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A 9.9 Media Publication

Agent 001 goes shopping for Camera accessories

digit

YOUR TECHNOLOGY NAVIG

May 2009

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VISA

GROUP TEST Camcorders

GROUP TEST Digital SLR Cameras

EXTRA EXTRA!

+ A look at Hanuman - Indian born console game
+ Interesting and novel ways to produce electricity
+ Workshops: XBMC and Photography tricks

Tech Checklist

Things Tech you should
leave home without

Inside The Road Warrior's Backpack

0 74470 25140 8

The Tech-sense

All of the people working in research labs, all those working in hardware and software companies, all of us working at Digit, and all of you – readers of tech magazines, web sites, and tech enthusiasts – all taken together, constitute a minority in the grand scheme of things. And not the whole of that minority, mind you, knows enough about technology to practise it well.

Over the past decade or so, I have seen technology enter every aspect of our lives, and the mobile phone is perhaps now the starting point for most of the world. However, I still find so many causes for complaint, when I encounter people who should just know better.

I can't begin to describe the disappointment I feel when I speak to customer service representatives who know less than I do about their product. And no, I'm not special, most of you who read this magazine, have had similar encounters.

Almost every month I find myself arguing, quite fruitlessly, with my ISP's representatives, over some issue or another. Most often it's a badly configured server, or some technical problem with their lines that causes me to call them. Of course all I get in return is standard verbiage, and ridiculous requests to "delete my IE cache". I don't even use IE, and what's IE got to do with the fact that their DNS server is down? Why should I have to spend 15 minutes of my life, every month, educating people about how their system is supposed to work?

The common everyday system assembler is no different. I can't tell you how many times I've seen rear system fans pushing air into a cabinet, instead of out; or CPUs that run hot because the guy who threw it together thought, "Thermal paste? You can probably never have enough!"

The technology service providers across SoHos and SMBs are no better. Yes I will admit that there are quite a few gems, in this field, but overall, it's just sad to see the pathetic state of knowledge and awareness.

I've spoken to quite a few small business owners who just cannot seem to find an affordable and reliable enough maintenance provider. One such company's network was recently assailed by the Conficker worm, and a whole host of other malware. As usual, the sys-admin (from an outsourced company), felt the best solution was to format-reinstall Windows on individual computers. However, it was sad to see that he didn't seem to have the common sense to unplug the LAN cable when reinstalling the OS, ensuring to plug it back in only after installing an updated anti-virus software. As a result, by the time I pointed this out to him, he had formatted and reinstalled Windows on 3 PCs over 4 times each! Shouldn't someone you pay to protect your PCs and data know such a basic thing? What about all the man-hours wasted?

Working in a media company, I also get a lot of FTP login details, to get ads, transfer pages, download images – the usual deal. I can't begin to tell you how many times I've found the passwords to be weak, and sometimes, it's the same as the root password to the actual server's OS!

Then there's the whole web site business, which is just another example of the visually impaired leading the blind. I've seen people with a distrust for open source software's security, get custom-coded solutions that either break or have security holes the size of a bus. Very often, the "product" provided is just an open source package that's coded on top of, without proper understanding of, the original code, thus resulting in security holes. If not, then it's custom-coded, without following some basic principles of security.

The advantage we've always had at Digit, is the fact that we're all a bunch of technology fanatics. There's always someone around who will offer up better solutions, and all of us can troubleshoot, rip apart and rebuild our own PCs. We're blessed with a lot of people who have the "tech sense" – or basically a combination of common sense, technology knowledge and experience.

Although this tech sense has helped us stay numero uno in your eyes, we're not content to sit back and do nothing more. Doing more, however, is not possible if we look at you as "readers" of a magazine. Starting this month, and hopefully a regular feature from now on – depending on the way you respond – we will be looking to interact more with you. Whether it's online through our web site, via e-mail, in real-time via live chats, or face-to-face workshops, we're going to go beyond the scope of any "magazine", and try to empower the tech community of India.

Whether it's saving you assembly costs by teaching you how to do it yourself, or helping you use technology better, we're going to listen to some of our readers who asked for an increased level of interaction, and help more people develop better "tech sense".

Turn to page 28 to find out more, and don't forget to write in and tell me if you have some suggestions about how we can help more.

Robert Sovereign-Smith, Editor

"Xxxxxxx"

editor@thinkdigit.com

digit

YOUR TECHNOLOGY NAVIGATOR

May 2009 • Volume 9 • Issue 5

Advertisers' index

Products reviewed this month

Tell us what you feel about Digit

Each month, *Digit* walks through the technology maze to bring you the most relevant, and the most researched stories. If you have an opinion about anything published in *Digit*, or about technology in general, please write to **editor@thinkdigit.com**

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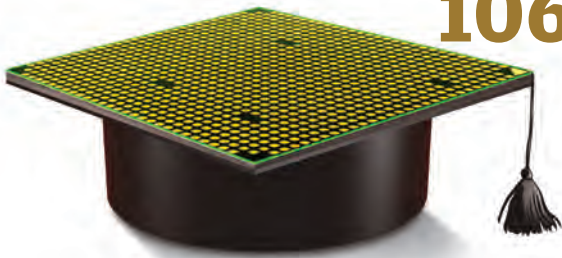
28

Know more about the exciting Digit carnival
next month

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Gaming

GAMES
Wanted: Weapons of Fate

Wanted is a video game based on the movie of the same name and features assassin time and curving bullets gameplay.
- Watchmen: The End Is Nigh
- Codename Panzers: Cold War MP Flock
- Myth II: Soulblighter v1.5.1

GAME TRAILERS
Jumpgate Evolution
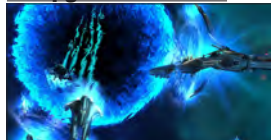
Nothing can prepare you for the journey that is about to unfold... The galaxy is in a fragile state, balanced on the brink of war. New threats emerge from the unknown depths of space, reaching forth with an iron grip, threatening to bring the surviving Nations of humanity to their knees.
- Alpha Protocol
- Black Prophecy
- Blade and Soul
- Burn Zombie Burn
- E.Y.E
- Marvel: Ultimate Alliance 2
- Metal Rage
- Modern Warfare 2
- Prototype

Entertainment

HD TRAILERS
Big Man Japan

A man transforms into a giant to fight monsters invading Tokyo in this ockumentary
- 12 Rounds
- Cloudy With a Chance of Meatballs
- Hunger
- Ice Age: Dawn of the Dinosaurs
- Sleep Dealer
- Surveillance
- The Song of Sparrows
- Where the Wild Things Are
- Year One

ANIMATIONS
- Hector's Hectic Life
- The Cobweb Hotel
- The Curious Adventures of Mr.
- Wonderbird

Linux

ESSENTIALS
- 7zip
- amarok
- Audacity
- Mplayer Codec Pack
- Pidgin
- Vuze
- Wine

DISTROS
- Mandriva 2009.1 RC2
- Nexenta 1.0.1
- System Rescue CD 1.1.7
- XPud 0.8.9

Tools

MULTIMEDIA
Apple iTunes 8.1.1

iTunes is a free application for Mac and PC. It plays all your digital music and video. It syncs content to your iPod, iPhone, and Apple TV. And it's an entertainment superstore that stays open 24/7.

Vue 7 Pioneer 7.0

Easily create your own 3D worlds with Vue 7 Pioneer. Create vast expanses of terrains, add trees, select the best point of view and render hyper-realistic images of your landscapes in moody atmospheres in a few mouse clicks. Vue 7 Pioneer is a great way to learn 3D. It's so easy to use that you'll be composing amazing 3D landscapes in no time. Vue 7 Pioneer is derived from the research e-on software makes for the high-end products it sells to large special effects studios.
- ALShow 1.7
- AndreaMosaic 3.31
- Ashampoo Photo Optimizer Free 1.20
- BurnAware Free 2.3.3
- Contenta-Converter Basic 4.2
- DarkWave Studio 2.7.2
- DivX Player 7.1.0.74
- Free FLV to WMV Convert 2.7
- Free PowerPoint to PDF Converter 5.5
- Fresh View 7.68
- GIMP 2.6.6
- ImageVisu 5.0.0
- Light Boogie 2.9.84
- MooO ImageViewer 1.59
- Need4 Free Audio CD Ripper 5.6.0.3
- Performa Pro 2.1
- Picasa 3.1 Build 71.18
- Plato DVD Creator Pro 7.88
- Pos Free Photo Editor 1.20
- RadioSure 1.8.820
- TwistedBrush Open Studio 15.73
- virtualStudio 1.0.37
- WIA-Loader 1.5.2.0
- WildFire CD Ripper 2.9
- Zortam Mp3 Media Studio 9.10e

INTERNET
SeaMonkey 1.1.15
Web-browser, advanced e-mail and newsgroup client, IRC chat client, and HTML editing made simple - all your Internet needs in one application.

- Hermes P2P 2.9
- Billeo 2.0.0.15
- BitKinex 3.1.1
- BitsCast 0.14
- FileZilla 3.2.3.1
- GigaTribe 2.51
- Gladinet Cloud Desktop Professional Edition 0.9.92 beta
- InternetScrap 2.40
- LimeWire 5.1.2
- Make Your Own Browser 3.19.09
- NetPen 0.97
- Orbit Downloader 2.8.8
- Skimmer beta
- Vuze 4.2
- Xcelerator 1.2

SYSTEM
MooO SystemMonitor 1.37
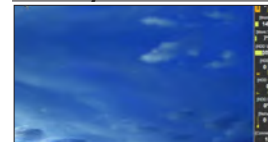
MooO SystemMonitor lets you keep your eye on system resource usages of your PC. It currently supports 30 kinds of information including CPU, Memory, Network, and detailed HDD usages. Using this software, you may discover what is limiting your system performance in each occasion.
- Allway Sync 9.2.11
- AutoRuns 9.41
- Daphne 1.41
- Driver Magician Lite 3.5
- Fast Duplicate File Finder 1.1
- Fresh UI 8.28
- Hawkscope 0.6.0
- Micro-Sys Launcher 1.6.5
- OnTarget Data Backup 3.0.4
- Process Tamer 2.10.01
- Restoration 3.2.13
- Screen Mode Switch 2.0.2.1
- TweakNow RegCleaner 4.0.5
- Wise Disk Cleaner 4.23
- Wise Registry Cleaner 4.23

ESSENTIALS
- .net Framework 2.0
- .net Framework 3.5
- Avast Home Edition 4.8
- Comodo Internet Security Pro 3.5.55810.432
- Foxit Reader 3.0
- Free Download Manager 2.5 build 758
- Irfan View 4.20
- Java(TM) 2 Runtime
- K-Lite Mega Codec Pack FULL 4.2.5
- Opera 9.64
- Silverlight
- Spybot Search and Destroy 1.6.0
- VLC Player 0.9.4
- WinRAR 3.80
- µTorrent 1.8.1

UPDATES AND ADD-ONS
- Adobe Shockwave

For any queries regarding the CD or DVD, email help@thinkdigit.com with "CD/DVD" as the subject. If the subject is not mentioned, your mail might not reach the right person.

Digit

DIGIT VIDEOS
Bryce modeling

A video tutorial showing how to make simple models and render them in Bryce 5.5
- Asus P565 Unboxing
- Bryce animation
- Dell XPS 13 Unboxing
- Samsung Pixon Unboxing
- Watchmen
- XBMC

MAGAZINE CONTENTS
- Demos
- DExposE2
- Hanuman
- Sixth Sense
- Stellarium 0.10.2
- Windows Powershell
- XBMC

FAST TRACK
Camstudio 2.0
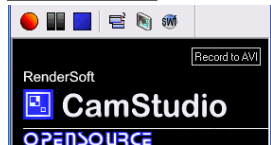
CamStudio is able to record all screen and audio activity on your computer and create industry-standard AVI video files and using its built-in SWF Producer can turn those AVIs into lean, mean, bandwidth-friendly Streaming Flash videos (SWFs)
- Tagscanner 5.3.1
- Thunderbird 2.0
- Advanced SystemCare Free v3
- AVG Anti-Virus Free
- Avira AntiVir Personal - FREE
- Antivirus
- Burn4Free 6.6.0.0
- Byrce 5.5
- Captureflux 5.2
- Cathy 1.10
- Clipboard Magic 4.01
- Comodo BackUp 1
- Easus Partition Master 3.5 Home
- Edition
- EasyCleaner 2.0.6.380
- FeedDemon
- Feedreader 3.1.3
- Foobar 2000 0.9.6
- Fx Media Batcher
- Handbrake 0.9.3
- ImageForge
- Mediacoder 0.7.0
- Paint.net 3.36
- Picasa 3
- Pictomio
- Sib Icon Editor 4.0
- SimpleOCR 3.1
- SyncBack Freeware 3.2.19.0
- TruVeo Video Manager
- VideoSpin 2.0
- VideoThang

- Virtual Dub 1.8.8
- WaterMark V2
- Wavepad
- Wavosaur 1.0.4.0
- Winamp 5.5.5.1

Tools

CREATE
Cool MP3 Mixer 1.01
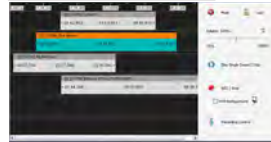
Cool MP3 Mixer is an intuitive multi-track mp3 sound recording, mixing and editing utility. You can record and mix multiple tracks of .mp3, .wav, .wma and .ogg audio files. It gives you the ability to mix multiple tracks in one. Add some sounds, record a few from the CD or microphone.

Wavosaur

WAVOSAUR is a free audio editor for Windows with VST plugins support. The program is ASIO compatible, can do loop points edition, auto-trim, noise removal .
- Expresseur 2.0.8b
- ActiveSolid 2.6.8
- AD Sound Recorder 4.4
- Cfont Pro 3.7.0.3
- CineCenter 1.3.2
- Decompile Flash Free 2.0.2.1512
- DipTrace 2.0
- EasyFLV Streaming Video 8.0 build 0.0.1
- Episode 5.1
- EximiousSoft Banner Maker 2.72
- FaceMorpher Multi 2.51
- Flash Protection Gold 1.41
- Flex jpg Animator 8.77
- Free PowerPoint to PDF Converter 5.5
- Image Clip Hunter 8.10
- Media Pop Up Ad Maker 8.0
- RonyaSoft CD DVD Label Maker 1.03.01
- SmoothDraw 3.1.3
- Solid PDF Creator 5.1.204
- SquidNet Network Distribution
- Processor 2.18
- Sweet Home 3D 1.8
- Wirecast 3.5.1

PRODUCTIVITY
Spryka Desktop Budget Lite 2.0

Desktop Budget Lite lets you take control of your budget, and lets you manage all your finances including your checking, your credit cards, loans, savings accounts, and any debts you might have, all with easy

to use, self explanatory windows and applications.
- Notepad2 3.0.20
- AceMoney Lite 3.16
- Calendar Magic 17.2
- Efficient Diary 1.51 build 25
- Evernote 3.1.0.1107
- FET - Free Timetabling Software 5.9.3
- NeedForTrade Studio Lite 3.2
- PhoneTray 1.33
- Rainlendar Lite 2.5 Build 72
- RGS-CardMaster 6.0.5
- Savings Bond Wizard 4.15
- Simple Home Budget Lite 1.7.5
- Smart Diary 4.40
- Smartstock 7.2
- Splendid City Scheduler Lite 6.6.5.3
- Task Coach 0.72.1
- Text Encoder 2.0
- Tiny Pad 2.0
- Wammu 0.29
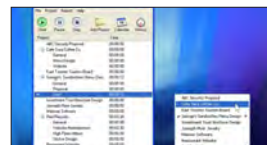
OFFICE
Dolphinity Organiser 2.1

A flexible personal information manager product that helps you to hierarchically store things-to-do, tasks, facts and such for quick retrieval
- NolaPro 4.0.4394
- BillQuick Lite 2009 10.0.60
- BillQuick Web Suite 2009 10.0.68
- Brochure Template 1.0
- Ghost Meeting 1.1
- GreenLights 2.1
- My Tenant Management System (MySQL as Database) 1.5
- Nebula Business Suite 1.1

- POSI 1.1.0.4
- Primitive Word Counter 1.09
- SnapshotMyVM 1.0
- SoHoMoney 9.04.06
- TortoiseSVN 1.6.1
- Yugma Web Conferencing 4.1
- TenderWiz
- SoftDrom RFBServer 1.0.4

Videos

ASTRONOMY 160
- Lecture 1 _ Introduction
- Lecture 2 - Planetary Orbits
- Lecture 3 - Our Solar System and the Pluto Problem
- Lecture 4 - Discovering Exoplanets: Hot Jupiters

LINUX JOURNAL
- AIR Applications
- DCop
- Dropbox
- Host File Tricks
- Network Troubleshooting
- RSI Break
- Rsync
- Symbolic Links
- Top Commands
- Upgrade Linux - Install IE7

BLEEDING EDGE TV
- White Beats by Dr. Dre
- Mophie Juice Pack
- Zune Originals hands-on
- Beats by Dr. Dre versions
- An in-depth look a LASIK part 1
- An in-depth look a LASIK part 2
- An in-depth look a LASIK part 3

INTRODUCTION TO ROBOTICS
- Lecture 1 - Course Overview
- Lecture 2 - Spatial Descriptions
- Lecture 3 - Homogeneous Transform
- Interpretations

The Digit Archive

Firstly, I would like to congratulate you for your success in the computer magazine arena in India. I purchased my first copy of *Digit* in March 2007. Since then I have never missed even a single copy of Digit. The variety of the softwares in the CD/DVD are vast. Being a student, I loved the Fast Tracks to PHP, AJAX, C++. The new design of *Digit* is really beautiful. *Digit* has helped to expand my computer knowledge in every area of computing. I have few requests:

1. Please provide Digit archive in your DVD.
2. Please include the latest version (1.6) of Battle for Wesnoth for Windows which is available at **wesnoth.org**. I can't download it because I have a dial-up connection and the cyber cafe has very high download charges.
3. Where has "take a crack" gone?

Nimesh, Ranchi

Hello Nimesh,
Thank you for mailing in. Bringing back the Digit archive is one of the most popular request we get, and you'll probably see one in the essentials section of the DVD from next month. We have recently given Battle of Wesnoth, but that was the Linux version. We'll look into giving the Windows version.

Editor

More FOSS coverage

It was very nice to go through your April 2009 issue. It was interesting as well. And why not? The future has always been interesting to the humans, largely because most of it is unknown. The "Cinematech" was certainly a very interesting column, giving us a peek and the possibility about the future, but I don't know whether you have actually missed out on big news or you actually wanted to postpone it for the next issue. This news I believe is "Once in a lifetime" kind of stuff.

The news is that there has been a collaboration between Microsoft and Red Hat on Virtualization Technology. You can certainly find the details of the same on the web site of both the companies. Microsoft, who has always believed in monopolistic business and who has always been against Linux (and Open Source) of all forms made this decision - is certainly a big news. Secondly, Microsoft is making Virtual Server available at no charge at all. Well, I tried all permutations and combinations to reach the conclusion which Microsoft had reached, but then I realised that I am "not Microsoft", so its better not to think about it. I hope that you can bring out more news on this issue.

I have been a real, die-hard supporter of Linux and open source. Don't you think that the above news means that open source is really giving a big challenge to proprietory software? If that is so, then can you tell me why you have not been writing about more of open source in your magazine rather than proprietory onces (which most people in India have pirated versions of).

I skip most of the tips and tweaks section in your magazine as, it contains stuff related to Windows. I have been running Linux on my laptop and desktop machines for the past four years now and have not been facing any problems at all. I watch movies, play games, listen to music, connect to my internet wirelessly, surf internet, do some programming, in fact, do everything — all on Linux.

I believe that you need to look more into the future which is exisiting nearby and also help other people understand the the same. Someone do need to put their hand up and say "Okay dude! I am gonna do it." That's what I believe your job is because you always are the first to bring out something different and innovative and that's what I believe that you should be doing.

Ashish Gupta.

Hello Ashish
Our Fast Track for this month is dedicated to Freeware. We openly support free and open source software, and often find that such software are better than their commercial counterparts. There is always a section of our DVDs dedicated to Linux distros and software. Maybe you should start going through the Tips and Tricks section more carefully, as quite a few of them cover Linux – based software. Thanks for mailing in!

Editor

More Video

I'd really like whole web sites about tutorials (including java) in the DVD, and you can even include the Digit web site and many more. The Videos in the DVDs are great, include more informational videos. Also include Java software for mobiles.

Mukesh

Hello Mukesh
In this month's DVD, you will find lots of informational videos. These include lectures from Yale and Stanford universities about Astronomy and Robotics. There are also instructional videos from Linux Journals, and procedures for the LASIK surgery from Bleeding Edge TV. Videos from the Digit team include a feature walkthrough of XBMC media server, and a video tutorial on animating in Bryce 5. Webaroo packs of websites, particularly of the Digit website is a common request, and we will look into it.

Editor

My phone sounds better!

Hi! I just want to express my views with your review of 'Nokia 5800 XPress Music'. I am dissapointed by your review. I am a proud owner of this phone for a month now and I already own an iPhone 3G. The touch interface of this nokia may not be as good as the iPhone but when it comes to sound quality this just thrashes the iPhone. You said that its performance is slow, but I don't think it is slower than iPhone. I think you've recieved a tampered phone. Get a new one and re-review it soon!

Kshitij

Hello Kshitij,
Our main contention with the Nokia 5800 XPress Music was that it was overpriced. If you are talking about how loud the speakers are, yes the Nokia 5800 XPress Music produces a louder sound than the iPhone. This does not mean that the sound quality itself is better, as the iPhone simply has no competition when listened to on a good set of headphones. Rest assured that we never write about or review tampered products.

Editor

Work@Tech
Find out your prospects of a career in the field of chip design

106

Write in
Drop in a mail, write to editor@thinkdigit.com.

Ogg Vorbis
Ogg Vorbis is the FOSS (Free and Open Source) community's answer to the .mp3 format. The .ogg format does not use propriety encoding algorithms like the .mp3 forma.t

Suggestion Box

I am a very big fan of your magazine and your magazine has improved a lot from the last few months. Your magazine is truly the best technology magazine in our country. There are a few suggestions:
1. When I opened the packaging of the April 2009 edition, the first thing I came to know that the paper quality of your magazine has improved a lot and should be continued for the coming months.
2. On the April 2009 DVD, there were too many HD Trailers. I know that every one likes HD vids a lot, but there were 10 on the first DVD. You should provide at most 6 trailers as 10 trailers take lots of space and we miss out on valuable software. You should rather provide normal resolution trailers.
3. April 2009 issue the article on recycling on computer wastes and LHC was great, but I found there was a bit of too much Sci-fi and the article on 'Engines...' should have normally found space on a Automobile Magazine.
4. I also think there were too many pages about upcoming movies which should not have found the place on a tech mag as the tech shown in these movies are quite unreal and will take many years to be publicised.
5. Fast Track to Ajax was good. You should consider revisiting some Fast Track topics like Security, Windows XP, Troubleshooting your PC.

Karan Raj Baruah,
Guwahati

Hello Karan
Thanks a lot for your valuable feedback. We recieve a lot of requests for HD Trailers and content, at the same time a lot of complaints from people who cannot playback these videos. For this reason, we have included both HD and normal versions of the trailers in this time's DVD. We have revisited Fast Track to Freeware this month, and instead of a list of all the freeware out there, this is a hand's on approach to accomplishing common tasks using Freeware.

Editor

Larger fonts please, Editor

I have been reading *Digit* for the past 2.5 years. With the new *Digit* interface you said that you cover more content per page, that is more words in a page. For that you have reduced the text size. Which is very difficult to read.

It is hard to read continuously with such a small text. Don't ask me to check my eyes. As my eyes are good only. Please increase the text size. Because of this I may stop buying Digit.

C.Karthik

I have been reading Digit for last four year and within these years many changes have been made in the magazine and I accepted them all from the business point of view and as a part of dynamism. However, since March 2009 issue the font is very small and eye straining thus not been able to read the articles leasurely. I request you to kindly enlarge the font so that I would not be compelled to leave the beautiful magazine at the cost of small font.

Urgen Lama,
Gangtok

Hello
Your feedback is important to us. The re-design is a continous process, and we are still constantly improving the look of the magazine based on the feedback of readers such as you. Stick with us, to see these changes.

Editor

No words to express!

This was a great issue — and I'm feeling that 'sci-fi' can become reality in the near future. Tech in movies and in reality were astonishing. The discussion on 'LHC' was informative. I was totally ignorant about it. 'Space Odyssey' section was great. Videos provided were informative. Speakers' test gave me good choice for speakers. Tips and tricks for IE8 was very helpful to me.

Hard drives tested were great. Info about movies got my heart. I would like to get hands on all the full versions of games tested in this issue. Can't you get 'Check your TQ' section back? Please. Thanks to whole team of Digit for such an outstanding issue!

Mayur Gaikwad.

Glad to know you liked the issue. Keep writing in!

Editor

I have been reading *Digit* for the past two months and have found your surveys of various hardware components simply great. Even the Fast Track issues are comprehensively made. The magazine has simply taken over me ever since I recieved the March Issue. I just want to know as to how I could send my problems to your Q & A section.

Rudrashish Bose

Hello,
If you run into any tech troubles and want us to answer queries in the Q & A space, just mail in your questions to sos@thinkdigit.com

Letter of the month

Digit is an institution

Digit is an eye opener for me. I am a paramedic and I had no knowledge of computer once upon a time (even MS paint or MS office was beyond me) . Then came that day I saw my first copy of *Digit* in a book store. Now, I have improved a lot when it comes to technology. I can install Operating Systems, and know some things about hardware.

When I first started reading *Digit*, I was a beginner at producing music. Now, however, I am proficient because of practicing on my Yamaha keyboard. *Digit* provides its readers with image editing software, system tools, and video applications. However, the DVD contains very few software for audio.

I have read the *Fast Track to Digital Audio* that *Digit* had provided in the Seventh anniversary DVD. I have tried Sound forge, Reaper, Music Studio 14, some audio editors and Audacity (which I love it a lot). I Want to know how to connect my Yamaha PSR 630 to PC. There are more music studio apps like sonar, cubase, FL studio, Ableton, Midi sequencers, Protools, Sequel, and other studio tools like Virtual studio technology , sound fonts, synthesizers and infinite Audio plug ins. This is really another world. Very happy to have Ogg Vorbis (I came to know about it only from *Digit's* knowledge base). I am very eager to have more digital audio studio apps further. I am learning Linux these days very seriously. Not yet tried Dual OS! (WinXP and Ubuntu). I want to know more about Ubuntu Studio – and the ISO if possible. Asking for too much? But, I know that only *Digit* can do this. Really! *Digit* is a university. Thanks a lot.

Praveen Kumar

Hello Praveen
Just slip in this month's DVD, amongst other audio software, you will find Darkwave Studio and Wavepad, two very good audio applications. You can connect your Yamaha PSR 360 to the PC using a wire with 3.5mm jacks on both sides. You should find one of these is specialised hardware stores, or ask your local hardware vendor to make one using the componants. The jacks cost around three rupees each, and the wire comes for about three rupees a meter. Rest assured that you will find an ISO of Ubuntu Studio in our DVD as soon as the latest version comes out. Thanks for mailing in!

Editor

Edi

ENTER

An interview with the publishers of Hanuman Boy Warrior

India's first PS2 Game

Kumar Jhuremalani and Siddharth Parwatay

Under what category does this game Fall in – RPG or Platform?

With respect to the character and what is happening in the gameplay, I'll put it as a platformer and the action genre. Since Hanuman has to go through a series of challenges and fight demons, it falls under the action genre. However, the movement around the smaller challenges such as swinging in the tree and collecting fruits puts it in the platformer genre.

Is this game meant only for India or worldwide?

It's not a worldwide launch for two reasons. In terms of the target audience, it's targeted at Indians and the Indian diaspora globally. Therefore, it'll most probably be launched in the UK, Middle East and most probably South Africa. However, being the first game with an Indian developer, our primary objective since the very beginning was to make it big in the Indian markets. The idea was intended to appeal to the Indian audience anywhere, not use Indian mythology to create a world game.

How long did it take from scratch?

The whole journey started when we had the developers' conference last year (DevStation Mumbai '08), which was also a first in its category (it was the first dev conference out of London). That was April 2008; the final game after alpha, beta, and QC (quality control) came in our hands mid-January. Effectively, it was a 10-month cycle.

With a price tag of Rs. 499, are you trying to undercut piracy?

Earlier, pirated games were priced around Rs. 125 a game, while our products were priced at Rs. 1,500. We have now brought this down to Rs. 499 with Hanuman. While creating games for the Indian market, one of the main parameters was to create games around the Rs. 499 price point without any sub-optimisation in the animation quality, programming, or the gameplay complexities. However, the level or the depth of the game is perhaps 8 hours of gameplay, not more than that.

How was it working with Indian developers?

Being very close to the dev team from UK, something coming out with a ten month cycle is nothing short of a miracle. And Aurona is not the only one. In June, you will have two quiz games from Candella. In another two months, two more games in PSP and PS2 SKU, from a company called GameShastra. One is a world quiz – it helps you in passing civil services and Joint Entrance type examinations. Earlier, we thought all that's done here is Flash games, but it turns out there is more to it. Gaming is being covered in a big way. Gaming critics are being well heard. Gaming distribution is becoming big, modern channels are putting in gaming retailing sections, and experience zones will also start following. Arcade games are also coming up. The place where it falls short is that the gaming industry is not recognised as a full-fledged industry. The government is not in a position to understand the full value of this industry. The fact that it can jump from zero to a five billion dollar industry even if it takes five years – that is not understood.

How practical is gaming as a career in India?

If you want to make gaming a career in India, you have to have an interest in gaming, because it is a very creative field. This can be in the story telling part, the programming part, or the animation part. In terms of programming skills, you need to

Atindriya Bose
Country Manager,
Sony Computer Entertainment

have this. I have sat with programmers and am amazed with their artistic tendencies, their programming skills and optimisation techniques. I feel console gaming or PC gaming is all about optimisation. Only then will you be able to make a fantastic game. Career wise, although there aren't sufficient institutes out there (and even if there are), institutes do not offer the gaming side of animation as a full course. Mostly, institutes offer a Flash-based animation gaming. There will be a few schools that will keep coming up and there are quite a few that are already running which will give you the opportunity of a one year course in getting into gaming as a programmer. I already have seen one school in Hyderabad that teaches programming very well – the Indian School of Gaming. Arena also does, but it's more towards the multimedia side. But more will come. Another thing about gaming that I have noticed is that while there are adequate game developers, they haven't done enough in project management. In all our partnerships, we endeavour that the company will also be learning. I feel there is a lot that can be done in taking it beyond this. We have had some preliminary talks with Aptech, on taking it to the next level, with some sort of partnership. ∎

(For more of this interview, head over to www.thinkdigit.com)

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ENTER

To Wait or Watch: in HD

Many people opted for Direct-to-home (DTH) services when they were launched. But what is the next step for these services? Are there going to be any technological advances? These questions have been answered by Sun Direct service as it has have recently launched its new High Definition (HD) DTH service.

Tony D'Silva, COO, Sun Direct, said that the new HD service will bring more realistic and breathtaking entertainment to people's homes. Sun Direct had reached a milestone that it had set, and had crossed 3.1 million subscribers. This was accomplished in a short period, compared to other similar services. The company therefore wanted to be the first to launch a service using this new HD technology. This step has also been taken after 1.5 million LCD TVs were sold last year and the expectation that this number will double this year, bringing a greater demand for higher quality content.

However, there are two major problems here – content and price. The content currently is very limited as there are only two channels, Tamil and Telugu movie channels, that offer HD content. The price of this HD box from Sun Direct costs approximately Rs. 10,000. So you really need to think whether you want to subscribe to such a service that has such limited content or wait until HD has become more mainstream. According to D'Silva, there are already more than 100 subscribers for this new HD service. So we guess there must be a lot of rich kids that can't wait to get their hands on this.

3G Delayed

The most talked about mobile technology these days is 3G. MTNL had announced it would launch 3G services soon, but this is not happening just yet. The launch is now supposed to be scheduled sometime in May. Jadoo, as the service is called, was supposed to have launched in February, but the response to this service in Delhi was nothing to boast about and this could have caused the delay in Mumbai.

MTNL has decided to move towards a new marketing strategy and will wait for a better 3G response before it goes ahead with the schedule. This brings up the question of whether the service will actually launch in May, as how much more could be actually considered as a better

response. Jadoo has a capacity to support about 1,50,000 subscribers, but currently there are only about 500 subscribers in the capital.

The plan is such that you have to pay Rs. 500 for activation and a monthly subscription charge of Rs. 599. Each call to a local MTNL number would cost 60 paise and Re. 1 to other operators. With 3G, video calls cost Rs. 1.80 within the MTNL network, while Rs. 3 for other networks.

Cricket: On the Go

The DLF Indian Premier League (IPL) has hit us again with the second season being played in South Africa. Controversies aside, there's finally some good news – you can now watch live coverage over the internet. If you were on the move, the only way previously that you could remotely follow the match was through the radio or score updates via SMS. But things are going to change now and you will soon be able to get ball-by-ball updates on your mobile phone. This service is not going to be limited only to those who own phones that have 3G capabilities, but will also be available for 2G phones as well.

To get ball-by-ball updates, all you need to do is download the application from **zengaentertainment.com.** You will also need a GPRS connection to access this service. Some operators levy a monthly GPRS charge, while with others you will have a pay-as-you-use scheme, which may turn out to be costly. However, if you want such a live feed, then this is the best way to go.

Scientists + CO2 = Biofuel

Scientists from the Institute of Bioengineering and Nanotechnology, Singapore have found a way to convert CO2 into Methanol. They managed to do so by using the organocatalyst, N-heterocyclic carbenes (NHCs) in a reaction with carbon dioxide. The reaction is supposed to be stable under mild conditions in dry air. Adding to this, NHCs are easily available and only a little was used in the above reaction.

This is considered a big step that should help the environment. Some believe that this reaction still has flaws, even though the catalyst is abundantly available, the NHC decays very rapidly. Some also say this whole process is more

of a negative energy process, in which you use up more energy to create the methanol as compared to the amount of methanol produced.

In our books, this is definitely a good start as people have moved away from just the ideation phase and entered into the proving and performing phase.

Operation desert clone

Camel racing is popular in the Gulf region. So what does the Dubai Camel Reproduction Center do? It just cloned the first ever camel and have named her Injaz, which means Achievement. You must be wondering what's the link between camel racing and cloning, well since this has been successful, the Camel Reproduction Center plans on using this technique to clone some of the best racing camels so that they can keep their blood line going for years. Not only do they want the genes of the elite racing camels to be preserved and reproduced for future use, but also for their milk producing camels.

Injaz the first cloned camel in Dubai

The technique used by the scientists was the same as that used to clone Dolly the sheep in 1996; she was put down as she was diagnosed with lung cancer in 2003. Injaz is actually a clone of a camel that was slaughtered for it's meat back in 2005. First the ovaries were removed and DNA was extracted from them. Next, the DNA was placed in the egg extracted from a surrogate mother. This egg is then planted back into the surrogate mother. Once Injaz was born, the tests showed that the DNA from Injaz matched that of the dead camel rather than the mother. Injaz was born after a 378-day gestation period and weighed 30 kg.

Brain invasion

Twitter, the microblogging, social networking web site has drawn a lot of attention of late. The first big achievement was thanks to celebrity Ashton Kutcher – he became the first user to have 1 million followers. The current
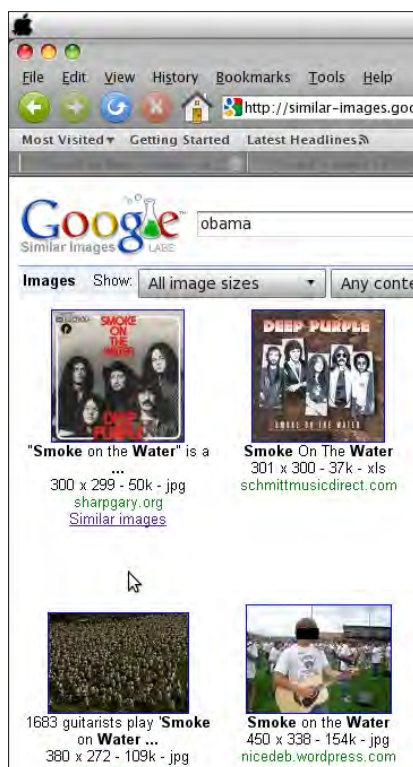
buzz

Scientist Stephen Hawkings has been hospitalised, but is said to be 'comfortable' after spending the night at the hospital

number has grown to 12,82,994 and we are sure this is just going to keep growing. Next up we have Oprah, who posted her first tweet on her show with the help of Twitter CEO Evan Williams. Oprah has just brought a whole new audience to Twitter and has almost 5,00,000 followers.

Twitter has also helped some people with their business, a recent example being that of Kogi (Korean BBQ) sold in Los Angeles on Taco trucks. Mike Prasad, brand ambassador for Kogi, wanted a single place where fans could meet. What better way to pass on this message to the world than with Twitter. You could even say thanks to these tweets the business is booming as they can talk directly to the customers using the 140-character tweets.

This is all about the present, but what does the future hold for Twitter? Well, one Adam Wilson has built a brain interface that allows users to post Twitter messages. For this to work, you will need to don a dorky looking cap which has electrodes attached to it so it can monitor your brain functions. This interface works by focussing on the alphabets being displayed on the screen. Once the desired character flashes, the cap can pick up the resulting impulse. The device still has its flaws as it can handle only about 10 characters per minute. With Twitter's

character limit of 140, it would take you 14 minutes to create a maximum size message. Though this is still in a nascent stage, it is a great accomplishment in terms of neural interfaces.

Google similar images

Here's the latest tool from the labs at Google – search for similar images. With this option within the Google image search, users will get the chance to directly click on an image that might be similar to the one they are looking for instead of re-searching with different search criteria.

The similar image link is located below the thumbnail images which are displayed from your search. The technology that Google has used relies on metadata and image recognition based on content, perspective and colour, which helps users narrow their searches.

This search tool is currently available to try out at **http://similar-image.googlelabs.com**.

You will clearly see that this has not been perfected yet as sometimes you might not get the image you are looking for and at other times your image search might not even have the similar image link. We tried this similar image search with the words 'smoke on the water' which gave image results of Deep Purple as well as actual smoke over the water, but only two similar image buttons were displayed on the page.

This will be a really helpful addition to Google's search engine and will save a lot of time for all of us.

Learn through DVD

Teachers from Dharavi in Mumbai will get to watch something other than *Slumdog Millionare*, thanks to Landmark International Institute for Empowerment (LIFE) trust. The LIFE trust is going to be conducting a two-month program during which 25 Anganwadi teachers will learn English. Anganwadis are pre-school centres which have been established by the Central Government so that children up to the age of six can study. Anganwadis are a great initiative on their own, but now with LIFE trust giving another helping hand, language proficiency among the masses is set to improve. Most of these Anganwadis are located in Dharavi, one of the biggest

slums in the world, occupying about 175 hectares of land and has about a million people staying in it.

LIFE trust has created an 'English DVD' for this task and will be training teachers using portable DVD players. They have tried to make the learning process as interactive as possible with voice, video, quizzes, discussions and role plays so that the children get some quality education. If this new DVD system of education is successful at the Anganwadi level, it could revolutionise the entire public school education system.

Bluetooth 3.0

Up until now Bluetooth was used to transfer images and small audio or video files between cell phone users, it never reached the status of a great new wireless norm. But that's about to change as Bluetooth Special Interest Group (SIG) announced that the technology just got an overhaul and

they have released a new version named – Bluetooth 3.0 + High Speed (HS). This new version of Bluetooth boasts of transfer speeds of upto 24 Mbps which is due to the inclusion of 802.11 protocol, the same protocol used in WiFi.

The good news here is of course the increase of transfer speed, but the bad news is that your current mobile phones will not support this. Mobile phones with this v3 should start rolling out within a year. The computers that have the Blouetooth 2.1 + EDR module have a better chance as they can be upgraded to the new version.

The question of power consumption may arise, this also is sort of a problem as larger the files transferred, more power will be consumed. The work around for this, the 802.11 protocol is triggered only during the transfer and not all the time.

This also means that the devices that use this new version will have to WiFi technology as well, so that they can take advantage of the increased data transfer speeds. But don't worry as this is also backward compatible and if paired with a device that does not have WiFi then it reverts to the old 2.1 + EDR module.

So what can this new Bluetooth 3.0 + HS accomplish other than what we have been using Bluetooth uptil now for, well to start off, the range should be a definite increase, and in the near future you will also be able to stream camcorders to HDTVs or even PC to PMP.

CONNECTIONS

The Next Big Idea

BETA-ISH

Kosmix

Siddharth Parwatay

As with any path breaking technology, every now and then you get a promising rival that is touted as the predecessor's killer. It has happened with the iPhone, but we are yet to see a definitive iPhone killer. And now, Google is said to have another killer rival. Recently, we came across several blogs and news items that claimed Kosmix, a three-month old search tool, to be the next big thing in the web search domain. Some even going to the extent of calling it the harbinger of Google's doom. What is ironic, however, is that while the media has been busy building up the Kosmix bubble, its founders (two silicon valley based Indians) are going to great lengths to underplay their product, especially when it comes to drawing comparisons with Google.

Unlike a normal search engine that displays results which contain your search phrase, Kosmix generates a dynamic results page on the fly, populated by content from other sources. These snippets of information are gathered from web sites such as Wikipedia, blogs, videos, photos, news and image results from Google. The idea is to give you a bird's eye view of a particular topic. Search engines such as Google help users find specific information in the form of web sites, research papers or flight schedules. Hence the founders have given their product the moniker of *explore engine* and not search engine. Kosmix's page title "The web organized for you" is perhaps an allusion to this concept. Sounds interesting, right?

We decided to give it a whirl for two reasons. One was the obvious curiosity about how it matches up to Google and the other to confirm reports from a New York Times article that Kosmix is best suited for certain specific uses. A quick random search will give you more than an inkling that this tool is not meant for serious research.

A search for one of our favourite bands "Porcupine Tree" proved to be quite futile as a guide, or even as a starting point. Agreed, the topic is still not serious enough, but it makes you wonder how the site will handle "quantum physics".

So, is it good for anything at all? Reports suggest that Kosmix does well in certain categories of searches such as travel, sports, health and electronics. For these categories, Kosmix is supposed to generate pages so specific and content rich that companies spending fortunes on developing such pages will squirm in their pants. A search on "Jaipur", had us mildly surprised. Apart from the normal and annoying results from Wikipedia and Google images, the web site managed to cull some interesting contextual content. The result page had a Google map of Jaipur, results from Hostelworld for cheap accommodation, travelogue videos from blinkx, and further down the page Trip Plans from Yahoo! Travel. Further down were interesting "how to" guides such as "How to Visit Jaipur" and "How to Buy Gems in Jaipur" from **ehow.com**. It would've been nice if the order of the results was different, but in the context of planning a trip, Kosmix can certainly be a good place to start. Was it useful to someone writing a college research paper on the city? Not at all. Go ahead and try it out, but certainly no one is expected to delete their bookmark for Google anytime soon.

Play in the cloud

Speaking of market disruptive technologies, something quite phenomenal is happening or rather could happen in the gaming world in the near future. OnLive, the revolutionary digital distribution technology, which was unveiled at the Game Developers Conference in San Francisco recently, could allow you to stream any game over a broadband connection to your computer, irrespective of your hardware. Essentially, this will turn any computer into a high-end gaming console.

With OnLive's mega servers that remotely process and render signals, theoretically any PC, Mac, TV or even a piddly netbook can become a receiving station for ultra high-end games. For you to be able to play on your large screen TV, OnLive will be offering a modem-like hardware device called the MicroConsole. It's most likely that the device will act as a thin client between your display and internet connection. A built in web browser will provide functionality and the device will have USB inputs and HDMI output.

What's the catch? Obviously, for people living in this part of the world, it's broadband! OnLive can dish out 60 frames per second in Wii quality at a bandwidth of 1.5 Mbps. At a bandwidth of 5 Mbps it can do 720p! How is this done? No one really knows but has to do with some insane interactive video compression algorithms that have latency low enough to support

ONLIVE Game Service

PC   Mac   LOW LATENCY VIDEO ← → BROADBAND INTERNET ← →

TV Via OnLive MicroConsole   CONTROLLER ACTION

1 Play — OnLive takes input from controller and returns low-latency HD video.

2 Connect — Home broadband connects OnLive MicroConsole, PC or Mac to OnLive Service.

3 Games — Games hosted in OnLive data centers on custom high-performance game servers.

on-line multi-player setups. So you guessed it — there is going to be large scale community activity too. This will include standard leaderboards, rankings and level indicators apart from the ability to join live games at any point. An interesting concept debuted by OnLive was the creation of "brag-

Wasting Time 39
Learn of interesting ways to spend time on the Internet.

80legs fee:
$2 per million pages scanned, plus 3 cents per CPU hour

Host photos 80
A roundup of the best image hosting sites

clips", which lets you save ten-second clips of various in-game accomplishments to share.

OnLive demoed 16 high-end titles which included *Crysis*, *Burnout Paradise*, and *Grand Theft Auto IV*. If you're wondering about the reaction of game studios to this technology you'd be surprised. Electronic Arts, Ubisoft, Take-Two Interactive, Warner Bros. Interactive Entertainment, THQ, Epic Games, Eidos, Atari Interactive and Codemasters have already joined the bandwagon. What would be interesting is the reaction of hardware manufacturers. Theoretically, since processing is done in the cloud, OnLive can make sure you never have to upgrade your PC. So bye bye high-end graphics card, see you quad core, adios gigabytes of memory? Will NVIDIA, ATI and Intel loose sleep over this? Maybe and maybe not. Because even if the games are not running in your system and are running in the cloud, they are still running somewhere on some hardware. Of course this hardware will be consolidated and have better utilisation rates. What about console manufacturers? They are certainly the first candidates for loosing sleep.

Yet we'll have to wait and watch before ideas become a reality. Given how

much trouble it is to encode and decode video, several critics are suggesting that this technology is unworkable. In its defence, OnLive has stated that apart from special algorithms, it has employed a custom built silicon chip that does encoding at the server end and decompression at user end in milliseconds. Besides, transmitting such compressed data over an open internet connection poses its own problems. It will probably result in the

need for a user to be in the geographical proximity of an OnLive server farm.

OnLive will be a subscription-based service, but since it's still in beta, pricing hasn't yet been revealed. Subscription models will probably let you play games for a certain amount of time or buy them outright for unlimited plays. The Bluetooth enabled device for playing on HDTV, (MicroConsole) will probably cost as much as any other console such as a Wii.

Web 2.0 Expo

Sometime in the first half of April, the third instalment of the Web 2.0 Expo came to quite a fruitful end in San Francisco. A yearly fixture now, the expo plays host to web designers, developers, entrepreneurs, marketers, business strategists, and venture capitalists; all connected within the all-consuming purview of Web 2.0.

This year, the response was a bit lukewarm, with attendee numbers dropping from around 10,000 last year to about 8,000 this time around. Who would want to physically attend an expo when every-

of some of the most promising ideas presented at Web 2.0 Expo 09:

80legs: the most innovative of all the ideas presented. It is a web-scale platform for content discovery (crawling) and analysis. So developers, entrepreneurs, in fact anyone, can use 80legs to analyse the internet at lightning fast speeds (2 billion pages per day on a 50,000-node supercomputer). The possibilities are limitless. You could use it to understand web trends, scan for content, and perhaps it could spawn new search engines. It'll be interest-

DubMeNow: is another step forward towards syncing mobile contacts with the web. It allows you to create a mobile business card which you can share with anyone through the cloud. In turn your contact's info loads directly into your existing mobile address book and is automatically updated whenever your contact changes their information. "Do away with visiting cards" seems to be the motto.

Bantam Networks: This is an online workspace for businesses, that features work flow management. So, basically,

thing from the keynote to closing can be found on the web within a few hours?

In the past, the conference has seen many exceptional ideas and technologies being showcased to the world for the first time, such as Zimbra, Flock and JobScore. Even with the current state of the economy, Launchpad, the startup podium, received about 80 entries. The approach this time was different, also reflecting the plight of the economy. Instead of the VC focus of previous years, this time the focus was on the end user. Here is a roundup

ing to see how this new platform can be used productively, if at all.

PhoneGap: launched by Nitobi, this one was the crowd favourite. PhoneGap is an open source framework that allows developers to author apps in HTML and JavaScript, while leveraging device capabilities such as camera, vibration and sound. So what's the big deal? PhoneGap apps are supposed to run on the iPhone, Android and Blackberry.

business teams get to create secure social workspaces where you access features such as information sharing, activity tracking, file storage, task lists and so on. Bantam also pulls in content from other Web 2.0 sources like Twitter and LinkedIn.

ZeaLog: A personal tracking app that is supposed to help you achieve any specific personal goal such as quit smoking, loose weight, drink more water, etc.

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China Mobile's subscriber base passed the 450 million mark this year. The number is more than the combined populations of several small countries.

When cell phone's become
Voting machines

Siddharth Parwatay

No we're not talking about voting for your favourite star in Indian Idol. But there is the distinct possibility of mobile devices being used as voting machines for the next elections. Perhaps this article and the concept is a bit ahead of its time but indicators towards this electronic shift have already found their way into popular culture. Do the "what an idea sir ji" ads we're being bombarded with so often, strike a chord? Or even the numerous reality shows where the contestants' fate is decided by the mobile voting public. Another instance that comes to mind occurred two years ago, when the Taj Mahal's right to be amongst the seven wonders of the world was put to a vote. Back then about 165 million mobile phones doubled up as voting machines and surprised the international community.

Think about it – the juggernaut of India's mobile subscriber base shows no sign of stopping. Despite the downturn it stands at around 360 million (36 crore), with close to ten million connections being added every month. This figure, however impressive, may not be close to the eligible voting population of today, but by the time the next election takes place in 2014, the numbers may be closing. A report by Gartner last year expected the subscriber base to hit 73.7 crore connections by 2012, owing to a compound annual growth rate of 21 per cent in the same period. Soon the Kafkaesque scenario of people being recognised by numbers and not names might become a reality. Except the numbers won't be government appointed dog tags but our very own cell phone numbers. One might argue that even a large subscriber base if it doesn't cover half the country's numerical strength, doesn't represent a valid cross section of the population. True. But if the infrastructure allows it, those that can exercise the option should be allowed to.

In other parts of the world this possibility is being seriously considered. VeriSign, the Internet infrastructure services provider, made a prediction just recently that voting by mobile devices could become a reality in the US by 2012. It also predicts that citizens will have a greater connect with their elected representatives through the mobile medium. A small reflection of this is happening in India but only it's the other way around with politicians using SMSs to reach citizens in their constituency.

In conclusion, if the problem of authentication and accountability can be overcome by developing the appropriate infrastructure, the TRAI and EC should seriously consider the possibility.

Phone a Friend

You are completely lost and on your way to an important even in an unfamiliar part of town. Worse yet, you are in a new city altogether and don't know what to do. We've all faced this situation and wished for a GPS device. GPS however is not within everyone's reach and doesn't make sense for occasional use. But what if you could get turn-by-turn directions as a service then? Now you can! SatNav has launched India's first voice-based Navigation Direction Service – SatGuide LCU (It stands for "Lost? Call Us!") available to all phone users across India. With the launch of this service, finding your destination is theoretically just a phone call away.

When you call in, an actual person will ask you for your details and will guide you to your destination. The other option is an SMS with distances and road names along with landmarks. The service works on a prepaid voucher model. Users get toll free calling accessibility from any telecom provider to be connected to a trained agent. To access the service, the customer will just have to purchase vouchers worth Rs. 100 from the SatGuide website, **www.satguide.in**, to register with the service. These contain 15 minutes of talk time. In addition, the vouchers will be made available through retail partners such as E-Zone, Croma, Staples and Reliance AutoZone, all over the country in a phased manner. Higher value vouchers are also available.

The service is available in Hindi and English between 6.30 to 11.30 pm. The maps have been developed in house by the company with detailed street level road maps of 200+ cities and include more than 15 lakh destinations.

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CONNECTIONS

Hit the road 32
Check out what goes into the
Mobile Warriors Back pack

Srikrishna Patkar

Vacation 2.0

Learn how you can use online resources to plan your vacation

Siddharth Parwatay

It's that time of the year when invariably everyone catches the travel bug and decides to pack their bags and head out. But before launching off on a Lonely Planet fantasy, understand that as with all things these days, there is the old way of doing things and then there is the tech way. Sure you can call up any of the tour operators and opt for a standard package, but remember that people are increasingly becoming quite comfortable with doing their own online research for planning their vacations, and effectively cutting out the expensive middle man. Here we show you how you can plan your own vacation 2.0.

There are a multitude of online resources that can help you find all the information you need. Apart from your regular ticketing and booking facilities, you can get access to information on various destinations, deals, reviews, local curiosities and a host of other things that would've ordinarily escaped your radar. There are resources that alert travellers to peculiarities that might transform into one of those major vacation blunders. The internet, of course, is a vast jungle of information, so where do you start? Let's go step-by-step and see how it can help you along every step of the way.

With the recession around, prices have gone through the floor. Hotel occupancies

are down 30 per cent compared to last year, while prices for air travel and accommodation have been slashed by similar amounts. Everything is cheap and traveller friendly, so you can finally go to all those places you've always wanted to visit.

Part 1: Planning your itinerary

Apart from the trip itself, this can be the most fun part of your holiday! Whether you browse the web site of the bird sanctuary you've always wanted to visit, download podcasts or watch videos of tours of ancient cities, the internet makes travel so much more enjoyable. If it's a trip with several people – friends or family – you can involve everyone at this stage by sharing links to travelogues and interesting pictures. Planning your itinerary can be done beautifully on the web. A good way is to browse some of the best travel web sites so that you can zero in on a suitable trip. The idea here is to come up with a package

of your own. A package would involve the best places to see, sights and specialties to visit and things to do. Once you have chalked this out successfully, the next step involves figuring out the logistics of transportation and accommodation.

Tourism Boards

Web sites of tourism boards of states within India or countries abroad are a good place to start. You might remember the Incredible India promotional campaign by the Ministry of Tourism or the Madhya Pradesh and Kerala tourism campaigns. Many Indian states have very interesting and comprehensive government promoted tourism web sites. They showcase the various attractions found in that state and in many cases allow for booking accommodation in state-run and private facilities. For instance, **keralatourism.org,** which is perhaps the most elaborate of all state tourism web sites, is very comprehensive incorporating vital information such as calendar updates for local events and other facts and figures. Another good state tourism web site is **rajasthantourism.gov.in** which allows you to book hotels run by the state department. A simple search online will give you third-party web sites where all the state tourism board web sites are listed. Internationally, you have web sites such as **visitsingapore. com** which has a micro-site for India. While browsing these web sites be sure to look for special events. For instance, there could be the carnival or Goa fest happening or a concert of your favourite band coinciding with your trip to Bangkok.

Information sites

These information web sites will plant the seed of a travel idea in your mind. What you can expect to find on these websites is a large number of travelogues and custom packages. The web sites range from regular travel web sites to country specific ones and even ones for those who want to go down the road less travelled. What you can do is get inspiration from these sources and plan a customised package for yourself. This gives you all the information and the freedom of tweaking your itinerary to your convenience. Here's a small selection:

Infohub.com: a speciality travel guide web site with a lot of content. It describes itself as "the ultimate source for out-of-the-ordinary and inspiring travel ideas" and going by how extensive the information is we tend to agree. The web site has travel stories plus you can browse both by country or popular vacations, such as eco-tourism, biking tours, photography and videography, scuba diving or sports. The quick vacation search helps you narrow in on options quickly or you have the option of searching for keywords. The web site is also a great source for finding professionally managed tours.
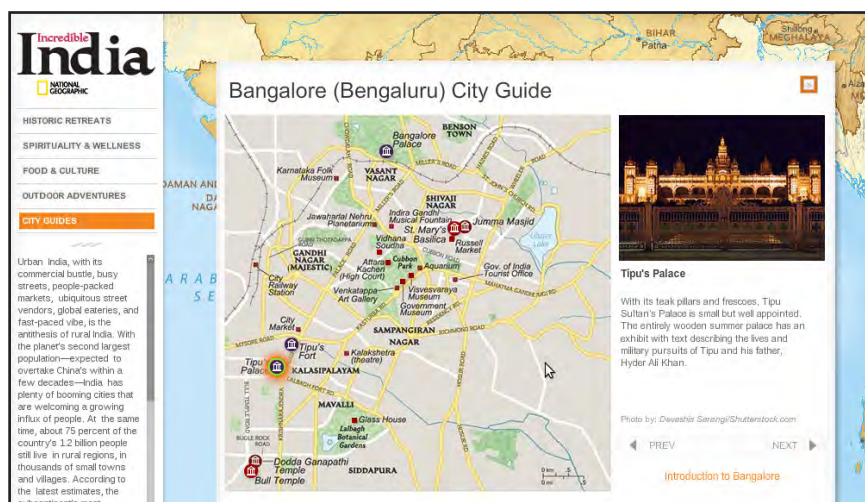
CONNECTIONS

Interactive live maps are available from a number of web sites.

Indiatravelog.com: this is an India specific travel web site that gives details of various holiday plans by theme. Their themes are quite extensive; ranging from adventure and wildlife to beaches and ayurvedic holidays. The site also claims to give free travel assistance by filling out an online form. You can ask their Tour Planner about prices, itinerary suggestions, bookings, etc.

Trivago.co.uk: as the URL suggests, this web site is aimed at a specific audience but nevertheless is a great resource to compare prices for hotels, browse the site for attractions, reviews and photos. It has an interactive Google powered map that lets you triangulate on an area and view the various options including hotel availability and attractions. You also have the option of entering a city and duration of holiday and you'll be presented with a list of hotels on the right. You also have the option of refining a search by price. When you click on the attractions tab in a particular city, you will have a sidebar to filter for events, nightclubs, museums etc. or pick specific places from a tag cloud of places and attractions. The best part is that all content is user generated.

Cultureholidays.com: again, an India specific site but probably targeted at foreigners. Still they've got some of the most innovative itinerary plans around. You get great package deals to check out and learn from. The web site has a long left panel with resources ranging from car rentals, useful tips, distance calculator, weather, and shopping. Apart from this you will also find innovative itineraries such as the Elephant Festival Tour, which is centred around the famous Jaipur festival.

travel.mapsofindia.com: a sub-site of **mapsofindia.com**, this is one terrific collection of information on almost any place imaginable in India. The detail is so great that this can actually be a one stop site for your needs. For instance, click on the Travel to Goa link in the left side bar. You will find yourself with a multitude of in-depth details including a general roundup of attractions, ways to get there, fairs and festivals and destination guides.

Innovative itineraries at culture holidays

Worldtravelguide.net: ease of use and attention to detail separate this one from the rest. Additionally, the website is the most thorough we have come across in its approach. It's got travel guides to every country in the world as well as detailed city, ski, beach, cruise and airport guides. Click on Travel Essentials for world weather forecasts, a world clock, a World Events Guide, attraction guides, and more. First click a location from the map, and then you select the type of guide you're looking for to the right. Options include, country guides, beach guides, cruise guides etc.

Other notable mentions include **Idiscoverindia.com, Indianholiday.com and lonelyplanet.com and zoomtra.com**

Communities and forums

Travel communities and forums are a good way to get first hand info and also to interact with fellow travellers. **Indiamike.com** is a fairly popular Indian travel forum with a huge database of user generated information. You get to see reviews, read travelogues of people within India, and also seek advice on almost anything even remotely connected to travelling. You have discussion threads on travel basics, states in India, cities, transportation, offbeat vacation ideas, and even a thread on itinerary advice. The itinerary advice incidentally has some 27,000 posts! Forums and communities are also a good place to get visa and passport advice too.

Part 2: Transportation

The mode of travel is a major concern while on a vacation. After you have planned out your itinerary, you should have a fair idea of what modes of travel you need to look into. For domestic travel you have road, rail and air as the main transport methods. For international travel flight is the only option, and since flying to Bangkok is cheaper than flying to Bangalore you shouldn't rule out international travel. So let's say you zero in on flight as your transport of choice for the first leg of your journey. Which websites will help you book a flight and what else is there to know? Travel web sites such as Travelocity, Yatra, Cleartrip or MakeMyTrip are good for getting consolidated info on flights, espe-

Choose your seats at red bus!

cially international travel. They all follow a similar format which allows you to specify details such as destination, departure and arrival dates before searching for all available flight options. You can even filter the results by price, airline preference and timing preference. When it comes to domestic booking you can visit the carriers' web site directly to access better deals,

feature

Mark the dates
There is a lot to look forward to next
month. To find out more, flip over to 28

unless of course the travel website has some sort of special offer.

Bus booking can also be done online at web sites such as **redbus.in** and **ticketvala.com**. These web sites have essentially consolidated all the small tourist bus operators in the country into a single platform. So you


can look at bus timings, prices and other details and simply book online. In the booking process, you can even look at the seat layout and select your boarding point. Sure, you can probably go to a Konduskar or Neeta Travels yourself but isn't this much simpler? Parijat Kaushik, an avid traveller and weekend getaway enthusiast said, "I found the experience with both these web sites quite satisfying. They are quick to respond to web queries and there is always the help line number where you can talk to customer service."

Railtourism.com and **travelchacha.com** give you details on cab and car rentals within most cities. You can even book a car online. If you have no road transport planned for any part of your journey but want to get to your starting point (Airport, railway station), you have the option of city specific cab services such as **www.merucabs.com** for Mumbai, Delhi, Hyderabad and Bangalore.

Part 3: Accommodation

OK, now that you know where to go and how to get there you need to figure out your accommodation. For both domestic and international travel, people are increasingly getting comfortable with booking hotels online. However, you need to put in a fair bit of research here. Lots of hotels from all segments are well covered by web sites such as **travelguru.com** and **makemytrip. com**. You get to know indicative prices but as any experienced traveller will tell you that there is a bit of scope for bargaining. On a web site such as **travelguru.com**, you enter your destination, check in and check out dates, and number of people. Say your destination is Jaipur, the web site will instantly tell you it has 91 hotels registered under that location. Hitting search will give you several options. You can filter searches by which category of hotel you are looking for (5 star, 4 star, etc) and by amenities (swimming pool, internet access, etc). There is also a price slider to filter by price. For each hotel you have room descriptions
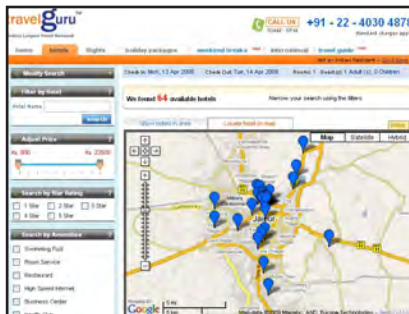
Locate hotel on maps at travelguru

and photos. Photos here are very important as you get to see the rooms and facilities. There is also a lowest average price mentioned as well as user rating. Even a one star hotel we found had 22 reviews so the user community is pretty active here. One you decide on the type of room you want, simply pay online and book.

Another interesting web site is **nivalink. com** which boasts impressive statistics such as 1,000+ custom itineraries, a database of 3,000+ hotels / resorts, 1,00,000 individuals serviced, and over 10,000 pictures to browse. The web site describes itself as a web-assisted, research-driven customised travel solutions provider. Suppose you wish to find hotels in the Kerala backwaters, simply click the link under itineraries and accommodation options. You will be

Intl' travel specs

Communication is very important, so be sure to check out what's available at www.matrix.in. You should visit your bank's website to get information on international forex and debit card transactions.

Sure, it'll be a bit complex but visit the Indian customs and excise website at www.cbec. gov.in to get the latest information on baggage rules and other inputs on foreign travel.
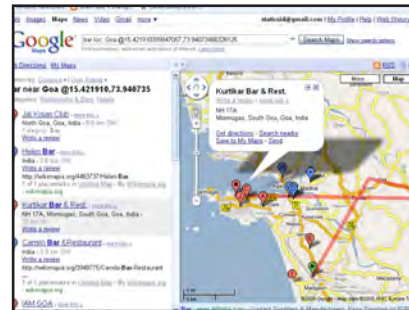
Use Google maps to plot direction and hot spots

presented with a list of all available hotel options. Click on any one and you get a detailed description of facilities with pictures and also contact details. If you are looking for reservations and travel assistance for an itinerary that covers more than one destination, email nivalink with details and they promise they will get back to you with a model itinerary, plus suggestions and detailed cost estimates.

A peculiarity with accommodation is that the bulk of it is provided by small and medium sized enterprises. These small businesses provide unique, friendly and quaint living experiences which are much more personal. It is always difficult for travellers to source information about their properties, let alone book them and receive instant confirmation.

Another booking solution is to go to the hotel chain's web site directly. For instance, Ginger Hotels a budget hotel chain has a very comprehensive web site that lets you view, choose and book at a hotel of your choice.

But how do you make sure that you will indeed get what you are paying for? This is where reviews come in. There are exclusive hotel review web sites such as **oktatabyebye. com** where you can find a whole lot of user reviews. This site lets you cross check rates with other web sites such as makemytrip and travelocity.

Using online mapping services to plot your itinerary

Now that you are all set to take off, you probably would want to plot your itinerary on one of the online mapping services such as Yahoo! maps or Google maps. You can even print them out and carry along to help you along your journey. The My Maps service from Google allows you to overlay information such as photos, weather, and public transit maps. You can even mark the places you want to visit along the way on the map so that you don't miss out any. Featured content by Google shows you hot spots and displays distance.

By now you must surely be toying with the idea of claiming all your accrued leave. So, be your own travel agent, head out and remember that everything is just a click away. ∎

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feature

Hit the road 32
Check out what goes into the Mobile
Warriors Back pack

Mobile
warrior's backpack

Agent 001

Obsessive-compulsive
geekism. A vacation
to escape the summer
heat. What
happened next?
Read on...

Wednesday — Inspiration amid Perspiration

It's April, and Mumbai is her usual hot, muggy self. Correction — its hotter than usual this year. My apartment, albeit decent, is on the top floor and the lack of any sort of air-conditioning means my flat has the feel of an oven by the time I get home. Okay — enough griping, I know there are others less fortunate than myself. But try as I might — I couldn't shake the feeling that just this once, I needed to get away from the heat.

It's the beginning of the month, we had just finished working on April's issue and being the eleventh hour workers that we are, work for May had not begun. A geek with time to kill is an incurable web crawler. Juggling between posting on forums, moderating our own forum (**www.thinkdigit.com/forum**) and reading up on the latest hardware, I was also going through a few wallpapers on **www.interfacelift.com**. Suddenly, I came across a wallpaper of a snow-clad mountainside with the sun setting as a backdrop casting a radiant orange glow across the ice. Maybe it was the heat getting to me, but as weird as this sounds my mind couldn't help drift to the last time I was on vacation, which was just over a year ago. Why not? Serious

SwiftEF 8 on 9, headlines Musseo 700, Total word count 2952

work wouldn't begin for another nine days so I had time to kill.

My runaway heart was doing a jig of its own by this time. Tamping down my excitement I approached our editor for leave. After a brief pause he acquiesced. I would get the entire week off — amazing! But wait... there was a snag. He told me to make a note of everything I carried with me. Nope, he wasn't interested in the Brylcreem and shampoo, just the gadgetry. I enquired about his curiosity, but he was vague. I acquiesced, left his bay and got down to what little work I had for the day. During lunch, I made a list and checked off some of the things I'd need for the trip. I decided to shop for the stuff I didn't have that evening after work. At 6.30 pm, I headed off to Croma. I'd get most of the stuff I needed there.

First, I picked up a bunch of Li-ion rechargeable batteries. Eight Sanyo Eneloop AA batteries rated at 2000 mAh with a four-cell charger set me back Rs. 1,250. These batteries are high-drain and the amount of drain if left lying inside any device is negligible. I also picked up four Uniross AAA rechargeable batteries for my GPS unit. Also on the list was a larger memory card for my compact camera, since my 1-GB card was with a friend. My camera, the Canon PowerShot A710IS does not support SDHC memory, so I was limited to a 2-GB card. I spent Rs. 450 on a SanDisk SD card.

I got home to a location dilemma. Some place with mountains like the ones I saw in that wallpaper is where I wanted to be. This holiday was going to be all about being one with nature — the fewer people around the better. Till date I'm not quite sure exactly what made me choose Himachal Pradesh as my destination, but I'm pretty sure it had something to do with the climate there. Rolling hills and sweeping valleys, clean unpolluted environs and some of the most untouched (by man) scenery was another factor. Last, but not the least, the thought of gormandizing mouth-watering momos and seeing my breath vapour as I sipped piping hot coffee was the clincher. Himachal it was!

Destination confirmed, I decided to fly to Delhi and from there catch a bus to Shimla. I visited www.makemytrip.com and checked out the availability and cost of air tickets for Delhi on a Saturday. I booked myself on an afternoon flight and also booked my return from Delhi for the Saturday after next. That way I'd have Sunday to unpack and rest when I got back. After checking up on the availability of buses to Shimla and finding many options I leaned back for a moment of quiet contemplation — the calm before the storm in retrospect.

Nikon D60 — The entry-level king amongst DSLRs

Clothes... I'd need to pack warm. My Levis. were in for sure. My hiking boots I'd wear — these darn things take up a third of my duffel bag, so they're better off on my feet at all times. And then the thunderbolt struck — which of my geeky possessions would I be able to carry with me and which would I be forced to part with for a whole week? From experience this is the most painful part of every vacation I take — the hours I spend agonizing over which of my lovelies I'll have to live without.

I was immediately depressed as I realised I would not be able to take as much as I wanted. I'd have to live without the NVIDIA GTX 285 that I had taken home from the office for a whole week! No games. No beautiful 24-inch LCD. Damn!

iPod Touch — Amazing screen, amazing sound

These thoughts alone were nearly enough for me to irrationally consider cancelling my flight reservations — I kid you not. In anguish, I reached for a cola from my fridge and plonked on to the sofa, taking a long, hard swig from the can as my thoughts whirled. Rationality slowly returned. I decided to pack all my gadgets first and use the remaining space for the necessary evils such as toiletries, towel and clothing.

An action-plan in place, I checked my watch and decided to get a few things ready before hitting the sack. I unpacked my Nikon D60. This beast has a 10.2 megapixel CCD sensor and features a vibration-based dust cleaning system. The beauty of the D60 is that whether you're a pro or a novice, you can get quality results and although its low-light performance isn't class leading, its pretty good and very newbie friendly. At Rs. 35,000 (with its default lens) this camera comes highly recommended. Canon fans will want to look at the EOS 400D. Priced almost identically to the Nikon D60, this camera offers similar quality, although I find its menu system to be unnecessarily complex. Canon's lenses are also much costlier. I removed my camera's battery pack and set it to charge. Later, I would charge the spare battery pack I always carry. I also

carefully packed the Nikkor 18−200-mm lens I bought last year. Priced at Rs. 25,000, this long zoom lens can be used on all Nikon DSLR DX (ie. not FX format) cameras and allows for great versatility for distance and close-range shooting.

The standard 18−55-mm lens that ships with the D60 was also packed. Next I removed and backed up the 8-GB SD card that was inside the camera and emptied it. I also had an empty, identical spare and both cards were packed along with the camera. I had no intention of running out of space to shoot; it's happened before and isn't funny, I assure you. These cards are SanDisk eXtreme III SD cards and offer write speeds of up to 30 MBps, very suitable for high-end cameras and professionals swear by these cards. Such a card will set you back by Rs. 1,500 — expensive but they're worth the premium. 16-GB SD cards can be had for as little as Rs. 2,600 and are suitable if you want to shoot videos as well. Next I packed my Canon PowerShot A710IS with the new batteries. This beauty has been a trustworthy companion over the past two years she's been with me. What I love the most is her ability to deliver good night-time shots and her low-light performance is very decent. Optical image stabilisation takes care of blur-causing camera shake and she's got a 6x optical zoom. She's not truly pocketable, thanks to her curvaceous grip, but this makes for a firm hold. If you must have a compact, pocketable camera look at Canon's Digital IXUS series — the Digital IXUS 80IS is good. It's really compact and takes quality photos. I packed my camcorder next. I have a Panasonic SDR-H40GC-S. This camcorder features a 42x optical zoom and a 40-GB hard drive. What I really like about the model is the effectiveness of the image stabilisation unit — even at the long end of the zoom there's no visible blur. I prefer hard-drive based camcorders above other media any day. These start up and record faster with fewer delays and one saves on the cost of disks and tapes. When shooting outdoors, the huge optical zoom does make a difference, allow-

Grado SR 225 — Entry-level audiophile joy

ing one to capture even distant scenery rather well. Priced at just Rs. 25,000 the SDR-H40GC-S is definitely worth a look for someone looking to buy a camcorder. Thus concluded the packing of what I

Creative EP630 — Affordable, good sounding in-ears

fondly call my *memory-makers*, cameras, camcorders and their ilk.

Some of the other stuff I had to pack is used daily, either in the office, or at home or the gym, so I made a note lest I forget to pack them later. I'd carry my iPod Touch with me for sure. With no introduction necessary, this wonderful PMP is a must try for everyone. Apple's multi-touch interface is nothing short of amazing. It's got great sound quality and the screen is clear and crisp — a joy for viewing images and movies alike. I made sure to carefully pack both USB and mains chargers. I also threw in my in-ear

Creative EP630 earplugs for use whilst commuting. For a mere 800 bucks these earplugs are a steal and offer decent sound quality with slightly overemphasised bass. A good buy for anyone looking at portability and good noise isolation. My Grado SR 225 supra-aural headphones would also accompany me for I cannot survive for very long without these beauties pampering my aural senses with their lovely sonic embrace and I'm bereft whenever we part. Besides, being extremely lightweight and robust they have an amazingly rich musical presentation and although not the most neutral of cans, the mid-range is superb. The highs are extended, although not harsh, and the bass, while not as deep as some, has good impact. Unfortunately, the SR 225s are not available in India, but you can check them out at **www.gradolabs.com**. With a lot of my gear laid out and notes made on most of what I'd be carrying I decided to call it a day.

Thursday — Oh weekend, where art thou?

After wrapping up work, I took a little time off to check up on the area around Shimla. There's a wealth of information online. It seems there are local guides available to take one around and there are lots of places to stay. There were several inns and hotels that allowed online bookings. The editor dropped by my desk and told me to carry my notebook along with me, and more importantly to check (and reply to) important mails. Not that I'm averse to packing a notebook, in fact I am not one of those people who can make do solely with a PDA — they aren't productive enough for me — and I hate cramped keyboards. I have an Apple Macbook 2008 with 4 GB of DDR3 RAM running OS X 10.5.6, with Windows XP Pro co-existing peacefully thanks to Boot Camp. It's a compact notebook with a screen size of 13.3 inches. For those looking at something really compact yet reasonably powerful, look at the 12.1-inch screen size. 11.1-inch notebooks are also available but I also packed my trusty old Reliance data card with me. Although it's an ancient CDMA 1x unit with a super-slow 56.6 kbps connection, I stick with it as it's enough

Apple Macbook 2008 — Sleek shell, superb performer

Celebrate

A big technology carnival, the Digit Anniversary Carnival, is just one month away. Find out more on

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Hiking boots need to have ankle support else you risk sprains when steeping on uneven ground

CONNECTIONS

for very basic browsing and email checking, which was about all the usage I intended for the duration of this trip. After all, holidays mean freedom from work and that means freedom from broadband. The major advantage of using a Reliance CMDA card is that the network is so extensive that no matter where you go you're never out of signal coverage range ninety per cent of the time. I'd also pack a spike guard. It's an MX unit that I bought from Lamington Road in Mumbai for 550 bucks and as asinine as this may sound, this is no ordinary spike. It's probably among the best available in India with a noise filter as well as surge protection built-in. Each of the six connects have an individual switch and the sockets can fit a variety of plugs. Most small hotels have just one plug point and having a spike also helps by providing multiple points. With my notebook, cameras, camcorder, two cellphones and GPS unit to charge, I'd make sure to make full use of its abilities. If you are shopping for a spike guard make sure it also has the ability to connect various sizes and shapes of plugs. I've been in a fix once while staying at a hotel in Bangalore for two days where I could not charge my notebook despite having available plug points in my room and my charger — make sure this doesn't happen to you.

Friday — Answering the call of nature!

My last day at office before my vacation and I was excited. I settled down to work. During my lunch break I thought of things I had missed. Another important piece of equipment to carry with you, especially when traversing through unfrequented spots or unfamiliar territory, is a

Nokia N95 8GB — Still the convergence king

Garmin eTrex — Rugged, dependable

GPS receiver. I use a Garmin eTrex H. Check it out at **http://tinyurl.com/d4wfkv**. Sadly the unit is grossly overpriced here at around Rs. 13,000 but is available in the US for around Rs. 5,000. We owe this huge premium to the binary facts that GPS receivers are considered a novelty in India and our government's insane duties and tax structure. The eTrex H features a high sensitivity receiver that is able to lock on to signals even while under cover — such as if you're hiking through a wooded region. Its battery lasts for a good 11 hours — more than sufficient. Navigation is easy and via five buttons and the unit, besides being sturdy, is water resistant, a fact that has been tested by yours truly. It's also WAAS (wide area augmentation system) ready, which is a navigation aid that is aimed at augmenting the accuracy of GPS receivers. For those looking at something ideal for travelling by car and with inbuilt maps for navigation, look at the Garmin Nuvi 200. This beauty is priced at a pocket busting Rs. 20,000 but offers a lot for the price. It's got a wide colour display, is capable of 2D as well as 3D mapping, offers turn-by-turn voice directions as well as allowing the user to define points of interest (POI) and later gives off a proximity alert whenever a POI is near. It's SD card expandable as well. It also comes pre-loaded with the maps of India. The only downside is the battery life that lasts for around four hours real time, which means it's impractical to carry around in-hand. But plugged in to your car's charger point, you are assured not to get lost.

That evening I got ready the final few things I'd need. I packed my notebook, my PDA phone and my iPod Touch.

I also carefully packed my Grado SR 225 headphones into their box. I made sure to place the fragile stuff between denims and shirts — airport personnel are no better than the local buses in the way they throw baggage around and I certainly didn't want to damage any of my beloved possessions. I also packed a generic all-in-one battery charger I had bought off eBay India. Priced at a mere 150 bucks this charger works with all lithium-ion batteries. In case you happen to have two batteries for the same device this charger works like a charm. Imagine charging your cellphone's battery while using another battery in the device. For the interested here's a link to the product — **http://tinyurl.com/cw35d2**

What is really superb is this multi device charger from Power Traveller, called the powermonkey-eXplorer. It comes with a host of connectors for nearly every device including iPods, other PMPs, cellphones, PDAs, digital cameras, Sony's PSP, among others. The eXplorer comes with a device called the solarmonkey which basically allows the use of solar energy to charge your devices. This killer device is a must have for road warriors — just hook up the eXplorer with the powermonkey to your backpack in the day time and it will keep charging as you trek as long as your backpack is in direct sunlight. Besides solar charging, it can also charge via AC power or a USB connect. Although expensive at close to 50 pounds or Rs. 3,700 the powermonkey-eXplorer is definitely something that goes on my wishlist. Check it out at **http://tinyurl.com/5aa7vn**. Although note that its cheaper to buy this from Amazon UK.

Sandisk eXtreme III — Blazing fast

With all my packing done I was in readiness for the trip. I made sure to double-check everything and finally kept my e-tickets and ID inside my smaller bag that would be my cabin luggage. Before going to bed that night I had a look at all the stuff I'd be leaving behind. Sure I'd miss my gaming rig, I'd miss my HiFi headphone amplifier system and all my other stuff. I spent a couple of minutes looking at all the stuff I couldn't carry with me. I got into bed. As I was drifting off to sleep my eyes went to my packed bags stacked in the corner of my bedroom. Of its own accord a smile touched my lips even as sleep overcame me. All that I couldn't leave behind...

agent001@thinkdigit.com

The D700 is Nikon's cheapest full frame camera and boasts of terrific low light performance

Geek On Holiday

Agent 001 goes on holiday, here's some of the stuff he took along and why...

Mileston Hiking bag — Get one of these when you go on long trips. The bag has a sleeve for the laptop inside, and compartments that can be used to store electronics. Make sure the one that you pick up is waterproof.

Canon A710IS — An old model now, but one of Canon's better point-n-shoots with good low-light performance

Apple Macbook 2008 — Sleek, sexy as hell and functional, now BootCamp adds Windows XP to the fun. A quality notebooking experience

Sanyo Battery Charger — A must if you're going to be carrying rechargeable batteries around

Cell phone charger — Never forget these, never leave home without it/them

Reliance CDMA data card — A must have when on the go sans broadband.

CONNECTIONS

Tip:
Hiking boots need to have ankle support else you risk sprains when steeping on uneven ground

Given a choice, opt for Li-ion batteries over Ni-cad. This saves cost in the long term

iPod data cable — Never leave your pod without it, even though batteries last well over 16 hours

EP630 — For under a thousand bucks a great set of in-ears

iPod Touch — the PMP of choice for music lovers and video junkies alike. Loved for its brilliant touch interface and excellent all-round performance

Grado SR225 — Grado's sweet entry - level offering to audiophiles. Slightly bass shy for some, but superb first row action in the mids and highs

Nikon D60 — A solid entry-level DSLR this one has a 10 megapixel CCD sensor and comes with a vibration dust-removal system. A great beginners DSLR

✓ Nokia N95 8 GB
✓ IMate KJam
✓ Canon PowerShot A710IS
✓ Nikon D60 w 18~55 lens
✓ Nikkor 18~200 lens
✓ Apple Macbook 2008
✓ Grado SR 225
✓ Apple iPod Touch
✓ SanDisk eXtreme III 8 GB
✓ 8 x Eneloop 2000 mAh rechargeables
✓ Creative EP630
✓ Reliance data card

Nokia N95 8 GB — One of the most converged and balanced smartphones on the market, until the N97 came out that is...

Imate KJam — A full QWERTY keypad PDA and one of the more affordable models in the market available, but slightly long in the tooth now

digital life
Drool maal

The Demoscene
All the dirt on the mostly underground computer generated art movement.

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Gamin' Station Racing Simulator

The Gamin' Station is an add-on to your gaming console for the ultimate racing experience. The Racing Simulator works with the Xbox, the Xbox 360, the PS2 and the PS3. The default configuration comes with a 27-inch LCD screen, 5.1 surround speakers, a steering wheel with force feedback and a racing chair. This configuration can be updated and customised for individual orders, with additional modules such as cup-holders, custom artwork on the body and a larger screen. The basic version will set you back by $2,435 (Rs. 1,27,793) not considering the shipping costs.

LG Versa Transformers edition

LG is rolling out a limited edition Transformers Versa phone, to promote the upcoming Transformers: Revenge of the Fallen movie. Versa is something of a little transforming gadget itself, with a large touchscreen slate to which consumers can attach modules. At present, the only module available is a QWERTY keyboard, but planned modules include a gamepad. The limited edition Versa will feature a Decepticon icon on both the front and the back, which is a strange choice as Transformer fanboys are more likely to prefer the Autobot icon. No word on the pricing, and the phone will unfortunately ship only in the US. Yours for $440 (Rs. 22,754).

Ulysse Nardin Chairman

Ulysse Nardin is a company known for making expensive hand-crafted watches. It has recently unvieled the Chairman, a smartphone with some unique watch-based technology. The side of the smartphone sports a crown, presumably to adjust the highly detailed watch shown on the 2.1 inch touchscreen. Even better is the kinetic rotor, which powers up a backup battery on the smartphone in the same way movements power up a watch. The smartphone is a limited edition, each one is hand-crafted, and available in six colours. The craftsmen have also thrown in Wi-Fi capability, a 5 MP camera, and a fingerprint scanner for biometric recognition – now you will just have to hide that Vertu in shame.

Canon EOS IDs Mark III

The Canon EOS IDs Mark III is the top of the line in the Canon EOS DSLR range of cameras. The 21.1-MP CMOS sensor should satisfy even the most demanding enthusiast. While the camera lacks features such as HD video recording that much cheaper Canon cameras have, it more than makes up by addressing some of the most irritating faults inherent to digital photography. The tone priority setting makes sure that the minute tones in an image are preserved despite harsh lighting conditions. The DIGIC III image processor can churn out images at higher rates, and the autofocus system uses 19 primary and 26 secondary autofocus points. The basic body is available for $8,000 (Rs. 4,00,141).

Senses Lounger

The 4 Senses Lounger takes the concept of the egg chair and ups it a few levels. Readers will recall the Ovalia with surround sound embedded in the chair. The 4 Senses Lounger from Schletterer, a German company, is a therepautic one-man spa designed for psychological and physiological rejuvenation. Tweeters and woofers are strategically located for a programmed 20-minute audiotherapy sequence. Aromatherapy is provided along with vibrations along the surface of the lounger. The ambient lighting for relaxation is recognisable even with the eyes closed. Each unit is made to order, and the colours are customisable.
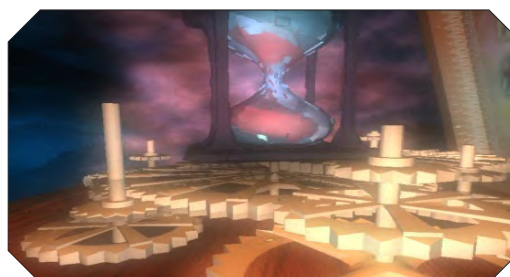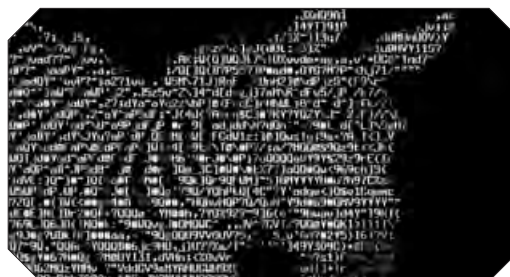
The Demoscene

From intros for cracked software, to an art movement, we trace the evolution of the mostly underground demoscene.

DIGITAL LIFE

Aditya Madanapalle

For most people, a "demo" means a limited version of a program that you can try out before making a purchase. However, if you belong to a mostly scattered community of elite programmers and artists, a "demo" is a very versatile real-time audio-visual presentation. The content of the presentation varies drastically, typically involving spectacular effects, synthesised music and an overall design. Demos are usually programmed by a group of people, and distributed over forums and web sites. The demoscene has a history dating back to the 1980s, when personal computers were first made available to the masses. Since then, the movement has been lurking in the shadows, neither growing nor fading, but changing in style and method.

The C64, Amiga and Atari consoles were among the first machines used to program demos. Original software was costly back then, and users traded disks with cracked versions of programs. The people responsible for cracking the software, tagged the cracked versions with pseudonyms for identification that helped in making sure of authenticity, an early version of the tags used with torrent files today. What began as a simple image or a macro to identify the cracked versions of the software grew to become elaborate sequences of sounds and images. These sequences were intros to cracked versions, called "cracktros". Since the software took up most of the space on a disk, there was very little leeway for the crackers to work with. The fallout was that demo artists had to create the most spectacular effects, designs and sound possible, and fit them in a tiny space. Even today, the smaller the demo, the greater the respect it commands. A 64-kB sequence, complete with generated effects and music, can take up as much as 20 MB in a modern FLV format encoded for easy distribution on the internet.

One of the key aspects of programming demos was that everything was calculated by the computer in real time and graphics was rendered on the fly. Demos pushed the machine to new limits, and took weeks, if not months, of programming. For this reason, groups or teams emerged, called a "demogroup". A typical demogroup consisted of anywhere between four to ten individuals, who each performed a specific task. The cracker broke down the copy protection and other legal restrictions on a program. An artist, typically from some other underground faction such as a graffitti artist designed the logos and the graphics of the demo. Perhaps another artist would convert these designs to a digital format. A music artist programmed the music, which would typically be some form of electronica or industrial sounding track. A swapper was responsible for spreading the demo, maintaining activity on forums, and most importantly, making all the contacts that would spread the software over the internet. All of this would come together on a single disk as a demo and a cracked program. Most of these people were anonymous, known only through their monickers.

Many of these groups were organised across wide geographic locations. Some of them had cycling members, and included over 100 people working at any point of time. This involved a large number of crackers, and a large number of traders or swappers. This allowed for the latest software to be quickly distributed to a large number of people. The demoscene was and is active mostly in Europe, particularly in the Scandinavian nations. 1985 to 1995 is considered by many in the scene to be the golden age of the demo, when the demos flourished the most. There are many reasons for this perception. Before the Windows-based PC came along, Amiga, Commodore and Atari were the computers used by most people. The hardware capabilities of these machines were more or less similar, and upgrades were almost unheard of. The components were fixed, and there was no need to cycle them as newer versions came into the market. All these consoles outperformed the early Windows-based machines in terms of native graphics and audio capabilities. Graphic cards and audio cards were very rare, and VGA was yet to make its presence felt. This allowed for the first generation of demo programmers a level playing field, where innovation was very hard to achieve.

More than benchmarks, software and perhaps even games, demos were responsible for pushing machines to their absolute limits. Demo programmers exploited every bug and glitch in the machine, both known and unknown, to program that many more components into the demo. The way a machine operated was studied and used in every conceivable way—the swap space, the

DIGITAL LIFE

buffer memory and the RAM hacked to accommodate the requirements of the demo. Programmers in the scene discovered new ways to use shaders and 3D models, smart approaches to combine live synthesis of sound with pre-recorded samples, and outrageous use of coding tricks. Demos increasingly became versatile with random elements. These approaches and methods were often reverse engineered or mimicked by rival groups and used for their own demos. Arrogance at coding or design capability, and respect towards such talent are two mainstays of the demoscene. The most well known or popular groups were treated and behaved like rockstars.

Early trading parties involved a bunch of people meeting up to exchange disks and collaborate on parties. Later on, demos and software were exchanged over the internet, through the use of modems. The proliferation of the internet allowed for an easy way to spread demos, modifying the role of a swapper in the group. The swapper became the public face of the group, posting on forums, registering for parties, representing the group at meets and the like. With an increasing focus on the demos themselves, the crackers also phased out. A lot of demo programmers still cracked software, but the association with software was removed by the emergence of demoparties, where demos by different groups were showcased independent of any affiliation. The movement still remained mostly underground, and cracked versions of software still carry demos even now, but the vast majority of the demoscene gradually became more focussed on the art of the demo, moving away from any criminal associations with software pirates.

Bulletin boards were maintained by some groups, through the agency of which the group collaborated and released demos. Diskmags for the demoscene emerged which were periodical releases of a collection of the best demos on a floppy disk. A diskmag typically had user-rated charts for the best demos, appearing on which was considered the biggest token of recognition in the demoscene. The community developed around the demo, meeting up, socialising, and sharing a feeling of belonging to the same family, the same dedicated bunch of coders with a common purpose. Some of the early demos threw up better graphics than the games of that time. A lot of the coders in the demoscene also coded games, or made mods for existing games.

The early Windows-based demos were restricted for a number of reasons. The platform itself was limited in terms of capability, and the existing coders had to learn new languages. A new generation of coders started coding demos on Windows, and diskmags gained a lot of ground in the early 1990s. The internet allowed for better collaborative efforts over longer ranges, and forums allowed for newbies to learn the ins and outs of coding. Demogroups were considerably reduced in size, because distribution and cracking software were no longer really relevant. Demoparties

were organised on larger scales across Eruope, often combined with LAN parties. Videos and sampled loops instead of synthesised music were considered more acceptable for ease of distribution. The focus shifted heavily to artistic demos, moving away from flashes, blips, spectral forms and fractals, to smooth flowing 3D animations such as highly detailed models, fluids or particle animations. Demoparties started having segments for judging and voting on demos. All the old platforms were still allowed, with 4-KB or 64-KB limits, increasingly called "intros" as against "demos". Demos were allowed in 256 KB, 1 MB and upwards, sometimes with no upper limit. Synthesised music itself became a category at demo parties. Individuals were often proficient at both coding and synthesising, a necessity as the groups became smaller.

With the growth of software piracy for Windows, demos started making a comeback along with cracked versions of programs. The coveted titles or an important version release of a program carried demos along with them. These demos, however, were just for identifying the cracker or group, and were short but spectacular. Demoparties became more organised, sponsors were arranged for them, and large gatherings from the scene wre organised in European nations, particularly Germany, Russia and Finland. Some of the more recent demo parties showcased demos on large LCD screens, and involved lengthy and elaborate sequences. Within the scene, enthusiasts still code for the old platforms, and some obscure devices, ranging from programmable calculators to hand-held videogame consoles. Modern computers have varying graphic capabilities. Not all demos can be distributed as a real-time rendering standalone program as the performance may vary dramatically from machine to machine. Some will simply not be capable. Most of demos nowadays are distributed as video files, but that does not mean that they are mere animations. The focus is still on programming, and the demos maintain the format of the older demos, with a sequence and a "splash" every now and then. In recent times, crackers of X-Box and PlayStation games also started including demos along with the cracked versions of the games for these consoles. This kickstarted another alternative scene, for consoles. Demos programmed for these consoles are distributed as ISO disk-image files.

Although the glory days of the demoscene are long gone, the scene itself is still alive and kicking. The feeling of bonhomie is much greater, and the focus is on style and method more than ever. Innovation and ability are still respected. Diskmags are still active, and still release issues, even if they are sporadic. The demoscene is still the large, highly competetive family that it was, and produces great art for those who know where to look.■

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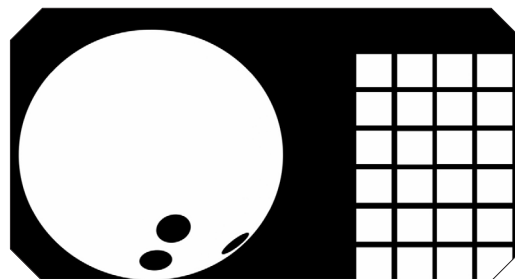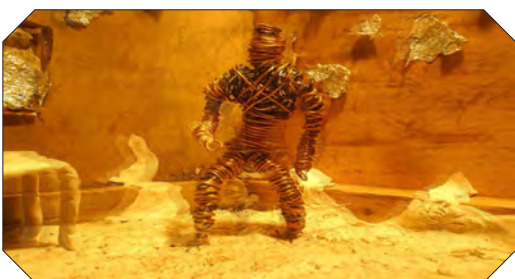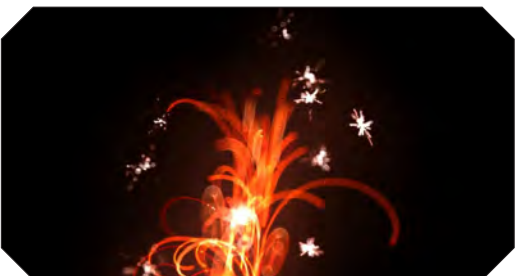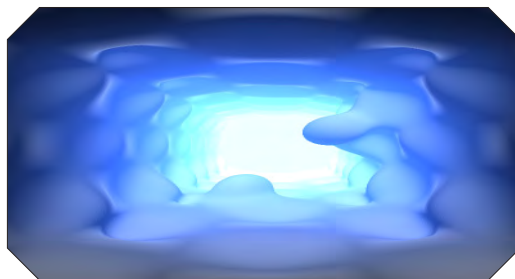
Adventure sports such as sky diving, mountain climbing, bungee jumping, etc. are quick becoming hobbies for all age groups

Kumar Jhuremalani

Ever felt the need to learn the guitar, and realise that you can't commit the time? Well that's where the internet comes to your rescue. With extensive detailed information available all over, anybody and everybody can pick up a new hobby. We are going to show you how to take advantage of this.

Apart from just strumming, everything right from learning how to read notes to actually playing any instrument is explained thoroughly online. The other hobbies that we will discuss here include art, cooking and gardening.

Music

Most of us love music, but not all have had the opportunity to get into the depths of witnessing what happens in the making of it. **www.largemart.com/read-music/begin.html** discusses the fundamentals of reading musical notes. Each page sheds more light on tasks such as learning notes on a piano and understanding where the notes fall on staves. For a more detailed understanding on reading music, visit **http://datadragon.com/education/reading/.**

Once you can read music by yourself, you will find it easier to play the guitar or piano online. Initially, you need to be aware of the theory behind the instrument you want to play. Consider the guitar as an example. Hear and Play **(www.hearandplay.com/)** is a good web site where you can

learn more on the various parts of a guitar. This site also has vast information on the piano or the organ.

About.com is another web site that gives you details and information on several topics. We're staying with to the guitar right now, so once you are at the site, select Guitar from the list they have. Ultimate Guitar **(www.ultimate-guitar.com)** is a site where you can learn various strumming techniques with the guitar. There are some detailed images along with lessons to teach you exactly how to hold the guitar and which chord to strum and when. This site also allows users to post videos and tutorials to help others. There are also those who may not be able to understand all that we see on the internet. Guitar Master Class (**www.guitarmasterclass.net**) offers a great Mentored Training Program where senior members actually help beginners improve their guitar skills.

Learning just a single instrument might not be that interesting. With sound mixing software such as Zulu DJ Audio Software, you can become a virtual DJ. You can mix songs you already have and create some exciting tracks. With this software, you don't need to invest in expensive DJ and sound mixing equipment. Instead, you can practice with this right in the confinement of your home. Zulu is on this month's Digit DVD if you want to give it a try. Once you get good at it, you might even move on to becoming a professional DJ.

Art

You can't consider art as a single hobby — you need to be specific about what exactly you want to do in your free time. While arts and craft lessons were fun back in school, very few take this up as a hobby. Now, elementary and intermediate courses are no longer necessary to learn the correct way to draw or paint. You can now sit in front of your computer and enjoy your new hobby.

www.learn-to-draw.com is one of the many web sites that teach you how to draw — right from the basics. There is also a section on caricatures, which is really interesting.
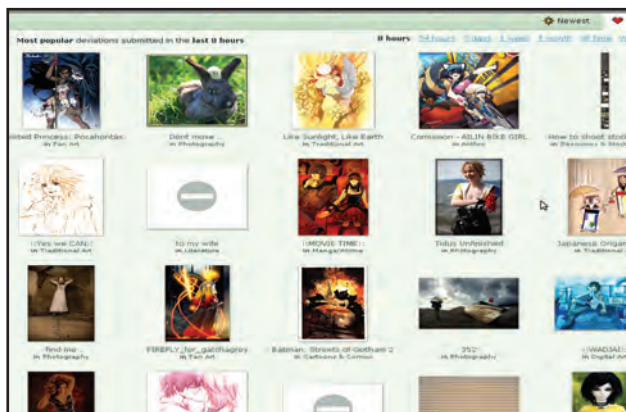
Hobbies Online

Stop wasting time on the internet and do something creative and productive instead

Jazz

Jazz was the first genre of music played on an electric guitar

View and post your created artwork at Deviantart.com

After drawing, the next step forward with art is adding colour to your work. For this, a site such as **www.watercolor-painting.com** comes in really handy. Here you get to learn basic brush techniques and also some advanced techniques such as splatter and spray textures. If you are more interested in oil painting, **www.learn-to-draw-and-paint.com** has helpful theory and techniques. This web site also offers to teach you how to use charcoal and crayons in your art. So what do you do once you have completed your piece? How do you preserve it? These necessary details are also given at the same web site.

What about those of you who don't want to get your hands dirty with paint, that's where digital art steps in. With software such as Photoshop or Corel Draw, you can create artwork using the mouse. Just take a look at **www.deviantart.com** to see what people have done using the computer as a tool for art. This web site shows you some really beautiful artwork done by its members where software such as Photoshop is not just used for correcting images and adding final touches to a photograph, but instead can be used to create your very own unique style of art. To know more applications of Photoshop, you should check **www.pixel2life.com**, which is actually an index of all the tutorials that people have created and submitted to different art-related forums and web sites. Pixel2life also offers tutorials for a list of 2D-art related software and if you are planning to move with the times then you can use the same web site as it has links to tutorials for 3D art software such as 3D Studio Max, AutoCAD and Cinema 4D.

Also, check out **www.mangatutorials.com** and **www.howto-**

You can cook a dish like this in no time with recipes from SanjeevKapoor.com

drawmanga.com — the names of these websites speak for themselves, and there are many other similar ones out there.

The next art form that you can learn online is calligraphy. This is the art of handwriting and is another hobby that you could pick up from the web. Just visit **http://vaxx-ine.com/mikwit/lessons** to learn more about calligraphy and exactly what it is. This form of handwriting art, though often considered to be just a hobby, can help you to make money.

Create some funny caricatures like this one of Charlie Chaplin

Let's move on to craft — origami is the traditional Japanese art of folding paper. Check out **www.origami-club.com/en** as this site gives you detailed diagrams on how to create your own paper models ranging from aeroplanes to dinosaurs. This site also offers animated tutorials to help beginners in understanding how to start off with Origami.

Gardening

How many of you know that the optimal pH to grow cauliflowers is between 6.0 to 7.0? This is just one of the many facts that can be found online that will help you in gardening, especially for those of you who are already interested in this field. To find out more facts related to gardening, visit **www.thegardenhelper.com**. This web site does not only give instructions about vegetable gardening, but also has a whole range of topics including houseplants, climate-based gardening and many great tips on gardening.

If you are looking to cook the food you grow, then No Dig Vegetable Garden (**www.no-dig-vegetable-garden.com**) is a must visit where you will learn how to grow select vegetables on a self-created organic garden bed.

Bonsai, the Japanese art of growing indoor miniature trees is really fun, and you have to take great care of the tree in the proper way in order to grow great looking trees. These miniatures look really fantastic and quite unreal the first time you see them as they are full grown trees but the size of a house show piece. There is a lot of useful information and guides on learning about Bonsai on the forums of **www.bonsaitreeforums.com**. Many users have posted their own accomplishments in this field and they look really great.

Learn how to grow Bonsai trees and decorate your house

Cooking

Okay this might not interest everybody reading this, but cooking is really a great skill to have and taking it up as a hobby will be a really wise choice. Food is one of the basic necessities that one needs to survive and cooking for friends is a useful social skill. Learning to cook online is really easy as there are tons of recipes and video tutorials available to help you. Many youngsters are opting to go abroad to study or work, and this is perfect for them as they might not always have a cook or might face a situation where cooking might be the only way out. So where should you start with this hobby? Well as http://www.reluctantgourmet.com shows us, a basic tomato sauce or mashed potato is where you can start. After this, you can then move on to a simple pasta. Also see http://busycooks.about.com/od/cookinglessons/a/cookinglessons.htm, and for Indian cooking: http://indianfood.about.com. Once you have mastered the basics, then check out recipe sites, such as: www.indianfoodrecipes.net, www.tarladalal.com and www.sanjeevkapoor.com where you can find the latest Indian recipes.

Photography

Photography has come a long way from the early box cameras to modern dSLRs, and the future is also looking bright for photography as 3-D cameras are already in research and development. So where does one start off if they want to learn about photography? The beginner's guide at www.photonhead.com takes you through the basics of your camera and also gives you great information about some photographic concepts. Photohead also includes many good advanced tips and tricks for those of you who

Bonus

There is a bonus for those who want to take up photography as a serious hobby as this month we have a Digital SLR comparison test which can be found on page 56 of the magazine. This test will include some great cameras and will help you understand which one is best for you to purchase.

already know the basics and want to learn more about photography.

Visit http://photobites.blogspot.com/ to learn some advanced photography techniques and improve your skill level.

Even though you read these guides and learn these tricks, putting them to use is important. So anytime you leave your house taking your camera with you is a must. The inspiration for a photograph can just hit you anytime and anywhere. You might see a funny sign board or might even be caught up in a traffic jam when you could take a really great shot of your surroundings.

So what do you do when you have taken your photo? You can

Take advantage of online photography contests

Don't forget to visit

Check out www.casemodgod.com for some of the most insane case mods created by people. Once you mod your case you can always post it on sites like these and get people to go WOW! Other sites worth a visit are – www.mofocases.com, www.neatorama.com, www.modders-inc.com

upload these photos on photo sharing web sites. There is more on that in this issue.

Photography can also be linked to digital art as you can touch up your photo using software such as Photoshop. To know more about how you can touch up your photos visit the web site mentioned in the arts section of this article.

Creative writing / blogging

Blogging is something that most of you might have already started, but did you realise by doing so you are actually increasing your skill at creative writing and in turn are unlocking your imagination? If you are just blogging about your daily routine then you should check out how to improve your writing skills.

Creative writing is fun. Once you get the hang of it, you can write on just about anything. Check out http://www.dailywritingtips.com/creative-writing-101/ for tips on creative writing.

Mod Casing

Mod Casing is basically any modification you do to a case (computer, console, phone), to change the look of it. This is a very niche hobby, but it is fun in its own way as it involves using tools to break and cut the metal from your cabinet. http://case-mods.linear1.org/ is a great place to start off if you are new to case modding. This site teaches you from the basics: how to case mod just by doing a paint job on your cabinet to give it a new look. People have gone to great troubles just for this hobby to create unique and simply fantastic case mods. One of our personal favourite mods is the Human Case Mod project where the case was built from a mould of the builder's wife's body!!! But of course, you don't need to start off with something that complex, though it is just phenomenal, the basics that most people start off with entails cutting the side panel of their

Half Life 2 based case mod

computer case and putting a sheet of acrylic to make it transparent done really well at the linear1 web site.

Some of the resources mentioned would definitely draw your attention. Besides, Youtube.com is another great place to learn new hobbies. Users have posted video tutorials on all the above mentioned hobbies. If you actually keep practising your selected hobby or hobbies you might even be able to make it into your career and make money from it. This shows another example of how you can indirectly make money using the internet.

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Shrikrishna Patkar

SCI-TECH

Powering the Future

Aditya Madanapalle

From personal gadgets to mass transit systems, and household appliances to satellites, all depend heavily on electricity. For most of the twentieth century, the demand for electricity has mostly been met by power stations. Power stations typically use a generator that converts the kinetic energy into electricity energy. This typically involves a turbine rotated at high speeds. The mechanism for moving the turbine varies depending on the type of power plant. The flow of water is used in hydroelectric power plants, where the turbines are located in the structure of dams. Hydroelectricity was, for long, the most promising method of producing electricity. The source is renewable. Therefore, a single dam can produce electricity for decades. China has more than 15 large scale dams in various stages of construction.
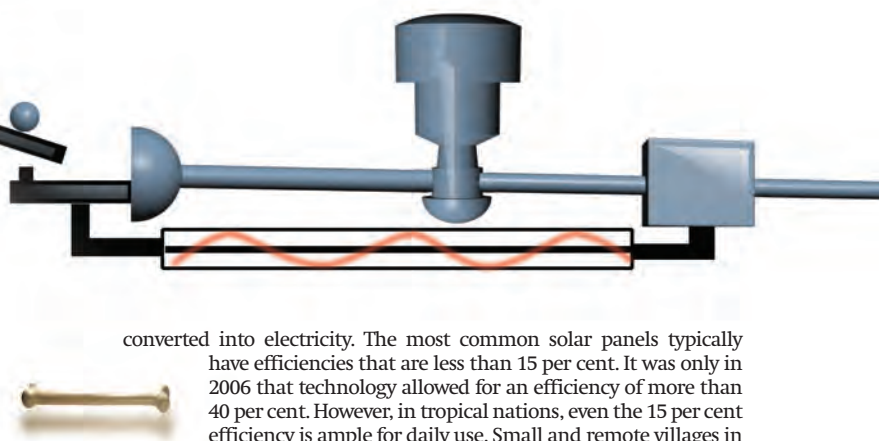
Apart from generation, a vital step in electricity consumption is the transmission of electricity from power plants to consumers. Transformers are the units for transmission of electricity. Electricity cannot be stored in large quantities for mass distribution, and has to be consumed more or less as it is produced. Transferring electricity over large distances required cables and transformers, or distribution stations. Transformers occupied significant spaces in urban areas. Electricity consumption is constantly monitored, and the most innovation takes place here, from low-power appliances and gadgets to accessible meters for monitoring usage.

Here, the entire system of generation, transmission and consumption (known as a grid) is under review. A single grid may have a number of power stations, transformers, city users, industrial sectors and rural areas connected to it. The entire system tends to be large, problematic and uneconomical. The scientific community is in the process of innovating each step in the process, and coming up with a range of methods for addressing the various issues concerning the production and distribution of electricity.

Microsized power

Solar cells were one of the most promising sources of *clean* electricity, and were heavily promoted in the pre-1980 oil crisis. As oil prices dropped in the early 80s, solar cell research slowed down considerably. The biggest problem with solar cells is that they are very low in efficiency, which is measured by the fraction of incident solar energy converted into electricity. The most common solar panels typically have efficiencies that are less than 15 per cent. It was only in 2006 that technology allowed for an efficiency of more than 40 per cent. However, in tropical nations, even the 15 per cent efficiency is ample for daily use. Small and remote villages in India are totally powered by solar panels, which saves the cost of hooking these places up to the grid.

Wind energy, using windmills is another option as a renewable power source. In recent times, there is a preference for large windmills instead of the smaller, noisier versions. There are a number of large scale windmill farms coming up all over the world. Hundreds of windmills have been installed at Satara, and Suzlon is planning India's largest windmill plant at Kutch, Gujarat. This plant will have a capacity of 450 MW and will put the arid, barren deserts to good use. Remote places are ideal spots for windmill farms, and in the future, companies may look into large scale windmill farms in the world's oceans.

One of the ideas that is getting increasingly popular is microgeneration of electricity. This means every household, small community, or industrial area will generate its own electricity requirements. This has taken off already to some extent. In Canada, the government buys off some of the electricity generated by solar panels installed in residential areas. In the UK, the government has policies that encourage and subsidise microgeneration projects, with the politicians opting for it as a PR exercise.

Nuclear energy, when handled well is an environmentally sound method for generating electricity. Instead of large-scale nuclear power plants that are hooked to the grid, smaller nuclear power plants are being considered by a number of companies. Toshiba is planning on nuclear reactors as small as 15x10 feet to power entire buildings. These will be long term investments, and are basically more or less future proof, as the electric supply will continue for a period of four decades. Hyperion, a company based in New Mexico is in the forefront of nuclear microgeneration. It plans to mass produce small nuclear reactors that can each be installed across the globe, and power 20,000 homes each. These nuclear plants will be smaller than a typical garage, and will be safely buried underground in a concrete envelope. They will need refuelling once every five years

These nuclear power plants use nuclear fission. Nuclear fusion, is something far more exciting and potentially economical. Present technology only manages to create less energy than the amount of energy used to create the fusion burst, and that only in extremely short bursts (less than a second). There are a number of experiments on fusion power around the world, the most significant being the Joint European Torus (Jet) at Oxfordshire, UK. Scientists have flirted

First Solar Cargo Ship leaves docks
At the end of December 2008, the first Solar Cargo vessel set sail from Japan. The Auriga Leader transports Toyota vehicles across the seas

Leapfrog Technologies
Environmentally disasterous projects (such as Dams) are still being constructed in third world Nations (such as China). Leapfrog technologies aim to directly jump ahead in the progress timeline

Oil Peak
The maximum extraction of Oil from around the world is called "Peaking". Some say this occored in the 1970s, some say it will occur in 2020

with fusion power for a long time now, but the technology is proving surprisingly difficult to develop. This is mostly because when break-throughs occur, fresh obstacles show up. The biggest problem lies in containing the very hot plasma required for fusion to take place, for which electrostatic or magnetic fields are currently used. The raw materials for fusion are deuterium and tritium, heavy isotopes of hydrogen, found in water. Fusion power is looked upon as the holy grail of power generation, promising a very scalable and sustainable source of electricity. When combined with micro-generation, fusion power alone should be sufficient to meet mankind's needs for a very long time.
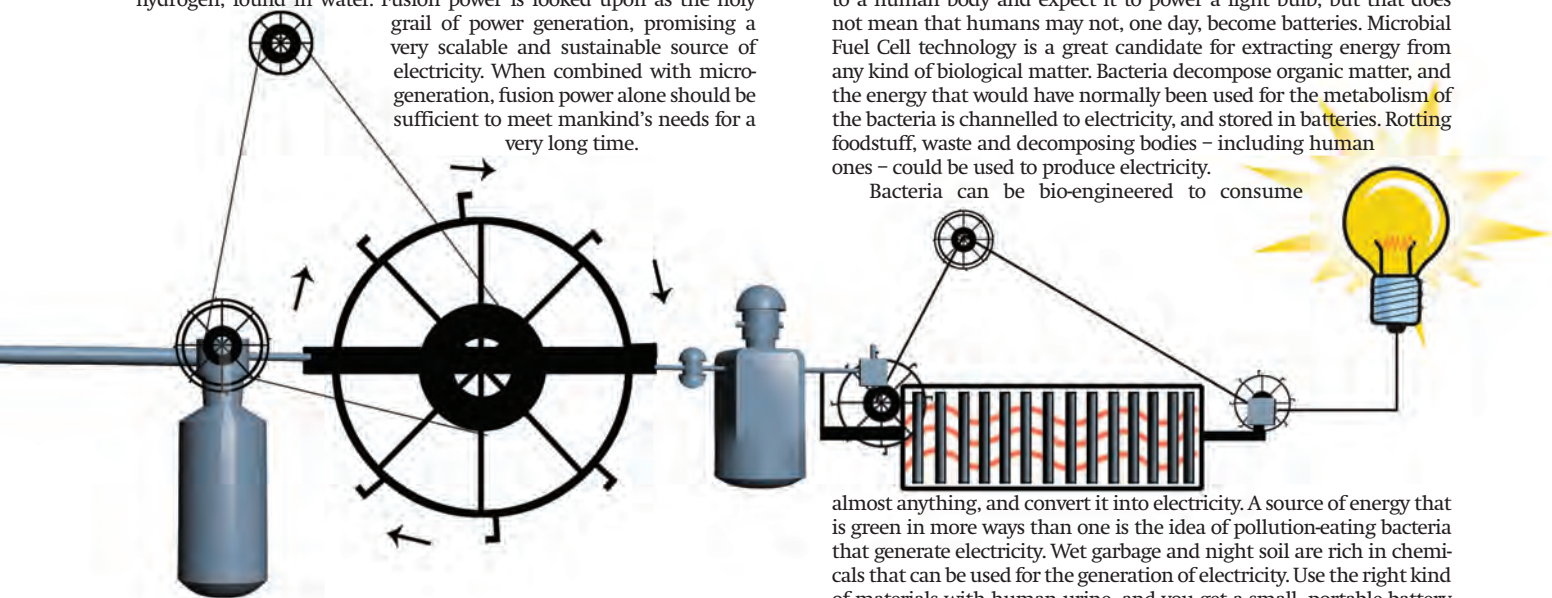
Recycling energy
The current methods of production and consumption of energy are very wasteful. A large chunk of the energy is not used for the final work, or gets dissipated as heat. A lot of electricity use is terribly inefficient. For example, power plants consume fossil fuel to boil water. The steam turns turbines that produce electricity. This electricity is then converted back into heat to warm up a home, or prepare warm water. A solar water heater would reduce the maintenance cost of a grid, and conserve the energy lost in the various stages of production, transmission and consumption. Scientists will look to install usage-specific sources of electricity. Street lights and traffic signals around the world have already sprouted solar panels. The next step in this direction is to research innovative ways to convert wasted energy into electricity.

Some kinds of materials generate electricity when put under pressure. Metal plates beneath roads could theoretically be used to power up the streetlights. Electricity could be stored during the daytime, and used at the night. Similarly, plates could be placed below mass transport systems such as trains. Although generating enough electricity to power the trains themselves is impossible according to the laws of physics, auxiliary devices such as signal lights, fans, lights, indicators and doors could be powered by the movement of the trains. This would require more energy to drive the train, but overall could be more efficient. Existing vehicles do use some of the kinetic energy for some of the electric needs. The Toyota Prius for example is a hybrid car that does just this. At smaller levels, certain crystals produce electricity when pressure is applied. This principle could be used to power gadgets; a gaming console, mobile phone or computer could be fed back at least some of the required power from the effort of pressing the keys.

Converting the energy from the movement of the human body into power with portable instruments is an idea that has been around for a long time. Kinetic rotors power watches, and some of them even power personal gadgets (refer to Drool Maal in this issue). Torches, radios, mobile phones, and cameras are all ideal candidates for using the kinetic energy released from human movement. The technology for this already exists but costs more to mass produce and deploy than traditional battery-driven gadgets. An MP3 player that juices up as you jog is a great idea, and there would be many takers for such a gadget. The California Fitness Center in Hong Kong is a gym that draws power

from the patrons who work out, and use it to light up the place. In the future, expect to see more such usage specific ways to draw power.

Enter the Matrix
Groundbreaking research suggests humans, potatoes, trees, cows and bacteria as possible sources of electricity. You can't just connect wires to a human body and expect it to power a light bulb, but that does not mean that humans may not, one day, become batteries. Microbial Fuel Cell technology is a great candidate for extracting energy from any kind of biological matter. Bacteria decompose organic matter, and the energy that would have normally been used for the metabolism of the bacteria is channelled to electricity, and stored in batteries. Rotting foodstuff, waste and decomposing bodies – including human ones – could be used to produce electricity.

Bacteria can be bio-engineered to consume almost anything, and convert it into electricity. A source of energy that is green in more ways than one is the idea of pollution-eating bacteria that generate electricity. Wet garbage and night soil are rich in chemicals that can be used for the generation of electricity. Use the right kind of materials with human urine, and you get a small, portable battery that lasts a few days. The digestive juices of cattle have also been used to generate electricity. Bacteria can be used to decompose human and livestock waste, and then the waste itself is reduced to a form of ethanol, which is then used as fuel in power plants. This is not a new idea, but an idea that has not been implemented for a long time. As much as a century ago, gas from rotting vegetables was used to light street lamps. Another idea applies pressure and heat to biological waste, mimicking the natural processes that many assume produced crude oil. Although the technology exists, the efficiency is not perfect, and development will take some time.

Just connect wires to a potato or a lemon, and surprisingly, it will power a (small) light bulb. You will have to find a very low power light-bulb though. Large potato farms as a source of energy have been around in popular culture for some time now. While this idea may not be viable, there are similar ideas that can be put into practice in a practical way. For example, trees can line streets and be used to power the street lamps.

Supernova Batteries
Some of the ideas that the scientific community has are beyond the scope of current technology. The Sun, for example, is a great source of energy. The incident solar radiation on a small part of the surface of the Earth, is a viable option. A modern industrial nation receives solar energy equivalent to approximately 1,000 times its normal energy usage. Imagine large solar arrays in space that beam back energy in the form of microwaves to Earth (killing countless birds — ed.). Now, imagine a ring of solar arrays arranged all around the sun, and the amount of energy it could beam back to the planet. How about a star completely enclosed within a spherical solar panel — you have what they call a Dyson sphere. This kind of a structure would capture all the power released from a star.

Exotic materials or particles such as miniature black holes and anti-matter are thought of as great sources of energy. Anti-matter has been created, and power extracted too, but the particles are very rare and very costly to be commercially viable at present. However, there is active research going on in particle physics, and there may be properties or particles that are hidden from human science at this point of time. ∎

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The CCD sensor was invented
in 1970 at Bell Labs

Sensory Activity

All you wanted to know about image sensor technology — where it's at, what innovations it's going through, and what the future holds...

Mihir Patkar

It seems that in the end, all it takes to capture the male attention is the ability to let the guy boast: "Mine's bigger". These days, any advertisement for a new phone or camera hypes up the megapixel count. The Mobile World Congress was awash with new handsets touting 8-megapixel cameras, while Samsung is already launching a couple of those on our shores here.

Meanwhile, technology enthusiasts continually shake their head. We all know that the true power of a picture lies in the image sensor. The battle between the two default technologies — charge-coupled device (CCD) and complementary metal oxide semiconductor (CMOS) has raged on since they were invented about 40–50 years ago.

Two camps have developed, depending on manufacturer alliances, which promote one of the two technologies.

The CCD camp touts its better picture quality, given that it has traditionally served as the benchmark. CMOS has slowly been catching up in this respect, but in all honesty, still has miles to go before it can click.

The CMOS camp, though, stresses on the smaller size of the sensors and lower power consumption. The latter is a key feature in favour of the technology, as this greatly advances its chances of becoming the *de facto* sensor type for mobile phones, where battery is king.

Size, however, is still up for debate. Yes, CMOS sensors are significantly physically smaller than CCD sensors; but they also require accompanying chips to optimise the captured colours, and of course, better quality lenses to achieve the same image quality. CCD sensors, on the other hand, bring the kitchen sink with them.
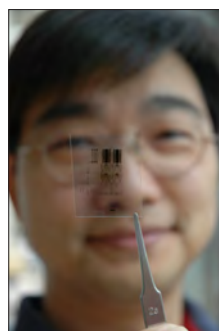
UW-Madison electrical and computer engineering graduate student Hao-Chih Yuan holds a sample of a semiconductor film on plastic

Live MOS and let live

To put it simply, Live MOS seeks to take the best properties of CCD and CMOS sensors to develop a 'super-sensor'. It is claimed to deliver the image quality of a CCD, while using the kind of power of a CMOS sensor.

Essentially, it's a souped-up CMOS sensor. The biggest breakthrough for Panasonic researchers was reducing circuit paths on the surface of a CMOS sensor. By bringing these paths to the minimal two that a CCD requires, the photosensitive area of the sensor was boosted by thirty per cent.

This added clarity is what gives Panasonic the bragging rights for 'image quality that's as good as CCD', although quite a few reviewers on the internet would beg to differ.

Still, it is significantly better than CMOS in terms of picture quality, and the simplified circuit takes a lesser toll on the processor, thus providing photographs faster. Couple it with proprietary noise-reduction technology and LiveView functionality, the fast shutter speed in the compact Micro Four Thirds system promises to offer great bang for your buck.

And already, the Lumix DMC-L1 as well as the Olympus E-330 have received some accolades from the industry as well as independent reviewers. Has Panasonic really created a game-changing technology here?

Where the companies stand...

Of course, for the end user, what matters most are for which sides the big companies are rooting.

The CMOS camp is currently championed by two heavyweights in the photo industry, Sony and Canon.

The latter has already outfitted most of its digital SLR (DSLR) cameras with CMOS sensors, replacing the once-popular CCD, and rumours are that it could soon go the same way with pro-level digital camcorders. And at this year's IEEE International Solid State Circuits Conference, the company discussed its efforts in developing a 3.3-MP CMOS image sensor that promises higher-quality video and imaging for mobile phones.

Sony, meanwhile, is concentrating on developing new techniques for its proprietary CMOS sensor's analogue-to-digital conversion process. By enabling each pixel column on the sensor to have its own conversion process, the image quality could be pushed up significantly while loss is minimised.

When it comes to mobile phones the CMOS market is booming the most, with CCD nowhere in sight — Samsung's OmniaHD is churning out 720p videos without much effort on its processor or battery.

On the CCD side, Fujitsu Research's efforts towards the Super CCD EXR have had CMOS proponents cowering. Incorporating a revised control circuit and new arrangement for colour filters, new cameras like the FinePix F200EXR offer more bang for buck than ever before.

But the greatest advocate of the CCD technology over the years has been Kodak Eastman. Last year, the company wowed the world with the world's first 50-mega-pixel sensor. To get an idea of the sheer scope, consider that in an aerial photo of a 2.5-kilometre-wide field, you should be able to pick out a small 1x1 foot laptop. As always, with superior photo imaging, Hasselblad is the first to jump onto the bandwagon, touting this sensor in its H3DII-50 dSLR.

Of the major companies, Nikon is the only one still straddling the fence. Some of its cameras incorporate both CMOS and CCD sensors.

And as always, the scientists who actually conduct the research on these technologies are least bothered about these cosmetic battles. For them, it's all about getting out a better picture in the end.

Clear logic

The most path-breaking technological advance that we will come to see in the near future, we think, will be from the veterans of photography — Kodak Eastman. The company has arguably done more for the world of image capture than any other. The latest barrier it has broken down brings a wide scope, as it applies to both CMOS as well as CCD sensors, and promises to end the need for flash bulbs!

In a nutshell, Kodak's researchers have figured out a way to enhance picture quality, especially at night or in motion, by two to four times that of a camera today. And they did it by adding nothing more than a 'clear' pixel to the existing Bayer pattern of filter arrays.

The improvement — by scientists John Compton and John Hamilton — could give image sensors a 2–4 times increase in sensitivity.

The two Johns have introduced a fourth pixel filter to the Bayer Pattern, which has no pigment on top. This clear pixel, called a 'panchromatic pixel', is sensitive to all visible light

SCI-TECH

Digital SLRs use larger CCD sensors than point and shoot compact digital cameras

The Bayer Pattern

To understand the breakthrough, one needs first to know the mechanics of a sensor itself, be it CMOS or CCD. The sensor is an array of millions of sensor pixels, which collect and store photons from light captured by the camera's lens.

By themselves, these sensor pixels would be able to capture only greyscale images. To capture colour, a filter needs to be placed over each pixel, thus letting each pixel capture only a particular colour from the incoming photons. The pixels, of course, are restricted to RGB (red, green and blue).

Once the pixels capture these colours, smart algorithms take over – in a simplistic explanation, they make sense of the colours from the millions of pixels on a sensor, join the dots, so to speak, and deliver the best image.

In 1976, Kodak scientist Bryce Bayer figured out that the best output requires the best array of filters. Experiments led him to conclude that this optimal array was an alternating series of pixel filters, with the first line being red-green and the next one being green-blue, such that green becomes the dominant filter colour on the sensor (see Fig 1).
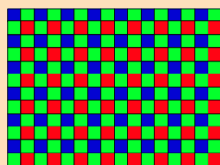
Fig 1

The Bayer Pattern has since become the basis for creating sensors, be it for CCD, CMOS, or any other. It is so widely used, that only an improvement of the same technology makes sense in terms of manufacturing, as an overhaul of the system is too much of a cost to bear.

wavelengths, and is designed to absorb light. The lack of filtering light to detect colour information makes the sensors more sensitive, thus providing greater luminescence, which translates to better clarity in the end result.

In the new array, the panchromatic pixels would be predominant. So, (fig 2) the panchromatic pixels would be twice in number those of green pixels, while the green to blue/red ratio would still be 2:1. What's more, the array could use different patterns with these new pixels, depending on the kind of applications

Fig 2

Applications

The two main applications for this new sensor pattern are clicking photos in dim lighting, or snapping a picture of moving objects (see comparison shot provided by Kodak).

Technology has improved image stabilisation

In consumer technology, the obvious advantage lies in mobile phone cameras. Low-light shots are still an eyesore, even with the dual LED flash on some of the new handsets. Sensitivity to light is the key to delivering less grainy (i.e. less noisy) images, and that's exactly what panchromatic pixels offer.

As for blurry shots, mobile phones as well as end-user digital cameras have fallen prey to moving hands and faces. The promise to get rid of these, without the added hassle of image stabilisation algorithms, is quite attractive, as it reduces processing power and bloated software.

While Kodak is currently working on CMOS versions of the panchromatic array, and already has a sample sensor ready, the CCD version is more promising for scientific institutions, especially those involved in space science.

It's pure light out there, and in the near future, we might just get to see the most fantastic shots of the universe!

and power requirements that the sensor demands.

"This represents a new generation of image sensor technology and addresses one of the great challenges facing our industry — how to capture crisp, clear digital images in a poorly lit environment," said Chris McNiffe, General Manager of Kodak's Image Sensor Solutions group.

Distilling distortion

While the issue with photo filters should be addressed in the near future, US-based scientists from two universities are looking a bit further down the years. After all, they're going after a much more complex problem, at least in terms of pure hardware engineering: the distortion caused by the relationship between flat photodetectors and curved lenses.

University of Wisconsin-Madison's Electrical and Computer Engineering Associate Professor Zhenqiang "Jack" Ma and student Hao-Chih Yuan have developed a flexible light-sensitive material that, they say, could revolutionise photography. The team also includes UW-Madison Materials Science and Engineering Professor Max Lagally and University of Michigan Professor Pallab Bhattacharya.

Their inspiration for this potentially ground-breaking technology: the human eye! Light enters the eye though a single lens, but at the back of the eye, the image falls upon the curved retina, eliminating distortion. "If you can make a curved imaging plane, you just need one lens," said Ma. "That's why our development is extremely important."

Ma and his group have created curved photodetectors with specially fabricated nanomembranes — extremely thin, flexible sheets of germanium, a very light-sensitive material often used in high-end imaging sensors. The researchers can then apply the nanomembranes to any polymer substrate, such as a thin, flexible piece of plastic. Currently, the group has demonstrated photodetectors curved in one direction, but Ma hopes to develop hemispherical sensors soon.

"We can easily realise very high-density flexible and sensitive imaging arrays, because the photodetector material germanium itself is extremely bendable and extremely efficient in absorbing light," Ma said.

And what next?

Present research, near-future technologies and distant-future possibilities aside, what's next in the big picture for sensor technologies?

The answer may lie with a bunch of Harvard guys, who have created what they call "black silicon". This material can absorb more light than any other commercial material on the planet, so be on the lookout for great things from a spin-off venture called SiOnyx.

After all, a material that captures the infrared spectrum is bound to capture the world's attention with it! ∎

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Why distortion occurs

Ever taken a photo of a person from up close? Some can turn out looking like images from an amusement park's 'Hall of Mirrors', with an enlarged nose or a hand as big as a head.

This distortion happens because of the distance between the lens and the photodetector – a light-sensitive material such as the sensor in a digital camera.

When a camera records an image, light passes through the lens and lands on the photodetector. However, a lens bends the light and curves the focusing plane.

In a digital camera, the point where the focusing plane meets the flat sensor will be in focus, but the image becomes more distorted the farther it is from that central focus point.

High-end digital cameras correct this problem by incorporating multiple panes of glass to refract light and flatten the focusing plane.

However, such lens systems – like the mammoth telephoto lenses sports photographers use – are large, bulky and expensive. And even high-quality lenses stretch the edges of an image somewhat, thus never providing a "true image" for the photo-enthusiast.

Developing a sixth sense

An Indian researcher wants you to develop a sixth sense that makes the entire world your personal computer. And his latest gizmo — made from off-the-shelf items and costing less than Rs 17,500 — might just do that!

SCI-TECH

Mihir Patkar

Pranav Mistry needs to make a phone call. While most of us would whip out our handset for this simple task, Pranav holds up his left palm in front of his chest. As if by magic, a number-pad appears on his fingers! His right index finger, tipped with a red cap, deftly dials out the digits and hits 'Call'. The earphones and mike — attached to the cellphone in his pocket — take over, and Pranav is happily yapping away.

Reality is a playtool for this 27-year-old. Studying for a PhD at the Massachusetts Institute of Technology's Media Lab, he already holds a Master of Arts and Science from the institute, in addition to a Master of Design from IIT Bombay.

"I'm a *designineer*," Pranav laughs. "Exposure to diverse fields, from design and technology to art and psychology, gave me an interesting perspective to the world."

Born to an architect in Palanpur, a small town in northern Gujarat, Pranav has previously worked as a User Experience (UX) researcher at Microsoft India.

"I love to see technology from a design perspective, and vice versa. This vision reflects in almost all of my projects and research work," he says.

His new endeavour stands testament: called 'SixthSense', the tool sees what the user sees, and augments surfaces or objects he is interacting with. What's more, it's small and light enough to be

With a fully functional keypad projected on his palm, Mistry dials a number by tapping his fingers

worn around your neck like a pendant, or affixed to your cap.

"SixthSense attempts to free information from its confines by seamlessly integrating it with reality, and thus making the entire world your computer," he says. Pranav is associated on the project by the head of the MIT Media Lab's Fluid Interfaces Group, Pattie Maes, and fellow student Liyan Chang.

Creating a sixth sense

Multi-touch and gesture-based devices have been getting increasingly popular, Pranav says. Meanwhile, mobile devices are getting increasingly smaller, allowing us to be connected anywhere and all the time. So why not couple the two?

"We've evolved over millions of years to sense the world around us. When we encounter something, someone or some place, we use our five natural senses to perceive information about it; that information helps us make decisions and chose the right actions to take," he says. "But arguably, the most useful information that can help us make the right decision is not naturally perceivable with our five senses."

The data, information and knowledge that mankind has accumulated about everything is now increasingly available online.

"Although the miniaturisation of computing devices allows us to carry computers in our pockets, there is no link between our digital devices and our interactions with the physical world. Information is traditionally confined on paper or digitally on a screen," the engineer says.

Unveiling their project at the Technology, Entertainment, Design (TED) 2009 expo in February, Maes said, "I had been intrigued by this question whether we would evolve or develop a sixth sense, that would give us endless and easy access to meta-information that may be relevant to making a right decision."

That's where Maes' "genius" student came in. Pranav had previously worked in the field of augmented reality, in which real-world and computer-generated data are seamlessly blended into real footage in real-time.

"I've noticed that we humans are interested in information, not the computing. The idea of living in the real world, but still augmented with the advantages of the digital world, excites me," he says. "In fact, I don't like the idea of having two separate worlds. It should be seamless." So Pranav decided to push augmented reality one step further.

Turning sci-fi to reality

Steven Spielberg's 2002 science-fiction film *Minority Report* offered many glimpses into the future of technology. On the computing side, the audience gasped in wonder as Tom Cruise's character wore a special glove to manipulate a

Pattie Maes, Head of MIT Media Lab's Fluid Interfaces Group

digital screen without touching it — operating it solely by gestures.

Spielberg had based this amazing interface on research pioneered by one of his science advisors — John Underkoffler. Since then, Underkoffler, an MIT alumnus, has developed this interface further at his company, Oblong. He recently demonstrated a working prototype of the same, called the 'g-speak'.

"Unfortunately, g-speak uses an array of 10 high-precision infra-red cameras, multiple projectors, and an expensive hardware setup," Pranav says, adding that it still served as one of his inspirations.

There are other such technologies too — although none as advanced as the g-speak — that share common hindrances — the
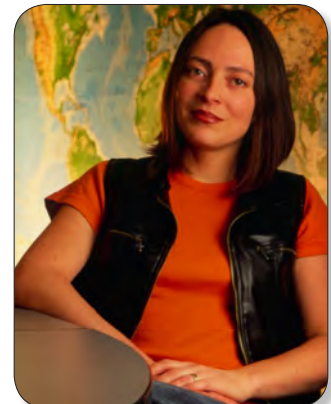
Bill Gates, the philanthropist, released mosquitoes into the air at TED 2009 as he was making a point about Malaria.

Siftables

Siftables are technology blocks from MIT, than can be put together like Lego bricks to make different divices. .

hardware has to be reachable by the user; the device has to be as large as the interactive surface; and they all need custom screens or goggles that display the projected images.

All these factors turn portability and cost into insurmountable problems.

Pranav needed to make his gizmo different in several significant ways. First, allow the user to interact with the projected interface using hand gestures. Second, free the user of the limitations of physical space (giant screens) as well as personal (goggles), and make it portable and cost-effective at the same time.

Maes didn't repeatedly praise him as a genius for no reason. A bit of brainstorming, and voila! The SixthSense was born...

So what is sixth sense?

"Other than letting many of you live out your fantasies as Tom Cruise of *Minority Report*, this is one of those devices that can really provide a sixth sense about everything in front of you," Maes said during her address at TED (available on the DVD).

SixthSense is a wearable, gesture interface. The current prototype consists of three main hardware components: a pocket projector (3M MPro110), a camera (Logitech QuickCam) and a laptop computer.

For the software, Pranav developed several computer-vision based techniques/algorithms, using open libraries such as openCV.

The entire cost, sans the laptop computer, runs to about $350 (Rs. 17,500 approximately).
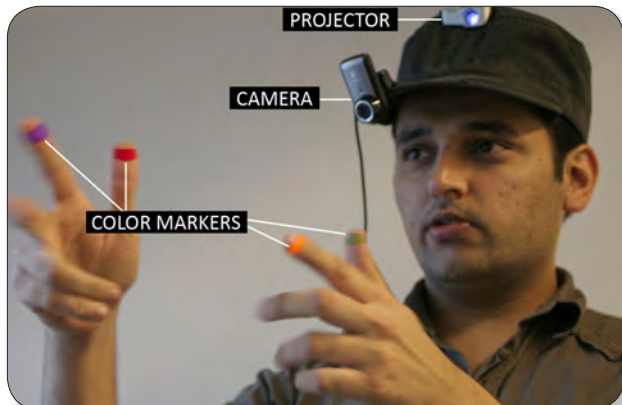
The engineers are discounting the expenses of the laptop because they have already figured out a way to use mobile phones in its place. While the notebook is still used for heavier computation, with mobile devices today sporting the kind of power that a computer had five years ago, it's only a matter of time before laptop is completely replaced by a cellphone.

Both the projector and camera are mounted on a hat or coupled in a pendant-like wearable device, and are connected to the laptop, which the user carries in a backpack.

Pranav prefers the pendant look: "It improves recognition as the body of the user moves less than the head."

"Plus, it would be socially more acceptable in this form factor," he laughs.
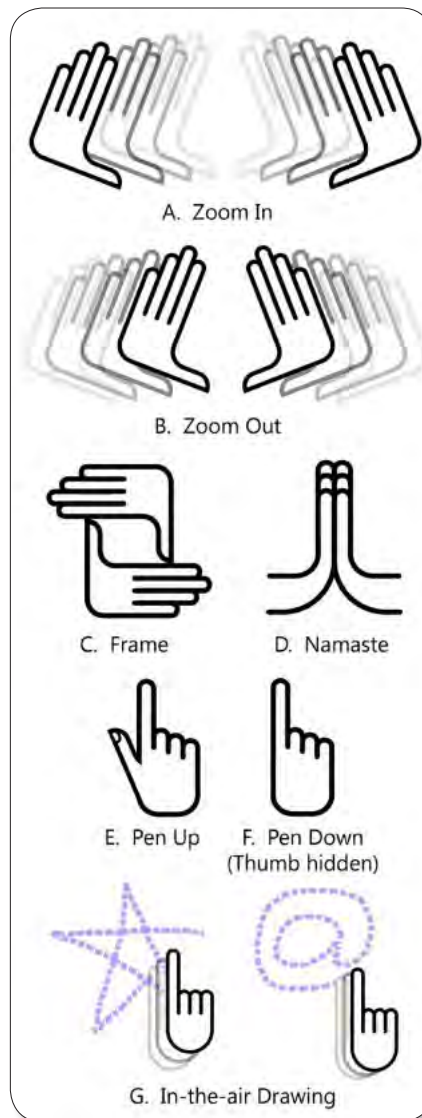
The software program processes the video stream data captured by the camera and tracks the locations of the colour markers at the tip of the user's fingers, using simple computer-

The various hand gestures used with SixthSense

A camera, mini projector and four colour markers later, you are ready to go

vision techniques. Currently, these markers are simple caps of whiteboard pens.

"The current prototype only tracks four fingers — two index fingers and two thumbs. This is largely due to the relative importance of the index finger and thumb in natural hand gestures," Pranav explains. Needless to say, the number is currently restricted only by the programming, and could easily be scaled up.

The system also implements a few object-augmentation applications, where the camera recognises and tracks physical objects such as a newspaper, a coffee cup, or a book, and the projector portrays relevant visual information on them.

In a demonstration video (available on the DVD), Pranav walks into a book store and picks up a novel. The Wear Ur World system recognises the book, and portrays its **Amazon.com** rating. It can even provide reviews, user comments, and even additional annotations.

A bit of stylus input...

When it comes to operating an interface based on touch/hand gestures, the first technology to use it effectively was the stylus on touch-screen mobile devices. There's a simple, yet lasting, joy in scribbling a few words on a screen and seeing them digitised. The SixthSense, of course, had to have a pen-type input. The index finger, Pranav thought, would make a good replacement.

"The user can draw on any surface using the movement of the index finger as a pen," he says. Putting the thumb out activates the pen, and putting the thumb back in holsters it.

Of course, this opens up a whole bunch of gesture-based shortcuts: "SixthSense lets the user draw icons or symbols in the air, using the movement of the index finger, and recognises those symbols as interaction instructions."

For example, to access your email, all you have to do is draw the "@" sign in the air, and you'll land up on your inbox. Need to use Google maps? Just draw a star to start plotting your way.

And to undo any action or operation, simply draw an X in the air — the symbol for 'incorrect' doesn't owe its origin to technology, but it is universally recognised!

Still, this is just the tip of the iceberg as far as the SixthSense's gesture-recognition system is concerned.

...a Bit Of The iPhone...

The world of gestures was revolutionised by Apple's iPhone. Not many tech-enthusiasts can forget the moment when Steve Jobs leapt up on stage during his keynote address at Macworld 2007, and announced: "Who wants a stylus? Yuck! We're going to use the best pointing device in the world — our fingers!"

With the popularity that the phone and its different touch-gestures have seen, it just makes sense for a gesture-based device to incorporate these signs.

"SixthSense recognises gestures supported and made popular by interactive multi-touch based products such as Microsoft's Surface or Apple's iPhone," Pranav emphasises.

The gadget's operations are not exactly the same as those for the iPhone, but they are influenced by Apple's technology.

For example, to zoom in on the iPhone, the user pinches

from the labs

ESP
The labs at MIT are also working on Emotional Social Intelligence Prosthetic, a device for reading minds.

SCI-TECH

outwards on the phone's screen with two fingers. In SixthSense, the same is done by moving all four fingers, or the hands, outwards. And vice versa: bring the hands in to zoom out.

...an Indian angle
One of the coolest aspects of the iPhone was its 'one-button-to-rule-them-all', that let you go to the home screen from within any application. It made navigation so much simpler in an interface devoid of a physical keyboard and a mouse, with their many shortcuts.

So how does Pranav 'welcome' a user to his home screen? The Indian connection comes to the fore, with the folded-hands "Namaste" gesture serving the purpose — from within any application, just like the iPhone.

It seems so simple, it's almost as if the MIT team was inspired by a game of dumb charades. In fact, freehand gestures, or postures, are just that — signs used in everyday life to depict certain events or actions. The demonstration video aptly describes many of these easy-to-understand gestures.

Pranav walks around a city, clicking pictures of various sites. He doesn't have a digital camera with him, but why would he need one? He simply lifts up his two hands, and joins the forefinger tips of one hand to the thumb tips of another — forming a frame. Once he "frames" a scene, the camera takes over and clicks a picture, which is saved for viewing later.

Myriad applications
Indeed, the uses of this technology are limited only by one's imagination.

Pranav doesn't wear a wristwatch any more. He simply looks at the back of his hand, and draws a circle near the wrist. Like with the number pad, a watch pops up out of nowhere!

"When you go to the supermarket, and you're standing there in that huge aisle of different types of toilet paper, you don't take out your cellphone and open a browser and go to a web site to try to decide which of these is the most ecologically responsible decision to make," Maes said during her address at TED.

In her demonstration video, Pranav walked down such an aisle, and picked up a pack of paper towels. The SixthSense projected an unfavourable ecological rating on it, and Pranav moved to the next pack. This one got a green light, and the engineer could even tap that to gain some more information about the product. What a satisfactory and knowledgeable way to make a purchase!

And Maes stressed how customisable SixthSense is: "Some of you may want the toilet paper with the most bleach in it rather than the most ecological choice."

Another scenario had the 'designineer' looking at his airplane ticket. His pendant locked on to the little piece of paper, and alerted him about any delays in schedule and changes in the designated gate.

The most interesting of the aspects — especially for newspaper and magazine readers — was the use of the augmented reality tool with an article. On a blank piece of paper next to the article, or even a white space, the SixthSense can project relevant videos, news channel feeds, updated scores of matches, etc.

A controversial use of the device had Pranav meeting his colleague, Chang. On Chang's white t-shirt, the SixthSense projected "world clouds" linked to him across the internet, creating a virtual tag-based Google search result of his online persona. Everything from his hobbies to work was there to be seen — an aspect that could throw up many privacy issues in the future.

A fifth sense for the disabled
More than anything, an issue close to Pranav's heart is the application of his technology back home.

"I think the SixthSense and the vision behind it can act as the gap-filler for the digital divide in India and other developing nations," he says. "I am really excited to extend the SixthSense

vision to the fields of education, medicine and accessibility."

The engineer is currently working on versions of the SixthSense that can act as an eye for the blind and an ear for the deaf; or it can speak on behalf of a person who cannot speak. "It could act as the missing fifth sense, rather than a sixth sense," he enthuses.

Pranav also hopes to get kids back into playgrounds with his device: "I want to dig into education for kids, such that the power of digital world can be integrated into their everyday activities, including playing. Today's kids are missing out on playing in real fields. I think the underlying technologies in SixthSense can redefine the world of education and gaming drastically, by making the world a playground."

What Now And What Next?
The potential for the technology was evident at TED, an event that hosts some of the biggest minds in the world today — no exaggeration. At the end of Maes' speech, Pranav stood up to receive a standing ovation from a crowd that has seen and regularly participates in creating technologies that promise to change our world.

The commercially-available and off-the-shelf components hold a lucrative prospect in the near future: "In mass production, the device shouldn't cost more than today's cellphones," Maes said.

The elimination of physical input hardware makes it easy for the device to be scaled down in size in the future — opening the door for a more stylish product.

"I think it will take about 1.5-2 years before this can go into market," says Pranav, who is working closely with several consumer electronics companies. Already, Pranav and the team are planning several improvements. The topmost among these is the development of a more sophisticated gesture-recognition technique that rids the user of the cumbersome need of wearing coloured markers.

"In a couple of months, we will be ready with a version that will eliminate the requirement of the coloured markers," he says.

"I am also making some changes in the system design so that one can remove the SixthSense pendant, put it on any table, and start using that table as an interactive multi-touch screen," Pranav says.

"It's not perfect yet, and it's still a work in progress," Maes adds. And then the mad scientist took over: "Who knows, in ten years, we might come up with the ultimate 'sixth sense' brain implant." ∎

readersletters@thinkdigit.com

Here is a brief on the computer vision part of SixthSense. According to Mistry, "SixthSense continuously captures and processes the video stream captured by the camera. The core software component of SixthSense is based on amalgamation of several machine vision algorithms."

"SixthSense system is capable of tracking and recognizing the user's hand movements and freehand gestures. A technique that I have developed using edge detection and color tracking helps performing this operation. The system also recognises and tracks the location of physical objects in users viewpoint. The system uses a few feature extraction and image matching algorithms in order to compare and identify pictures of the objects with the objects in user's viewpoint. The system later retrieves related information about the identified object from the Internet and projects on the object itself, seamlessly augmenting them. SixthSense also is able to stabilise and correct the projected visual information on non-flat surfaces and objects. At the moment, I am also working on some additional features that will correct(change) the interface colors real-time on the basis of the characteristics of the surface the information need to be projected. All these algorithms are developed using C++ and C# and are based mainly on machine-vision based techniques. The visual interface is programmed using WPF." he added.

Photographed by: Manas Parekh

MOVING
shooters

Camcorders are cheaper than ever and with holidays around the corner you
don't want to be left without one. We look at a selection across all price ranges.

Michael Browne

April and May — the months of summer are characterised by unbearable heat and, of course, summer holidays for children and icy cold drinks. Most people are busy planning vacations to cooler climes at this part of the year. With kids on holiday from school, it makes an ideal time for parents to take their annual leave and plan vacations. Unfortunately, our busy work schedules almost always leave us with too little vacation time and there's almost too much to do once we're back, so more often than not, the vacation is forgotten almost as soon as it's over. It's for preserving such fun memories that camcorders were invented.

Whatever the occasion, nothing preserves memories like a well-shot video of the whole scene; from the build-up to the main event and beyond. A camcorder is the best way to ensure that your memories of the years gone by remain fresh, and reliving the fun moments is but a matter of slipping the correct disk into your DVD player.

With digital cameras shooting movie clips at up to 720p resolutions, we thought camcorders were largely meant to go the way of the dodo. After all, why pay Rs.

50,000 for a camcorder when you can buy a digital camera for Rs. 15,000 and record videos that are 80 per cent as good as some of the best camcorders around? Well, here's where camcorders, as a product category get their retort. They've become a whole lot cheaper and many camcorders are now available for well below the Rs. 20,000 mark. We found that there were a number of decent models in the market priced around the Rs. 17,000 to Rs. 20,000 price range.

Obviously, these are the more basic models available and typically use MiniDVD as their storage medium. Another emerging trend is the use of flash memory as storage. Thanks to the crash in flash prices, due to which USB drives have become dirt cheap, even camcorders that utilise the same flash memory to store captured video have become much cheaper. Owing to lower prices, the density of flash modules has also expanded and whereas last year we saw up to 8 GB of flash memory on a camcorder, this year we're seeing 32-GB models emerge. Soon, 64-GB models will make a splash as flash prices continue to fall.

The ultra common MiniDVD and DV tape camcorders also seem to be losing popularity. This was bound to happen,

and is a trend we anticipated some time back. Why pay extra for removable media and have the hassles of extra moving parts with cassette trays and such, when hard drives and flash can handle twenty times the storage? Also, flash and hard drives are both more reliable and faster. Perhaps the biggest reason for the traditional storage media (MiniDVD and DV tape) gradually becoming obsolete is the emergence of cheaper, HD camcorders. As we know, HD videos take a lot of space and with one MiniDVD offering a paltry 288 MB — which is only enough for around 2-3 minutes of shooting — no wonder manufacturers are adopting hard drives and flash. HDD storage is also becoming cheaper — thanks to market-wide adoption of larger hard drives. Although the largest capacity we've seen on a camcorder is 80 GB, with 1.8-inch micro drives now scaling up to 250 GB, it's only a matter of time until camcorders with drives of 100+ GB make a splash.

Perhaps the biggest shocker for us was the pricing. We actually found HD camcorders priced at well below the Rs. 40,000 mark! And we're not talking about a paltry HD resolution of 480p. We're talking 1080i — yes! — 1920 x 1080 interlaced pixels, in a body that's half the size of many MiniDVD camcorders.

Ergonomics 64
A variety of ergonomic devices tested!

Bazaar 68
A roundup of latest products in the market

TRIED & TESTED
Like cameras camcorders can also have either CCD or CMOS sensors

SONY HDR-XR100E
Stunning performer

The HDR-XR100E is Sony's gift to the masses — an HD camcorder that's priced on a par with some of the costlier non-HD camcorders around. It's a handsome looking device — black, with a mixture of gloss and matte finishes. It's not very large, but owing to the 80-GB hard drive, it comes across as being much bulkier than the flash-based camcorders. Owing to the colour and the shape, it looks a bit like the Canon HF11.

The back of the LCD viewfinder has a lot of colourful stickers, a cheery respite from the all-black body. This viewfinder is crisp and clear with great colours, crisper than the viewfinder on its sibling, the Sony HDR-CX100. The viewfinder is also fast and there is never any sort of lag which admittedly is rare to find these days, but super annoying when found. Going with the norm that HD camcorders do not have great zoom, this one has only 10x. Although this may be enough for most uses those looking at shooting outdoors at distant scenery should look elsewhere.

At full zoom, the performance of the Optical Image Stabiliser (OIS hereon) is impressive, and we were able to focus on the number plates of vehicles moving some 300 m away clearly enough to read them. At full quality settings (equating to super fine quality at a resolution of 1080i), the HDR-XR100E will chew up 16 MBps, which is a lot of space, despite this, the massive 80-GB hard drive gives more than 500 min of recorder video. Therefore, it's safe to say your batteries will run out before the drive is full.

The layout of the buttons on this camcorder is excellent and the menu system very well thought out. In fact, the

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Sony HDR-XR100E

entire menu system is touch-screen based and the settings are very simple even for total newbies to find their way around. The record button is ergonomically placed and even people with large hands will never have to bend their thumbs much. This deserves special mention as continuously bending the thumb while shooting can become painful after just 10 to 15 minutes. Image quality of the videos is really good and we felt as though we were watching an HD movie, which in reality we were. All videos have great resolution and very good detail.

The resolution is sharp and it's worthwhile to invest in a large-screen LCD / plasma display for someone really into capturing and watching a lot of such videos – smaller displays do not do justice to the video output of this camcorder! The camcorder focuses fast at the long end of the zoom and indoor shooting is also good, which means low light performance is good and the output videos never seemed dim. Still image quality is also pretty good. In fact, at a size of 9 x 10 inches, it's as good as most mid-range digital cameras. The OIS system also works well for zooming in for photos. We did not register any image shake during the entire test, save for when we tried some over adventurous panning just to check how far the OIS system could cope.

At a price of Rs. 36,999, this camcorder is quite frankly a steal. Sure, it won't replace your camera. But, if you intend to do a lot of quality video shooting, the Sony HDR-XR100E is just the thing. With its massive resolution and superb all-round quality you'd be daft not to at least check it out.

CANON HG20
Silver Streak

The HG20's bulk makes the Sony CX100 look really tiny and cute. That doesn't mean it's not attractive. It sports a refreshingly different light grey / light silver and

chrome colour scheme that keeps things interesting. The fit and finish is good with the lettering CMOS Sensor written in chrome. The lens is large and gives the camcorder an executive feel. The still shot / video select dial is conveniently located on the back of the camcorder in such a way that it comes really close to your thumb, which is ideal, and people with larger hands will not have any problems. There's a small rough textured, raised portion on this dial that coincides with your thumb and makes switching from play and record mode a snap.

However, people with large hands may need to bend their thumbs a bit. There are AV, Component and HDMI outputs provided. A connection for an add-on microphone is also included. The LCD viewfinder is pretty decent and quite bright. The record button is very conveniently located and you don't have to put in extra effort to navigate your way through. Even large handed people will find it comfortable. On a negative note, the photo click button is really hard to press and causes shake when you don't have support while shooting. Halfway down the click, the autofocus is activated and after that the button becomes really stiff. Canon also provides a neat remote control unit with this camcorder and we tested this; the unit works flawlessly. The HG20 ships with a 60-GB HDD, more than enough for even frequent users.

Thankfully, unlike the Sony camcorders that power on when the LCD flap is opened, there is a chrome-finished and hard to miss power button on the top of the body. The camcorder can be switched on and off regardless of the viewfinder being open or closed. Image quality on the HG20 is really good and its OIS system works really well to deliver shake-free videos most of the time. The only time we had an issue with shake was when we wilfully jiggled our hands when shooting to check the effectiveness of the OIS system. The HG20 does very well indoors as well, and thanks to its 12x optical zoom outdoor shooting is equally good. Still shot quality is also good, with great highlights and detail.

We were a little taken aback when we learned this camcorder was priced at Rs. 95,995, which is quite honestly a sizeable chunk of cash and more than this camcorder
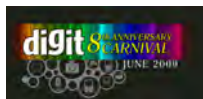

Canon HG20

How we tested

We divided the camcorders we received into two categories: regular and HD camcorders. After this we segregated them into categories based on the media they use. We logged all the specifications of each camcorder and also recorded the bundled software. A high weight was given to ergonomics. This is overlooked by many people, but is very important since it affects usability to a great extent. Finally, for performance, we tested each camcorder's video capabilities both indoors and outdoors under both natural and artificial lighting. We also tested the quality with the zoom and used variable zoom throughout the testing. Finally, we checked the efficacy of the image stabilisation at the long end of the zoom. This is very important because when zoomed in, even minor hand movements can cause blur and spoil the video. We tested the quality of still shots as well as the quality of audio captured while shooting the video. All the images were transferred to a test PC with a GeForce 8800 GTX graphics card and viewed on a ViewSonic VX2025WM monitor that has an 8-bit, MVA panel and is very suited for image and video editing work.

TRIED & TESTED

Camcorders

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EDITOR'S PICK digit — MAY 2009

		Non-HD		
Brand	Samsung	Samsung	Canon	Sony
Model No	SMX-F30BP	VP-DX205	FS 10	HDR-CX100
Price (Rs)	Rs. 16,900	Rs. 18,900	Rs. 30,995	Rs. 36,990
Plus (+)	Affordable	Built well	Looks great	Superb pricing, compact
Minus (-)	Mediocre performer	Poor performance	Mediocre performer	OIS could be better
Grand Totals (Out of 100)	44.94	41.18	48.58	62.99
Features	18.22	15.56	20.44	19.44
Performance	26.72	25.62	28.14	43.55
Features				
General				
Optical Zoom	34x	34x	37x	10x
Still Image Sensor Resolution		0.8 MP	1.07 MP	4 MP
Optical Sensor Size	1 / 6 inch	1 / 6 inch	1 / 1.6 inch	1 / 5 inch
Optical Sensor Type	CCD	CCD	CCD	CMOS
Minimum Illumination	3 lumens	2 lumens	0.2 lumens	5 lumens
Recording Formats	H.264 BP		MPEG-2	AVCHD, MPEG-4 AVC, H.264, MPEG-2
Storage Medium	Flash	DVD	Flash	Hybrid
Inbuilt Storage	16 GB	NA	8 GB	8 GB
Image Stabiliser (Y/N) / IS Type	Y / Electronic	Y / Electronic	Y / Electronic	Y / Optical
Min Shutter Speed	1 / 60 sec	1 / 50 sec	1 / 6 sec	1 / 30 sec
Max Shutter Speed	1 / 10,000 sec	1 / 10,000 sec	1 / 2000 sec	1 / 1000 sec
Shooting Modes	4	4	Easy, P, TV,	10
White Balance Presets	2	2	8	4
Widescreen Video Capture (Y/N)	N	N	Y	Y
Focal Length	2.3 96.6 mm	2.3 78.2 mm	2.6 92 mm	3.2 32 mm
Lens Aperture	f/1.6-4.3	f/1.6-4.3		f/1.8-2.2
Focus System Type	Automatic / Manual		TTL video sensing	Automatic / Manual
Filter Size	30 mm	30.5 mm	Not supported	30 mm
Connectivity / Interface	USB	USB	USB	USB / HDMI
Internal Viewfinder				
Display Form Factor	NA	NA	NA	NA
Size	NA	NA	NA	NA
Resolution	NA	NA	NA	NA
External LCD				
Size	2.7	2.7	2.7 inches	2.7
Resolution	1,12,000 pixels	1,12,000 pixels	1,23,000 pixels	2,11,000
Bundle				
Remote control	Y	Y	Y	N
Accessories	Ac Adaptor/Charger, A/V Cable, USB Cable,	Ac Adaptor/Charger , AC Cord, A/V Cable,	AV and USB (data) cable and charger	AC adaptor, Cables Compnent AV Cable, A/V Connecting Cable, USB Cable
Software		Cyberlink Media Show	Pixela ImageMixer 3	Picture Motion Browser
Weight	270 grams	365 grams	260 grams	330 grams
Ergonomics (So 10)	6.25	6.5	6.5	4
Performance				
Video Quality (So 10)				
Indoors (Normal Lighting, variable zoom)	4.75	4.5	5	7.75
Outdoors (variable zoom)	5	4	5.5	8
Dim Lighting (variable zoom)	4	3.75	3.75	6.5
Image Stabilisation effectiveness	3.25	4	4.25	6.5
Audio Quality (So 10)	6.75	6	5.25	7.5
Still Image Quality (So 10)	3.5	3.5	4.75	8

MiniDVDs allow for a maxi-mum of 1.4 GB on a single disc, or 2.6 GB if it's a dual layer disc

Pay special attention to the view-finder. Its your window to the action and should be crisp and clear and adequately bright

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HD

	Sony	Canon	Canon	Canon
	HDR-XR100E	HG 10	HG20	HF11
	Rs. 39,990	Rs. 89,995	Rs. 95,995	Rs. 95,995
	Great performer, looks good	Neat looks, Built well	Great OIS system, good performer	Stunner, great performer
	None in particular	Mediocre performer	Bulky, expensive	Expensive
	72.09	62.36	72.54	69.5
	24.76	28.92	27.12	23.72
	47.33	33.44	45.42	45.78
	10x	10x	12x	12x
	4 MP	2.96 MP	3.3 MP	3.3 MP
	1 / 5 inch	1 / 2.7 inch	1 / 3.2 inch	1 / 3.2 inch
	CMOS	CMOS	CMOS	CMOS
	5 lumens	0.2 lumens	0.2 lumens	0.2 lumens
	AVCHD, MPEG-4 AVC, H264, MPEG-2	MPEG-4, AVC/H.264	AVCHD	AVCHD (MPEG-4 AVC/H.264 standard)
	HDD	HDD	HDD	Flash
	80 GB	40 GB	60 GB	32 GB
	Y / Optical	Y / Optical	Y / Optical	Y / Optical
	1 / 30 sec	1 / 6 sec	1 / 6 sec	1 / 6 sec
	1 / 1000 sec	1 / 2000 sec	1 / 2000 sec	1 / 2000 sec
	10	Auto, Program (P, TV, AV, Cinema)	14	12
	4	8	5	8
	Y	Y	Y	Y
	3.2 32 mm	6.1 61 mm	4.8 mm - 57 mm	4.8 mm – 57.6 mm
	f/1.8-2.2		f/1.8-3.0	f/1.8-3.0
	Automatic / Manual	9-point AiAF	9-point AiAF Function	TTL contrast detection
	30 mm	43 mm	37 mm	37 mm
	USB / HDMI	USB, HDMI	USB	USB
	NA	Widescreen	NA	NA
	NA	0.27 inch	NA	NA
	NA	1,23,000 pixels	NA	NA
	2.7	2.7 inches	2.7 inches	2.7 inches
	2,36,000	2,11,000 pixels	2,11,000	2,11,000
	N	Y	Y	
	AC adaptor, Cables Compnent AV Cable, A/V Connecting Cable, USB Cable	Component, USB (data) and AV cables, charger	Compact power adapter, USB cable, Component cable, Stereo video cable	Compact power adapter, USB cable , Component cable , Stereo video cable
	Picture Motion Browser	InterVideo WinDVD SE, Ulead DVD Movie Factory SE, DVD Movie Writer SE	Pixela ImageMixer 3SE	Pixela ImageMixer 3SE
	330 grams		465 grams	380 grams
	7.5	7.5	7	7.5
	8	5.25	8	8
	8.25	6.5	8	8
	7	4	7	7
	8	6	7.25	7.5
	8	6	7.5	7.5
	8.25	5.75	8	8

is worth. Sadly, Canon's MRPs are not indicative of street prices and you could probably find this camcorder for a good deal less. As it stands, it's a very capable HD 1080i camcorder; but thanks to this atrocious pricing it loses out on any sort of recommendation.

CANON HF11
Black Beauty

In stark contrast to its sibling, the HF11 is a pure black colour with the finish alternating between matte and glossy black. It has really nice contours and reminds one of designer gear. The quality of surface treatment and materials used is top notch, perhaps even better than the HG20. It's slightly smaller than the HG 20 and features 32 GB of flash memory inbuilt. However, despite its slightly more compact dimensions, it's no worse to hold. Despite the size, Canon has made sure to take care of ergonomics — the record button is placed perfectly for both small and large handed people and you'll find the button conveniently located under the pad of your thumb. The zoom is variable and super slick. Gently nudge the zoom switch and the focus zooms in ever so slowly and slickly. Push the switch harder and the focus zeroes in more quickly — this is one of the best zooms we've used.

As with the HG20, there is an easy button that disables all the extra options and settings for newbies. The click dial is placed on the side of the device and not on the rear as with the HG20. Thus you may not be able to use it one handed and using this dial sometimes requires the use of the other hand. As with the HG 20, there is a mini horseshoe connect provided for using an add-on flash. The LCD viewfinder is crisp and quite clear — however the colour saturation seems to be a little poorer, and this makes the HG20's viewfinder appear a little crisper. Unlike the HG20 that features a 60-GB hard drive, the HF11 comes with 32 GB of flash memory.

The OIS system works very well, and at the long end of the zoom there is barely any shake. In fact, the OIS system is marginally better than the one on the HG20, noticeable at the maximum optical zoom (12x). Image quality indoors is also good; in fact its every bit as good a performer as the

HG20 and we could hardly tell the videos apart. No surprise then when we found it priced identically — Rs. 95,995, equally atrocious pricing on Canon's part. With the current era of aggressive marketing, Canon has a refreshingly different view — chase away consumers with exorbitant prices — mission successful.

SONY HDR-CX100
Petite

The CX100 gets full marks for being the most compact of HD 1080i cameras that we've seen. However this compactness comes at an cost to its ergonomic scores. The fit and finish of this camcorder is good, with Sony following a matte black finish that really sets the tone for a serious device. Parts of the body have a glossy finish. Canon's HF11 looks better, however, and probably sported the highest quality of build in our test. The controls on the Sony are touch-screen based and the menu system is very easy to use. Everything seems designed with newbies in mind, and the menus are very simple; unfortunately for expert users this means a lot of the

Sony HDR-CX100

settings are not as visible.

There's an Easy button that totally idiot-proofs the settings and when activated this button glows with a blue-LED. This camcorder has a smart battery and the viewfinder has a small indicator of the battery life remaining based on the current usage. This is really helpful. The LCD viewfinder is bright with good colours and is more than adequate for most shooting, although it gets a bit dim in bright sunlight. The camcorder powers on when the display flap is opened, although it can also be turned off via a power button located inside this flap.

We found Canon's system of having a power button on the outer body more convenient. As further examples of idiot-proofing, record quality has four preset settings, the lowest having a bitrate of 5 Mbps and the highest using a whopping 16 Mbps; this highest mode records at 1080i. The record button is rather annoyingly close to the grip and people with large hands will have to bend their thumbs. This is irritating, and becomes painful after some time.

There is no click dial to select video / audio and capture and play modes as with most camcorders. Instead, there is a small button that toggles between still image and video. Thankfully, the photo button is conveniently located and has a nice soft feedback. The OIS system works well, although it is not as effective as the OIS system on its larger sibling, the Sony HDR XR-100E. As a result, a little arm jiggling has this camcorder lose its composure faster. However, for the 10x zoom most people will find little to complain about when it comes to blur while shooting.

Once again the zoom is variable – it's super slow or lighting fast depending on finger pressure. Sony's performance in terms of video quality is really good. Sadly, the great performance when shooting in daylight conditions is not repeated indoors and the HDR-CX100 isn't as good indoors, where a bit of noise and loss of detail mar the 1080i videos that it produces.

Priced at Rs. 36,990, the Sony HDR-CX100 is a lot of camcorder for the price and if you're hunting for a super compact, HD camcorder this has to be the one. It's easy to use and very well priced. If the ergonomic issues associated with its compactness don't bother you, then this is the one for you. If they do, you'll find the Sony HDR XR-100E a slightly better camcorder in all respects.

CANON HG10
When young is not better

The cheaper sibling to the HG20, the HG10 is built equally well and follows the same colour scheme as its pricier sibling. The grey / silver colour looks really neat and although we felt this unit was a little large, we couldn't fault the quality of fit and finish. It feels rugged in-hand, something that most large camcorders cannot boast. Canon has got the ergonomics right once again, and the HG10 feels very comfortable; the record button really comes slap bang under the pad of your thumb when properly gripped — perfect. While the record button has a nice soft touch, the photo button is slightly tackier and it's easy to get a bit of camera shake while using it. The HG10 comes with a 40-GB HDD which is enough for at least 200 hours of recording at a resolution of 1080i.

The HG10 actually has a slightly larger CMOS sensor than the ones on the HG20 and HF11, and we expected better results. Moreover, larger CMOS sensors are cost-

Canon HF11

Canon HG10

If you shoot a lot consider a hard drive based camcorder, the extra storage space is worth the premium

Flash based camcorders are becoming cheaper thanks to the greatly diminished price of flash memory

Contact sheet — Camcorder comparison test

Brand	Contact	Phone	Email	Web site
Canon	Canon India Pvt Ltd	1800-180-33-66	info@canon.co.in	www.canon.co.in
Samsung	Samsung India Electronics Pvt Ltd	+91-11-4151 1234	zion.kim@samsung.com	www.samsung.com/in
Sony	Sony India Pvt Ltd	1800-11-11-88	sonyindia.care@ap.sony.com	www.sony.co.in

lier, and so the HG10 had big boots to fill. Unfortunately, it didn't live up to our expectations and while outdoor shooting was good, indoor shooting was considerably inferior to the other Canon and Sony HD models. Still image quality was also not that good. The OIS system works reasonably well, although it's not as effective as those on the other HF camcorders. In fact, it's nearly on a par with the Sony HDR-CX100, which didn't impress us in terms of the resulting image stability.

Priced at Rs. 89,995, the HG10 is expensive and is outperformed by the other HD camcorders in this shootout. We can't recommend it, not at that MRP and perhaps not even at half the price.

SAMSUNG SMX-F30BP
Value for the masses

Samsung's SMX-F30BP is touted as a flash-based camcorder with 16 GB of memory. The device itself is a bright silver colour and looks lively. The build quality of the finish is also good and the camcorder looks rounded without any sharp edges. The LCD is not as good as we'd expect from Samsung, but it's better than the unit of the DX205. Sadly there's no variable zoom (one feature we really loved on the other units) and the camcorder tends to zoom too quickly — this is bad. Although this camcorder isn't exactly compact, the record button is too close to your hand, which is uncomfortable. Interestingly, the palm grip swivels to a vertical alignment. Since the default grip works best, we don't know what Samsung was thinking — with the grip vertically aligned it's actually a lot more uncomfortable.

The mode button to select between record, capture and play is well located and easy to use. The absence of an auto-focus means that images are a basic function.

Samsung SMX-F30BP

Video quality indoors was poor; in fact there was considerable loss of detail with the noise that crept into nearly the entire video. Outdoor shooting was much better, although only until you start to use the zoom. Once the zoom is used, the digital image stabilisation (DIS hereon) kicks in and quite frankly does not do much. We prefer OIS much better, DIS does not compensate for regular body movements and the resulting jitter is very evident from the videos. Maybe we're nitpicking, because we tested the excellent HD camcorders first, but saying its performance could have been better is a gross understatement.

We weren't impressed until the point we saw its price. At Rs. 16,900, the SMX-F30BP is the dream come true for someone looking at their first foray into the world of camcorders. Sure it's far from the best around, but for the price, it's good value for money.

SAMSUNG VP-DX205
For the disk lover

This was the only MiniDVD camcorder we received. This was different from the disk recorders that we received last year. They stored only video on the disk and images had to be stored on an added memory card. This present camcorder can even store videos on an SD card — a plus for flexibility. It's a very simple looking camcorder that's nevertheless built quite well. Samsung uses a smooth metallic finish coupled with a dull textured finish that makes for quite a welcome contrast. The colours are black with gun-grey and quite frankly attractive.

The lens flap has a nice positive slide open and close. The disk flap button is also well located so that you can operate it with your thumb. Once again the lack of a variable speed zoom is annoying, once you have become accustomed to this feature you really cannot do without it. The zoom is quite fast as a result, and at the long end of the zoom, the lens takes some time to focus on subjects. The photo button is easy to use and clicks easily — a pleasure after Canon's hard buttons. There is no autofocus for still images.

In terms of performance, the VP-DX205 performed slightly worse compared to its sibling and we were quite frankly surprised. It doesn't help that there is some lag associated with writing to mini-DVD disks. The DIS system works a lot better than the system on the VP-DX205. Still images are also not fun and are not as clear as we would expect. Priced at Rs. 18,990, the VP-DX205 is obviously for the user on a budget who prefers the good old optical disk.

Samsung VP-DX205

CANON FS10
Classy looker, mediocre performer

The FS10 is a sleek looking camcorder, finished in glossy silver that is immediately eye-catching. It's built well and feels solid in-hand. Quality of materials used is top class. Although this camcorder isn't the most compact we've seen, it definitely scores points for ergonomic placement of the record button. You never have to really bend your thumb or align your grip to use this camcorder — a serious plus in our books. The photo button is also easy to use and well placed. Available with 8 GB of flash with additional memory expansion option available, the FS10 should not run out of memory considering at its highest quality it uses only around nine mbps.

The viewfinder is pretty good, and although it's not as legible as the other two Canon HD camcorders in bright sunlight, it's clear, crisp and offers good brightness levels for indoor shooting. Image quality both indoors and outdoors was not too good, although in dim lighting the lack of quality becomes even more apparent. One point we liked was that the DIS system was

Canon FS10

slightly better than the Samsung camcorders, although it was nowhere near the quality of the OIS based devices. Audio quality was slightly below par, although to be honest you'll notice the lack of video clarity first.

Priced at Rs 30,995, the Canon FS10 is a little expensive when one considers the excellent pricing on the Sony camcorders. How can we recommend even a decent non-HD camcorder when an HD camcorder is available for a meagre Rs. 5,000 — 6,000 more? ∎

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Click to thrill

Whether you're an amateur or a professional photographer, the dSLRs we present here will add extra sparkle to your thought...

Rossi Fernandes

Photography — a creative art, an essential tool for some and a hobby for many others. Today, we have reached a stage where everyone should have a camera.

Photography started with film cameras and they were always thought of as difficult devices to use and rightly so for many reasons. They were difficult to maintain and operate. You had to truly understand photography to be able to take good photographs. For the rest who wanted a camera as a utility, something to keep memories as prints, there were the simple handheld cameras of their time. These were compact cameras and they were certainly cheap, and they made taking photographs much simpler, but not totally foolproof. There were still problems common to both SLR and point-and-shoot users. Film developing was a costly affair and plenty of photos were lost due to mistakes during shooting — this was a time before digital sensors or preview LCD screens.

Digital cameras gained significant acceptance quite quickly. They fixed many of the problems associated with film cameras — the instant ability to view your shot, most importantly, but they did so at a price. Even the really early digital cameras that lacked the refinements and the automation that we see today were much costlier than the then-available decent film SLRs that were generally considered to be great cameras for professional and amateurs alike. As we've seen in the past with every new technology, users should perhaps have delayed purchasing these expensive gadgets, but instead the take-up of digital cameras was fast, and the market has continued to grow ever since.

Negative scanners can scan images directly from film negative into high-quality images

Nikon launches the P90 — a 12.1 MP camera with a 24x optical zoom

It has been years now since point-and-shoots (P&S) were developed, and the pace at which developments and improvements have taken place has been staggering. Within a decade, we've gone from film cameras that couldn't guarantee a proper set of photos in a film to digital point-and-shoots that can detect faces, store them, click photos when people smile and there's hardly any cost involved in using them!

What else could anyone want? There are those who look at point-and-shoots and think of them as toys and consider the only proper cameras to be the dSLRs. Speaking practically, point-and-shoots are actually pretty decent. Prosumer P&Ss, such as the Sony DSC H5, the Canon SX 10 IS, the Canon PowerShot S5 IS and many more, have closed the gap between standard point-and-shoots and dSLRs. Easy operation, and the ability to take macro photos to telephoto shots on a single camera without the need for changing any lens or settings. For hassle-free photographs, these prosumer cameras are very good.

However, if you are serious about photography and are analytical about quality and perfection, then we and other enthusiasts will tell you that you ought to buy a dSLR. If you are a professional photographer using a P&S camera, then we honestly aren't sure why....

dSLRs bring a lot to the table, and there are good reasons for their weight, size and the number of knobs and settings they carry. You don't just go out and buy a dSLR and walk around with it in your pocket. They require a rather more considered approach. They are meant for those who'll sit an entire weekend in a nursery taking photos of flowers, go out and do some wild life photography, sports photography and

will take that kind of dedicated time on the camera trying out all kinds of shots. dSLRs are modular gadgets. So over time, you'll be drawn into buying an extra lens or two. The type you buy and the amount you spend will obviously depend on your requirements.

The Contenders

For the dSLR test, we were looking at entry-level and prosumer dSLRs. These are cameras which existing P&S users would perhaps opt for in their second step into photography. We received cameras from Canon and Nikon, the giants with a history in dSLRs. Sony, a newcomer to the dSLR market also sent us its entry-level A200. Sony having bought out Konica-Minolta's dSLR business, this would be one camera not to be taken lightly. The Canon EOS 1000D and the EOS 50D were with us for the test and we also got our hands on the EOS 400D.

Canon EOS 400D

Canon's EOS 400D is a slightly older camera than the rest. It followed the EOS 350D and is well known as a cheaper version of the EOS 450D.

The 18 — 55 mm autofocus lens that comes with the camera is average. It's not going to be particularly useful when you go out on hiking trips or for wildlife photography. The lens does not provide sufficient zoom for that kind of photography, but for casual photographs portrait and closed ranged photography, it will do.

The buttons are small and the jog dial is a little hard to roll. A single jog dial is used to cycle the settings and a button is used together with the jog dial when combinations are required. All the settings expected from an entry-level dSLR are present. There are no limitations with this camera in terms of features.

Canon EOS 400D

What we looked for while reviewing dSLRs

The cameras were tested for many parameters and factors. We particularly focussed on the usability of the camera and its functionality. dSLRs are advanced cameras meant for the niche customer unlike regular P&Ss.

Although each manufacturer lets you add different lenses to your camera, we used the set supplied to us for testing. Notes were made of the type of lens and we thoroughly tried out the functionality of the lens for both macro shots and telephoto. Portrait photos were also taken to see if there was any distortion when taking relatively close-up shots with the supplied kit lens.

Photographs were taken at extreme ends of the ISO range (100 – 3200) to get an idea of the amount of graininess (noise) that would be visible in the images. A good sensor and processor together would provide less graininess and would be better suited for low-light photography. An overall rating for quality was given by comparing different photographs taken at different ISO settings and aperture settings.

The autofocus functions on these cameras do not work the same way. A range of settings is available to control focus on different types and numbers of objects. We tried each of the settings to see if the camera could focus on smaller objects and also in low light. Cameras have built-in features that use a strobe-like flash to help it focus on objects in the dark. We also tried out the flash to see how much of light the unit would disperse and also to see how well the camera evaluated lighting conditions.

The screens on the dSLRs' display photographic results, and in some of cases is even used to focus. We took note of the quality of the screen and how well they could cope in broad daylight. A larger screen would usually be welcome.

A dSLR is more advanced than a P&S, and gives the user much more control over its features. All features are controlled through its menus and for this reason the user interface is very important. With entry-level dSLRs, manufacturers have tried implementing simpler menus with help for each item.

The quality of the dials on the camera is an important part of the build quality. Changing between settings is done using these buttons and dials, so these controls will take a battering over time. All dSLRs are built solidly to protect the mechanical components, so the chances of things going seriously wrong are pretty low. Still, cost cutting is something every manufacturer tries to do on their lower-end models, and so we kept an eye out for possible problems.

Notes were taken of all the additional features such as noise reduction and synchronising features for the flash. There were many other features — such as the Live View picture which lets you focus and shoot using the LCD screen and also video recording.

Professional photographer and close friend of the magazine, Manas Parekh, came down to personally try out each camera. We were able to get a look at the cameras in a different light with his opinion of each camera that we tested. His inputs are incorporated into the reviews.

Nikon's new dSLR, the D5000 comes with a foldable screen

BEST PERFORMER
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MAY 2009

Canon EOS 50D

Taking close-up shots is difficult with the standard shooting modes. The flash unit isn't particularly good either. It's bright enough for close areas and is too focussed on a narrow area. The build quality of the hinge and the flash unit isn't very good.

Although this was a good entry-level Canon dSLR prior to the release of the EOS 1000D, in comparison, using it isn't a very simple task, given its user interface. The menus are basic and sketchy. Using it with the Auto shooting mode gives decent results though.

Getting good shots in low-light situations can be a little difficult. It often requires you to increase the aperture size by a significant amount and also set the ISO to its maximum — 1600 to use a 1/30 second shot. Fortunately, the amount of grain at higher ISO levels is low and manageable and image adjustments can fix this.

The camera uses CompactFlash memory. The EOS 500D has just been launched and so the EOS 400D will slowly be phased out. Availability might soon be a problem, but at the same time, it's also interesting to find low prices for the EOS 400D.

Canon EOS 1000D
Canon's new EOS 1000D competes with the Nikon D60. The 1000D lies at the bottom of the pyramid of cameras from Canon. The EOS 1000D is a smaller camera and also a light one. In looks, it appears a little more refined and polished than the other cameras. The corners are rounded and so are all the buttons. It almost feels like a P&S from the rear end of the camera around the screen. The finish isn't very nice. It feels very sandy and it's not the best feel you would wish for when you're holding a camera. It's also light and so attaching a big lens will probably upset the balance significantly. Very light dSLRs are probably not a good idea.

Large markings are present everywhere to inform the user of the controls. Clearly, this camera was made for a beginner who possibly might even buy a dSLR as his first camera. It's not as impressive as the D60 though.

One of the key features of the EOS 100D is the Live View. It's similar to the one found in the Nikon D90. It lets you use the LCD screen to focus. This should prove convenient to P&S users not used to a viewfinder. There is a slight delay as expected and we're really not so impressed — many would agree that the old viewfinder way of focussing is the way to go.

The buttons on the EOS 1000D are flat and easy to push. The jog dial feels as if it has large notches and isn't as smooth and light as the other buttons and dials on the camera. Unlike the other Canons and the Sony, the EOS 1000D uses an SD/SDHC card. The body is built well and the flash hinge and structure is slightly better on this than the 400D. The lens itself looks similar and has a slightly silky grip which we didn't like. There's also the missing thumb-grip near the screen which was present in the EOS 400D.

The menus on the 1000D are basic but not as amazing as the 50D. The controls are a little more manual with the 1000D. Most of the controls are to be changed using the button and jogdial combination instead of using the direction keys in the software menu. The zoom buttons for the preview are set into bevelled slots on the back of the camera.

Focussing is simple and straight forward. Macro shots are fairly easy to take as well. The camera feels and works a lot like the EOS 400D and it also happens to replace and take its place in the price range.

The menu drags it all down, unfortunately. The A200 in comparison feels richer. The EOS 1000D is a slightly better camera than the aged 400D in image quality, but we preferred the body and ergonomics on the EOS 400D. The MRP for the Canon EOS 1000D is Rs. 34,995.

Canon EOS 50D
One of the most special cameras in this test has to be the EOS 50D. It's sheer size and feel in hand was enough to get positive responses from everyone who used it. The EOS 50D was released late last year to replace the EOS 40D. Like its predecessor, the EOS 50D isn't a full-frame camera, but it has a good 15-MP CMOS sensor. The DIGIC 4 processor is one of the other revisions made to the camera.

This is larger than the others cameras that we tested. The EOS 50D also has slightly different controls from the others. The biggest difference lay with the large dial ring in place of the direction arrows. The directional arrows on the 50D are replaced by a joystick, rather like the ones found in mobile phones except this one is really sturdy and a little hard to use. Like the D90, the 50D uses two dials dedicated to change shutter speed and aperture in the manual mode. In the aperture or shutter priority mode, the jog dial at the front is used.

The camera is also wider than some of the other cameras. A lot of space on the rear isn't used and only the dial-wheel and the joystick are present. All other controls such as the ISO level, white balance settings, and the autofocus settings are present on top, right behind the tiny screen on top of the camera.

Using this camera isn't particularly easy. It's more geared towards the more advanced enthusiast. If you're used to dSLRs, then you can get around it in an hour or so. The interface is more refined than other cameras and Canon has also tried to ease things by adding little fade-in effects and some colour to the menus — in our opinion is a nice touch.

The screen is of very good quality and is positioned well on the left. It displays colour accurately and controls for the brightness for the screen are easily accessible — this is a good thing when you're working in extremely dark or bright places. The primary information display is well thought of and has all the settings you need. All the menus and features work really quickly.

Canon EOS 1000D

The autofocus works exceptionally well and is very quick. Similar focussing options are present on even the cheaper Canon dSLRs. We received the Canon EOS 50D with a standard 18–55mm lens. The quality of lens is good, but it's not optimal for outdoor shooting of large areas. On the other hand, for macros with zoom engaged, it's possible to get good up-close photos. The manual focus is also very good and you can get accurate focus on small objects.

The camera has a good burst shooting mode and it performs well for a second or two, but after that the shots slow down. We used a SanDisk Extreme III CompactFlash card for these tests. The flash isn't strong or as impressive as the rest of the camera.

The EOS 50D is clearly an exciting piece of equipment. The overall results are stunning, but there are a couple of complaints — the biggest one being the ON / OFF switch being at the bottom, and a complete pain to use. It's too tiny and is flimsy in comparison to all the other controls on the camera. For its feel, ergonomics, performance and features, this makes a strong contender for the best camera in this test. The price for this camera, with lens, is Rs. 81,995.

Nikon D60

The Nikon D60 falls into the entry-level dSLR bracket. This category has been bubbling with activity with manufacturers trying hard to get the attention of eager enthusiasts who might take the leap. Like the rest of the contenders in that price range, the D60 is a 10.2 MP camera.

The biggest and the most prominent feature about the D60 is the usability of the functionality. Nikon has a done a lot to ensure that the user is never lost in a sea of options. All of the features and options are clearly distinguished and a dedicated help button gives a short description of each of the feature's details. The menus are very warm and the main interface displaying the aperture size, shutter speeds and all the settings is highly interactive and animated. All this user-friendliness does not

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Nikon D60

make the camera feel very bare and toned down — it still has an edge over the other dSLRs in the same price range.

Holding it is as difficult as with the other small dSLRs. The body is close to the hand grip with just enough space for your fingers. However, the build is superior to the Canon EOS 1000D, 400D and the Sony A200.

Images turned out well and the Auto shoot mode does its part nicely. The noise at ISO 1600 is very manageable and is on a par with the EOS 1000D and the 400D. Nikon supplies a good 18–55 mm VR lens, which makes a big difference. The VR works pretty well, but a lens of this calibre doesn't really need it.

At the end of the evaluation, it's the D60 that seems to be preferred; and rightly so, for its ease of use, it features excellent menus and has a user-friendly design. It feels very much like a refined camera than an attempt to tone everything down too much for the sake of ease of use.

Nikon D80

The Nikon D80 is actually a camera from late 2006. The D90 was released last year and the general reaction everywhere was to show the thumbs-up. The D80 was known to be a good camera. It made good sense as a dSLR for a casual photography enthusiast. We were interested in the D80 primarily for its lower pricing with the D90 now in the market.

The controls and body construction of the D80 are similar to those of the D90. The directional buttons aren't very large, though. A two-jog dial setup is present on the D80 and is a welcomed feature any day. Changing shutter speed and aperture size simultaneously with them makes life easier, for sure. Controls for the white balance and ISO are lined along the left of the screen, so operating the camera settings requires using both your hands at times.

The smaller screen is present on top which immediately takes it a step up from the entry-level dSLRs. This feature makes adjusting settings much more straightforward. There's no need to look at the screen and use the directional keys to change any of the settings. Taking photos while making adjustments simultaneously is a lot simpler this way. This is a feature only found on mid-ranged dSLRs. The other difference is the eyepiece which is larger than with other cameras. Focussing automatically becomes simpler. There's also support for a remote-control which is a nice function that can be useful when taking long exposure shots on a tripod.

One of the annoyances of the D80 has to be the tiny direction buttons all combined together. This is hard to use and is similar to the control used in the much older D70.

Nikon D80

The D80 supports a larger battery pack; this gives more power to the camera and also makes it easier to hold. The battery pack can hold two D80 batteries. Like the D90, the D80 also uses SD/SDHC cards for storing images.

The lens we received with the camera was Nikon's AF-S 18–135 mm. It's the most powerful lens of the ones in this test. This wasn't a VR, but it didn't affect us a lot while taking telephoto shots.

Another addition with cameras such as the D80 is the more comprehensive menu system. Control for many more of the features can be found and each one modified according to your needs.

While the D80 is pretty identical to the D90 on most fronts, the larger and better quality screen is the biggest difference, we feel. Liveview and video recording are the other very important additions to the D90. With a price tag of Rs. 70,950 including the AFS DX 18-135/3.5-5.6G lens, the D80 is slightly cheaper than the D90.

Nikon D90

Nikon's D90 is one of the newest entries to Nikon's line-up. The D80 was known for its really great quality sensor and the D40X was another camera that used it. The D80 was previously known as a great mid-range dSLR. The D90 therefore has a lot to prove, especially as it is quite costly.

The biggest difference going from a D40X or any other entry-level dSLR is the sheer size. It's more or less the same as the D80. The D90 we received for review from Nikon came with an 18–105-mm VR lens. It's functions and this kind of range lets the user to capture from wide-angle images to good telescopic images (for better telescopic images, you would consider the Nikon 18-200 mm lens.). This lens could be described as having a 6x optical zoom. As an overall solution, this lens with the D90 body makes an excellent choice.

Operating the D90 is pretty straight forward, although it isn't as simple as the D60 or the D40X. There isn't the help menu

Cisco buys Pure Digital Technologies, a camcorder manufacturer

Nikon D90

for every single feature that you find on the entry-level cameras that are intended to attract the new dSLR user. It's assumed that the D90 user would be well-versed with dSLRs or photography basics.

Two jog dials are present — one at the front of the shutter release button and one on the rear near the screen. Accessing them is simple and the feel of the dials is very nice as well, but holding the camera might be a problem for users with smaller hands. The same old tiny directional key set is still present on the D90. On a camera this size, a larger set of separated keys would have made better sense.

The focus ring on the lens is located on the body instead of the tip of the lens as on some of the other cameras. The camera focuses quickly, even in low-light, and the

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DSLR Comparison Test				
Brand	Canon	Canon	Canon	Nikon
Model	EOS 1000D	EOS 400D	EOS 50D	D60
Price	Rs. 34,995	Rs. 60,995	Rs. 81,995	Rs. 39,950
Specifications				
Sensor resolution	10.1	10.1	15.1	10.2
Sensor size (mm)	22.2 x 14.8	22.2 x 14.8	22.3 x 14.9	23.6 x 15.8
Sensor Type	CMOS	CMOS	CMOS	CCD
Highest Image resolution	3888 x 2592	3888 x 2592	4752 x 3168	3872 x 2592
File formats supported	RAW, JPEG	RAW, JPEG	RAW, JPEG	RAW, JPEG
Supplied lens (mm)	18 − 55 mm	18 − 55 mm	18 − 55 mm	18 − 55 mm
Burst rate (fps)	3	3	6.3	3
ISO Rating	100 − 1600	100 − 1600	100 − 3200	100 − 1600
Shutter speed range (sec)	1/4000 to 30	1/4000 to 30	1/8000 to 30	1/4000 to 30
White balance settings (number)	7+ custom	6+ custom	8+ custom	6
Auto focus modes (number)	3	3	4	3
Self-timer (Y/N, sec)	✔ / 2, 10 sec	✔ /10 sec	✔ / 2, 10 sec	✔ / 2, 5, 10, 20 sec
LCD screen size (inch)	2.5	2.5	3	2.5
LCD resolution (pixels)	2,30,000	2,30,000	9,20,000	2,30,000
Memory supported	SD/SDHC	CompactFlash	CompactFlash	SD/SDHC
Live view (Y/N)	✔	✖	✔	✖
Video recording (Resolution)	✖	✖	✖	✖
Battery capacity (mAH)	1080	720	1390	1000
Dimensions of body (mm)	126.1 x 97.5 x 61.9	126.5 x 94.2 x 65	145.5 x 107.8 x 73.5	126 x 94 x 64
Weight (g)	450	510	730	495
Performance (Out of 10)				
Auto mode (with flash)				
Colours	6	6	8.5	7
Detail	6	7	8	7.5
Flash	7	7	8	6.5
Grain	6.5	6.5	7	6.5
Zoom Sharpness	7	6	7	7
Manual mode (low ISO, long exposure)				
Colours	7	6.5	8.5	6.5
Detail	6.5	6	7.5	7
Grain	6	6	8	6

Even cheap full-frame sensor dSLR cameras are priced around a lakh and a half

manual focus is very easy.

The 3-inch screen is exceptionally good and Nikon has implemented Live View in this camera — this lets you focus using the screen. The general reaction from professional photographers is that they aren't really fond of it. The other interesting addition to the camera is the HD 720p video recording function. dSLRs have until recently lacked video recording functionality so we think it's a nice function to have in a dSLR, especially for a regular user. The quality of the video is surprisingly good too. The only drawback here is manual focussing.

The D90 together with the AF-S DX 18-105/3.5-5.6G VR lens is priced a bit higher than the D80 at Rs. 83,950. It's a great enthusiast multi-purpose camera, though!

Sony A200

Sony, in comparison to the other brands, is a newcomer to dSLR cameras. It recently took over Minolta-Konica's dSLR business, so things can't be as bad as some might expect. The Sony A200 is one of the cheaper offerings amongst the entry-level dSLRs in the market.

There is a 10.2 MP CCD sensor onboard the A200 and Sony bundles an 18–75 mm lens with the camera; this is a decent lens for medium distance photography. It's not as powerful as the Nikon's 18–105 mm VR lens, but is a small step up from the 18–55 mm lens supplied with starter dSLRs from other brands. The focus ring is positioned on the outer edge of the lens body. It has a fine gear-teeth-like feel to it as you focus. It's different from other lenses but some might find this distracting or awkward. It doesn't get in the way of functionality or performance, though.

The size also seems a tad larger than the EOS 400D and the EOS 1000D. It's

	Nikon	Nikon	Sony
	D80	D90	A200
	Rs. 70,950	Rs. 83,950	Rs. 27,990
	10.2	12.3	10.2
	23.6 x 15.8	23.6 x 15.8	23.6 x 15.8
	CCD	CMOS	CCD
	3872 x 2592	4288 x 2848	3872 x 2592
	RAW, JPEG	RAW, JPEG	RAW, JPEG
	18 – 135 mm	18 – 105 mm	18 – 70 mm
	3	4.5	3
	100 – 1600	200 – 3200	100 – 3200
	1/4000 to 30	1/4000 to 30	1/4000 to 30
	6	12	7
	3	3	3
	✔ / 2, 5, 10, 20 sec	✔ / 2, 5, 10, 20 sec	✔ / 2, 10 sec
	2.5	3	2.7
	2,30,000	9,20,000	2,30,400
	SD/SDHC	SD/SDHC	CompactFlash
	✖	✔	✖
	✖	✔, 1280 x 720	✖
	1500	1500	1650
	132 x 103 x 77	132 x 103 x 77	130.8 x 98.5 x 71.3
	585	620	552
	7	8	7.5
	8	7.5	6
	7	7.5	7
	7	7	6.5
	7	8	6
	8	8	6.5
	7	8	6
	8	7	6

Pretec releases the 64GB 666x — the world's fastest Compact Flash card

Sony A200

easily the heaviest of the entry-level dSLRs. The quality of the camera is pretty good, although it feels of plastic almost all over.

The display quality of the 2.7-inch LCD screen is average. Sony has brought in colourful menus to the dSLR and everything looks very user-friendly, but there's little help to guide users through the menus. The buttons on the back for operating the camera are well considered. The direction key set, for example, lets you scroll through images diagonally. The buttons are flat, soft and effortless to use. But wear and tear on them through months of rough use might concern some.

The controls are placed in different areas of the camera and not cramped all together. This might be comfortable for use once you get used to this kind of layout, but it also means that you have to move your fingers all over the camera to access them. It's probably not the most optimal layout. While dSLRs try to give users the quickest access to controls, the A200 has a few settings hidden away behind a Function button. These include the flash mode, metering and autofocus mode settings. Noise reduction features for ISO and long exposure shots are also present.

We're quite impressed by the features and design effort that Sony has put into this entry-level dSLR. One such feature is a meter that measures the amount of movement while you are taking a photograph. A flashing indicator next to it warns you of it. The stabilization control is present as a simple slider on one corner of the camera and not on the lens. The stabilization is average, but just the warning is enough to get your attention and put that extra care into holding the camera steady.

The other very impressive feature is the flash. With almost everything automated, the flash is able to measure the light very accurately. We tried all kinds of shots with objects really close and some moderately far away. The amount of light

fired is accurate and the backgrounds are rarely drowned in darkness. If you think that the flash on the Sony isn't sufficient, then you might face a problem. Sony uses a different flash-mount compared to Canon and Nikon, so purchasing a third-party flash might turn out to be a bit of a problem. It must be said that this mount feels more solid than the rest. The grip too is a little nicer than on the Canon cameras.

Image stabilisation is present on the camera and not on the lens with the Sony A200. A sensor detects your face in front of the eyepiece and then turns on the focussing and turns off the LCD, as with some of the other cameras. Those with high-definition TVs and monitors will be interested to know that this camera shoots at 16:9 aspect ratios. This means you don't have to go through the trouble of cropping every single photo manually or automating it using an image editor, which often can crop out areas of interest to you.

The camera isn't very fast and the drive speed at 3 frames per second is also not as impressive as the upper-end cameras, but it does easily make a match for other cameras of its category. The A200 uses CompactFlash memory and not Sony's proprietary Memory Stick Duo like its point-and-shoot cameras.

The Verdict (s)

Knowing how great are the variations between P&S cameras, the case with dSLRs is quite different. The cameras we received were all very good in their own way. One thing's for sure though — it's safe to assume (at least most of the time), good quality comes at higher cost.

Roughly, the Nikon D60, the Sony A200 and the two Canons — the EOS 1000D and the EOS 400D fell into the basic entry-level range of dSLR cameras. Our conclusion is that the Nikon D60 is a

better camera than the rest. This is mainly because of the features and the functionality of the camera. One of the very valid points emphasised by Manas and something with which we all fully agreed on was that the D60 was an easier dSLR to use, and the quality of the body and feel was far better than the rest. Of the two Canons, we felt that the 400D was better than the very new 1000D.

The 1000D has a weird dusty feel to it and holding gives not the nicest and most confident feeling one can get. This was one of the D60's biggest plus points. The EOS 400D was better in that aspect. As cameras, the 1000D is a little refined in its menus and interface. The EOS 400D we feel is the better of the two Canons, and right behind the D60 in our idea of the optimal camera for a beginner. The Sony A200 is a slightly different story. The camera is a nifty little thing with its features and menus. It caught us by surprise, and was not what we expected from Sony. Unfortunately, some of the complaints concern the average build quality of the lens and the feel of the camera. The body is solid, but its feel isn't so great. It's also a slightly noisy camera when you let it loose to autofocus all the time. Market prices might differ from MRPs. The Sony A200 is a decent camera, if it's a lot cheaper than the D60.

The next cameras we need to consider are the Nikon D80 and the D90. The D90 was called in to replace the D80 and it does that easily. Although the video recording feature might not be on every photography enthusiast's wish list, it's the Live View that will interest many. As much as people would dismiss it, it's a feature useful in many situations and that's an edge the P&S always had. The D90 is on a par on that front now. The D90's Live View works pretty well and the video quality is better than that found with many of the point and shoots cameras. Should you buy the D90? Yes! If you are looking for something better than the D60, then it is miles ahead, and also ahead of the D80. The D80 now is left to slip out of the market, as the D90 takes centre stage. If prices seem attractive and photo shooting is all you want, it might be something to consider if you don't mind buying outdated technology. The MRP for the older D80 is Rs. 70,950 with the 18−135 mm lens and Rs. 83,950 for the D90 with the VR 18−105 mm lens. Market prices might be lower.

There is no better way to describe the Canon EOS 50D. As a mid-ranged prosumer dSLR, it doesn't come much better. Nikon's D90 is a great dSLR and also a video camera, but the Canon EOS 50D is a better photographer's camera. The price for it is a whopping Rs. 81,995, which includes the EF-S 18-55 mm f/3.5-5.6 IS kit lens. It's not the best value for money product considering the 18−55 mm lens that comes with it, but it's a camera we recommend if you have the money to splurge. ■

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Contact Sheet — DSLR Comparison Test

Brand	Contact	Phone	E-mail adress	Web-site
Canon	Canon India Pvt. Ltd.	1800-180-33-66	info@canon.co.in	www.canon.co.in
Nikon	Inter Foto India	+91-22-4092 5555	ajpa@interfotoindia.com	www.nikon.co.in
Sony	Sony India	1800-1111-88	-	www.sony.co.in

Bluetooth mice work on a 2.4 GHz frequency range. Any device operating on the same frequency in close proximity will interfere with signals and affect performance

Built for you

Relax amid work...we test some of the most comfortable computing equipment around

Michael Browne & Kumar Jhuremalani

Scientists have proven that standing upright (while working) and lying prone (while resting) are the only two positions the human body was built for. We still sleep lying down but thanks to the modern work environment we no longer accomplish most of our work standing up — we're in a sitting position on a chair or otherwise. The spinal column did not evolve for a sitting posture just as the wrists never adapted for the repetitive action of supporting the hand as one types on a keyboard, sometimes for hours at a stretch.

As a result, repetitive stress injuries cannot be avoided and most users are unaware of the damage that takes place since such injuries typically do not manifest themselves as soreness at the injury spot until quite late, when most of the damage has been done. For most of the office-going fraternity rest is also not an option. Take Carpal Tunnel Syndrome (referred to as CTS here-on) for example, a very common repetitive injury that occurs for a multitude of reasons. One of the ever increasing causes of CTS has been pinpointed in recent times to be RSI (Repetitive Stress Injury) that occurs after continual use of keyboards and mice with incorrect posture and insufficient rest. CTS is a painful, progressive condition caused due to compression of the median nerve in the wrist. This nerve gets compressed due to inflammation of ligaments in the carpal tunnel that houses the median nerve. These ligaments become inflamed as a result of certain mechanical movements among a host of other factors, including hormone deficiencies and even certain hereditary conditions. It is this collection of bones in the wrist (collectively called the Carpal bones) that allows the wrist to move and rotate vertically, horizontally and laterally. Once it develops, CTS can take several months to improve and any activity irritates the condition. Most of us would not even get a week away from work, let alone a few months. Therefore, as with most ailments prevention remains the best cure.

Thankfully when it comes to using computers, manufacturers of not just human interface devices like keyboards and mice but also office chairs have woken up to the fact that there is a problem that is affecting an ever increasing number of desktop and notebook users and have designed solutions meant to reduce such repetitive-action generated stress, if not totally alleviate it. We at Digit have had our share of what we fondly call *technology related injuries* and one of us jokingly refers to as *technical injuries*. We've also learnt that ergonomic chairs and keyboards with palm rests really help keep such problems at bay. This article is devoted to such devices that can collectively be termed as ergonomic, or simply those designed with the nuances of the human body and posture in mind.

Logitech VX Nano: for the mobile warrior

The Logitech VX Nano mouse is the new ambidextrous version of the VX Revolution that was Logitech's answer to mobile prosumers demands of a powerful, feature rich mouse for use with notebooks. The VX Nano is small and has shallow scallops on each side that allow your thumb and little finger to grip the body. Although the VX Nano is not as comfortable as the VX Revolution for right-handed users it's obviously a lot more comfortable for left-handed users. Also the

VX Nano is smaller than the VX Revolution meaning those who like to palm their mice will be disappointed, you may need to grip it with your fingers, especially if your hands are relatively large.

The mouse itself is finished in black and dark grey and looks very business-like at first glance. Even with two AAA cells it's not heavy. The scroll wheel can be clicked and this toggles between a super fast friction-less scroll and the regular clickety-clack precision scroll that most mice have. This feature works very well and the mouse is a glide (literally) when scrolling through very long web pages or documents. The tilt wheel is another, plus particularly for us test centre types who use MS Excel extensively, and scrolling side to side is a snap. There are two customisable buttons on the top of the mouse accessible with your index finger. These are set to the default actions of forward and backward — a boon when surfing but they (as well as the other buttons) can be customised using the Set Point software bundled. Incidentally drivers for Mac OS X are provided.

We mentioned that the VX Nano is compact and this suits its the fact that is is touted as the "ultimate notebook mouse". It certainly has a tiny receiver, and this can aptly be described as "nano". In fact, sitting in a USB port this receiver barely protrudes by six or seven millimetres — it's positively tiny! The receiver can also be stored inside the mouse — to do this you need to remove the battery compartment cover. Usefully, once the receiver has been inserted into its bay, the mouse switches off and cannot be turned on until the receiver is removed — a useful power saving feature. And rather frugal it is, on batteries, that is. A set of two AA Duracell batteries are still happily running at well over 60 per cent charge, even after two weeks of heavy use. Safe to say your batteries will last for at least a month. The mouse itself tracks well enough for office use and most other applications. However, it's not as good for gaming or even Photoshop applications where greater precision is required; and like all wireless mice the odd jump of the cursor takes place.

All in all, for a price of Rs. 5,295, the VX Nano is not cheap and cannot be said to offer value for money. But it has very little competition and occupies somewhat of a niche — the über-notebook mouse. Desktop users will scoff at its small footprint and this makes it not the most comfortable mouse to palm, but it's just the tool for the discerning notebook user — compact, functional and very feature rich. A pity Logitech couldn't make one each for right and left handed users and why couldn't they make this one just a bit larger?

MX 5500 Revolution: Desktop King!

The Logitech MX 5500 Revolution is Logitech's flagship desktop solution just below the astronomically priced De Novo. This duo consists of the MX 5500 keyboard and the MX Revolution mouse. This keyboard bears similarities to the older MX 3200 desktop keyboard, although there are a number of new shortcut keys added. The multimedia

Keys should not be too hard or too soft to press and their rebound should also be nominal — this is termed as good feedback

Extra mouse buttons enable you to do common tasks quickly and without using shortcut keys

and zoom buttons are to the left of the main keys while three flat-button shortcut keys have been provided at the bottom right of the unit. The alphabet keys themselves are very well laid out and this together with the slight bevelling on the top makes typing a real joy. The key spacing is greater than on a regular keyboard, but similar to the key spacing on the Logitech G15, which, strangely, is a gaming keyboard. This said we had no issues adapting to the slightly more spaced-out layout.

The feedback of the keys also seemed a little soft at first, but within a few hours of use we realised that this is noticeably less stressful on the fingers. However, the feedback isn't as squishy as we've found some Microsoft keyboards to be. In fact, a light, almost whisper-like, touch is all that's needed to type and our typing speed actually went up on this keyboard, which is about as good a praise as one can imagine. The palm rest is adequate, but we'd prefer one that extends just a little bit more; for us this palm rest is a little short to be termed properly ergonomic; the Logitech G15 has a slightly larger surface area on its palm rest although there is always a trade-off with workspace area. Unlike the MX 3200, its surface is not coated with any bacteria-resistant material and we noticed the palm rest does not get sweaty, even with prolonged use sans air conditioning. One annoying feature we found when using this keyboard was that the function keys have been split apart by the word *Logitech* and its monogram, therefore there is a two inch gap between the [F8] and [F9] keys. That being said, each of the function keys has an alternate function highlighted in orange. Corresponding to this orange colour scheme there's a function key that replaces the right-side Windows key and using this key allows the alternate functionality to be accessed.

The keyboard has a small display embedded into the top, and this portion is tapered so that this display is convenient to read when looking down at the keyboard. This display will show you the status of any of the shortcut keys currently being used; otherwise it can be programmed to display the time and date. For example, if you change the sound volume, a level indicator will be displayed. It also works with the *calculator* function in which case both operations and results are displayed. Do note that this LCD is not backlit, which means it will not be readable in dimly lit conditions; although if it were backlit it would drain a lot more battery juice — any sort of backlighting is a double-edged sword when it comes to wireless keyboards. The MX 5500 uses four AA batteries, which is two batteries more than the MX 3200 used. Logitech claims battery life at a whopping six months and while we had no way to test this, we used this keyboard for three weeks with heavy usage and had no issues at all.

The MX Revolution is no longer new, having being launched some time in 2006. But it's still one of the most advanced (read designed for extreme office users) mice around. It follows the same black/dark grey colour scheme as the VX Nano, but it's

shaped radically different and is much larger and heavier. The scroll wheel has the ability to work as a free spinning (quick) scroll or a click-like (precision) scroll function. Toggling between these functions happens by pressing the mouse wheel but this is not a mechanical function as it is in the VX Nano; instead, the switching is electronic, and for this reason the toggle does not work unless the Bluetooth dongle is connected to a computer. The built-in tilt-wheel functionality is a huge plus for those working with spreadsheets. This mouse is designed for right-handed folk and the thumb region is deeply recessed, with the body below the thumb tapering outwards sharply; this creates a wide base for

the mouse to sit on and also a proper resting area for your thumb. In fact it reminds us of sports bikes' wind-cheating bodywork in the way one's thumb completely fits into this recess. The right side is lightly sculpted for your last two fingers. The forward/backward buttons are located conveniently above the thumb recess and while they are easily accessible with the pad of the thumb, they are well out of reach to be accidentally or unintentionally used. With Logitech's drivers installed the mouse wheel is actually pretty smart and can be configured to run in either precision mode or speed mode, according to the application.

Located within the thumb recess is another mouse wheel — the document flip. This one has limited movement both ways. Clicking the wheel brings up a window with all current programs running being shown as smaller windows. Nudge the wheel and you'll start flipping through the documents. Once you get used to it, this is a faster, neater version of Windows' alt + tab. A dedicated search button is also provided, located behind the main mouse wheel; this provides instant online searching of a highlighted word or phrase.

Using the MX Revolution for browsing and working with spreadsheets and documents is a joy. The mouse tracks fairly accurately, although an MX 518 it is not, therefore don't expect a lot of frag-fest wins with this mouse. Another plus is the sealed lithium-ion battery and the battery lasts for around 15 days on a single charge. A neat dock has been provided for effortless charging when it's needed and the four-stage, green-LED battery indicator on the mouse body will notify you when the device needs juice. On a slightly negative note the MX revolution is heavy, understandably so considering the functionality it packs and its largish size. Despite the fact that most mice with a pair of AA batteries would be heavier we'd like it to be around 25 grams lighter.

As a combination of keyboard and mouse the MX 5500 Revolution is hard to beat. Although it doesn't have the (ahem) split keyboard layout that is touted as being "really" ergonomic, we feel this is about as

Staples 13392, Pneumatic Fabric Manager Chair: Grey suit

The Pneumatic Fabric Manager Chair is really not that great to look at. The chair is broader at the shoulder level and tapers slightly towards the base. The back rest ends at the neck and there is no head support. The fabric of this chair is made of a microsuede fabric and the colour of this chair is a dark bluish-grey.

This chair is not too soft but you can easily get used to sitting in it. There is also extra cushioning towards the base which gives good lower back support. Along with that some extra cushioning towards the top of the chair gives good shoulder and upper back support while sitting upright.

You can easily adjust the height of this chair. A tilt lock is also present on this chair, but the chair can only be locked in the upright position.

One interesting feature is the adjustable side arm handles which can be adjusted by a simple clip along with a pull-push mechanism located on the handles itself. Though this is a very useful feature to have in a chair, the model that we received had very wobbly side handles, which is not comfortable at all. Also these handles do not have any fabric on them, instead is made of rubber which is found on many computer chairs.

This chair would not suit a person who has to sit and type all day. It is more likely to be suited for a manager of a company who doesn't need to type very much or even someone who spends the whole day in meetings in a board room. But a price tag of Rs. 9,990 (MRP), does not justify the features that this chair offers. It is much more of a comfortable meeting chair than an ergonomic computer seat.

ergonomic devices

Gel Wrist Rests

If you don't fancy buying a new keyboard or mouse, but at the same time want to avoid Carpal Tunnel Syndrome (CTS) and Repetitive Strain Injury (RSI), then you need to have adequate support for your palms so that the wrists remain in line with the hands. This can be acheived through the use of gel wrist rests.

We tested the Staples 502451, Gel Keyboard WristRest Black as well as the 502499, Gel WristRest Black. The Keyboard WristRest was long and it covered the entire length of the keyboard, while the other WristRest was just enough for the mouse. The bases of these wrist rests have a rubber grip so that they do not move while typing or using the mouse. These gel rests have the right amount of softness to give enough resistance to support your palms.

While typing with the keyboard wrist rest, the palm of your hand gets the support it needs, thereby removing the strain on the wrist. The same is the case when using the mouse rest.

These gel wrists rests are really effective at removing the strain on your wrists. They are easily available at Staples and the mouse rest costs Rs. 99, while the keyboard rest costs Rs. 199. If you are a gamer we would suggest you buy the mouse rest, while if your work involves a lot of typing then you should definitely look at the keyboard gel rest.

TRIED & TESTED

ergonomic as it can get. We love the keys, we love the functions and we love the keyboard in general. The mouse is brilliant as an office tool and the fact that it looks very up-market may also do a lot for the look of your desktop space. This combo is probably more than most users will be able to fully utilise, so it's largely overkill, but anybody looking at a quality combo will probably end up shopping for one of these. Its price of Rs 11,495 will make most users flinch and feel it's a tad overpriced. At a price of around Rs. 7,500 we would gobble up this deal. Incidentally, the MX Revolution is available at an MRP of Rs. 7,495 and street prices are as low as Rs. 5,000 — which we reckon is a steal for what is arguably one of the most functionally productive mice we've used.

Logitech Desktop Wave: Tidal wave of comfort

The Logitech Wave has been aptly named. While the mouse's design itself brings nothing remotely wave-like to mind, the keyboard has a slight raise in the centre that causes the keys towards the middle to be slightly raised. This slight undulation does not affect the top portion of the keyboard where the function keys lie; instead it is in the region of the alphabet keys and this gives this product its name. The keyboard itself is well laid out and the keys have a similar gap to that we found on the MX 5500's keyboard — it seems Logitech is not following any standard for gaps between keys. However the keys themselves are well bevelled and easy to use. Feedback is poles apart from the MX 5500's keyboard, while that lacked much feedback and could be termed as slightly squishy, the keys on this one exude a lot of positive feedback and there is a feeling of the key rebounding back after being pressed — very good feedback. However, feedback is a double edged sword that compro-

mises on comfort levels and after spending some four hours typing non-stop we'd have to agree that the soft, minimal feedback of the MX 5500 kept our finger pads in much better shape. However, for non-touch typists this sort of a keyboard is easier to use, it'll also be easier for newbies unfamiliar with the layout of a keyboard.

There are fewer shortcut buttons on the Wave than on the MX 5500, but the keys themselves are larger and much easier to use on account of their more positive feedback. There is a useful document flip button that is quite conveniently located to the left of the alphabet keys. The two-way zoom button is large and also easy to use, as are the other multimedia keys. Once again, as with the MX 5500's keyboard, all the function keys have secondary functions that are activated by a dedicated function key. Dedicated buttons for Media Centre and calculator have also been provided. All the dedicated shortcut buttons have a steel grey colour and this makes them really stand out in comparison to the other keys which are a generic black. There is no backlighting whatsoever and the Wave's keyboard makes do without any sort of display. The keyboard has a really soft-foamed wrist rest and for the first time we actually found our palms and wrists could rest very comfortably, sans sweat and any sort of itchiness after extended periods of time. The palm rest extends further than that on the MX 5500's keyboard and this alone makes it more comfortable to use for longer periods of time. The palm rest has anti-bacterial treatment, a boon for sweaty climes such as ours. During use, we noticed that our palms and wrists never felt hot, due to the excellent choice of materials used in the palm rest and maybe also be due to the dimples in the material that cause small air pockets between the material and your hands.

The mouse supplied with the Desktop Wave follows the same black/dark grey colour combo that to our eyes looks classy. The mouse is neatly shaped and ambidextrous. In fact it's so ambidextrous that there is single button above the thumb recess located on both sides. The mouse wheel is also a click button and has tilt capabilities, but this tilt wheel does not look as robust as the unit on the VX Nano or the MX Revolution. The mouse tracking is decent but does not

in any way standout and cannot compare in accuracy to the VX Nano or the MX Revolution. That being said, it's a solid wireless mouse that will satisfy all but the most demanding users.

Priced at Rs. 5,995, the Wave is a great product, but we feel it should have been paired with a better mouse — Logitech has a vast repertoire, after all. The bundled mouse looks great, but does not equal the keyboard's comfort or usability. The fact that it's half the price of the MX 5500 Revolution is a strong plus point, though we did not like the slightly hard feedback on the keys. If Logitech had bundled a better mouse than the LX8 we would heartily recommend this deal.

Logitech V470: Fancy free, receiver-less

The Logitech V470 is a cute looking notebook mouse available in a number of snazzy colours. It's a Bluetooth mouse and does not need a receiver unit since the mouse can pair directly with any device with Bluetooth. 95 per cent of all notebooks and netbooks come with Bluetooth and the major advantage of such a mouse is that a valuable USB port is freed up which would otherwise be occupied with some sort of receiver unit.

The mouse is built to mediocre standards, but when loaded with two AA cells it feels solid, mainly due to the increased weight. The mouse clicks have a positive feel to them but the build quality is obviously a couple of notches below the superb VX Nano. Mouse tracking is good, in fact much better than some of the other wireless mice we've used — no surprise since the V470 uses the same 800 dpi laser sensor that the other Logitech mice — such as the VX Nano, VX Revolution and MX Revolution — use. In fact, we were pretty surprised to see that it's nearly on a par with the MX Revolution when it comes to pin-point accuracy. Logitech has provided this mouse with a good set of smooth Teflon

Optical sensors do not track on glass laser sensors have no such issues

One of the most important parts of a keyboard is the palm rest that supports the entire weight of your upper wrist and palms

feet and this is probably what makes it accurate. Our complaint, if any, was with the tacky mouse wheel that just does not feel as good as the metal units on some of the other Logitech mice. Thankfully, the tilt function is a little more robust, but mouse clicking feels very tacky.

Priced at Rs. 2,995, the V470 seems very expensive. But do note that this price is the MRP and street prices are sure to be lower. A good mouse if you're looking for something usable and functional without extra buttons and such. The fact that this mouse doesn't utilise a USB port like 99 per cent of other wireless mice do is probably a clincher for anyone who uses printers, cameras, cell-phones or other such USB interface devices with his notebook.

Microsoft Comfort Curve Keyboard 2000:
Not comfortable enough

The Comfort Curve Keyboard 2000 from Microsoft is a wired USB keyboard aimed at those looking for comfort while typing for many hours a day.

The layout of the keys is such that towards the centre of the alphabet keypad the keys are slightly lower and closer to the user than the keys to the right and left. This when viewed from above gives the impression of a down-ward directed curve in the entire

layout. The rest of the keys i.e. the numeric keypad, are flat.

Each key in the first row, starting at Esc and ending at Pause Break, has a slight rounded top, making it easy to distinguish between the keys. The rest of the keys have more of a comfortable dip which results in a good flow while typing.

There are a few internet and multimedia keys also present on the keyboard, and these include: Back, Forward, Web/Home, Search, Mail, Play/Pause, Volume Controls (including Mute) and Calculator.

This keyboard does not have standard key sizes as there are long keys towards the centre, giving more accessibility while typing. Another thing we noticed was that the last row of alphabet keys seem to dip downwards. Both these layout features add to the natural and ergonomic experience while typing.

Coming to the Space Bar key, this is the only key we particularly did not like as the feedback is just too mushy. This is expected from most keyboards as the Space bar key is the most used. Other than the space bar, the feedback of the other keys is good.

The Curve does not have a palm rest even though the design matches the design of the general curved layout. But we feel this is a gross ergonomic blunder, as with-out a correct type of wrist rest you risk Carpal Tunnel Syndrome — a serious prob-lem. Another flaw we noticed was that while typing, you tend to put pressure on the edge, which in turn causes the keyboard to lift up from time to time as it is very light.

Though there has certainly been some thought put into this keyboard to make it ergonomic and comfortable, it has not been executed that well and we wouldn't recom-mend that you buy this.

Microsoft Wireless Laser Mouse 6000: The Right Choice

The Wireless Laser Mouse 6000 is one of their ergonomic mice. It's not an ambidextrous mouse, as the design favours only right-handed people.

Its a greyish-silver colour on the top surface, and black everywhere else. It feels a little heavy due to the AA batteries power-ing it. The mouse connects to the PC by RF through a USB dongle which can also be clipped on the back of the mouse.

The mouse curves slightly to the right, with just the right amount of space that results in a scallop for your thumb to fit into. There are also indents present for the rest of the four fingers so that they can comfortably rest on the mouse; this adds to its ergonomic feel. There are two shortcut buttons pres-

ent on the top, towards the left side, which control zooming. The keys are appropriately placed and so you will neither tend to acci-dentally press them nor are they hard to get to if you use your thumb.

This mouse also has a Windows Flip 3D key which can be used from the scroll button. The scroll wheel also allows for 4–way scroll, in a similar manner to a tilt-wheel.

This mouse is big and is better for desktop use, though it can be used with a notebook, carrying it along might seem a burden.

The only complaint we have is with the scroll wheel, in that it is too smooth and does not have precision scroll. This causes inaccu-rate scrolling from time to time.

It does not have as many features or buttons as the MX Revolution, but it definitely beats the LX8 in terms of design and comfort. ∎

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Staples 14548 Fabric Managers Chair Black: Comfy and Elegant

A comfortable chair and one that is almost too comfortable for anyone looking at doing any serious work. After a couple of hours in this beauty we felt as if we could fall asleep in it — high praise indeed for a chair that's meant for executives and managers. Called the Staples Ellston Chair, this beauty is finished in black microsuede and the fabric feels very comfortable and soft to touch. It's a well-padded chair and the padding is firm, so it does not depress with your body weight; this is important so that you do not get that sinking-into-the-chair-feeling. There's lumbar support provided and the chair is well contoured to fit the normal human back. Just near the neck there's a slight protrusion in the foam padding that provides good support to the neck region when seated in a proper upright posture. When seated in such a position we also found that the extra padding around the lower back area provided support to the lower lumbar region and basically reduced stress on the lower back, which is exactly what such chairs are designed to do. On a slight negative note, the armrests are not height adjustable, but they are at a perfect height for most people, so this should not be an issue. The padding on the armrest is also sufficient. Another negative and maybe a serious omission is that while the chair is height adjustable there is no locking mechanism for the back rest. Some chairs we've seen have this very useful feature allowing one to simply lean on the back rest thereby pushing it back and locking it into position — this allows you to recline backward without stressing the muscles of your back by continuously applying pressure on the back rest to keep it from swinging back into position. The fabric used is cool, a blessing for climates such as ours, and even without airconditioning we didn't find ourselves perspiring as much as when seated in some faux leather and real leather chairs.

Priced at Rs. 7,990 (MRP), the 14548 Ellston is expensive and may not be worth its price but it's a really comfortable chair, possi-bly too comfortable for an executive, but for a manager who wants to really relax after gruelling, productivity inspiring speeches delivered to his team — this may be just the thing. Home users who spend hours in front of their PCs may also want to consider it, since it's priced better than its sibling.

XFX ATI RADEON HD 4890

From Green to Red

The time has finally come for XFX, a company that used to manufacture only NVIDIA solutions, and has now moved onto ATI graphic cards. XFX has launched ATI's HD 4000 series, and we have with us the new high-end ATI Radeon HD 4890 graphics card.

XFX has followed ATI's reference design in terms of the cooling solution for this card. One thing to note is that ATI has not moved to a 40 nm GPU, but stuck with the 55 nm GPU, the same used on the HD 4870. This card has 800 stream processors, the same as the HD 4870, with a core and memory speed of 850 MHz and 3,900 MHz, which is faster than the HD 4870. There are two 6-pin power connectors for this card, but it is lacking an HDMI port. XFX has provided a DVI-to-HDMI converter, but an HDMI port would have been much appreciated.

On our test setup consisting of an Intel QX9650 @ 3.0 GHz, 4 GB DDR2 memory running at 1,066 MHz and a Windows Vista operating system, 3D Mark Vantage gave us a score of 10,668 under performance mode and a GPU score of 10,220, which is quite a good score. The XFX Radeon HD 4890 is ATIs newest entry. In all reality it's a tweaked up version of the HD 4870. It does not stand a chance against the GTX 285 or GTX 295 from NVIDIA, but it definitely performs better than the 4870. If you really want a high-end card, but want to spend less than on the 4870, this is the card for you.

Specifications:
Bus Type PCIe 2.0, GPU Clock: 850 MHz, Memory Bus: 256-bit, Memory Size: 1024 MB DDR5, Memory Speed: 3900 MHz

Ratings
Features: 8
Performance: 8
Build quality: 8
Value for money: 9
Overall: 8

Contact: Rashi Peripherals Pvt. Ltd.
Phone: +91-22-6709 0828
Email: response@rptechindia.com
Web site: www.rptechindia.com
Price: Rs. 19,999

WD HD player

Have an HDTV? Buy this now!

Even though the boom in LCD and Plasma TVs is great news for everyone, broadcasting of HD content still hasn't taken off. This means that people have to depend on Bluray disks and their movie databases to make good sense of their expensive purchases of LCDs and Plasmas.

The only way out is to the setup an HTPC for HD. However, Western Digital might have something of interest. Diversifying from its main hard drive business, it has created a compact little player called the WD TV HD Player, which plays every format you can think of — well almost every format we could think of.

The user-interface on the player is clean and designed very professionally and is extremely easy to use. The remote has all the controls required to run the device. The remote isn't chunky but is light and flat, but it doesn't feel so great in the palm of your hand.

The performance of the player is very good. It provides good quality audio and video. We tried all kinds of media dumped on an external portable storage drive from WD as well as a few flash drives. However, the movies encoded with digital audio had problems decoding. These have to be connected using the optical out to a receiver.

Making this player has been a great move by WD and it removes the need for an HTPC solely for playing back HD videos. An HTPC is a nice thing to have, but then there's the trouble of getting a compact case, setting up all the hardware and software. Sure, you get all the flexibility you need to run whatever you want – games, movies, music, photos, browse the net, chat, etc. On the other hand, many of us just want music, photo viewing and videos on our TV. If you're like us, then we honestly think this player a must-have for it's price which isn't very high for the performance and format support.

Specifications:
2 USB ports, Display interface: HDMI, Composite A/V, Dimensions: 40 x 100 x 125.5 mm, Weight: 303 g

Ratings
Features: 8
Performance: 9
Build quality: 7.5
Value for money: 7
Overall: 8

Contact: Amarjeet Singh
Phone: +91-93210 29204
Email: amarjeet.singh@wdc.com
Web site: www.wdc.com
Price: Rs. 8,500

40 nm GPUs
have been used in the new
Radeon HD 4770 cards

GA-GC230D
the motherboard from Gigabyte
with inbuilt Atom 230 processor

TRIED & TESTED

Dell Studio XPS 13
13.3" with all muscle

The Dell Studio XPS 13 is a nice sleek and stylish 13.3" screen laptop.

It's a fusion of leather, aluminium and plastic – these are the three materials that are present on the back of the lid. When you start this laptop the first thing that we liked is the way the touch buttons light up, then you will also see the backlit keyboard. Having backlight for the keys is a big plus point. Along with that the keys on the keyboard are well separated with pseudo key spacing. Not only do the keys have backlight, but the mouse buttons of the trackpad also do, and the buttons are a joy to press. Though the trackpad is smooth and accurate, it is slightly small.

A few features of this laptop that we didn't quite like are the thickness and weight. We find this laptop to be too thick for 13.3 inch screen and also it is slightly on the heavier side weighing in at 2.2 kgs.

Looking at the sides of the laptop we found some interesting ports. There is a USB-eSATA combined port on the right, a DisplayPort and an HDMI port on the left, and instead of the regular single headphone and microphone ports, there are two 3.5 mm ports for headphones accompanied by a single microphone port. The optical drive on this laptop is the slot loading kind.

The screen of this laptop is really something to talk about; it has really great viewing angles as you can sit on the side and still view a clear picture. The inbuilt speakers are decent, nothing out of the ordinary, but just a slightly better than average.

This motherboard has an Nvidia MCP79MX chipset and also a GeForce 9400M graphics solution which work together in Hybrid SLi. Stacked up with 2 GB DDR3 memory, it is a really good performer.

The battery that came along with this laptop was a 4-cell battery and it lasted for a total of 1 hour and 25 minutes under performance mode of Hybrid SLI – this is what we expected from a 4-cell battery.

If you are willing to look past the exteriors, the Dell Studio XPS 13 is a good buy. The model we received costs Rs. 59,900 and is definitely a good performer with the configuration that was present, but the price will vary according to the hardware you select.

Specifications:
Dimensions (W x H x D): 319 x 22.55 x 236.12 mm, Weight: 2.2 kgs, Processor: Intel Core 2 Duo P8400 @ 2.2 GHz, 2 GB DDR3 1066 MHz, 320 GB HDD, 2.0 MP Integrated Webcam

Ratings
Features: 8
Performance: 8.5
Build quality: 7
Value for money: 7
Overall: 7.5

Contact: Dell India
Phone: 1800-4254026
E-mail: dell_enquiries@dell.com
Web site: www.dell.co.in
Price: Rs. 59,900

ASUS P565
Another Windows Mobile

This phone is definitely stylish and has looks that would attract anybody. Most of the rear cover is made of leather which gives a nice finish to the phone. The front of the phone sports a 2.8-inch VGA display and the body is glossy black in colour. The phone is light as it weighs only 120 grams. The buttons, located below the display are well placed and easy-to-use making them quite ergonomic. Except for the call accept, reject, the quick menu and OK buttons, the other navigation buttons can be customized to lead you to a specific menu.

The ASUS P565 is built on Windows Mobile 6.1, but with ASUS' Glide features you should be able to scroll and perform tasks such as zoom and scroll with just flicks of the finger. However, the phone was quite slow and the Glide feature was laggy. This phone is supposed to have the fastest processor – Marvell PXA930 800 MHz – but it did not seem to be fast at all.

For messaging or typing anything on this phone, you need to use the stylus - it's not very comfortable for on-the-go typing. Alternatively, you can also use your own handwriting to enter messages and this works brilliantly. Much better than the Nokia 5800 XpressMusic we tested last month.

The call quality is clear and audible on both ends of a call, but when you use the loudspeaker, the microphone picks up a lot of ambient noise, which is a draw back. The speaker is good enough when consider that this is on a mobile phone.

Overall, the phone does have it charms but it does not come without its faults either. But even so, the price tag of Rs. 21,900 is not justified for this phone and we would not advise you to pay this much.

Specifications:
Form Factor: Bar type, Operating Sytem: Windows Mobile 6.1 Professional, Dimensions: 102 x 60.5 x 16 mm, Display: 2.8" VGA 480 x 640 / 65K /TFT

Ratings
Features: 7
Performance: 6
Build quality: 7
Value for money: 6
Overall: 6.5

Contact: ASUS Technology Pvt. Ltd.
Phone: +91-22-67668800 / 1-800-2090365
E-mail: media_india@asus.com
Web site: www.asus.in
Price: Rs. 21,900

Panache Black Current
Compact and Affordable

With its attractive size, the Black Current might draw the attention of those who want an HTPC. The Panache Black Current comes without a monitor, so basically you will be getting the cabinet and everything inside it – nothing else.

The motherboard is a mini-ITX form factor and does not have many upgrade options due to its form factor. It comes with two DIMM slots, two SATA ports and just a single PCIe x1 expansion slot. There is no chance of installing a discreet graphics solution here. The cabinet also is quite tightly packed with one optical drive slot which is already in use. The hard drive is mounted vertically on the side. There are two SATA connectors, one being used by the hard drive and the other by the optical drive, so expansion is a problem. The CPU heatsink and fan are not the regular size, but instead there is a low profile heatsink to compensate for the lack of space within the cabinet. The model we received comes with a Core 2 Duo E7400, a pretty up-to-date configuration which will easily handle any quality high-definition content.

There are some things lacking in the Panache Black Current – firstly there is no HDMI port, which means that even though this could make a good HTPC, it lacks the most essential connectivity option. Next is the lack of an expansion slot for a graphics card for those of you who would want to play some games on their HTPC. For a person who does not want to go through building an HTPC this would be ideal, but for a gamer who wants to play on a 42 inch LCD, this PC is lacking in the (3D) graphics department.

Specifications:
Processor: Intel Core 2 Duo E7400 @ 2.8 GHz, Cache: 3 MB, FSB: 1066 MHz, Chipset: Nvidia 610i, Memory: 2 GB DDR2 800 MHz, Hard Disk Drive: WD 320 GB Caviar Blue

Ratings
Features: 7
Performance: 7
Build quality: 7
Value for money: 8.5
Overall: 7.5

Contact: Panache Infotech Pvt. Ltd.
Phone: +91-93200 22012
Email: info@panache.co.in
Web site: www.panache.co.in
Price: Rs. 16,500

ASUS Rampage II Gene
Honey I Shrunk My Rampage

Even though this is an mATX board, it has all the features of a full-sized ATX board. The GENE also supports either 2-way SLi or CrossFire as it has two PCIe x16 slots. These slots are separated by a single PCIe x1 slot. A very noticeable feature in that the DIMM slots hold the memory in place by a single clamp instead of the traditional clamp on both ends of the slot. This makes for a very intelligent design for when you need to remove a memory stick, you do not need to remove the graphics card that is usually present and blocks the removal of the RAM stick. The overall layout is good, the heatpipes are sturdy, the SATA connectors are facing outwards so that the wires aren't cramped for space.

ASUS has also provided an LCD poster along with this motherboard. When there is an error or problem, the board detects this and displays the errors during POST. Very useful for quick diagnostics when problems occur.

The first option that you see in the BIOS is the Extreme Tweaker which has many controls that can be used to overclock your processor, memory, etc. There are LED indicators on the motherboard itself that change colour to warn you against overvolting. This motherboard also lets you overclock on the fly via Tweakit.

We tested this motherboard with the Intel Core i7 965, 3 GB of Kingston Hyper X memory running at 1,333 MHz and an ASUS ENGTX285 TOP. The GENE performed equally well compared to the other X58 boards we have reviewed. Game benchmarks also gave some great scores from games such as *Doom 3* and *Prey*. A 4 GB file transfer test took a total of 69 seconds while video encoding a 100 MB file through the DivX converter took 79.3 seconds.

Priced at Rs. 16,750, this board is best suited for gamers who want to save space or attend many LAN parties as the small size will be a bonus.

Specifications:
CPU Socket: LGA 1366, Chipset: Intel X58 / ICH10R, Audio: SupremeFX X-Fi onboard 8 - Channel High Definition Audio CODEC

Ratings
Features: 8
Performance: 8
Build quality: 8
Value for money: 7
Overall: 7.5

Contact: ASUS Technology Pvt. Ltd.
Phone: +91-22-67668800 / 1-800-2090365
Email: media_india@asus.com
Web site: www.asus.in
Price: Rs. 16,750

Nokia E75 - the new business phone now available

Megalodon is a 7.1 Surround Sound Gaming Headset soon to be released by Razer

Samsung Pixon
Good Camera, Not So Good Phone

The Pixon is simple with its completely black look. It has a 3.2-inch full touch screen and is just a few mm thicker than the iPhone with a width of 13.8 mm. The Pixon gives more of an overall phone feel rather than the delicate feel that you would expect with an iPhone.

There are three buttons below the screen – Call Accept, Back and Call Reject. None of these buttons have backlight on them, so you would need to get used to them while using the phone in the dark. The stylus for this phone is supplied separately and has to be attached to the phone as an accessory. The same is the case with the Samsung Omnia.

On tapping an option that looks like a mirror from the quick access menu, the small second camera that is on the front of the phone becomes activated and you see yourself. Keeping this option as a mirror is quite innovative. While scrolling through the menus in this phone, we came to the conclusion that though Samsung has tried to mimic the scrolling of an iPhone, it has not yet achieved it as the effect is not that accurate.

There are three ways to enter text with this phone while sending an sms or entering anything in general. The first mode is the alpha-numeric keypad that will be displayed if your phone is upright, if you turn it horizontal, you get a full QWERTY keypad. The third way to input text is by handwriting, but it just fails when it comes to that feature.

Overall, the main attractive feature on this phone is the 8 MP camera. But this phone does have a quite a few flaws and paying Rs. 28,750 for it is just not a good option. For around the same price, you can opt for the symbian platform N96, but if you want a full touch interface then you should go for the iPhone even though it has a poor camera.

Specifications:
Battery: 1000mAh, Design: Bar, Screen: 3.2", 262K Color TFT Screen, Memory: 200 MB internal, Dimensions: 107.9 x 54.6 x 13.8 mm, Weight: 122 gm

Ratings
Features: 7.5
Performance: 7
Build quality: 8
Value for money: 7.5
Overall: 7.5

Contact: Samsung India Electronics Pvt Ltd
Phone: 011 - 41511234
E-mail: sarfaraz.b@samsung.com
Web site: in.samsungmobile.com
Price: Rs. 28,750

Iomega eGo 250 GB
Don't Drink and Drive

The Iomega eGo is a portable drive with a capacity of 250 GB, and we just had to see how well this drive performs.

When it comes to performance this drive didn't do that badly and almost matched up to the April's Best Buy WD MyPassport Studio, which was also 250 GB. The eGo slightly outperformed the WD drive when it came to synthetic benchmarks that we ran on it – SiSoft Sandra and HD Tach (8 MB and 32 MB zones). But when it came to real world file transfer tests it fell slightly short. The eGo did do well in the read and write transfer tests but it clearly fell short when we tried to load a 1 GB image in Photoshop (140.8 seconds). This was the only bad point with this drive as it was the slowest from all the drives that were there in last month's test.

The iomega eGo is really a good drive and in our opinion if you want style and a design that is slightly unusual then there is nothing better. The performance almost matched up to our last month's Best Buy and it only fell short in one test, and we would recommend this as great value given that the price is only Rs. 3,750.

Specifications:
Dimensions (L x W x H): 134 x 89 x 19 mm, Interface: USB, Rotational Speed: 5400 RPM, Memory Cache: 8 MB

Ratings
Features: 7
Performance: 8
Build quality: 7.5
Value for money: 8
Overall: 7.5

Contact: iomega
Phone: 09841022940
E-mail: baskaran@iomega.com
Web site: www.iomega.com
Price: Rs. 3,750

Zebronics RealWatts PRO-600
Just the right amount of power

The 600W Real Watts power supply unit falls under Zebronics Pro Series range which consists of power supplies ranging from 350W to 850W.

This is not a modular power supply and only the 24-pin motherboard cable has a sleeve on it. There is a 6-pin PCIe connector as well as an 8-pin PCIe connector, which means this PSU is able to handle some high-end GPUs. Some cards such as the GTX 280 or even some of the newly launched GTS 250s require 8-pin PCIe connectors and that's where the 8-pin PCIe connector will come in handy. This power supply does not have enough cables to support SLI or CrossFire of high-end GPUs, but it would suit if you want to SLI low end cards.

This power supply has a triple +12V rail rated at 24A each. The manufacturer specified total outcome is 575W of the triple 12V rails.

We setup an Intel QX9650 @ 3.0 Ghz, 4 GB DDR2 memory running at 1066 MHz, an Nvidia 8800 GTX to test the stability of this power supply. We observed that the 3.3V rail was providing 3.29V and the 12V rail was providing 12.23V. Also the fan was running pretty quietly.

With a price tag of Rs. 3,850, this power supply is slightly overpriced but will still suit a basic gamer who would want a decent PSU, without spending too much money. A person who uses the computer just for basic tasks need not invest in this power supply.

Specifications:
1x 24-pin ATX cable, 4x SATA connectors, 4x 4-pin Molex connectors, 1x 12V 8-pin connector, 1x 4-pin floppy connector, 1x 6-pin PCIe connector, 1x 8-pin PCIe connector.

Ratings
Features: 7
Performance: 7
Build quality: 7.5
Value for money: 6.5
Overall: 7

Contact: Top Notch Infotronix India Pvt Ltd
Phone: +91-44-4393 6000 to 99
Email:enquiry@zebronics.info
Web site: www.zebronics.com
Price: Rs. 3,850

CM Storm Sniper
The Assassin That Cannot Hide

The first thing we noticed about this cabinet is that it is huge, being even wider than the CM Stacker RC-810. This is due to the protruding side panels of this chassis. There is a large knob present on the front top of the cabinet which is used to control the speed of the cabinet fans, a really useful feature. Inset within this knob is the button for controlling the LED lights, another useful feature for those who get too irritated with these lights. This feature is also great while downloading things at night, just switch off all the LED lights of the fans and go to sleep instead of having a completely lit room. Along with these are a nice big Power button and a small, hard to press, Reset button, four USB ports, one e-SATA and one FireWire port as well as two 3.5 mm audio connectors. The cabinet is raised above the ground with stands that can be rotated.

Cooler Master has really gone screwless with the Sniper as you don't need screws to attach hard drives, optical drives or even cards into the expansion slots, each of these locking in a different way. With the optical drives, there is just a button push to lock it into place, with the hard drives you can just slide them in the trays supplied and with expansion cards, there is a clip mechanism that is quite easy to use.

The Sniper is definitely well built but it is not as good as the CM Stacker, which falls in the same price bracket. It would be a cabinet worth consideration if it had cost somewhere around Rs. 7,000. But unfortunately that's not the case here with its price of Rs. 11,400 – this is too pricey in our opinion, even though it does have some unique features.

Specifications:
Material: Stell, ABS Plastic, Mesh bezel, Dimensions (D x W x H): 566.6 x 254.6 x 551, Weight: 10.6 kg, 5.25" Drive Bay: 5, 3.2" Drive Bay: 5

Ratings
Features: 7.5
Build quality: 7.5
Value for money: 7
Overall: 7

Contact: Cooler Master India
Phone: 9833870302
E-mail: Tanmay_L@Coolermaster.com
Web site: www.coolermaster.com
Price: Rs. 11,400

Buffalo has launched a new portable DVD drive that consumes only 7.5 W

Kingston DDR3 HyperX memory now available for SO-DIMMs of notebook PCs

Canon LBP 3370
A box that prints

Monochrome laser printers are really good for office use and especially SoHos, but they are equally good for home users, as they deliver quick prints and are also very cost effective compared to ink-jets. One such monochrome laser printer is the Canon LBP 3370, aimed at the home user.

The exterior of this printer is boring, as it is looks like a box with a white and grey exterior. There are two ways to load the paper, one through the bottom tray while the other through an opening front tray. There is an indicator on the bottom tray which gives you the approximate measure of the paper present in the tray. This feature is very helpful at times so you know when to refill the paper. On the rear of this printer, the USB port is located, together with the Ethernet port for printing over the network.

The paper comes out on top and the controls for this printer are located next to the tray on the right. There is also a single line backlight display which has a slight tilt forward for easier reading. Other buttons include: Utility, Job, Settings, Reset, Feed Selection, Cancel Job and Online. Within these menus we found a few interesting options like Toner Saver mode, Power Saver mode and even 2-Sided print, which can work out to be beneficial in the long run.

Since this was a monochrome laser printer we decided only to check the time taken to print text documents, and it did extremely well. It took only 7.6 seconds to print a single text document; very fast. Quality wise it wasn't as crisp as it could have been and the detail of the text just seemed a bit off, but it is still acceptable with these speeds. Next we printed 15 pages and it took a total of 57.5 seconds which is really fast.

The Canon LBP 3370 is definitely fast and the outcome of the prints are very good. This printer would go well for home use, but we say it would go equally well for office use, especially with its network connectivity options. Priced at Rs. 29,995 it would be a great buy for any business or home.

Specifications:
Dimensions (W x D x H): 399.7 mm x 378.6 mm x 267 mm, Weight: Approx. 12.2kg, Memory: 64 MB, Print Resolution: Upto 600 x 600 dpi

Ratings
Features: 8
Performance: 8
Build quality: 7
Value for money: 7
Overall: 7.5

Contact: Canon India Private Limited
Phone: 1800-180-33-66
E-mail: info@canon.co.in
Web site: www.canon.co.in
Price: Rs. 29,995

HCL Leaptop Series 39
Just a Design

HCL has introduced a new laptop, or 'leaptop' as it calls it, to its range of laptops. The HCL Leaptop is certainly good looking, but how well it performs we are about to find out.

It has a nice piano-black finish with some curvy and circular print designs on the back of the lid, as well as the wrist rest. HCL is not the only brand to be sporting such a design, as lately many prominent brands have adopted similar designs on their laptops to increase the style factor. This laptop has a 14.1" display and is heavy, 2.4 kg with the battery. On opening this laptop you will notice that the screen used is highly reflective. The keyboard is a standard QWERTY keyboard which starts to get cramped towards the end as you notice the slightly squished arrow keys. The surface of the trackpad is really smooth and we didn't think it would be as accurate during usage, as that is the case with most smooth trackpads. But HCL proved us to be wrong in this case.

Coming back to the screen, the viewing angles on this laptop are really bad, the screen starts washing out from a slight tilt in any direction. The optical drive present causes the laptop as well as the table it is on to vibrate when you load a disk into it, which is a no-no for us.

This sample we received came with 1 GB DDR2 RAM and Windows Vista OS – these are the basic requirements for that OS, but we still feel that you should have 2 GB of memory instead.

Specifications:
Processor: Intel T5800 Core 2 Duo @ 2.0 GHz, Operating System: Windows Vista, Graphics: Intel GMA 4500 Graphics with shared system memory/.

Ratings
Features: 6
Performance: 5
Build quality: 6.5
Value for money: 6
Overall: 6

Contact: HCL Infosystems Ltd
Phone: SMS leptops to 56161
E-mail: infiniti@hcl.in
Web site: www.hclstore.in
Price: Rs. 39,990

New Quadro FX5800 from Nvidia has 240 parallel CUDA processing cores, 4 GB high speed shader RAM and cost around $3300

Thermaltake MK+ Armor
A Mightly Shield

Thermaltake is known for making expensive high-end cabinets intended for the gaming audience and has a series called the Armor series of cabinets. One of the recent additions to this line is the Armor+ MX, a slightly cheaper cabinet, which is a mid tower cabinet with some unique features to offer gaming enthusiasts.

One eSATA, two USB, a microphone and headphones port and the power and reset buttons are located on the top of the cabinet, towards the front. The reset button is tiny and difficult to push in comparison to the power button.

There is a unique mechanism to open the side panel, first the two thumb screws behind and then there are two clips that you need to slide forward to open. The panel just snaps into place on closing and is simple and easy to use. The design is well considered and the good thing about these clips is that you don't even need to bother with the thumb screws.

The interiors are neatly setup. The PSU, which needs to be mounted on top, has its own support beam. This beam can also be removed for the convenience of setting up your PC and cable management. The hard drive bays have their own trays and the entire cage can also be removed. The drives bays give you easy loading and you don't even require to use screws when installing hard drives or even optical drives. Along with screwless drive bays there are also screwless PCI slots, which really are great and save you considerablt time and effort.

This cabinet has a total of three fans, one 120 mm for intake, one 120 mm for exhaust and a 230 mm side intake fan. We feel that the inclusion of a top or bottom fan would have been a bonus for this cabinet. This cabinet is a bit pricey at Rs. 7,000 and you might be better off going for something else such as the CM 690.

Specifications:
Dimensions: 21.1 x 9.4 x 19.3 inch (H x W x D), Front Door Material: Aluminium / Chassis: 0.8 mm SECC, Motherboards supported: Micro ATX, Standard ATX

Ratings
Features: 7.5
Performance: 7
Build quality: 6
Value for money: 6
Overall: 6.5

Contact: Tirupati Enterprises
Phone: +91-93392 07519
Email: mail@tirupati.net
Web site: www.tirupati.net
Price: Rs. 7,000

Datacolor Spyder3 Elite
Colour perfect

Anyone working in a professional computer graphics development environment will tell you the importance of accurate colours. This is a problem often ignored. To get these perfect colours on a PC monitor or TV, you need to calibrate it. That's where the Spyder 3 Elite comes in. It's the top-of-the-line calibrating unit for displays and projectors. It's something we used thoroughly through the LCD and Plasma TV test a few months back for both testing and to give the screens an even playing ground.

The package comes with the main calibrating unit, a stand and the software required to operate it. The hardware connects through a USB connector. A balance weight is attached so you can easily hang the device on your screen if you don't use the suction cups that come with it. For LCDs with delicate surfaces, suspending the device this way is required. The hardware also has a small sensor facing the front of the device to measure the ambient light.

Once the software is installed, the device is detected easily. The software works by displaying a set of colours on screen which are detected by the hardware sensor. You are first required to check boxes in the software to tell it all the controls available for your TV or monitor – RGB values, colour temperatures, etc. Once this is done, you make changes to the values for as the software requests. Eventually, Spyder 3 makes changes to the colour profile on your system that calibrate your screen and gets you as close as possible to the optimum colours.

We really liked the results that the Spyder 3 Elite and it's something that lets you get multiple screens to look very alike each other. That's something very important in professional work places and it's highly recommended that you get one for your studio. It's also very good to calibrate your PC monitors and televisions.

The cost for the Spyder3 Elite is Rs. 20,800 which is somewhat on the high-side given the software limitations.

Specifications:
USB connectivity, Dimensions: 1.5 x 3.5 x 4.0-inches
Requirements: Windows XP, Windows Vista, Mac OS X (10.3 and higher), 100 MB free space

Ratings
Features: 7
Performance: 8
Build quality: 7
Value for money: 6
Overall: 7

Contact: Eesh Dewan
Phone: +91-11-4153 9116
Email: info@bhushanphoto.com
Web site: www.bhushanphoto.com
Price: Rs. 20,800

Buffalo has launched a new series for NAS solutions = High Performance Reliable NAS TeraStation III (2TB) series

ASUS now offers burnt warranty on the P5KPL-AM/PS motherboard to actually boast about the Anti-Surge technology present

D-Link GLB-802C
As basic as it gets

For home users who do use ADSL modems and want something different, then the D-Link GLB-802C comes into the picture and for small offices this router offers a whole range of options and features, so let's take a look at them..

The GLB-802C continues with the usual D-Link design that is used for its routers and has not gone with anything different. The front displays LED light status indicators, while the rear has connections for LAN, USB, RJ11 ADSL port, power button and a small reset button. A telephone line splitter is also provided with this ADSL router. With this splitter you can use the phone and the internet at the same time.

The Home menu gives you an overview of your connection where you can also change your IP if needed. Under LAN settings an interesting option is for you to use the device as a DHCP server. IP routing is also possible through the Routing option. Dynamic Domain Name System (DDNS) is a feature present with this router which automatically configures your dynamic IP with your domain. A great feature for those who don't have a static IP. There is also an IP filter present which can be easily configured by just adding the IP to the list.

Other options with this router include: NAT, RIP, DNS, UpnP and SNTP.

For a basic router this does have a lot of options, but you really don't need all of them. This router will mainly be used by those who are not happy with the one they were provided by their ISP. This router is also aimed at SoHos and has all the features required to establish a secure connection for a SoHo. Priced at Rs. 1,600, with all the options it offers, this router would be great for home or small office use.

Specifications:
Dimensions (L x W xH): 142 x 108 x 32 mm, Weight: 198 gm

Ratings
Features: 7.5
Performance: 7
Build quality: 7.5
Value for money: 7.5
Overall: 7.5

Contact: D-Link
Phone: +91-22-3061 6666
Email: sales@dlink.co.in
Web site: www.dlink.co.in
Price: Rs. 1,600

Plustek OpticSlim M12 Plus
Slim is in

If your work involves travelling to different locations and scanning pages, then you probably need a portable scanner. The Plustek OpticSlim M12 Plus is a slim and light scanner that can easily fit into any laptop bag. Although compact and light, the performance is something we still need to judge...

The scanner looks like a rod of some sort with buttons on it. The grey and dark blue body give it a professional look. The attachments that come along with this scanner are a wall mount and a holding dock. We really don't know why they provided a wall mount since this is meant to be a travel scanner. There are only two buttons on the scanner - Scan and Custom. The USB connection is located on one end of the scanner. By the by, this device does not run on any external power source, it is powered by through the USB cable. The OCR and BCR are part of the bundled software and are easy to set and use. You just have to select the function you want to use and hit the scan or custom button accordingly.

This scanner is a single feed scanner where you have to initially give a slight push to the paper until the scanner's motor takes over and pulls the paper in. It takes a little more than half a minute to scan an A4 size colour page at 200 dpi, which is slightly slow in comparison to the other Plustek scanner we tested. But considering how portable this scanner really is, it is acceptable. Some amount of banding was noticed in the colour scan which would make the quality just above average. In greyscale, the time taken to scan was reduced to under half a minute and the quality was also better. We also tested the scanning at 600 dpi of a colour page and found that the output was almost spot on and we were quite impressed, ignoring the time taken; more than two minutes.

This scanner is definitely not the fastest scanner around but you have to consider the fact that it is very portable. Since it also comes with its own cloth casing, it is great for mobile scanning, but a price tag of Rs. 7,500 just does not justify all that it offers. If you need something for the office then this is not for you.

Specifications:
Interface: USB 1.1, Dimensions (D x W x H): 47 x 274 x 33.8 mm, Weight: Approx. 330 g, Resolution: Hardware optical 600 dpi

Ratings
Features: 7
Performance: 7
Build quality: 7
Value for money: 4
Overall: 6

Contact: Fujisan Technologies Ltd
Phone: +919987567015 / +919987567008
E-mail: sales@fujisan.co.in
Web site: www.fujisan.co.in
Price: Rs. 7,500

Stellarium

Rossi Fernandes

Astronomy is a hobby that really requires you to go out and observe the night sky but there are programs made to ease understanding and learning. If astronomy interests you, then one program that will let you browse through the infinity of space without having to go outdoors is Stellarium. It's free, open-source and available for download from www.stellarium.org.

In this article, we'll be looking at how to use Stellarium and we'll also take a panoramic photo of our surroundings and then use it in the application itself. Why so? This lets you use the surroundings you are in and get the exact location of the planets, nebulas, stars and other objects in the sky. It makes pinpointing objects in the sky much simpler and is informs you in advance when and where a planet or star will appear along your actual horizon.

A look at the interface and how to use it

Stellarium's interface is extremely simple and it runs mostly as a full-screen application. The software shows you a perspective view of the sky standing from a point on the Earth. You can change this point of view whenever you wish.

There are two main toolbars on the left bottom of the screen. The horizontal one contains all the toggling for the elements in the scene. This basically allows you to hide away the trees and the ground or turn on the constellations and the artwork. You can even turn off the atmosphere.

The toolbar on the left contains the application controls. Here, the current time and location from where you are viewing the sky can be set. The search function is also available to find a particular object in the sky.

Navigating through space is simple. Use the arrow keys to look around. Think of yourself looking up, down and sideways. To zoom-in, use the Page Up and Page Down keys. You can also use the mouse-scroll. Left-click to select an object and to view information on it which is displayed on the left top. To hide the information, right-click.

Setting time and starting real-time

In Stellarium, just like in real-life, the skies can only be viewed at night. The only way to see the skies during the daytime is to turn off the environment. This can be done by clicking the `Atmosphere` button on the horizontal toolbar on the bottom of the screen.

What is a panorama and why do we need one?

A panorama is basically a single image that you could wrap around virtually so as to give you the freedom to look all around you. A panorama is great because you can use it to relate to different points in the sky. For example, you can be looking up to the sky and can expect a star to rise from behind a building in your vicinity well in advance. To look for that same star otherwise would be a more confusing task.

How to shoot a panorama?

Shooting a panorama shot is the difficult part of creating a panorama, at least in comparison to the stitching of the images. In short, a whole sequence of photos needs to be shot of the area you plan on using as a panorama. The photos have to be taken in the open. This sequence of photos must cover the entire area of which you wish to create a panorama. Start from a position at eye level and keeping
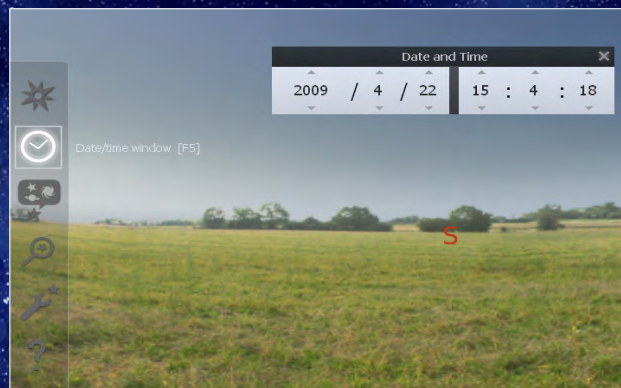
Setting the current date and time

the zoom to a minimum, start clicking photos while keeping in mind the area covered in the viewport. Next, move to the adjacent section of the view and click another photo. Continue doing this for all the photos in a row and shoot multiple rows till you have covered the entire 360 degrees, including the area above you.

While taking the photos, try not to change any of the settings on the camera. This ensures that there will be no big changes in the colours, brightness and contrast of the images. If you have a camera with manual settings, switch to that mode and set a comfortable setting for the ISO, aperture, shutter speed and megapixels. Use settings such that the scene is well illuminated and the shutter speed is kept reasonably fast so as to avoid any blurring.

You should also do this exercise really quickly so you don't have a big difference in lighting. If you start in the morning and end in the evening, there's a big chance that one side of your panorama is going to be dull or grainy. Be prepared with a charged set of batteries and a large memory card as well. As the end result is going to be a large image, it's alright to turn down the sensor resolution to something small, such as 1600 x 1200.

Stitching it up

The panorama sequence of shots cannot be used separately but they have to be merged together into one. This can be done with a couple of programs. Using Adobe's Photoshop CS3 is one of the simpler ways of getting a panorama shot done. Firstly, dump the sequence of images into one folder on your hard drive.

Start Photoshop, then go to `File > Automate > Photomerge`. Set the layout as Auto and select the files or folder that has the images. Click `OK` when done. (See figure 1). Photoshop will then show you a preview of the panorama. (See figure 2) Photoshop will then load the images, align them and merge them into a single file. Save the image when you're done.
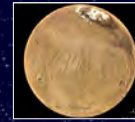
Editing the panorama image

Now that the panorama is created, we need to clear out the sky so that the skies can be viewed. Double click on the only layer that exists - the background and make it a layer. Now, use the Eraser Tool and then erase the area above the horizon. To be even neater, use the line tool from the toolbar on the left. Draw a line and make as many nodes as required.
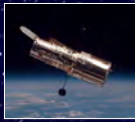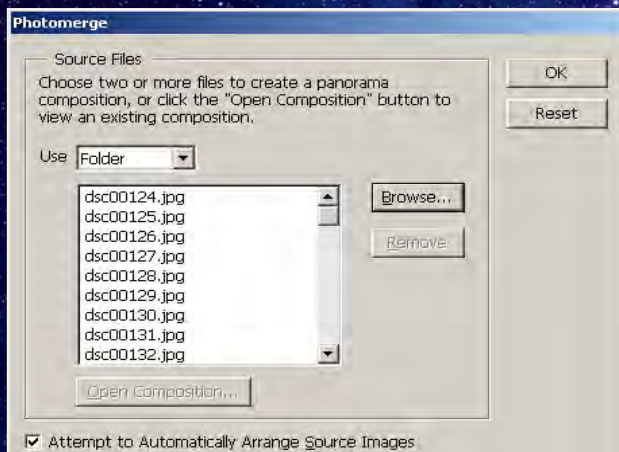
Figure 1: Adding the ffles and folders to the panorama

Complete the loop to make a shape. Then, right-click on the drawn path and click on Make Selection.

Once the image has been modified, it needs to be exported into the PNG image format. Click on File > Save As. Choose the format as PNG, give the file a name and save it. If you feel the output image is too large, you can also resize it down to something smaller. Remember the name of the file as you will require it to make the landscape.ini configuration file.
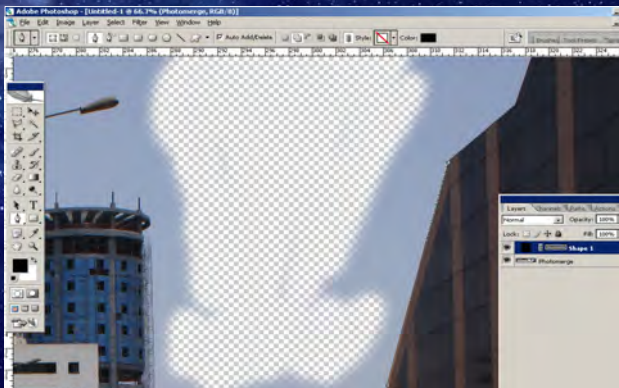
Clearing out the sky with the eraser and selection tool

Making the configuration file for the panorama
All the information that is to be used by Stellarium along with the panorama image is stored in a small text file called landscape.ini. The file is read by Stellarium when you select a landscape. This file is kept in the same folder as the panorama image. Use Notepad and create a file by the name of landscape.ini in the same folder as the panorama image.

A sample landscape file needs to contain the name for the landscape, the description, the image location itself and the altitude.

For example, we created a file called landscape.ini with these lines in it

```
[landscape]
name = Test panorama
author = Digit
description = Panorama test
type = spherical
maptex = panorama.png
```

This configuration should be fine if you shot all your photos starting from the east. If you haven't, then you have to rotate the landscape. First take a distinct point on the image that points out to the North (0 degrees). If required, draw a small mark on it on Photoshop. Looking at the entire panorama, judge how much to the left from the left of the image it is.

Figure 2: The rough mockup of the panorama in Photoshop

A simple formula is to be used : 270 + b - (360 * x / X) x is the distance in pixels between the left of the image to the spot you've chosen and X is to the horizontal length of the entire image. Use Photoshop or any image editor to measure the distance in pixels. b is to be the heading you've chosen for the point. So if the spot, you've chosen is to be the North, then b will be 0.

The result of this formula will be the degrees. Add the value to a line in the same text file

angle_rotatez = ___.

Inserting a panorama in Stellarium
Installing downloaded panoramas into Stellarium is simple. Unzip the zip file into the \Stellarium\Panoramas folder. Restart Stellarium and then use the vertical toolbar and click on the Sky and Viewing Options window. Click on Landscape and then choose the panorama you just installed.

In our case, we will simply copy the folder we created for the panorama into the Panoramas folder.
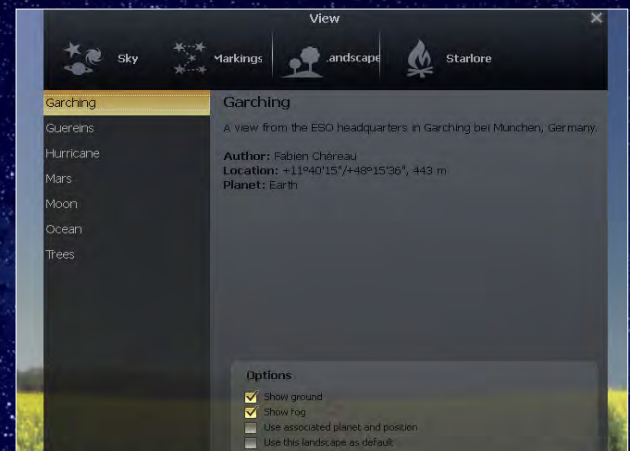
Choosing from a list of landscapes

Packing up the panaroma
With the panaroma ready to go, you can upload it to the Stellarium's Wiki. Create a thumbnail to put up on the page with the dimensions 200x114. Pack the files up into a ZIP folder with the folder, the image and the landscape.ini file in it. Also, it's a nice idea to include a README.TXT file which contains information about the landscape.

Once the panaroma is ready, you can upload it to the Wiki located at http://www.stellarium.org/wiki/index.php/ Landscapes. There are landscapes created by other users there for you to download and try out.

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Exciting and interesting
ways to
share images

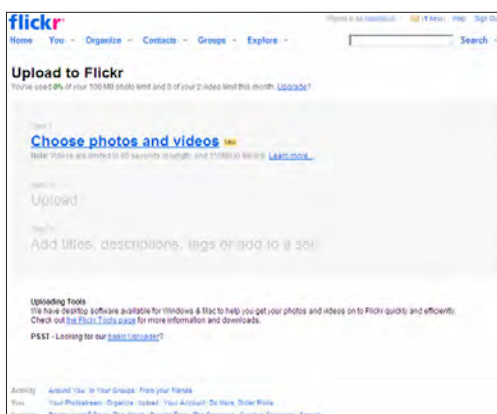**Image and file hosting sites are aplenty. We present exciting ways to share your holiday memories with your nearest and dearest...**

TOOLBOX

Nash David

Summer is just around the corner, and so along come holidays. You've probably planned of going on an exotic vacation. When you return, most of your friends, relatives and colleagues will want to know all about it. That's an exhilarating moment by itself — waiting to tell how that adventurous trek uphill amidst slippery steps really was, or how the chilling breeze felt! With the internet and MMS services well within reach, you don't really need to wait that long. In fact, you can start sharing instantly, whether you're holidaying in India or Indiana. When it comes to image sharing, in addition to the familiar names, there are many other options.

With a user friendly interface, uploading photos is very easy with Flickr

Flickr
A Yahoo! entity, Flickr is a popular image sharing service. The site is simple in its design, but don't ignore its potential. It offers a wide range of services. You can upload either by using its standalone software, or uploader, which is available for the PC as well as Mac. Further, you can also use the web interface at Flickr.com/upload. Finally, you can directly upload the photos you capture using your camera phone via WAP. To do this, simply visit Flickr's WAP site at **m.flickr.com**. After you login, you will be prompted either to select a photo from a folder on your phone or turn your camera on to capture while on the go. No longer is this restricted to sci-fi movies. It's as simple and practical as it gets.

After you are done uploading, you get to decide whether to keep your photos private or allow them public access.

Another useful feature in Flickr is the ability to upload your photos via email. To do this, simply email your photos to a unique email address assigned to you. Any image that you send as an attachment to this address is uploaded to your flickr album. After you uploaded your photos, you can edit them using Picnik's online photo editing tools from within your Flickr account.

Picasa
What Flickr is to Yahoo!, Picasa is, more or less, to Google. Once again, as is the case with all Google services, sign in with your Google id and you are ready with the usual pattern — upload, store and share!

Again, with Picasa, you have an option between offline installation software, or a web interface to upload your albums. In fact, if you have a Gmail id, take a closer look towards at the top left of your Inbox. There is a whole list of services there. Click on Photos and you will be redirected to Picasa's web interface.

Another good point about Picasa is that if you are a blogger, especially with Google's

Ashwini Baviskar

Sony dSLRs

With the acquisition of Konika-Minolta's camera business, Sony has marked its entry into the dSLR segment.

free blogging platform Blogger.com, any picture you upload on Picasa is available on your blog and vice-versa. Unfortunately, Picasa doesn't let you upload pictures from your camera phone. You can only browse images you have already uploaded from a PC. To do this, go to **picasaweb.google.com/ m**. But then, that's Google — the intenetion is a one-stop shop for all possible services, isn't it?

zeec.net

Although we haven't heard much about the site, zeec turns out to be really fast in the whole uploading and sharing process. In addition to a standard web upload, you can also upload pictures directly from your handycam. Zeec is compatible with Wordpress blogs. You can also use Zeec's mobile feature. However, at this point in time only Nokia blogs are supported. While the site talks of a URL for GPRS users (**zeec.mobi**), it didn't work when we tried testing it. Maybe sometime in the future this feature will be added. So, it is best to wait and watch.

Snapfish.in

Sharing your images online just makes everything so easy. But thinking it over it, your loved ones back in the village, or for that matter a colleague sent off to some remote location? Are they going to go online to check your photos? Probably not. We guess there's still some time left for that to develop in our country — which is why, at times, we prefer print copies to forwarded

URLs. Snapfish (powered by HP) has a solution to this. It charges Rs. 2.95 for high quality photo prints. Not that these are the only sites that provide such a service, but believe it or not, Snapfish happens to be the only site of brand value, credibility and reputation to offer you such a service in India and charge you in Indian rupees. And best of all, your first 10 prints are free.

It charges around Rs. 40 to 50 for logistics depending on the number of prints you order, and guarantees three days for

Mumbai and Goa and four days for the rest of India.

In addition, you can have your pictures on notebooks, mouse pads, coffee mugs, t-shirts and more and have them delivered to your doorstep — all ordered from the comfort of your living room.

Photobucket

This site has become popular with the advent of online social networking. Photobucket lets you share your images on most social networking sites such as Facebook and Myspace in addition to Blogger and Livejournal.

Photo sharing online is a vast playground and by no certain means can we list all the options you have. The reason for selecting the sites we have mentioned here is their user-friendliness. Rather than having complex menus, these sites are more or less self explanatory and you should be able to manage your way through effortlessly. Also, depending on how urgently you want to share the images, you might prefer one site over the other. So while a GPRS user would probably prefer Flickr over Picasa; a Gmail user may go the other way. Also, those addicted to Facebook (it is considered by many a clinical condition, after all) would opt for Photobucket.

An additional feature with image sharing sites is the public feature. You get to see really funny and amusing images of the darndest things that some people do! Nevertheless, freedom given to users can get out of control. Therefore, self monitoring is very important. Despite precautionary measures taken by most web sites, provocative and offensive images do find their way to such sites in the public domain. As a word of caution, we recommend to keep your private moments within the private domain and not make them public. ■

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Mercury launches two Intel Motherboards - PIG43M and PIG41M with HDMI Support

Become the audience

We tell you why it's high time you installed HTPC software, sat back and truly relished your home theatre setup..

Rossi Fernandes

LCD and plasma TVs sales have seen a phenomenal increase recently, and this should continue with falling prices. Most users don't have a clue about high definition and the ones who do cannot access it. HD broadcasts today are almost non-existent in India and the distribution of Blu-ray discs is still in its infancy. In the past issues of *Digit*, we've shown you how to build an HTPC and why it's so useful.

Just setting up a compact PC and running an OS doesn't make an HTPC and doesn't bring out the fun either. What helps is installing HTPC software that makes the operation of the PC completely hassle-free and tunes everything to the very bare basics. A Windows Media Center Remote or a wireless keyboard is all that you need. There is no shortage of good HTPC front-end programs and they're available for every operating system you can imagine. Of the available options, we like XBMC this is a widely talked about program, and for good reason.

XBMC is free, open-source, and can be downloaded from www. xbmc.org. The last stable release was version 8.10 and a new alpha release 9.04 Alpha has just been produced. XBMC is also available for the Xbox, Apple TV and also a LiveCD for the PC.

We like the idea of HTPC systems and software for several reasons. They let you view your TV from a distance and operate all the media functions using a single input device. Your entire database of media can be easily accessed from either a server on the network, a NAS, a camera or even directly streamed over the internet. While the same can be done using any operating system, software such as XBMC make it so much simpler and do it in a very interactive and colourful manner. XBMC can handle most file formats. We're going to look through some of XBMC's features and help you set things up. We'll also briefly look through some of the less popular HTPC front-ends.

The system requirements for XBMC aren't too high either, but a decent graphics solution is always recommended for the smooth transition effects and interface animations. Installation of XBMC is quick and easy.

The entire program is menu driven and requires minimal input on your part. Most of the features are automated once you set it up. In fact, it's so simple that you can use a keyboard to access all functions without having to ever use the mouse. You can also purchase a cheap media centre remote control and have it configured to keys you would use on your keyboard. Another way to control the HTPC is through a gaming controller such as the Xbox360 controller.

To further simplify it, we suggest setting up Windows in a manner that it automatically starts XBMC on bootup. To do this, we assume that there is a single user setup on Windows. This will ensure that the account automatically logs on if there's no password set. Click on the Startup folder in the Start menu. Right-click on it and click Explore. Create a shortcut in it which points to XBMC's executable. Now every time Windows boots, XBMC will start up so you don't have to manually start XBMC from the Start menu.

Movie handling on XBMC

Movies are mainly the reason people setup an HTPC. Although standard DVD and DivX players can run most formats, there's one thing they can't do well — play HD videos. For this, even a low-end dual core processor with a decent amount of memory can do the job perfectly. Obviously a faster processor and a good graphics solution will go a long way and you won't have to upgrade the HTPC any time soon.

To watch movies on XBMC, one needs to go to the Movies menu. Use the arrow keys to move up and down the menus and press [Enter] when you reach the menu. You can also use the mouse to click on the menus and features.

When you do this for the first time, your movies and video collection need to be imported. You can set multiple locations as the source for the videos and this includes network connections. This is useful when you have two or more PCs at home. You can share a folder on another PC and access the share over the network. To do this, go to Movies > Add Video Source. Click on Browse and choose the paths. Click OK when done. You can set additional sources in this same manner by clicking on Add and then Browse.

Setting content type for media

To set the folder you've added to a content type, click on Set Content. Click the up/down arrows and set the type of media. Choose between Movies, TV Shows and Music Videos. Enable the button for Run Automated Scan. This will enable XBMC to query the video information and get the appropriate information on the movie. For example, it'll show you a short brief of the movie, it's overall rating, fan-art, etc. We've chosen IMDb.com, but you can choose from any of the sites listed.

Getting XBMC to download covers

Having movie names as text alongside a default image name is boring. Similar to downloading of movie details, XBMC can also download movie covers. Although this might seem silly, it's a great combination when used with a more advanced theme or script for XBMC. For a trial, set the MediaStream theme for XBMC through the Settings > Appearance menu. We prefer the MediaStream theme. Once the theme is set, go back to the Settings menu. Remember that the skin that you choose changes the functionality of the software a bit and also the menu names.

All the media that is added to XBMC can have the album covers downloaded for you. Typically on a PC, you need to manually set folders to be scanned for the album and some software even requires you to choose an album cover. Go to XBMC Settings > Music > Library. Here, choose the radio buttons for album cover and information to be downloaded while adding to the library. XBMC will scan each of the albums added automatically and download the covers for you. You can also do this for movies and TV shows.

Using the XBMC interface (on MediaStream)

The XBMC interface looks good, but isn't as exciting or polished as some of the interfaces we see on media players and gaming consoles. MediaStream as a theme is much closer to that and to some, even better than those.

All the menus can be accessed by pressing the up and down keys and pressing [Enter] to access them. The submenus can usually be accessed by pressing the left and right keys. The [Tab] and [Esc] keys
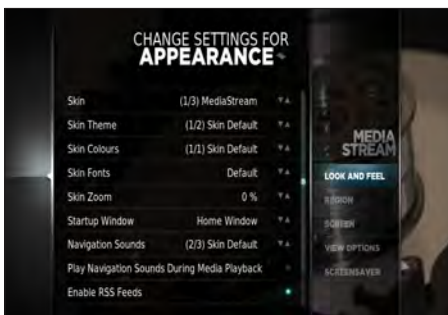
Changing XBMC themes changes the look and some of the menus and features

access additional functions such as bookmarks, aspect ratios and quality settings for the video playback. The backspace key takes control back to the previous root menu. So once you have the movie and music folders setup, XBMC automatically takes you to those folders. To add new folders or change settings, one must go back to the root. In every menu, the right-click button on the keyboard (alternate menu key on the keyboard; to the left of the right Ctrl key) or the right-click button on the mouse brings up a menu of alternate functions such as removing media from the database.

Using the File Manager

Almost all the media played using XBMC is done by first adding the source and then playing it from the respective folders. The file manager lets you play any file format directly from the file location itself. To go to the file manager, go to the main menu if you are using a default theme and go to File Manager. With MediaStream, the file manager can be accessed through Configure the System menu. The File Manager has two paths on either side and additional paths such as network paths can be added by selecting Add Source. A display of the system resources can also be seen in this menu. File operations can be performed by right-clicking in this menu or by using the alternate-click key on the keyboard. Files and folders can be deleted and renamed using this feature. This feature is especially useful as it removes the need for using Windows to make changes to the folder structure and also for quickly running isolated media files without having to import them every time to the XBMC library.

Streaming audio from the internet

The advantage of using a desktop as a media playback device for your TV is great because it lets you connect and access resources on the internet in real-time. Shoutcast streams are just an example and they are very much like any radio station except in this case, there are thousands of them streaming audio all the time. Think of it as a satellite radio system but there are no subscription rates here.

Listening to internet radio stations is simple. Go to Listen

XBMC can list and play Shoutcast streams over the Internet

to Music (if you are using the MediaStream theme) and then to Add Source. If this takes you to the music collection window that you already added, you can go back to the root folder by right-clicking here and clicking on Go to Root. To add the stations, click on Add Source and then go to Browse. Scroll down to Shoutcast and press Enter. The next menu you see is the entire database of genres available. Choose the Genre you want to add or press OK if you want to add all the genres. Click OK again.

Now from the root of the Music menu, go to Shoutcast and select a genre. Choose one of the many radio stations and the stream will start playing. The volume can be controlled by pressing the + and − keys.

Setting up the weather panel

XBMC has a nice little feature which lets you see current weather for different places. Weather is updated all the time and all you

DisplayPort like HDMI is a display connectivity standard but is royalty-free

need to do is add an entry for your city. Go to Check the Weather link menu and then to Settings. Choose to change the Area code and type in the city followed by a comma, then India. If weather updates for your town or city are available, the weather window

The Weather menu displays current for the specified cities

will show them. Change the Region in the same settings menu to UK. This will display temperatures in Celcius instead of Fahrenheit. Click on Refresh to update the cities you've added to the list.

Controlling using an Xbox controller

If you already have an Xbox 360 or an Xbox 360 controller, it's a good idea to use it with the HTPC. For one, the cable is long enough for you to sit at a comfortable distance and control the PC without the need of a keyboard and mouse. We suggest using free software called

Using Xpadder, you can set a game controller to control XBMC

Xpadder (www.xpadder.com). Xpadder lets you bind keyboard keys to the controller. XBMC is controlled by a set of some 8 to 10 keys in all. The same keys can be bound using

this software.

First, download and install the Windows drivers for the X360 controller and then install Xpadder. Xpadder will detect your controller. First, start the controller setup by clicking the controller icon on the left top of the software. Click New. Here, enable all the buttons and triggers you want to use for XBMC. Once that's done, you can click on each of the buttons shown in the display and a virtual keyboard will be displayed. You can click on each of the keys to bind that button to the keyboard. You will also see a mouse on this virtual keyboard. You can even set the buttons and joysticks on the controller to function as a mouse.

XBMC Scripts and Plugins

Being an open-source software package, scripts and add-ons are available for XBMC. One of the plugins that comes with the program is the Apple Trailers script. This plugin downloads Apple Trailers videos for you from its site without

Trailers from Apple's site can be viewed directly within XBMC

having to open a browser. The site is updated pretty often and it's good fun to be able to view trailers this easily.

Plugins can be installed by simply unzipping the archive to your Plugins folder in the installed XBMC folder. To access the plugin, go to the Use your Programs menu and to the Programs Plugins folder. XBMC Zone (**www.xbmczone.com**) and **http://tinyurl.com/d25nrz** are good places to start looking for plugins of interest. It's not hard to find scripts and plugins for all kinds of needs starting from viewing RSS feeds from Google Reader in XBMC to viewing videos in full-screen from Youtube. ■

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Media Portal
www.team-mediaportal.com

Media Portal is geared more towards those who have their TV and radio broadcasts being processed through the computer. The general look and feel of the software isn't very nice and the performance seems to be slightly sluggish as well. One of the interesting features is the configuration

tool. It allows users to completely configure the system outside of its HTPC interface like any other Windows application. Support and configuration for the hardware remotes is also done within the software. Installation of plugins is also simple. Media Portal is versatile with great potential but requires users to sit and tweak and configure bits of the software themselves.

Boxee
www.boxee.tv

Boxee is somewhat similar to XBMC and that's because it's a branch of XBMC like Media Portal. It's geared more towards social network-

ing and some of interesting features is the ability to retrieve and view content off the internet, all without having to go through the hurdles of installing and setting up plugins to do that for you.

Vista Media Center
www.microsoft.com

Vista comes with a built-in media centre application and if you own Vista, you most likely have an HTPC frontend program built-in. Although it might not support all the formats you want to use, it's depends highly on the internet for media and information on sports matches and such like. It also has the ability to record TV programs, access internet TV channels and even burn disks. Unfortunately, a lot of the online content isn't available for India so you're left with

somewhat handi-capped software. If you don't want to go through the hassle of downloading and installing a program and use conventional media formats or play movies off your DVD drive, then Vista Media Center should be sufficient for your needs.

TIPS & TRICKS
SECRETS THAT KEEP YOU AHEAD IN THE RACE

ADVANCED SYSTEM CARE 3

Advanced System Care 3 is a comprehensive system utility for protecting, cleaning, repairing, and speeding up your Windows PC. Cleaning up the system involves maintenance tasks such as deleting temporary files, downloaded internet files, recycle bin, redundant registry entries and other tasks that free up memory and generally keep the system well oiled.

Getting started
The interface of has four large buttons — Maintain, Diagnose, Utilities and Home. In the home section, you get an overview of version, statistics and other details. When you click on "View" under statistics, you know when the last scan was done, number of problems Advanced System Care (ASC) has fixed, and the amount of defragmentation done.

ASC Interface Buttons

Diagnose the system
To diagnose the system, click on the Diagnose System button and scan. ASC will analyse your system for performance and security problems, after which the number of problems found is displayed. Click repair to fix.

Enable ASC to clear junk from Recycle Bin
By default, the application does not scan the Recycle Bin for junk files. To enable this option, click on `Option > Junk Files Clean` and check the box for Windows Recycle Bin.

Running maintenance
To enter the maintenance section, click on the Maintain Windows button. Click the scan button to start scanning your system. This checks for spyware, registry problems, privacy issues, and junk files. Once the scan is complete, it will give you the number of problems detected in each area. Click on the repair button to fix all issues.

Advanced system care, fix problems after scan

Tweak Defrag settings
Click on `Options > Disk Defragment`. Here, check the box for skip huge files and change defragment point to 15%. This should make your defragmentation process faster.

Setting up Restore point
Click on the Restore button at the top left to enter the Restore Center. Here, you will find a list of back up points created earlier. By default, ASC saves upto 20 such back up files. Click on Create Restore Point to create

a new restore point. A restore point lets you undo unhealthy changes to your system that may happen. The system restore utility helps return your computer to an earlier time without loosing data. To select the processes that you want Restore Center to back up, click Settings and Check/Uncheck the boxes accordingly. You can even specify the number of backup files that should be stored (upto 100), and choose to create a restore point at start up everyday.

Retaining certain cookies
During a privacy sweep, the application may get rid of certain cookies that essential. These cookies could be those that have your personalised settings on certain web pages such as Google or Yahoo!. You can decide on the cookies you want to delete or retain by clicking on `Options > Ignore List,`

Cookies to be retained
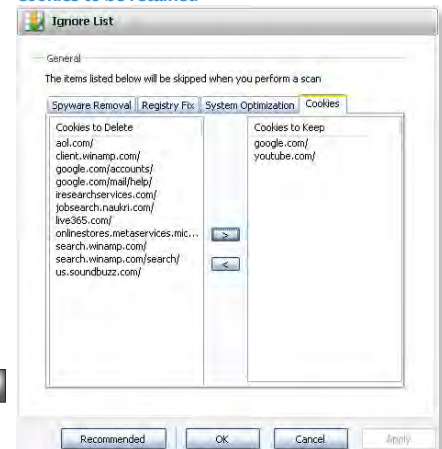
and then click on the cookies tab. Here, you will find a list of cookies on the left. Moving certain cookies from the left column to the right column marks them as 'cookies to keep'.

Check hard disk for errors
Click on the Utilities button. Under the Tuneup tab, you will find the Disk Check icon. The disk check utility inspects the file system and partition to confirm it is healthy. It scans for problems related to bad sectors, lost clusters, directory errors, etc. Click Yes to proceed.

Defrag registry
The Registry Defrag tool is also found under the Tune Up tab of Utilities. Clicking on it will launch a registry defrag wizard. It basically compacts the registry size, which in turn, is supposed to reduce boot up time. It will ask you to close all programs before continuing.

Update drivers
The Update Drivers utility automatically scans the installed hardware components and suggests new updates for them after looking up the information online. Click on 'Learn More' for more information on

TOOLBOX

Updates Driver

each of the driver updates that the utility suggests. Click Download to download and install the drivers. This function of the application is still in Beta testing and the recommended updates list that it produces may not be correct.

Remove unnecessary files
Under Utilities section, click on the Disk Cleaner utility and select the drives you want to scan. This utility lets you find unnecessary files and recover space blocked up by temp, backup, cache, and log files. Click Next to continue. You have the option of moving the files that it detects to the recycle bin, or backup or permanently delete them.

Optimise Firefox
Under Utilities > Tune Up tab you will find the Firefox TCP Optimizer. This tool can modify your TCP/IP protocol and Firefox settings to increase speed. You have

Optimise Firefox

the option of selecting the Auto Optimise option or configure settings manually. To do it automatically, simply click the Boost now button.

Boost gaming performance
Many of the tools listed under utilities are available as independent applications from 10 bit, the makers of ASC3. Once such tool is the Game Booster. Clicking on it will open up a download page for the component. The premise behind the tool is pretty simple; it works by temporarily shutting down background processes, cleaning RAM, and intensifying processor performance. Once downloaded, you can click on the icon to run. The interface will show you a large list of processes that it intends to suppress. These

Game Booster

include Windows help, certain web clients, etc. You can choose the ones you want to keep selected and press the large 'Switch to Gaming Mode' button. The application then prompts you to close certain programs that are running. You can skip this step if needed. Now the large button changes to "Back to Normal Mode' button which you can click to return.

Defrag your drive
The Smart Defrag tool found under the Utilities is also an independent application. Use it to defragment your hard drives efficiently for better performance. Once downloaded, simply select the drive and click start. The defrag process can be quite time consuming. Smart Defrag also gives you the option of scheduling defrags.

Smart RAM
The Smart RAM tool shows you physical and virtual memory utilisation. It also frees RAM while the processor is idle. Under the

Smart RAM
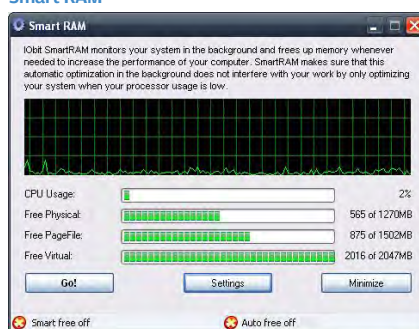
settings menu, you can toggle this setting. You can also activate the tool at command. Click 'Go' to clean memory with a Smart Clean or Deep Clean option. Smart clean on the first pass cleans around 30 MB. Deep clean momentarily clears Virtual memory to a significant extent.
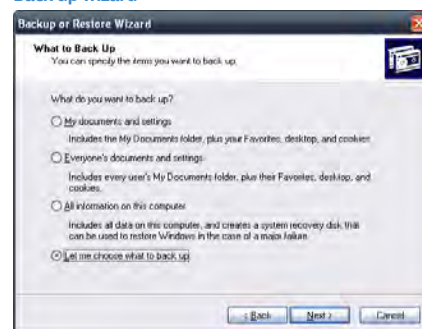
Back up system
This tool is found under the Security Tab of Utilities. It launches a wizard that helps you back or restore your system setting and

Back up wizard

documents. In the wizard, you can choose to back up specifically or preset items like My Documents. If you choose My Documents and Settings, it will back up favourites, desktop and cookies as well. Click Next to continue and give a location for backup. The data will be stored in a BKF file which you should ideally move to a remote location. Click on Advanced to specify type of backup (Copy, incremental, differential, or daily). Click Next to backup.

Add / remove programs from startup
Removing programs from the start up list can significantly reduce time needed to boot. Under the Admin Tools tab, you will find the Startup Manager. This shows you a list of programs that are there in your Startup. Simply uncheck the ones that you don't want to load at startup.

Reduce right-click menus
As we installing more programs on our system, our right click context menus keep increasing in size. It becomes very annoying when you can't identify the action you want among all the clutter. Click on Context Menu Manager to alter these menus. You can remove items from New, Send To, and Shell Extensions right-click menus. Simply select the item and click on the Remove button.

View space usage graphically
Disk Explorer depicts the space utilisation in your hard drive in the form of a pie chart. Simply select the partition to analyse and it will show you a detailed break up of items.

File duplicate files and get rid of them
Every PC has a lot of duplicate files that occupy unnecessary space. With the Disk Explorer tool, you can find these files on a drive and instantly delete them. In Disk

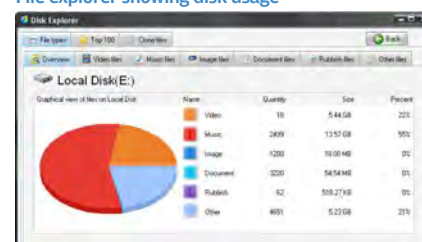**File explorer showing disk usage**

Image search improvement
A Similar Images feature added to Google's Image Search tool lets people scour the Internet for similar photographs

UN to launch a web site that will offer free access to rare manuscripts, books, films and maps from around the world

TOOLBOX

Back up wizard

Explorer, click on the Clone Files tab. Click on the Find Clones button and the list will be populated. Hold `[Ctrl]` and select multiple file, right click and send them to the Recycle Bin.

View system processes in better detail

Click on the Windows Manager tool under the Admin Tools tab. You will be able to see a whole list of processes in better detail. Click the terminate button to stop any process.

View more detailed system information

The System Information tool provides a much better look at system details than the Windows tool for the same purpose. The information is logically seperated into OS, Processor and MB, Drivers, Display, Network etc. Click on `File > Export` to export information as text or HTML.

GOOGLE TIPS

We all use Google for fulfilling our daily search needs. But do we really know how to use it optimally? There is much more to the Google search engine than just typing your search phrase and hitting `[Enter]`. Google has many options that will let you reach the information you are looking for in the wilderness of cyberspace, more quickly and efficiently. Here we look at some tips that'll make you a Google God.

Search exact phrase

If you want to search for an exact phrase, use quotes. For example `high quality desktop printers` will only find that exact phrase. To slightly broaden the search results you can use quotes in combination, for instance `high quality "desktop printers"` will find pages that contain the words high quality and the exact phrase "desktop printers".

Search using "OR" operator

Google normally searches for pages that contain all the words you type in the search box, but if you want pages that have one term or another (or both), use the `OR` operator. For instance `high quality desktop OR printer` will give you results which contain the words high, quality, desktop or only

printers or all of the terms. Remember the operator is case sensitive and has to be in upper case. Alternatively, use the | symbol.

Asterix operator

The Asterix operator serves the exact function it did in DOS (remember Dir *.exe). It's a wildcard and can be used in place of search terms you can't quite recall. For instance, if you can't remember the exact name of software you need, you can type `advanced * cleaner` and it will give you appropriate

Use asterix operator if you do not remember the exact phrase
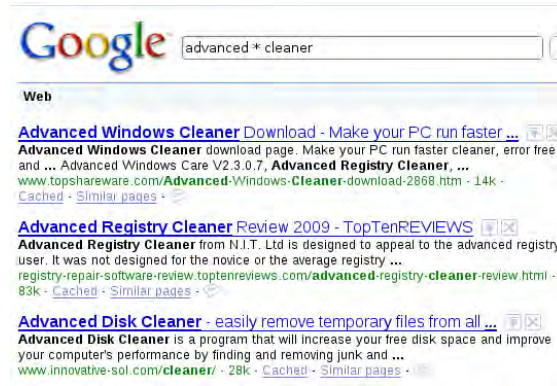
results. The operator can also be used to find information on certain domains. For instance to search for educational information type `printers research "*.edu"`.

Ignore certain terms

If you need Google to ignore certain terms, use the `-` operator. For example, if you're looking for "dark chocolate" and not at all interested in milk chocolate, you can use `dark - milk chocolate`.

Find similar terms

Use the `~` symbol to return similar terms. For instance, `~dark choco-late -dark` will get you pages that contain words similar to dark or darkness combined with chocolate. These words might include something related to night.

Find results for a particular date range

When you want to find instances of your search phrase, say `web 2.0` appearing on the internet in a particular chronological era, you can use the `daterange:` operator. However, there are two important points to note. The dates have to be entered in Julian format (which is no simple task) and the date is not the date of creation, but the date on which Google indexed the page.

For example, the Julian date for April 16, 2000, is 2451650. To find the instances of "web 2.0" being used between April 16, 2000 and April 16, 2003 use the search `web 2.0 daterange:2451650-2452745`. There are Gregorian(normal) to Julian converters available online.

Search for terms in the title of web pages

By default, Goolge searches for your term within a web page, but by using `intitle:` you can search for pages that have the words mentioned in the page title field of a web page. `intitle: Social Networking Basics` will return articles with this title. A variation of this command is `allintitle:` that will search for all of the above terms in the title of a page.

Find results within a range of numbers

Say you are looking for results for a range of numbers such as cameras between 4 and 10 megapixel, you can use the `..` operator. For example, `4..10 megapixel cameras`.

Results for a number range

Search for a specific file type

This is most useful when looking for some whitepapers or other research orented material. This is because most serious or in-depth reports on any topics are most likely to be found in formats other than regular HTML pages. All this information

File type search

IRC was born sometime August 1988 when Jarkko "WiZ" Oikarinen wrote the first IRC client and server at the University of Oulu, Finland

is likely to be stored on the web in formats such as PDF, DOC or PPT. Use a filetype operator to specify fileytypes in your searches. For example, `filetype:pdf intel architecture` will return only PDF results containing the terms Intel and architecture.

Using Google Scholar
Google Scholar (**scholar.google.com**) searches articles, books, reports, theses and

Google scholar lets you preview academic books

Results for Google Scholar

more. You can use it to search, but full-text content is not always available. However, it's worth a shot for that last bit of information on your semester report.

Internal web site search
Often, you want to search a specific web site for content that matches a certain phrase. Even if the site doesn't support a built-in search feature, you can use Google to search the site for your term. Simply use the `site:` search modifier. If you want to find out what Agency FAQ has to say about viral

Internal Website Search

marketing, use this string `viral marketing site:www.afaqs.com`.

Using Google Cache
This one has many functions, and in some cases it can be used as your very own proxy to get around restriction. It can be used to highlight search phrases in the page. It can also be used to view pages that have been taken of the air since this is an image of the page Google has captured sometime in the

Cashed Results

past. To access a cached page simply click on "cached" under the result entry.

Use Google as a quick dictionary
Very often we come accross words that muddle us. But it's time quite an effort to actually go to a free online dictionary

Define function

to get the result. Instead try the `define:` function. With it Google aggregates meanings and definitions from several sources on a single page. For example, `define:moot`.

Use Google as a converter
Google can be used as a currency as well as units converter. Google normally understands loose syntaxes, but it is better if you know the currency notations; for example, INR, GBP or USD. Following are some examples: `50 yards in feet` and `100 INR in USD`.

Converter

Use Google for mathematical calculations
Google calculator allows you to calculate using certain mathematical operators. Operators such as log, factorial, and trignometric functions can also be used. These searches have to be entered into the google search bar directly. Following are some examples.
`3+3` returns 6
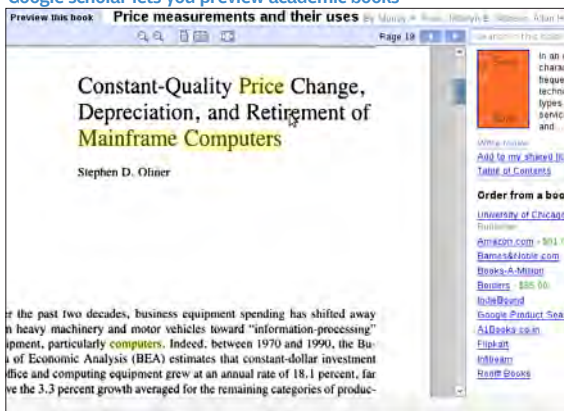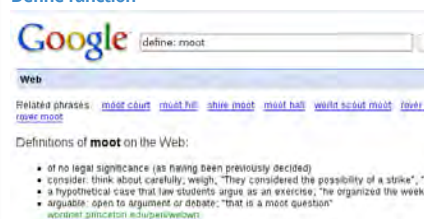`5-2` returns 3
`9*2` returns 18
`24/2` returns 12
`7^2` returns 49 (7 raised to power 2)
`5%2` returns 1 (the remainder after division)

Search for terms in a URL
This is another example of a specific location-based search. Using the function `inurl:` will return results

In URL search

that contain certain terms in the web site's URL. For instance, `inurl: geometry circles` will search for phrases not in the text of the site, but in the URL of pages.

Find the exact word
Google automatically searches for synonyms. For example, it finds United States for a query on `US`, when you may be searching for Us Magazine. Sometimes, Google helps out a little too much and gives you a synonym when you don't really want it. By attaching a + before a word e.g. `+us magazine`, you get an exact match for that word. It's easier than putting quotes.

XCHAT IRC

XChat is an IRC chat application for Linux and Windows. It allows you to join multiple IRC channels at the same time, talk publicly, and hold private conversations. It also has the added functionality of file transfers.
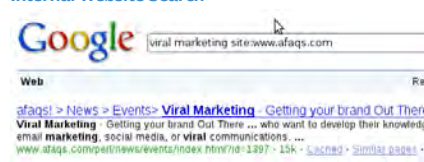
Getting started
When you start the XChat client, it will ask you to enter a nickname of your choice and a few alternatives in case your preferred nick is not available. Here, you also have to

TOOLBOX

Timeline

A recently launched Google Labs experiment presents information already available in Google News organised and displayed chronologically

As of today the top 100 IRC networks serve more than half a million users at a time
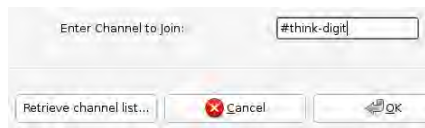
Getting started with Xchat

choose a network. Scroll through the list to view available networks. Click on a network (say FreeNode) and click connect. Once you are connected to the network or channel, you will have to select a channel to start chatting. Here, you have three options. One is to join a channel later. The second radio button allows you to specify a channel, preceded by #. This option can only be opted for if you know the channel name you want to join. The third option is to open the channel-list window, which will retrieve all the available channels.

💡 Joining a channel

Joining a Channel in XChat

Once you are in a network (eg FreeNode), click on `Server > Join a Channel`. Here, you can type the name of the channel preceded by a # sign e.g. `#think-digit`. You can also click on retrieve channel list. You will see a list of all the channels hosted on the server and the number of users in each channel. You can narrow down the list by entering a search keyword of your choice. Select the channel you want to join and click Join Channel. You can join multiple channels in the same way. Close window when done adding channels.
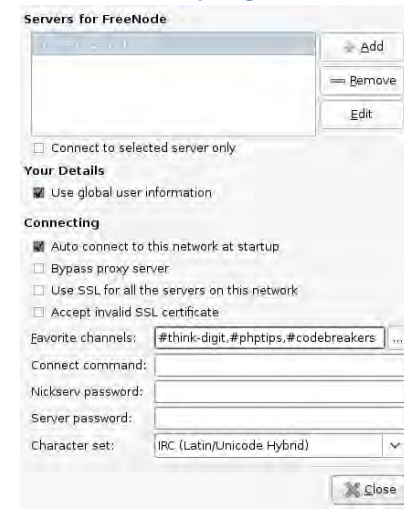
💡 Get notified when a user joins the server

This can be done by adding a user to your friend list in Xchat. Right-click on the username and click "+Add to Friend List. Now whenever this user logs on to the server, you will get a notification, irrespective of the channel he is logged into. This is in effect the same as using the `/notify` command. To view the friendlist, click `Window > Friend List`.

Transparent background

💡 Change Channel View (tree / tab)

Edit network for auto joining favourite channels

XChat offers two choices of organising the channels you have joined. The views available are Tree and Tab view. To change the view go to `View > Channel Switcher > Tab / Tree View`.
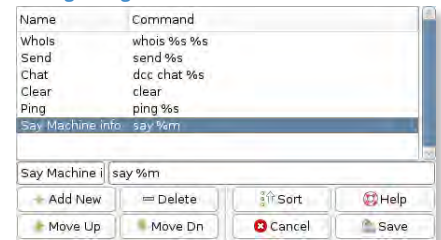
💡 Change Background and Text colour

To change the look and feel of your interface, go to `Settings > Preferences`. Under Interface, you will find Colours. The "foreground" colour is your text colour while the "background" is your terminal colour. "Marking Text" is the selection or highlighting colour. You can also set transparent background. Enabling this option will show your desktop wallpaper. To do this, go to `Settings > Preferences > Text box` and check 'Transparent background'.

💡 Auto join favourite channels on start up

You can have a number of channels that you can set for Xchat to join as soon as it starts up. To do this start up XChat or go to `XChat > Network List` or hit `[Ctrl] + [S]`. This will open up the Network List

Adding Dialog buttons

Box. Select a Network and click Edit. Check the box for "Auto connect to this network on start up". Enter favourite channels separated by commas. For example, #think-digit, #phptips,#codebreakers. Click close.

💡 Add private chat buttons

To be able to have private chat with any user click on the username, right click and click

IRC Commands

These are some common IRC commands that can be used with any IRC client, hence they are not specific to XChat

Command	Description	Example
/HELP	General help or help on the given command.	/Help Ping
/LIST	Lists all current channels.	
/JOIN	To join a channel	/Join #think-digit
/LEAVE	To leave a channel	/Leave #justvhat
/QUIT	Exits your IRC session,	/Quit [reason]
/NICK	Changes your nickname	/Nick nonnewbie
/AWAY	Leaves a message saying you're away	/Away [Message]
/WHOIS	Displays information about someone	/Whois nonnewbie
/KICK	Kick someone off a channel (in operator mode)	/Kick [#Channel] [Nick]
/TOPIC	Changes the topic of the channel	/Topic [new topic]
/MSG	Sends a private message	/Msg [Nick]
/QUERY	Starts a private conversation	/Query [Nick]
/NOTIFY	Informs you when people logging in or out IRC	/Notify [Nick]
/IGNORE	Blocks responses of certain users	/Ignore [Nick]

Movie Management

Siddharth Parwatay

TOOLBOX

A few years ago, when MP3s enjoyed all the hype, globally there was a deluge of audio content. People accumulated thousands of MP3 tracks and didn't know how to manage them. Tracks were repeated in collections and strewn about over the hard disk. Most of all, listeners didn't get quick access to the songs they were in the mood to hear. A similar type of situation has risen once again, but this time for movies — driven not by a diminishing file size, but by ever expanding storage space. By now, you may have accumulated hundreds of files that need to be sorted, categorised and managed. Often, you don't even know the movies you have, which one you've seen, and to what genre a particular movie belongs. Consider the situation where you have friends over, and they're all in the mood for an action flick. Which one should you play? The file names alone don't really ring a bell. Well fear not, for movie management applications are here to help you.

Several paid as well as free-licence programs that perform a multitude of functions are available these days. These applications catalogue your movies, keep track of titles you have lent out (in the case of DVDs), let you browse movies by various parameters such as actor, director, genre, etc., and most will even look up movie information from online databases such as IMDb. Some have their own database such as Coolector. Sadly, after going through several, we are yet to discover one that covers everything, especially in the realm of freeware.

We have, however, zeroed in on one that fulfills most of our needs – Rock Solid Software's MovieManager. You can download it at **http://movie-manager.ca/WindowsSetup/Freeware/MovieManagerSetup.exe**. It's free to use and whatever little lacunae there are can be worked around with a bit of tweaking.

General interface

The application provides two viewing modes – by movies or by actors. The movies perspective is preferable. On the left half of the screen you have a list of movies that are currently in your database. On the right, one pane shows you details such as IMDb rating, duration and genre. The bottom pane displays the movie poster and the cast.

Adding movies

The MovieManager database can be populated in several ways. When you run the application for the first time, the list is blank. Click the + icon to open a movie editor tab on the right pane. You can key in the name of the movie and click the IMDb lookup button. The details will be automatically filled in. Click Save when done.
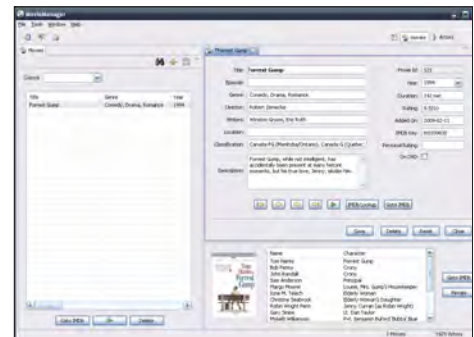
Scanning for movies

Scanning for movies is a better way to add movies to your database. Before scanning, go to Tools > Properties and click the Load Database tab to add file types. We found MKV and BIN to be missing from the list. To scan your hard drive, go to `Tools > Load Movies`. Click on Add to select your movie folders. If you wish to synchronise your database with your current collection, then check the Replace Database Contents button. If you want to sort your movies into genres, check the 'Use Parent Folder As Genre' box. Click the Load db button to scan. Your movies will now appear in the list. Click on the IMDb lookup icon to get information for the movies. You may have to clean up the names of the files as they may contain more than just the movie name. The software, however, pulls info more easily if folder names have a date of release. Therefore, use the following format for folder names — <Movie Title> (<year>).

Generating HTML

Often, we feel the need to share some great movies we have with our friends. How do you let them know the movies that constitute your awesome collection? Simple, just mail them an HTML list of your database! The generated HTML page contains the movie title
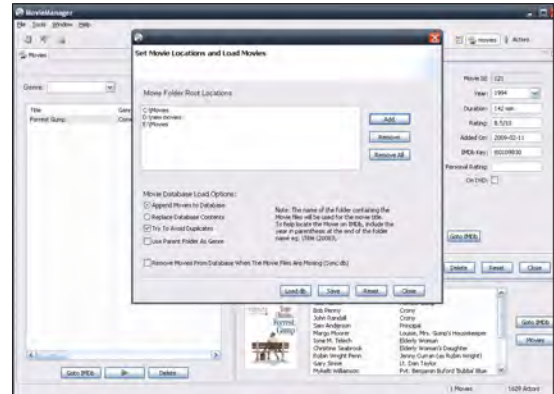
Scanning your hard drive for movies

and other fields that you have selected including the picture, rating, etc. The list can be sorted by genre too. To create an HTML list go to `Tools > Generate HTML`. Here you can choose the order and the details that you want. The default name for the file is MOVIES.html and will be saved on the desktop. Click Generate once done.

Scanning your hard drive for movies

Listing parts played by a particular actor

Suppose you want to know all movies in your database with John Travolta. In the movie view, double-click on the actor's name on the right hand side pane. The view will automatically shift to 'actors' view and will display movies featuring John Travolta in the bottom pane. Double-click on any of those fields to bring up a tab of that movie.

Seen / Unseen

You can save two different databases for movies you have seen or have yet to see. To do this, click on `File > Backup Database` and save it in a new folder called seen / unseen. Maintain separate folders for the two categories. ■

siddharth.parwatay@thinkdigit.com
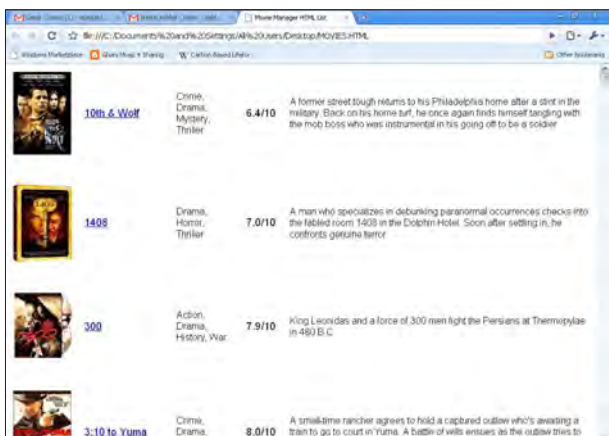
HTML page of your movies

K3B
CD/DVD writer software
for Linux

The DVD Re-Writable AD-7240S
from Sony is the world's first DVD
burner to achieve a 24x burning
rate (available in India at Rs 1,500).

TOOLBOX

Open Dialog Window. Here you will find certain buttons for performing standard actions such as WHOIS, SEND and PING. To add new buttons click `Settings > Advanced > Userlist Buttons`. Click `+Add New` and define your action. Click Save.

Private chat on double click
XChat doesn't open a new query box (or private chat) when you double-click on a user's nick name. This can be rectified. Go to `Settings > Preferences> User list`. Under Action Upon Double Click, replace QUOTE WHOIS %s %s with `QUERY %s`. Click Ok. Now when you double-click on a nick name, a query window will open.

Move tabs around
In the tabbed view holding down [Alt] key and pressing Left/Right arrow keys can move tabs around.

Installing themes for XChat on Linux

Matrix-like theme
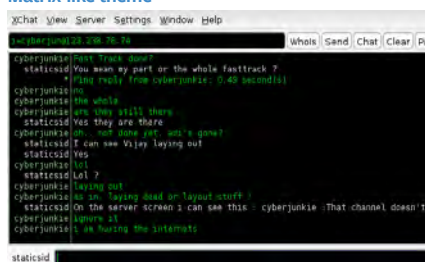
XChat doesn't have a themes function directly, but there is a way by which you can change the look of the UI considerably. What you need to do is replace colors. conf file named with replacement files that are available online. This file is found in `/home/username/.xchat2` for Linux. There are very few places from where you can get colors.conf files. One such source is **www.t0x.in/xchatthemes.html**. You can also replace the pevents.conf file for additional UI changes, but it may not be visible in all versions of XChat.

Use special characters
XChat has its own character map from where you can insert special characters. Click on `Window > Character Chart` to view all characters. Click on the ones you wish to insert.

Using Plugins and scripts
You can install scripts and plugins into XChat by clicking on `XChat > Load Plugin or Script` and pointing to the script file. We found a useful script online that automatically displays the real name of any user joining a channel. After downloading the script file (in this case autorealname.pl), simply load it in XChat. Visit XChat / IRC forums for finding other useful scripts and plugins.

K3B
K3b is a user friendly CD / DVD writing suite for Linux optimised for KDE. It is a versatile application and handles music, video and data equally well, and has no trouble burning "ISO".

Quickstart menu
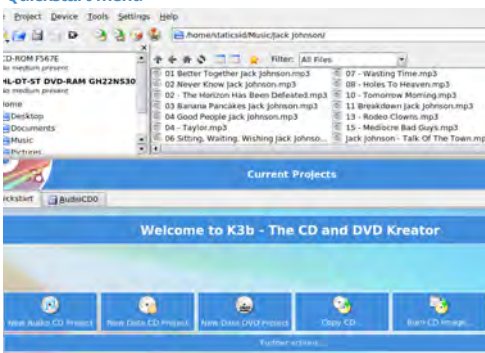
Getting started
When you start K3b, it will automatically recognise your writer drive. The interface will start at the Quickstart page. This has quick buttons for most common burning tasks such as new audio, data, DVD projects as well as other tasks such as copy CD, CD image, and burning DVD ISO image. Any new project you click on will be opened in a new tab.

Copy CD
You can either click on Copy CD in the Quickstart menu or click `Tools > CopyCD`. This will open the Copy CD dialog. You need to specify source and burn medium (which is the blank CD you wish to copy into). Under the Options tab, you can specify if it's a normal copy, i.e. burn into another CD or only create an image, in which case it will copy the image into the hard drive. This option can be found under Copy Mode drop down menu. Under the image tab, you can specify where to write the image file in the hard drive.

Writing Audio CD in K3b
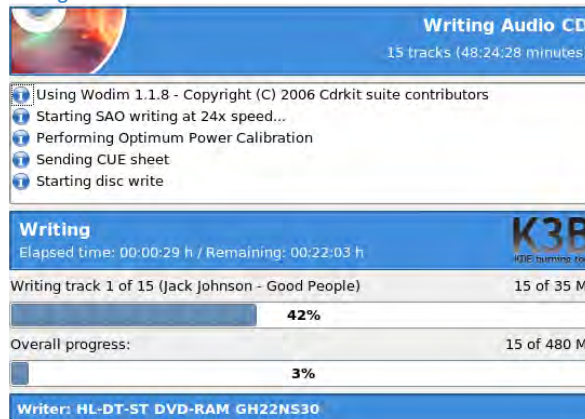
Erase CD/DVD RW
Under Tools menu, you will find Erase CD RW and the Format DVD RW buttons. In the Erase CD dialog, you can choose the erase type from the dropdown menu. Your options are Fast, Complete, Erase last track, Reopen last session, Erase last session. You can even specify the erase speed. Click start to begin the process.

Normalise Audio
To normalise an audio file means to bring the loudness of the audio to a standard level, so that some songs don't sound much louder or softer than others. Hence you don't keep reaching for the remote or volume control all the time. To add Normalisation audio support, follow the following steps. Enter `sudo apt-get install normalize-audio` in the terminal. Once executed, restart K3b. Go to `Settings > Configure K3b`. Under the Programs you will see `/usr/bin/normalize` show up under the "normalize" heading. If not, you can click on search. Now when burning an Audio CD, you will be able to select Normalise Volume Levels in the advanced tab.

Burning audio CD from MP3
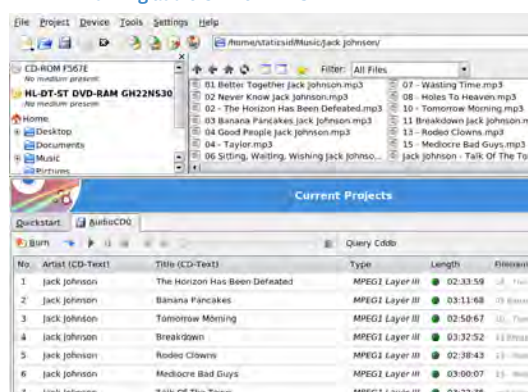
Add MP3 support
By default, K3b will not support MP3. You need to download a dependency package, for K3b to be able to support this file type. In the terminal, type the command - `sudo apt-get install libk3b2-mp3`. However, if you have a newer distribution, enter the command - `sudo apt-get install libk3b2-extracodecs`. After the package is installed, restart K3b and click on New Audio CD Project. You will now be able to drag MP3 files into the new audio CD to burn.

Ripping Audio
When you insert an Audio CD, the application will immediately look up the artist and track info on CDDB. You can also choose
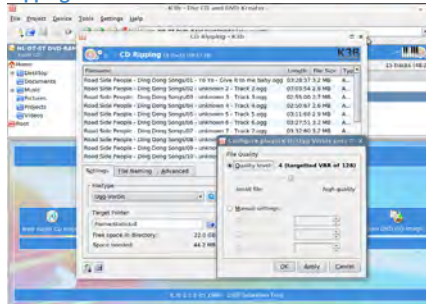
tips & tricks

Keep yourself free
Take part in the Digit
Carnival coming your way

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Ripping

to manually write the info. Click on Edit Track and Edit Album Info buttons or right-click on the track. Once this is done you can click Start Ripping. You will be able to choose the file type you want to rip to (FLAC, Ogg, or Mp3). In the file naming tab you can choose the way in which the ripped files are named. You can insert %g in the string to have the genre included in the file names. You can then click on Start Ripping to extract audio.

Slow down the read speed
K3b allows you to slow down the read speed so that the annoying high pitched noise reduces while reading CDs. Click on `Device > Set Read Speed` and specify the speed you want. This speed will be set for the currently mounted drive.
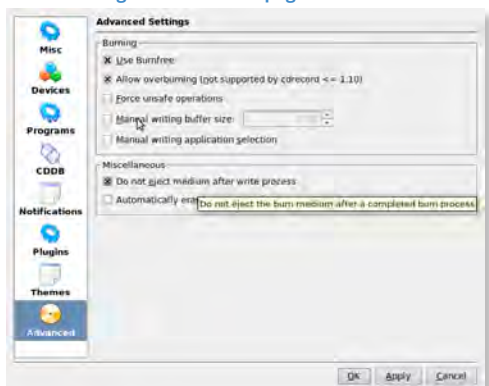
Change read speed
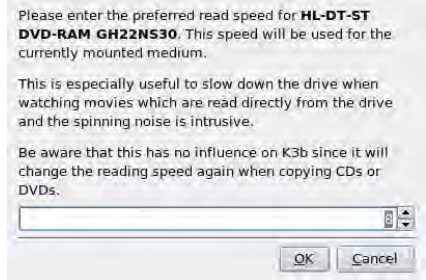
DVD Image Burning
K3b allows you to burn iso images onto DVD media. Click on `Tools > Burn DVD ISO Image`. You can then point to the ISO image file that you wish to burn and the burner will do the rest.

Writing Audio CD in K3b.png

Overburn
Overburning is a way to burn a little bit of extra data which is beyond the specified capacity of the media. If you have a 700 MB disk and wish to burn that little extra 4 MB song on it, you can. Click on `Settings > Configure K3b`. Go to the Advanced options and check Allow Overburining.

No Eject after burning
Sometimes it gets very annoying when writing applications pop the disk out after the burning process is over. K3b allows you to choose to not eject the medium. Go to `Settings > Configure > Advanced`. Under Miscellaneous, uncheck the box for 'Do not eject medium after write process'

Copper chrome theme
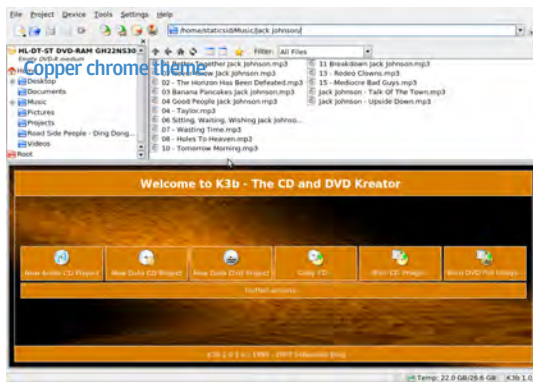
Change look
As with most applications, you can change the feel of K3b. It allows for themes to be changed to change the look of the software. To change theme, go to `Settings > Configure > Themes`. Here, you will find a few themes that come bundled. Click on any theme and click Apply. You can also install new themes. Click on the Install New Theme button and point to the theme file. You can search online for themes.

Saving all projects
Sometimes burning a DVD can be quite a process which can last multiple sessions. In fact, since K3b allows you to work on more than one project (in tabbed form) it can be even more time consuming. In such a case, you can choose to save all the projects that you're currently working on. To save all the projects, click on `File > Save All`. You will then be prompted to assign project names to each of the tabs and save them.

Split audio tracks
K3b allows you to split audio tracks while burning audio CDs. Simply right-

Split Audio Tracks
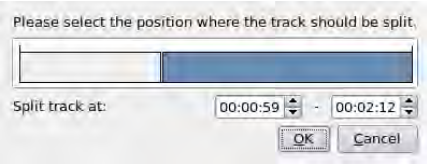
click on the track in the current project and click split tracks. You will get a slider to choose the splitting position, or you can specify the new timings of the split tracks (e.g. 00:00:59 - 00:02:12).

Make a data CD for Linux, Windows or both.
A data CD is a optical disk that is formatted to store data in the form of files. The files typically stored on a Data CD include MP3 audio, doccuments, compressed archieves, and even Linux packages. With K3b, you can write a data CD that can be read on both Windows as well as Linux Machines. To make a data CD in K3b, click on `File > New Project > New Data CD Project` or you can click on the New Data CD icon in the quick start menu. You can rename the volume by entering a name on the top right corner above the contents of the project. Click on `Project > Add Files` to open the dialog box to add files. You can drag and drop or select multiple files and click Open. Once you are done adding files, click on Burn to initiate the burning process. In the new dialog box, click on the File System Tab. In the drop down menu choose the appropriate option (Linux/Unix + Windows or Linux/Unix only). Click on Burn when ready.

Make a mixed mode CD
A disk with a data track as well as an audio track is a mixed mode CD. Therefore, you can effectively combine two data types (files and playable audio). Such CDs can be played on a Hi-Fi system and the data track can be read on a computer. To make a mixed mode CD click on `File > New Project > New Mixed Mode CD Project`.

Mixed Mode CD
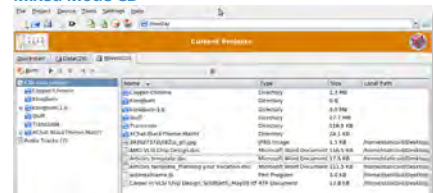
In the adding menu, you will find an audio track and a data track section. Select one of them before adding files. When you add an MP3 file to the data track, it will be stored as data if the selection is on data track. If it is on audio, it will be converted to CD audio.

Click on Burn when done. In the new Dialog box, click on the Misc tab. Here, you can choose if you want the data track or the audio to be the first track on the CD. Typically, the Data Track is the first track.

q & a

Your Questions, Our Answers

Q&A

All your computer niggles and nags are dealt with here!

Q A couple of problems

1. I have a wired broadband connection on my PC connected through a normal ADSL2+ router, but it doesn't have Wi-Fi capabilities. Is there some way to share the internet bandwidth with the PC and my laptop. Also, can I play a game such as *Counter Strike* over LAN with both?

2. Can I use my old 80-GB hard drive as an external drive using some external casing? Is there a way to use it as a backup drive with XP?

3. Is there a way to see all the details of a video file and save some other video to that format? Can I put some other video that isn't recorded through my handycam into my handycam by converting that video to the handycams default format and by naming it in the sequence followed by my handycam. One of the ways for outputting the file was given in your Tips and Tricks section using the VLC transcoder.

Vishal Singh

A You will have to buy a separate router that accesses the ADSL2+ router to let you access the internet using the laptop and the PC. It will also allow you to play *Counter Strike* between the two PCs.

You can use old 80-GB hard drive as an external storage disk. Purchase a 3.5-inch casing for it. It shouldn't cost you more than Rs. 700 for a decent one. Make sure it has an interface for your drive before you do.
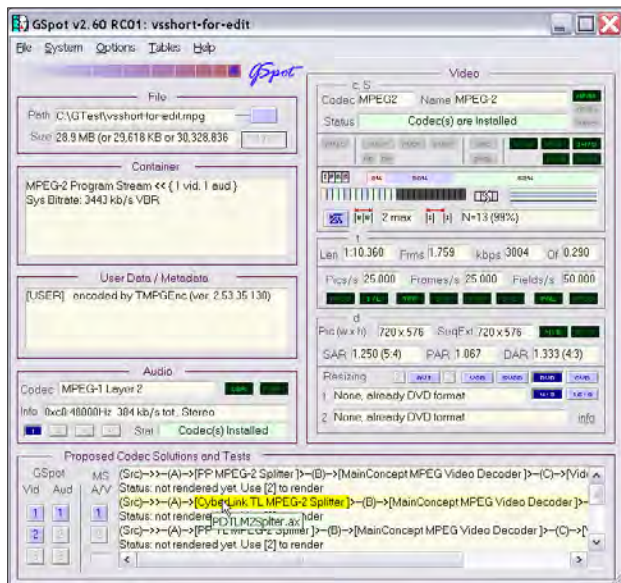
G-spot displays information on the format

Use a program called G-Spot to get details of the video format used by your camera. Often, manufacturers use proprietary or modified codecs within existing / known containers; hence, it might not work if you try and re-encode videos to the specific resolution and codec.

Major overheating problems!

Q My configuration is: AMD Athlon 64 x2 4200+, MSI motherboard with inbuilt NVIDIA 6100 graphics, 2 GB 667 MHz RAM, 250 GB Hard Disk. The drive has two partitions — one with Windows XP SP3 and other runs Windows Vista. When I use my computer for 3 to 4 hours at a time, it restarts due to overheating. When I check the BIOS, my system temperature shows up as 87 degrees. A few days ago, I discovered my PSU's fan wasn't moving, so I thought this could be the problem. Therefore, I changed my SMPS and bought an Intex 450-W SMPS, but the problem hasn't gone away. I cleaned my processor fan and RAM modules, but the condition has remained the same. I thought that it could be due to an infection so I ran a complete scan with Avast 2009 Home Edition with latest updates, but it didn't work either. My computer usually shuts down when I play games such as *Far Cry 2* or *Need for Speed Undercover*.

Bidyankur Bhagawati

A Your's certainly seems to be an overheating problem. Your CPU temperature is way too high. Install SpeedFan that lets you monitor your CPU temperature while running Windows. If cleaning doesn't help, try touching the metal heatsink immediately after powering off the system. If it feels really hot, then remove the heatsink and apply a new layer of thermal paste and reattach the heatsink. The existing paste might have dried up or your heatsink may not be properly thermally connected to the heatsink.

Connecting a new PC with Windows XP to a domain

Q I have bought a new PC with Windows XP Professional. I have a network with a domain setup. I want to know how to configure XP to connect to the network so that a user can login into the domain. I know how to configure Windows 98, but I'm not sure how it's done on Windows XP.

Rajesh Kumar

A Making your PC a part of the domain can be done by clicking on `Start > Control Panel > System`. Within the Computer Name tab, click on Change to rename the PC name or set a workgroup or domain. Choose to be a member of a domain instead of a workgroup.

DOS window problem

Q I have a Dell XPS M1530 laptop running on Windows Vista Home Premium SP1. Whenever I type ipconfig in Start > Run, the window opens for a brief second and then closes immediately. The same problem occurs when I run some DOS programs. What can I do? The problem does not arise when I open command prompt and then type ipconfig. This doesn't occur on my PC running on XP SP2.

Roy Fernandez

A Command prompts accessed through `Start > Run` automatically shut once the execution of the command is completed. Using `Start > Run > cmd` and pressing `[Enter]` might be the simplest way to start your command line applications. If commands such as ipconfig are required to be run very often, then you can create a batch file in notepad with the following text.

```
cmd
ipconfig
```

Save the file as a BAT file and run it when you need it.

Strange errors in Windows

Q My PC configuration is as follows:
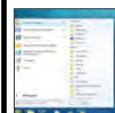Processor: Intel Core Duo CPU E7200
Motherboard: ASUS P5GCMX-1333 I am using Windows Vista as my OS. My computer has a couple of problems.

1. During start up, it shows up errors that say "Rundll32 not found".
2. I am unable to run Task manager. It says "Disabled by adminstrator".

TOOLBOX

3. I am unable to open the cookies. It says "Access is denied".

Chitrabhanu Pattnaik

A All of your problems suggest that you have some kind of a worm or virus. It's a good idea to install an antivirus, update it and run a complete PC scan.

How do I host a web site?

I have a static IP and want to host a web site on my PC. I have Vista Home Premium installed. I have also registered two domain names. Please guide me how to host a web site on my PC.

Nadeem

A Hosting a web site requires decent bandwidth depending on the amount of traffic you plan on getting. Still, hosting a web host is simple and there's plenty of methods to choose from. If you just have to host a basic set of pages without a MySQL server or a
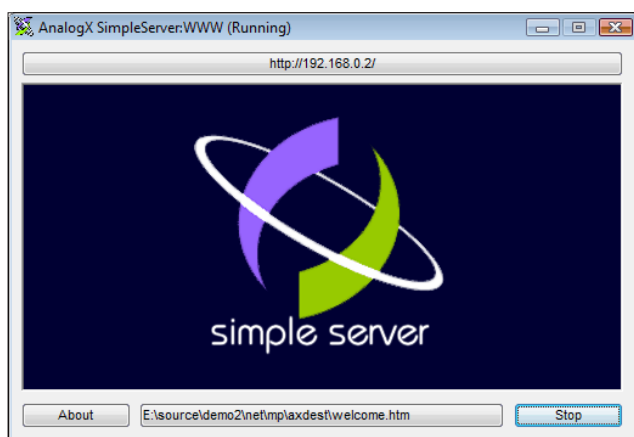
AnalogX is one of the most basic web servers you can find

PHP environment setup, then something as small and free as AnalogX Simpleserver **(http://www.analogx.com/contents/download/network/sswww.htm)** or Abyss Web Server **(http://www.aprelium.com/abyssws/)** will do. If you want the complete thing, downloading XAMPP for Windows is recommended. It comes with Apache, the web server, MySQL, PHP, Perl and everything you require. Once you have the web server installed and setup, simply login to the account on the domain provider's control panel and redirect the domains to your static IP.

PC slowdowns

I have a problem with my PC and I am sick of it. My PC has an Intel Dual Core 3.0 GHz processor, 1.5 GB of RAM, a motherboard running on the 945 express chipset and 80 GB of hard disk space. My problem is that when I format my system with Windows XP Professional SP2, after some days my PC gets slower and the speed decreases. Although the CPU usage is at a minimum, the fan rotates at its full speed when I copy some data such as movies, it performs well, but the CPU usage is only 7 or 8 per cent. There is no virus in my PC. When I use Windows Vista as my operating system, there is no problem and it works perfectly. I want to work with XP Professional, so please tell me what's wrong and what is the solution.

Manish Kumar

A Your problem is pretty strange. One possible explanation could be drivers. Try upgrading your drivers to the latest versions. Check your CPU temperature to make sure it isn't overheating and it's being throttled down. Do this from the BIOS and if it isn't, try turning off any CPU-throttling features.

System locks every time I boot into XP CD

Whenever I try to format my drive, the system hangs on the screen with the option for continuing or repair. I tried it with different disks. I have 384 MB of RAM and a 1.5 GHz Pentium 4 processor. Please help me with a solution to this problem.

Dushyant
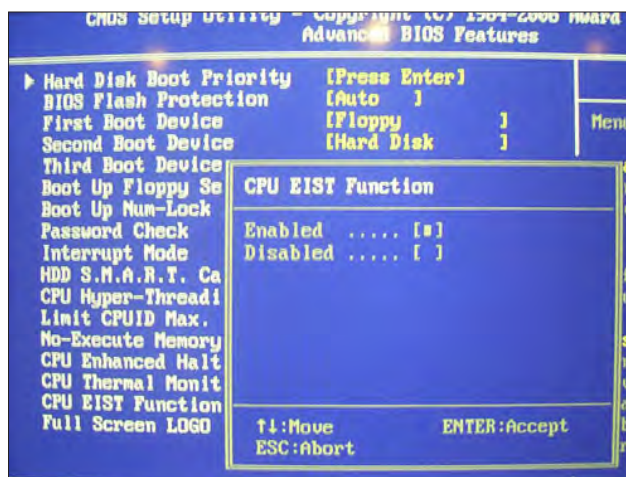
Disabling Intel's Speedstep technology from the BIOS might help boost performance

↘ Question of the Month

Securely passing on files

I want to write a CD containing my personal information and give it to a friend. I want it to be secure so that the data can only be read by my friend. Is there any simple software that I can use to encrypt it?
Also, I read in the magazine that to prevent most viruses from activating I should create a write-protected file AUTORUN.INF. The problem is that I don't know how to create a write protected file. I went to the properties window and ticked on the read only button but I don't think it works.

Ashish Mathew
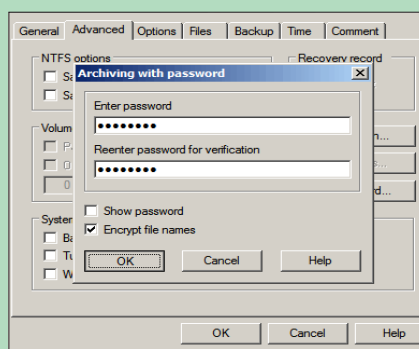
Storing files securely using password protection in WinRAR

A A simple and secure way to send files on a CD to your friend might be to use an archiving tool such as WinZip or WinRAR. Set a password to the archive and it should be fairly secure.

To create a write-protected file, start a command prompt by clicking on `Start > Run` and typing `cmd`. Go to the drive or partition you want to create the file by typing `E:` assuming that E is your flash drive. Type `copy con autorun.inf` and press `[Enter]`. Type `[Ctrl] + [Z]` and press `[Enter]`. Then, type `attrib +r +s +h autorun.inf`. This will set the file to be hidden, read-only and also a system file.

Vegas Pro was initially developed and published by Sonic Foundry

The Conficker worm blocks access to antivirus sites and also www.microsoft.com

A It seems that the problem lies with your hard disk. You can try after a complete disk check. For this purpose, use a bootable floppy disk or CD for Windows 98 or ME and format the drive.

Rabi Poudyal (Tech QnA Expert)

How to install Windows games on Ubuntu
Q How do I install and play Windows games on Ubuntu? What is this "dependency is not satisfiable" error and how do I get rid of it?

A Wine and PlayonLinux are needed to play Windows games on Ubuntu. You can simply install these by typing `sudo apt-get install wine playonlinux`.
   While trying to install any packages on Ubuntu, it may require some other dependency. Some packages depends upon other packages, those packages are called dependencies for the package being installed. You need to install the dependency packages to install the final package.
   For example, some of the dependency packages of wine are libfmt-support and libaudio2.
   It is generally faced during off-line package installation. You need to download the package and its dependency, and install using `dpkg` command. After installing all packages use the following command.
```
sudo apt-get -f install
```
   This command will install all packages with dependencies resolved.

**Rabi Poudyal (Tech QnA Expert)**

FIFA 07 keeps crashing
Q I have a Windows XP SP3 PC that runs on an Intel P4, 3.00 GHz processor with 512 MB of RAM. I recently reinstalled Windows XP on my computer because it had crashed due to a virus. Earlier, I had installed FIFA 07 on it and it was working perfectly. After rebooting, I reinstalled the game. However, when I try to run it now, a window opens saying:
   "FiIFA07.exe has encountered a problem and needs to close. We are sorry for the inconvenience. If you were in the middle of something, the information you were working on might be lost"
   I have tried reinstalling the game but it still does not work. Should I upgrade to Service Pack 3? Please help!

A I think you should upgrade to SP3 and update your graphics card drivers. You should also check what applications you have installed on your system that were not installed on your previous Windows installation and clean your registry with any
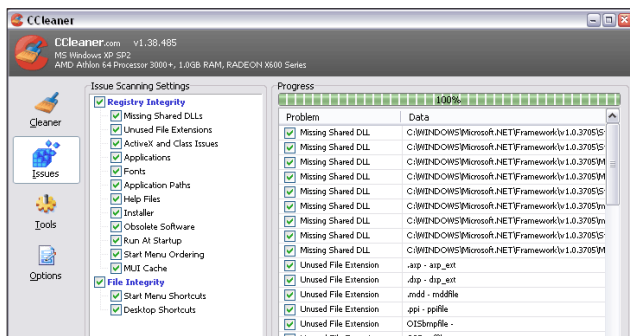
good registry cleaner. You can try using CCleaner for this purpose CCleaner can clear up the Windows registry and sometimes speed it up a bit

and check if your problem is fixed or not.

Navjot Tomer (Tech QnA Expert)

Surround sound audio editing
**Q** I wanted to know about software for 5.1 channel audio editing. Can you name the software?

A Almost all popular audio editing programs available can render 5.1 channel surround sound. A couple of examples are below: Sony ACID Pro (**http://www.sonycreativesoftware.com/acidpro/mixing**) Vegas Pro 8 (**http://www.sonycreativesoftware.com/vegaspro**) Supports audio as well as video editing.

Nagarjun Bodduna (Tech QnA Expert)

How do re-enable the registry editor on Windows
Q While installing any game or any application, I try to add information to the registry, a message pops up saying — "Registry editor is disabled by your administrator". I can't run that program because of this. Do you have any solution?

A To enable the registry editor after it was disabled by some malware, try the following to regain access:
   Click on the `Start > Run` and type `gpedit.msc` on the
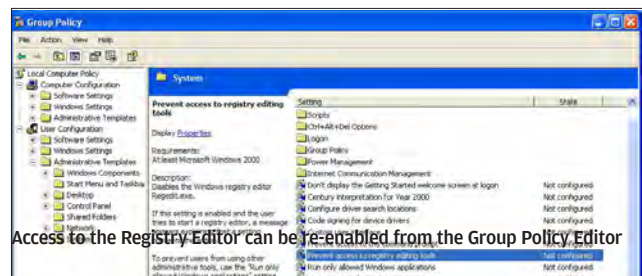
Access to the Registry Editor can be re-enabled from the Group Policy Editor

field. Go to `User Configuration > Administrative Templates > System`.
   On the option `Prevent access to registry editing tools`, Click Disabled and click on the OK button to save settings. Now type `regedit` from the Run dialogue.

Jagdeep Virdi (Tech QnA Expert)

NTLDR missing errors — XP won't boot!
Q I use Windows XP SP2. While booting, it shows an error message that the file NTLDR is missing. Press Ctrl+Alt+Del to restart your PC. After restarting, I continue to get the same error. What should I do?

A Enter the recovery console by booting into the Windows Setup CD. In the console, use the EXTRACT command from the I386 folder into the root of your Windows partition.

Sanjeev Chharia (Tech QnA Expert)

Trouble installing Windows 7
Q When I tried to install Windows 7, it did not work. It shows a message — "Upgrade to Windows 7, the computer needs to be running Windows Vista with Service Pack 1 (SP1) or later. Upgrading from Windows XP to any edition of Windows 7 is not supported. You can choose to install a new copy of Windows 7 Ultimate instead, but this is different from an upgrade, and does not keep your files, settings, and programs. You'll need to reinstall any programs using the original installation disks or files. To save your files before installing Windows, back them up to an external location such as a CD, DVD, or external hard drive. To install a new copy of Windows 7 Ultimate, click the Back button and select "Custom (advanced)".

A You need to have Windows Vista as a prerequisite to install Windows 7. All your previous software installed on Windows Vista will get removed once you install Windows 7. Windows 7 cannot be installed as an update and you can't keep the files in the installation drive intact. Back them up.

Aditya Rupani (Tech QnA Expert)

Did you know?
Did you know that digital cameras
have firmware that can be updated?

AgentOO1 doesn't want you mistreating your camera! Here's a list of accessories for extending your life and getting more out of it!

Ashwini Baviskar

Camera
accessories

STREET SMART

AgentOO1

Digital cameras have been in the market long enough and people have taken great interest in them. Accessories for cameras are meant for more than just maintenance. Here we look at the kinds of accessories available in the market and the money you will have to shell out for them.

For dSLRs, an additional lens is more than just an accessory. Cheaper dSLRs are usually bundled with a basic 18-55 mm lens and the very next requirement for amateur dSLR users is a zoom lens. For example, an 18-200 zoom lens is good both for wide-angle and telescopic shots. Third-party lenses are also available from manufacturers such as Tamron and Sigma. Check if your camera supports the lens you opt for. You also get 55-250 or 75-300 mm zoom lens. These are priced around the Rs. 10,000 mark. Image stabilisation usually costs a little more and prices can be slightly higher. For example, a 70-300 mm Sigma lens is priced around Rs. 9,000 and a 150-500 mm lens is approximately Rs. 52,000.

Filters are used to create certain effects without the need for further processing of the images. These are used in a way similar to lenses and are fitted atop the existing lens. UV filters and polarising filters help improve image contrasts, and a UV filter is needed at high altitude in the mountains. A neutral filter is often used simply to protect the lens from contact or damage and can also protect from dust and accidental fingerprints on the lens. Most of the basic filters range from Rs. 500 to Rs. 2,000. It's a good idea to have a basic filter that can help protect the lens without adding unnecessary colouration or distortion to the image.

A tripod is a must-have for every photography enthusiast. It helps to keep the camera stable so you don't end up with blurry images due to jittery hands. The size of a tripod isn't as important as its quality. Tripods can be relatively cheap and you can buy small compact ones from well-known brands such as Vivitar and Manfrotto for between Rs. 1,300 to Rs. 3,000. These are good for

picnics or hikes. With it all folded up, they can easily fit into a back pack. For the more professional, heavy-duty tripods, keep aside at least Rs. 5,000 to Rs. 10,000 for high-end kit from brands such as Benro. Monopods are cheaper and can be bought for Rs. 2,500 to Rs. 5,000 or so. Watch out for cheap plastic tripods. Carbon fibre tripods are rigid, and not as heavy to carry. Metal tripods are best left in the studio.

dSLR owners will always have a few complaints about the performance of the flash on their cameras. They're generally too weak and aren't easily controlled. Flash kits are available for different cameras makes. A basic flashgun such as the Nikon SB400 is under Rs. 6,000, whereas the more superior SB600 is priced around Rs. 12,000. The advantages these bring are better control using the display on the flash unit, more power, faster charging and greater flexibility in positioning the flash. Each brand has its own set of compatible flash units that can be mounted on the cameras; prices vary.

A carry pouch helps in carrying your camera without damaging it. The cost of a pouch is really low and good ones for a point-and-shoot camera under Rs. 500. A slightly larger handbag with sections to keep a battery charger and other bits will cost you somewhere between Rs. 1,000 and Rs. 3,000 for brands such as Lowepro. Those who want to go out on outings for shooting should invest in complete bags with provisions for the flash, batteries, extra lens, a laptop and even a tripod. Models start from around Rs. 3,000 and go up to as high as Rs. 15,000.

Like any other expensive electronic product, cleaning and maintaining cameras is a must. One of the first things to buy for the lens and the LCD display is a lint-free micro-fibre cloth and/or a lipstick-style lens brush. Cost range in the hundreds of Rupees. A small hand-powered air blower that costs around Rs. 15 is also worth keeping in your carry bag to blow off loose dust from the crevices.

Film cameras used up film rolls, but when it comes to digital cameras, battery consumption is significant; especially, when you're clicking with your flash turned on. On a typical charge, it's possible to take over 150 to 200 photos on a standard point-and-shoot camera. Buy additional Li-ion batteries that are compatible with your camera. For a dSLR, a power pack costs around Rs. 1,000 for entry-level model and around Rs. 2,000 for the higher-end.

With AA batteries, you can always put in a new set and continue shooting. AA batteries are easy to find if you run out of charge. Uniross and Sanyo's Eneloop rechargeable batteries are known to charge quickly and don't discharge for long periods. Although slightly expensive compared to other rechargeable batteries, they still make a good buy in the long run. Expect to pay around Rs. 600 to Rs. 800 for a two-battery set and a charger.

Memory cards are cheap and for a point-and-shoot, a 2 GB standard SD memory card from Sandisk or Kingston is nothing more than Rs. 600. Sony's proprietary memory cards can be costly. SanDisk also manufactures MemoryStick Pro Duo cards for use with Sony cameras. A 2 GB Sony MS card costs Rs. 1,050 and a 4 GB one is available for Rs. 1,799. Most dSLRs also use SD cards, but it's a good idea to go in for the high capacity SD (SDHC) cards. A 4 GB SDHC card can be bought for around Rs. 2,000 and an 8 GB one for around Rs. 3,200. Some cameras use CompactFlash cards. This format is a little bulkier than standard SDHC cards, but there are high-performance CF cards from SanDisk – Extreme III and Extreme IV. The price of a SanDisk Extreme IV 4 GB CF card is around Rs. 3,000 and Rs. 6,050 for an 8 GB card. SanDisk Extreme III CF cards are around 20 to 30 per cent cheaper depending on the capacity. ■

agent001@thinkdigit.com
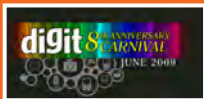
My PC configuration is an Intel Core 2 Duo E8400, MSI P7NGM-Digital motherboard, 2X2 GB Corsair XMS2 RAM, CoolerMaster 600 Watts Xtreme Power PSU. I want to buy a 22-inch LCD monitor and a graphic card. I have decided upon Dell 2209WA and ZOTAC 9800 GTX+ AMP Edition or an MSI 9800 GTX+ T2D512. Can I get anything better for a budget of Rs. 25,000? And please help me decide upon the graphic card. My basic requirement is gaming and multimedia. I would also be using Photoshop and Maya.

Charles Peter, Ghaziabad

The Dell 2209WA is a good monitor by all accounts, but why spend around Rs. 15,000 on a 22-inch monitor from Dell when you can spend Rs. 10,000-12,000 on other 22-inch monitors from brands such as Acer and ViewSonic. Instead of a GeForce 9800 GTX+ you could spend a little more, say up to Rs. 17,000 and get yourself an ATI Radeon HD 4870, which is a much faster card. With a monitor priced at Rs. 10,000, this just exceeds your budget by Rs. 2,000 but will be more future proof.

My PC configuration is as follows: Intel Core 2 Duo 4400 @ 2.0 GHz, Dynet 2 GB @ 667 MHz DDR2, Intel D945GCNL Motherboard, LG 17-inch Flatron. Please suggest a good graphics card below Rs.3000?

Mohit Shah

I recommend a graphics card based on the GeForce 9400GT chipset. Brands to look at are Palit, ZOTAC, EVGA and MSI. These should be the slightly cheaper priced cards available. Expect to pay anywhere between Rs. 2,800 and Rs. 3,400. Try to get a card with 512 MB of video memory.

My configuration is as follows: P4 HT 2.8GHz, Intel 865 GVHZ board, 1GB 444 MHz RAM, 400W power supply. Can I add a graphics card to my board as there is no AGP slot present. I only see PCI slots. I also asked several vendors for a PCI graphics card, but they told me that the result or performance of a PCI graphics card is not good. Should I increase the RAM or is there a solution for graphics on my board? Budget is not a problem. Can I overclock this board?

Bhushan Nandane

I have one word of advice for you – upgrade! Components are at all time low prices and you can pick up a reasonably fast configuration for around Rs. 25,000 without a monitor, which you no doubt already have. In case you do not want to upgrade there are a couple of very costly options for you. The PCI version of the GeForce 6200 GPU is available but it'll cost you Rs. 4,000, or

thereabouts, and is priced higher than the PCIe version of a GeForce 9400GT, which is a much newer card. Increasing the RAM will do little to make your current configuration faster. DDR RAM is also double the price of DDR2 RAM. Your PC is sadly outdated and I reiterate – upgrade it.

I want to buy a good, cheap, value-for-money large capacity hard disk, preferably an internal one, which I want to use externally since I have no available power supply to spare. Please suggest a hard disk for me and also what I need to buy in order to convert it into a temporary external solution.

Eric Pereira

All 3.5-inch external solutions need an external power supply. In case you want an external solution without the need of a power supply, you can look at 2.5-inch external solutions that draw all the power they need from the USB port. I'd suggest a 320-GB external solution priced at around Rs. 4,500. In case you want something really colossal, to the tune of 1 TB or more, then you had better stick to a 3.5-inch solution as these are cheaper. Buy the Seagate 1 TB 7200.11 series hard drive. Priced at Rs. 6,500 in the street, it's great value for money. Unfortunately, when you convert it to an external solution you will discover you need an external power connection. Why not buy a spike guard to solve this problem? For the external case (in case you are buying an internal drive) look at vendors such as Zippy and Transcend, their cases are decent.

I want to buy a high-end graphics card – which one is better, the GTX 295 or Radeon HD 4870 x2?

The GeForce GTX 295 is the newer and faster card. It should be priced at Rs. 35,000 or so. Look for brands such as EVGA, Palit, ZOTAC and MSI. These are priced slightly lower than brands such as ASUS, Gigabyte and XFX.

I Want To Buy an MFD with good print quality. My budget is around Rs. 10,000. Please suggest something. Can I print photographs with such a printer?

Pawan Maurya

Canon MP 486

In case you do not need the additional fax feature, look at the Canon MP 486, available at a price of Rs. 8,495. It's a good printer and will satisfy the need for a photo printer as well.

My current configuration is: Intel P4 (3.0 GHz), MSI G31M3, 2X2GB DDR2 800, XFX 9500GT 512 MB, Samsung 320GB (SATA), Odyssey 450 W PSU. I upgraded to this configuration around a month back. I played games such as Crysis, Prince of Persia, NFS Undercover at minimal resolution. I want to play at higher quality settings without getting my system to hang. I'm totally confused in choosing the processor (Q6600 / Q8200).

Corsair VX450

Please help me to choose any one among these processors and also a better solution for the power supply. I have a budget of Rs. 10,000.

Dhamodharen Sundar

Your PSU is unable to supply the required power and for this reason your PC is hanging. First, I recommend you upgrade your power supply to a Corsair VX 450 – that should cost you around Rs. 4,000. After that, upgrade your graphics card to a GeForce 9600 GT. This will make a huge difference to the performance. Such a card will set you back around Rs. 6,000. Next, please upgrade your CPU. I recommend buying at least a Core 2 Duo E7400. Priced at Rs. 6,000 this CPU will reduce the bottleneck on your GPU.

I'm planning to buy a netbook. My budget is Rs.25,000. I'm going to use it for basic multimedia (watching HD movies and playing music), work on PowerPoint and Excel, and surf the net. Which is the best one I can get around Bangalore at the given budget?

Arnie Adderstone

I don't think any netbooks are powerful enough to allow you watch any kind of HD content on them, but for regular DVD movies you should be covered. Do remember that netbooks do not have an optical drives. I recommend ASUS' EEPC 1000HA that has a 10-inch display. Alternatively you could look at the Acer Aspire One D150. Both these netbooks should be around the Rs 25,000 mark on the street. ■

hard disk
- Seagate 250 GB 7200.11 / Rs. 1,900
- Seagate 1 TB 7200.11 / Rs. 5,500
- Seagate 500 GB x 2 RAID 0 (7200.12) / Rs. 7,000

cabinet
- Zebronics Antibiotic / Rs. 2,100
- CoolerMaster 690 / Rs. 4,400
- CoolerMaster STACKER RC 832 / Rs. 14,500

monitor
- Acer 1916W / Rs. 6,800
- Dell E228WFP / Rs. 14,500
- LG 246 Wp / Rs. 23,000

power
- VIP 350 Watts / Rs. 850
- Corsair TX 650 / Rs. 6,500
- Corsair HX 1000 / Rs. 13,500

mother board
- ASUS NVIDIA 7025 M2N68-AM / Rs. 2,250
- MSI P45 Platinum / Rs. 9,000
- Intel DX58SO / Rs. 16,000

everything you will ever need to build your own PC. whatever your budget.

KILLER RIGS

- Basic rig = **Rs. 19,150**
- Multimedia-cum-gaming rig = **Rs. 86,300**
- Ultra high-end PC / Gaming rig = **Rs. 1,92,000**

video card
- Onboard / NA
- Palit Radeon HD 4870 1 GB SONIC / Rs. 15,325
- ZOTAC GeForce GTX 295 / Rs. 35,000

mouse
- Logitech 3 button scroll / Rs. 300
- Logitech MX518 / Rs. 1,300
- Razer DeathAdder / Rs. 2,500

speaker
- None
- Altec Lansing MX 5021 / Rs. 6,500
- Logitech Z5500 / Rs. 14,000

key board
- Logitech Multimedia / Rs. 1,750
- Logitech G15 / Rs. 4,000
- Logitech G15 / Rs. 4,000

sound card
- Onboard / NA
- ASUS Xonar DX / Rs. 3,700
- Creative X-Fi Titanium / Rs. 12,000

cpu
- AMD Athlon XP 6000+ / Rs. 2,850
- Intel Core 2 Duo E8400 / Rs. 8,200
- Intel Core i7 940 / Rs. 26,000

ram
- 2 GB DDR2 800 MHz (Kingston Value) / Rs. 1,050
- 2 GB x 2 DDR2 800 MHz (Corsair XMS2) / Rs. 3,350
- 2 GB x 3 DDR3 1600 MHz OCZ Platinum XTC / Rs. 18,000

Problems at home and problems with HP

Some readers have pointed out to us that Digit also has problems with service when it comes to delivering subscription copies on time, and a surprising number are having a real struggle with Hewlett-Packard, particularly regarding laptops

Edward Henning

Digit subscriptions

It had to happen. Having started a series of occasional articles on customer service, a few readers have written in to point out that there are times when our service at *Digit* does not meet expectations. This mainly takes the form of the magazine either turning up late or failing to arrive at all for subscribers. Thankfully, there are few of these, but we picked a couple of them, and asked our subscription department to investigate.

G. Kumar wrote from Bangalore to say that he had renewed his subscription, but that the January issue had failed to arrive, even though he did receive the Febrauary issue on 31st January. Where the fault lies, we cannot be sure, but to the best of our understanding, the cheque for his subscription renewal was received late — too late in fact for it to clear before the beginning of January, and for this reason he was not on the list for the January issue. A copy has now been sent to him.

It is important to remember when renewing a subscription, that it takes time, both for our subscription department to process the request and also for the banks to clear the cheque. Please be early when renewing.

Another reader, Pratik Gupta, wrote to say that he was also not receiving *Digit*, but he also expressed great frustration in trying to contact us to get help — specifically when calling our helpline. We found that the problem with his copies of *Digit* lay with the courier company that we were using to make the delivery, and as this has now been changed, we hope that he is reading this issue at the very beginning of May. We checked the new courier POD (proof of delivery) for the April issue, and it was delivered correctly on the 1st April.

In general, if you have problems because of either not receiving the magazine, or it is arriving late, please call the helpline, on +91-22-4078 9612 / 13 / 14 — but only in normal office working hours, between 9.30 am and 6.30 pm, Monday to Friday. You can also use email: **help@thinkdigit.com**. Of course, if all this fails, you can also do what these two readers did, and email us at: **servicewatch@thinkdigit.com**.

Does Hewlett-Packard have service problems?

Since having suggested to readers that they write to us if they are having some particularly bad support or service experience with a vendor, we have received a steady trickle of emails. Surprisingly, at one point, nine out of the 18 complaints we had received concerned just one company, HP. The ratio is down now, and about 40 per cent concern HP; but this is still far too high. So, is this a statistical cluster, or does HP really have a problem? I am still discussing this with HP, but it seems that the company does have problems that need to be addressed.

Let's take one example, from Manoj Nair in Chennai. He has had repeated problems with his Compaq Presario V3225AU. I spoke to him just before writing this, and he told me that so far his motherboard had been repaired or replaced a total of eight times! He felt very little confidence that his laptop would now be free from problems, particularly because service centre engineers had told him that the particular graphics processor and CPU in this model are not suitable for the Indian market, they are subject to overheating and consequent failure of the motherboard.

He wonders why HP does not fix the underlying problem rather than repeatedly repairing his machine. However, he has found HP very unresponsive to his requests, except the fact that the company does keep fixing the machine. Another reader, Nishant Mohan, has had similar problems with exactly the same model. His has failed four times now, and it takes a month each time to have it fixed.

Others have made similar comments, that HP is a very uncommunicative company, although often good, but slow, at fixing machines. This is also our experience. At the time of writing, HP has not satisfactorily resolved or answered any of the reader problems that we have passed on.

Another example: reader Dr. Sanjay Tharoor in Thiruvanathapuram purchased an HP Pavilion Laptop DV9312TX back in July 2007. After a year, his motherboard needed replacing, and this took a whole month, just as Mishant Mohan had described. The motherboard failed again, and the machine was returned to him, after a delay of more than one month, at the very beginning of April. I spoke to him a couple of weeks later, and the system had failed yet again, and he was just about to deliver it back to HP. He pointed out that one would expect better from a laptop that cost over Rs. 60,000! Indeed...

No wonder he feels "much frustration and anger", and also thinks that a better course than repairing the same system time and again would be to give him a different model. One cannot help but wonder if the HP engineers also consider this one to be unsuitable for the Indian market and climate.

We look forward to hearing some positive responses from HP to these and other similar issues. ∎

Service problems? Write in the servicewatch@thinkdigit.com and we'll do our best to help to resolve them

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Stuff we would buy...

Motherboards

Model	Market Price	Tested in	Socket	PCI-e x8/x16 slots	SATA Ports	No of rear USB Ports
ASUS M3A	Rs. 4,950		AM2+	1	4	4
ASUS M3N78-EH (Geforce 8200, AMD)	Rs. 5,450	November 2008	AM2+	1	6	4
ASUS P5Q Deluxe	Rs. 12,600	June 2008	LGA775	2	6	6
ASUS P5Q-E	Rs. 10,800		LGA775	2	6	8
ASUS P5Q-PRO						
ASUS P6T Deluxe	Rs. 20,800	April 2009	LGA1366	3	6	8
Gigabyte GA-EP45-DS3R	Rs. 8,500		LGA775	2	6	8
Gigabyte GA-EX58-UD5	Rs. 17,650		LGA775	3	6	8
MSI X58 Eclipse	Rs. 20,500		LGA1366	3	10	8
Zotac 780i Supreme	Rs. 14,500		AM2+	3	6	6
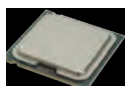
Processors

Model	Market Price	Tested in	Socket	Speed	FSB	L2 Cache
AMD Athlon X2 5200+	Rs. 3,000	November 2008	AM2+	2.7 GHz	2000 MHz HyperTransport	1 MB
AMD Athlon X2 5600+	Rs. 3,675	November 2008	AM2+	2.9 GHz	2000 MHz HyperTransport	1 MB
AMD Phenom 2 X4 920	Rs. 10,975		AM2+	2.8 GHz	3600 MHz HyperTransport	2 MB
AMD Phenom X4 9550	Rs. 6,850	November 2008	AM2+	2.2 GHz	3600 MHz HyperTransport	2 MB
AMD Phenom X4 9650	Rs. 6,800	November 2008	AM2+	2.3 GHz	3600 MHz HyperTransport	2 MB
AMD Phenom X4 9850 Black	Rs. 8,000	November 2008	AM2+	2.5 GHz	4000 MHz HyperTransport	2 MB
AMD X2 6000+	Rs. 4,175	November 2008	AM2+	3.1 GHz	2000 MHz HyperTransport	2 MB
Intel Core 2 Duo E5200	Rs. 3,500	November 2008	LGA775	2.5 GHz	800 MHz	2 MB
Intel Core 2 Duo E7300	Rs. 5,750		LGA775	2.66 GHz	1066 MHz	3 MB
Intel Core 2 Duo E8400	Rs. 9,050		LGA775	3 GHz	1333 MHz	6 MB
Intel Core 2 Duo E8500	Rs. 9,600	March 2008	LGA775	3.16 GHz	1333 MHz	6 MB
Intel Core 2 Quad Q6600	Rs. 9,750	November 2007	LGA775	2.4 GHz	1066 MHz	8 MB
Intel Core 2 Quad Q8200	Rs. 9,025	November 2008	LGA775	2.33 GHz	1333 MHz	4 MB
Intel Core 2 Quad Q9550	Rs. 14,850		LGA775	2.83 GHz	1333 MHz	12 MB
Intel Core i7 920	Rs. 15,100	April 2009	LGA1366	2.66 GHz	4.8GT/s QPI	NA

Monitors

Model	Market Price	Tested in	Size	Resolution	Contrast Ratio	Response time
Acer AL1916	Rs. 6,500		19-inch	1280 x 1024	700 : 1	8 ms
Acer AL2216	Rs. 9,800		22-inch	1680 x 1050	700 : 1	5 ms
BenQ T2200HD	Rs. 9,750		21.5-inch	1920 x 1080	1000 : 1	5 ms
Dell 1909W	Rs. 7,200		19-inch	1440 x 900	1000 : 1	5 ms
Dell S1709W	Rs. 6,550		17-inch	1440 x 900	600 : 1	8 ms
LG 177WSB	Rs. 6,400	May 2008	17-inch	1440 x 900	700 : 1	8 ms
LG W192W	Rs. 7,550		19-inch	1440 x 900	700 : 1	5 ms
LG W1942S	Rs. 7,100		19-inch	1440 x 900	700 : 1	5 ms
Samsung 2033SW	Rs. 7,850		20-inch	1600 x 900	15000 : 1	5 ms
Samsung 740NW	Rs. 6,500		17-inch	1280 x 720	500 : 1	8 ms
Samsung 743NX	Rs. 7,300		17-inch	1280 x 1024	500 : 1	5 ms
Samsung 943NWX	Rs. 7,500		19-inch	1280 x 1024	1000 : 1	5 ms
ViewSonic VA1918WM	Rs. 6,600		19-inch	1440 x 900	1000 : 1	5 ms
ViewSonic VX2255wmb	Rs. 12,500	May 2008	22-inch	1680 x 1050	1000 : 1	5 ms
ViewSonic VX2835WM	Rs. 28,000		28-inch	1920 x 1200	1000 : 1	3 ms

ASUS Maximus II GENE
launches in India and is based
on the Intel P45 chipset
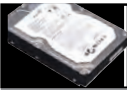
Hard Drives

Model	Market Price	Tested in	Speed	Cache	Interface
Hitachi 500GB	Rs. 2,975		7200 RPM	NA	SATA 2
Seagate 1.5TB	Rs. 7,700	March 2009	7200RPM	32	SATA 2
Seagate 1TB	Rs. 5,500	April 2009	7200 RPM	32	SATA 2
Seagate 7200.12 500 GB	Rs. 3,250	April 2009	7200 RPM	32	SATA 2
Seagate 750GB	Rs. 4,550	April 2009	7200 RPM	32	SATA 2
Western Digital Caviar Blue 640GB	Rs. 3,700		7200 RPM	16	SATA 2
Western Digital Caviar Blue 1TB	Rs. 5,150		7200 RPM	16	SATA 2
Western Digital Caviar Blue 750GB	Rs. 4,450		7200 RPM	16	SATA 2

Graphic Cards

Model	Market Price	Tested in	Core Speed	Type of memory	Memory
EVGA 9600GT Knock-out	Rs. 7,350	November 2008	700 MHz	GDDR3	512 MB
EVGA 9800GT (Super Clocked)	Rs. 9,250		650 MHz	GDDR3	512 MB
Palit GeForce 9400 GT	Rs. 2,400		550 MHz	GDDR2	512 MB
Palit Radeon HD 4850 SONIC	Rs. 9,265		685 MHz	GDDR5	512 MB
Palit Radeon HD 4870 1 GB SONIC	Rs. 15,325		750 MHz	GDDR5	1024 MB
Palit Radeon HD 4870 SONIC	Rs. 13,725	October 2008	750 MHz	GDDR5	512 MB
XFX GeForce 8600 GT	Rs. 3,400		540 MHz	GDDR2	256 MB
ZOTAC 9800 GTX+ AMP! Edition	Rs. 11,150	October 2008	738 MHz	GDDR3	512 MB
ZOTAC GeForce GTS 250	Rs. 10,350		738 MHz	GDDR3	1024 MB
ZOTAC GeForce GTX 260	Rs. 17,000		650 MHz	GDDR3	896 MB
ZOTAC GeForce GTX 285	Rs. 24,900	February 2009	648 MHz	GDDR3	1024 MB

Power Supply Units

Model	Market Price	Tested in	PCIe connectors	SATA connectors	MOLEX connectors
VIP 400 EX Series	Rs. 1,150		NA	NA	NA
VIP 400W SMPS Temperature-controlled	Rs. 1,650		NA	NA	NA
Zebronics ZEB 400W Power Supply	Rs. 1,475		1	NA	NA
POV Black Diamond 400W	Rs. 2,512		2	2	6
Corsair 400CX Power Supply	Rs. 3,300		1	6	6
Cooler Master Extreme Power 460W	Rs. 2,425		1	4	5
Corsair 450VX Power Supply	Rs. 3,950		2 (1x 8-pin)	6	6
Zebronics Pro 500W Power Supply	Rs. 3,120		1	4	6
Cooler Master Real Power Pro 550W	Rs. 5,450		2	6	5
Tagan BZ600 600W Modular Power Supply	Rs. 6,050		2 (1 x 8-pin)	5	4
Corsair 620HX Power Supply	Rs. 7,900		2	8	10

Digital Cameras

Model	Market Price	Tested in	Sensor	Optical Zoom	LCD Screen Size
Canon Powershot A740	Rs. 6,500	September 2008	7.1 MP	3.4x	2.5 inches
Canon A2000 IS	Rs. 12,500		10 MP	6x	3.0 inches
Canon SX110IS	Rs. 16,500		9 MP	10x	3.0 inches
Canon SX10IS	Rs. 24,995		10 MP	20x	2.5 inches
Nikon COOLPIX L19	Rs. 7,250		8 MP	3.6x	2.7 inches
Olympus FE20	Rs. 5,800		8 MP	3x	2.5 inches
Panasonic FS5	Rs. 9,499		10 MP	4x	2.5 inches
Sony S950	Rs. 8,800		10 MP	4x	2.7 inches
Sony H10	Rs. 15,660		8.1 MP	10x	3.0 inches

SERVING UP A VIRTUALISED WORLD

Siddharth Parwatay

A business, be it small, medium sized or large, has some basic computing prerequisites. First there should be IT stability. This means that downtimes are strictly unacceptable. Productivity should ideally never have to be halted on account of failure in the IT backbone of a company. Another prerequisite that makes complete business sense is lowering the cost of infrastructure. Most businesses these days are trying to lower their TCO (Total Cost of Ownership) by any means possible.

A buzzword that's been doing the rounds lately promises to take care of the above requirements. That word is virtualization. This solution is expected to improve utilisation, reduce costs,

Shrikrishna Patkar

Using virtualization to service your business needs

increase productivity and aid disaster recovery. The current adoption rate of virtualization in India is at around 19 per cent but is expected to quadruple in the next two years.

What is Virtualization?

Virtualization basically means abstraction of computer resources. But to get a better understanding of what that really means, one must delve deeper into its forms. Virtualization has several variants but the ones that makes most sense in the business arena are platform virtualization, and — at the other end of the spectrum — desktop virtualization.

Let's look at platform virtualization first. Platform virtualization is performed on a given hardware platform by virtualization software, which creates a simulated computer environment, a virtual machine, for its guest software. The guest software here is a fully functional operating system. This means that one piece of hardware or computer can have several virtual machines (VMs) running within it simultaneously. Each one of those machines has its own virtual components such as memory and storage space. Each one of the VMs have an operating system. This is all possible thanks to advances in hardware technology such as quad core processors that are so powerful that they have plenty of resources to spare. In such a scenario, you actually have one server but it acts as though it were several servers. Virtualization software enables that server to be split up into different partitions. With virtualization, each server's programs, files, and processes are merged into one image file. This will be one of the many image files constituting each of the virtual servers.

Therefore, one physical server could act as, say, three virtual servers with each virtual server performing a specific, and different, function. You could have a Windows-based file server, while another could be a Linux web server hosting web sites on Apache. Another could be a DBMS server based on another platform. Each virtual server acts completely independently from one another, hosted on a virtual abstraction layer provided by the virtualization software. If one server crashes, the others are not affected. The net result is that you have to buy only one powerful physical server and you get the benefit of three servers for the cost of that one.

Desktop virtualization, on the other hand, is a variant of the thin client model, only with greater flexibility. For example, users can use a stripped down PC as a client, connect to virtual resources and software on a server, but at the same time have the freedom to install and configure their own applications. A user's server-based desktop can be accessed from other locations as well. However, since this variant is discussed more commonly, we will look more at hardware or server virtualization.

What server virtualization software is available and how does it work?

VMware currently has the largest market share worldwide when it comes to server virtualization software. It has both free as well as paid options. VMware Server and VMware ESXi are free solutions. Virtualization software is installed as an application on top of a host Windows or Linux operating system. Once installed, a thin virtualization layer partitions the physical server to be able to run multiple VMs simultaneously. The computing resources of the physical server are pooled and allocated to the VMs as per their needs. The layer of virtualization ensures that each VM is isolated from its host and other VMs. Within the limits of your hardware configuration you generally get near native performance.

The other options for server virtualization software are paid solutions such as XenServer from Citrix and Parallel's Virtuozzo Containers. In the open source world you have OpenVZ and Linux V-Server. There is also a popular application called Virtual Box, which many home users would've tried.
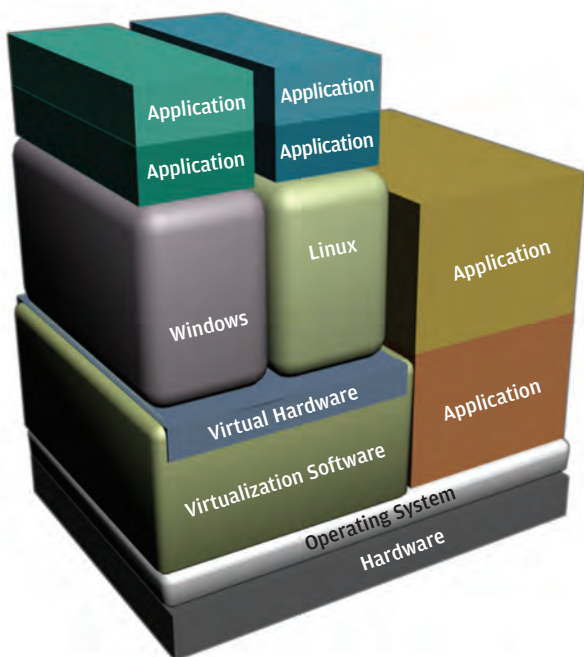
TECH@WORK

hardware. Security is also somewhat heightened. System admins go to great lengths to isolate each of the machines in a network by a complex system of firewalls and other measures. Now virtu-alized servers can reside on the same physical server and yet remain in their own encapsulated environment.

Your roadmap to virtualization

Now that you know the benefits of virtualization it is important to know a few points that will act as guidelines for your enter-prise to enter the virtualized world.

Assess your needs: the first step in a virtualization deploy-ment programme should be to assess your needs. Make a business case for virtualization and determine whether the technology will indeed provide a return on investment. Businesses should look at how their current servers are being utilised and answer the following questions

● Are common applications running on several different servers?
● Are there enough servers that could and should be consoli-dated?
● Is the business's server requirement likely to increase?

Licensing and tech support: it is important to check if current software licenses can be migrated to the virtualized servers. Also, some application developers may be unwilling to provide techni-cal support to their applications when they're moved to a virtual-ized environment.

## Virtualization deployment plan:

an SMB must understand the importance of a sound plan. Timelines, budgets and an implementation programme should be chalked out. Backing up data is very important. Also, the plan should be technically sound. For instance, it is important to assess the hardware requirements of each virtual machine. i.e. how much hardware is needed for it to operate smoothly. The number of VMs should not be allowed to exceed what the hardware is able to support. A thorough implementation plan will help the enterprise minimise glitches. ■

siddharth.parwatay@thinkdigit.com

What are its advantages?

An obvious benefit of consolidating hardware in such a way is cost saving. Consolidation of IT resources improves server utilization and consequently increases efficiency, lowers power consumption, and reduces the need for physical real estate.

Since hardware resources are utilised more efficiently, the compute capacity on each physical server is maximised. Thus the utilisation of resources increases by at least 5 to 15 per cent. It is important to note that savings increase propor-tionately with the number of servers that are consolidated by a business. If only a handful of servers are deployed as VMs, then savings will be significantly smaller. Some virtualization platforms claim to have a virtual consolidation ratio of 10:1. Consolidating servers results in increased ROI for both existing and future server expenditures.

With virtualization, each server's programs, files, and processes are merged into one file, and this file then placed among other images on one physical server. This means that software can easily be relocated bringing in an important aspect of portability. If upgrading to a better IT infrastructure the VMs can easily be moved without having to go through the lengthy process of setting up systems all over again.

Small businesses sometimes even deploy virtualization as a way to simplify disaster recovery. Conventionally, disaster recov-ery can be quite a harrowing ordeal to any IT admin personnel. Issues such as finding the right backup disks, offloading them on to new hardware, and encountering all sorts of problems such as not having a record of software licenses and not being able to find the original CDs for their operating systems and other appli-cations are commonplace. Then comes the cumbersome process of re-installing and re-configuring everything and making it work on the new hardware. Virtualization on the other hand makes it easy to capture everything onto a single image file which makes recovery easier.

Another consequence of this attribute is that it becomes easy to quickly respond to growing business needs. Since virtual servers can be deployed on blade servers, which themselves are modular, it becomes easy to scale up the IT infrastructure.

Testing is another area where virtualization has its uses. In a virtual environment, virtual test servers can be quickly setup, tested and broken down or reconfigured. Some organizations are still running applications on legacy operating systems, which with the help of virtualized servers can now be run on the latest

Application Virtualization

Application virtualization is an interesting variant of virtualization. Unlike server virtualization, where an isolation layer is built around each OS, here, an isolation layer is built around each appli-cation. So, in effect, the application is wrapped or packaged by a layer that does not allow it to freely interact with the underly-ing OS. This way the application is fooled into taking registry entries and other information from the virtual layer around it and hence the appli-cation cannot damage the OS. Virtualized applications can there-fore run alongside each other perfectly well. In fact, different versions can also run alongside each other with-out causing any conflicts. Hence, every application is a nice little bundle that can be very easily distributed. In effect the virtualized program can be streamed or deployed from one central server to clients. Error resolution becomes simpler and so does updating the package. In the context of large work-places where deployment is a hassle, this makes good sense. Altiris SVS (Software Virtualization Solution), Microsoft Application Virtualization (MAV) and XenApp are some of the AV options available. The way in which each of these solutions creates an abstraction layer differs other-wise they're quite similar in function.
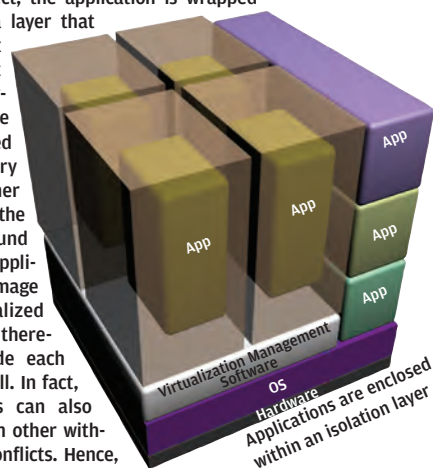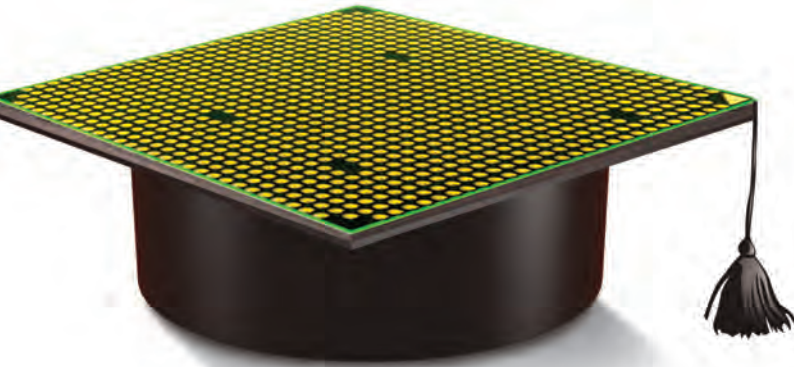
Be a Chip off the old block

All that you ever wanted to know about a Career in VLSI and Chip Design

TECH@WORK

Siddharth Parwatay

Chip designing is a challenging job with constant innovation in process technology. In addition to its dynamic nature, there are challenges that need to be overcome as products become increasingly complex. At its base lies Electronics Engineering and Computer Science and like others, this industry too, is not without its lore and legend.

The Indian story of VLSI began in 1985, when Texas Instruments set up the first design centre at Bangalore, thereby ushering in an era of wide-spread chip design and VLSI. Today, there are several companies in the field including AMD, Intel and NVIDIA, apart from companies engaged in ASIC (Application Specific Integrated Circuit) designs such as KPIT and Mindtree Consulting. VLSI design service companies brought in $927 million last year according to the ISA (Indian Semiconductor Association), from all three segments — analogue, digital and mixed signal. However, the industry is expected to shift to mixed signal in the coming years. Also, despite the difference in salaries slowly narrowing, having designs produced in India still presents a huge comparative advantage; so the future is bright.

The Indian link to VLSI
Processors and chips developed today contain hundreds of millions of transistors; hence, the term VLSI (very large scale integration). NVIDIA's Indian operation has 780 employees across three sites – Bangalore, Pune and Hyderabad. According to Amit Verma, Director of Human Resources, NVIDIA (India), "In these centres, the focus is on end-to-end ASIC product development encompassing architecture, RTL design, verification, timing, physical design, system engineering (including board bring up and debugging) and quality assurance for chipset and mobile products. NVIDIA's Indian engineers are part of the company's worldwide team and their contribution is vital to the business as a whole."

On the other hand, AMD has two centres in India, where AMD teams usually work on one or two products at a time. This involves a fair bit of interaction with the teams abroad. "Shanghai was, for example, a joint effort between Boston and India", said Karthik Muthusamy, General Manager, India Design Centre at AMD India Engineering Centre

Basic requirements
Passion and having an early understanding of this field is essential. Aspirants will work with sophisticated design tools, chip architectures and test methods. So, apart from technical expertise, additional skill sets are also important. "Key areas that we look for

in our engineers would be strong analytical skills, good problem solving skills, a willingness to work with teams as collaboration is a part of the job profile, and so a lot of communication skills." said Rohit Vidwans , Director — Digital Enterprise Group (DEG), Intel India. Specific to chip design activities, companies look for engineers in Electrical and Computer Science, even Chemical engineers or someone with a strong background in Physics. As for degree certification, companies hire all the way down from a Bachelors degree to a Masters in Science degree, as well as PhD holders; thus, spanning the entire spectrum of educational degrees.

Technical requirements
A strong hardware engineering background with specialisation in VLSI design is a must. Additionally, knowledge of digital systems and VLSI design, computer architecture, computer arithmetic, C/C++ programming languages, CMOS transistors and circuits is necessary. In VLSI design, tools play a major role. An integral part of an engineer's work deals with using the latest industry tools from Synopsys, Cadence and other EDA vendors. An understanding of hardware languages such as Verilog is also important. Other languages such as Perl and C come in handy too. Processor description languages such as nML and Lisa will be an added plus if you are thinking of a career specialisation in microprocessor design.

"Apart from architecture and HDLs, chip designing in today's world will need in-depth knowledge of even transaction level modeling using SystemC, knowledge of electronic design automation tools, and some understanding of the backend timing / manufacturing issues. Knowledge of simulation tools and interactions with memory / cache design will also be needed." says Sandeep Kumar a consultant architect at Coware India Pvt Ltd. Sandeep has sketched a successful career in this field, now spanning over 17 years of experience.

Recruitment
Companies are in search of highly motivated individuals with strong analytical and communication skills. Apart from educational degrees, companies are also interested in the fundamentals. "There are people who understand how to push the tools, but when we talk to candidates we try to see if they are familiar with fundamentals. For example, if we're working on a GCC component we would want to know where you put this particular switch. Why here? Why do you use it? OK, you know how to use ASIC tools, but do you know why you did certain things that way? Ability to understand and pick up is important," said Karthik from AMD. Arriving at the answer is as important as getting to the answer itself. So you can expect these kinds of questions in the interview rounds. Most companies have tests for analytical ability.

Talent is sourced by tying up with premier schools in the

The use of integrated circuits by the US military in the 1960s marked the begining of widespread use of the new technology

Evidence from the VLSI world may suggest that Moore's Law, which states that technical advances relating to chips double every 2 years, is slowing down

country, where companies engage in open forums and interviews. Internship is another means. Intel has a very strong internship programme. Hiring engineering students as interns and having them work with their design teams lets students get a first-hand experience of what it's like to work in this industry. At the end, companies take on the better ones as fulltime employees. This year, Intel has over 100-150 interns working in different development groups across India.

The intake varies widely from company to company. AMD believes in taking only a few people at a time. This is due to the steep learning curve. When it comes to microprocessor design, it doesn't use large teams. The Athlon design was done with less than 200 people. Therefore, finding the right talent is more important than making up the numbers.

Training

Some reports suggest that while sourcing talent, semiconductor companies find that is there a lack of engineers who can immediately be deployed on a design and that Indian electronics engineers need additional training and skill development. However, many industry insiders we spoke to beg to differ. In fact, they believe Indian engineers come with strong conceptual understanding and impressive learning aptitude. They need to be trained only on the latest tools and development methodologies as they are not usually exposed to these at the college level. However, they are able to pick up everything they need pretty quickly.

When working on projects for designing low power chips, efficient multi-core architectures, mixed signal chips, memory sub-systems, interrupt controllers, and interfacing with video/audio processor, the basic textbook knowledge may be insufficient.

"Current curriculum touches the basics of computer architecture, while taking up a school project and learning the relevant design automation tools, from companies like Cadence / Mentor Graphics / Synopsys will be a practical help," said Sandeep.

Some companies have strong mentorship programmes whereby junior engineers are paired with a senior engineer who coaches and guides them along their way. This is of course in addition to regular training programmes.

Work culture

It's not all work and no play when it comes to a career in chip designing. It's a very young industry to work in and the average age of employees at most companies is low, making the work culture active and vibrant. Companies have extremely challenging programmes where the teams are motivated to deliver; but at the same time, there are several recreational activities such as team building, sports and quarterlies. Intel organises events that involve employees as well as their families such as cricket sessions and tennis matches. So it's a mixture of cutting edge work and fun.

"Seeing technologies you've worked on, being put into day to day use is quite an exhilarating experience!"
Rohit Vidwans
Director,
Digital Enterprise Group,
Intel India.

Career path

Career paths in this industry are well defined for aspirants in both technical and management functions. Typically, an engineer takes about 5 – 6 years to reach the position of a Senior Design Engineer. As the aspirant gains more work experience by working with different designs, he / she can advance to a Lead position. Post this level, the engineer can

The right Course

Companies consider Tier A colleges in India such as IITs, BITS , NITs, etc., as a good source of qualified engineers. However, candidates from regional colleges such as VJTI or Manipal Institute are also considered, provided these students can opt for a course in VLSI design. Companies look for students at undergraduate and masters levels in computer science and electronics domains with a consistently high GPA. Here's a list of some of the top places that offer courses in VLSI Design and allied fields, as recommended by VLSI chip design companies.

CDAC, Hyderabad:
Certificate Course in Digital and Analog VLSI Design (CDAD)
Sandeepani School of VLSI Design, Bangalore & Hyderabad:
Post-graduate diploma in VLSI design
Veda IIT, Hyderabad:
MS and Diploma in VLSI and Embedded systems
Cranes Software, Bangalore:
Embedded System certification
Vedant Chandigarh, Lucknow: Course in front-end and back-end design including Analogue & Mixed Signal design

decide if he / she wants to continue in the technical function or move to a management function such as Project Manager, both of which are equally fulfilling depending on the inclination. How quickly you grow depends entirely on the individual ability. You can also branch off and choose to become an expert in a certain technology, for instance, L2 design, and be a mentor or Senior Fellow.

As for the salaries in this industry, a fresher starts off at around 5 lakhs per annum while a Lead Engineer generally gets 8 – 12 lakhs. In a few years, one can progress to Project Lead where 12 – 20 lakhs is the norm and the sky is the limit, depending on the brand.

Summing it up

To make a successful career one does need to have a special interest in the subject and a dream to make a difference. Conscious choices have to be made along the way which may be less rewarding in the short run such as going in for a focused Masters with a good project. The money and lucrative job offers will follow once one has developed the required skill-sets and gained the experience. Hence, chip design is an extremely fulfilling career option for the technically and technologically inclined. As for the areas to look out for, the general consensus is that chips designed for consumer electronics is a growth area. Designs for wireless devices and multi-core processor design is bound to go up too, while integration of MEMS is a growth area that has great applications in the healthcare and medical arena. Entertainment and graphics technologies coupled with designing chips that give you higher performance at lower power consumption should be the focus for young entrants. "The dawn of energy age has increased demand on semiconductors to do more with less energy (performance per unit of energy). Another trend is towards always-on mobile connected devices. This is giving push to cloud computing where most of the horsepower is in a data centre and a smart connected device can access this capability from anywhere." says Dr. Atul Garg (PhD), a senior chip designer at NVIDIA Corporation, Santa Clara, USA. The engineer from IIT Kanpur, who now holds ten design patents to his credit has this final advice for aspirants: "Keep yourself current with state of the art in such a fast moving industry, increase productivity to be in sync with industry trends, and keeping ahead of the competition. Learning is a lifelong process and nothing is impossible if you work hard." ∎

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developer corner

Command Line
According to dedicated command line users,
the command line is much faster than a GUI.

PowerShell: Empower the Windows CLI

Kshitij Sobti

Serious command line interface (CLI) advocates always shy away from Windows, deterred by the weak command interface it provides, and the lack of a pure CLI mode. With Windows PowerShell, Microsoft has brought power to the console, and given some geeks a road back to Windows.

Until Windows 98, we were used to an option to go into the pure console mode if all things fell apart. The presence of DOS in the event everything else failed was always comforting. Microsoft seems to have abandoned its CLI since then, with only a few minor enhancements, 'command.com' became 'cmd.exe' but significant changes were yet to come. Compared to the advanced nature of commands available for *nix environments, Windows can be said to effectively have no CLI.

Microsoft tried to give developer features such as Windows Script Host (WSH) to enable automating tasks, and scripting redundant procedures. However, it only managed to open numerous security backdoors, and become more associated with viruses than anything else. Finding the WSH process in your process list was a trigger of panic.

Microsoft fortunately hasn't given up. Windows PowerShell is its cure for the Windows CLI. Released in November 2006, Windows PowerShell is truly a powerful CLI option. Although it is still in its infancy with just one release, it has managed to live up to its name.

The CLI really?

Many people swear by the command line interface and sing praises of how much faster it performs some complex tasks. However, for most users, graphical user interfaces have become indispensable. Command lines may make complex tasks achievable. However, the truth often is that GUIs make simpler tasks easier. So why bother with a CLI?

Often we need to perform simple tasks that have rather trivial command line solutions. For example, how would you rename all the '.abc' files in a folder to '.xyz'? While the command line solution is a simple `ren *.abc *.xyz` executed in the said directory, the GUI by default offers no such comfort. How about renaming all the files in a directory which are greater than a fixed size? While such a thing would have required a complicated script before, with PowerShell, all this can be done in one line! Don't believe us! Read on and find out.

Setting up PowerShell

PowerShell is a free download available from the Microsoft web site, and is available for Windows XP onwards. The current stable version is V1. However, Microsoft has also released a CTP3 (Community Technology Preview) of its upcoming V2. Both versions are included on this month's DVD for your convenience.

Once you start the console, you will realise that it is quite similar to your normal command line, except that the colour scheme is different, with a blue backdrop and white text, and with a 'PS' in the beginning of the prompt. This is where all the magic happens.

Cmdlets

Windows PowerShell introduces the concept of cmdlets, which are basically small commands that can be run from the command line. They are unique to PowerShell, in that they won't run outside a PowerShell Window. Similar to normal Windows CLI commands, you run them by typing the command name, along with parameters to control their functioning.

In PowerShell, all commands follow the same naming convention of Verb-Noun, making the command names longer, but still easy to memorise. For example, some common commands are Get-Content, Move-Item, Rename-Item and Format-List.

In PowerShell, commands do not directly output the result to the screen, but instead return all the information as a .NET object, which PowerShell then displays. This allows for further processing of the output before it is finally written to the screen. PowerShell comes with many output formatting cmdlets for this purpose.

A very important and powerful new concept in PowerShell is pipelining, a concept with which DOS users will be familiar. Pipelining allows you to pass the output of one command as the input to another. Something like the example given above could be done with three commands:

- A command to get the directory listing
- A command to filter out the files to be renamed
- A command to rename the files

We pass the directory listing to the filter, and the filtered results to the renaming command, forming a 'pipeline' of sorts.

So what would this command look like in PowerScript?

```
PS> Get-ChildItem | Where-Object {$_.length -gt 50kb} | Rename-Item -newname {$_.name + '.big'}
```

This will rename all the files in the current folder which have a size greater than 50 kB, and add an extension of '.big'.

This might seem an unnecessary way of running commands. However, PowerShell provides multiple aliases for each command, so that the same result as above could have also been achieved by:

```
PS> ls | where {$_.length -gt 50kb} | ren -new {$_.name + '.big'}
```

Almost all commands have short forms for faster typing. However, while writing a script that will be used later, using the full command name can be helpful for future readers.

The command we just saw is divided into three different parts, separated by the vertical bar (aka. the pipe character).

```
Get-ChildItem {$_.length -gt 50kb}
```

This is similar to the 'dir' command. However, it is also capable of listing registry entries. You can also have a parameter such as '*.xyz', to display all '.xyz' files, or use the '-recurse' parameter to get a recursive list of all the files in the folder and its child folders. This output is being piped on to:

- `Where-Object`

Now this immediately highlights the difference between the regular commands you are used to, and PowerShell. The 'Where-Object' command filters the input it gets from 'Get-ChildItem' based on the conditions provided in the parameters.

Here the condition enclosed in braces, '{$_.length -gt 50kb}', specifies that for each object the required condition is that its size should be greater than 50 kB. Here, '$_' represents the object being tested for the condition. By using '$_.Length', we obtain the size or length of the Object, and since the object we are considering here is a file, the length is basically the file size. The final piece is '-gt 50kb', which means greater than 50 kB.
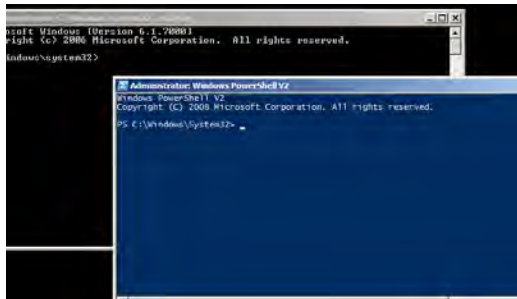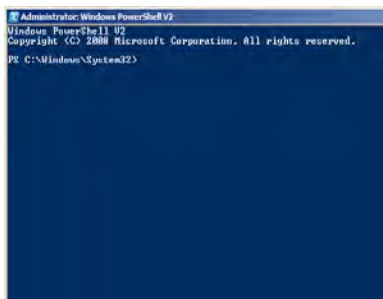
Hack alert
Two security experts recently took control of a Windows 7 system during the boot process using a code they developed. Reassuring to know it can't be done remotely.

XP Popularity
According to Forrester research, Windows XP powers 71 per cent of all PCs

TECH@WORK

There are a multitude of options available at this point. We could use 'name' instead of length to obtain the file name and test it however we like, or the modification date, or the attributes, the possibilities are endless. Even while considering the file size, we can change the '-gt' to '-lt' to get all files smaller that 50 kB or '-eq' to get all files of exactly 50 kB.

This command will test each file object for the prescribed condition, and output those that comply. This output is now further piped to:

● `Rename-Item -newname {$_.name + '.big'}`

This final part of the command gets the filtered list of files from the previous command, and renames them according to the parameters specified. The '-newname' parameter, as one might guess, specifies the new name to give to each file. Here we simply take the input file name '$_.name', and add a '.big' after it. Simple!

However we can do much, much more, by using the '-replace' parameter for example, we can replace certain strings in the file name by other strings. For example, we could replace all instances of 'Music' with 'Song' by:

```
Rename-Item -newname {$_.name -replace 'Music','Song'}
```

PowerShell to the Rescue
So we renamed a couple of file. What more can we do?

PowerShell is extremely diverse. It supports functions, loops, if-else conditions, reading / writing to files, downloading files from the internet, administering windows settings, regular expressions, pipelining, etc. In fact, all the cmdlets are actually .NET classes, so you can create some yourself.

Let's take a look at some of the things you can easily do with PowerShell.

Write the list of files in a directory to an HTML formatted file
```
Get-ChildItem | ConvertTo-Html | Out-File .\dirlist.htm
```

Here we use the 'ConvertTo-HTML' cmdlet to get an HTML output, and use the 'Out-File' cmdlet to write it to a file. We could as easily get a CSV output for use in a spreadsheet by using the 'ConvertTo-CSV' cmd.

Organise files in folder by name
```
$filelist = Get-ChildItem
$filelist | ForEach-Object -Process {mkdir $_.name.substring(0,1) -ErrorAction SilentlyContinue }
$filelist | Move-Item -Destination {$_.name.substring(0,1)}
```

Now here's some actual scripting work. This is what's going on:

First we store the list of files in the current folder to a variable called '$filelist'.

Secondly we use the 'ForEach-Object' cmdlet to perform an operation on each file on the folder. The '-Process' parameter tells PowerShell the action to be performed for each object. What we are doing is creating a new folder for each file. The folder name is the same as the first character of the file name (which we get using $_.name.SubString(0,1) which extracts 1 character starting from the 0th position of the filename). This will essentially create folders named '0', '1','2'...'A','B','C'... depending on the names of the files in current folder. Here, we have also added a parameter '-ErrorAction SilentlyContinue' which tells the shell not to display any errors that occur. This is done as there will be many error messages displayed since many files will begin with the same name.

Finally, the last command takes our file list, and moves each file to a folder corresponding to the first character in its name.

List all processes which are taking up to much memory
```
Get-Process | Where-Object {$_.VM -gt 500MB}
```

Simple enough, this takes the output of Get-Process and pipes it through the 'Where-Object' cmdlet to get a list of processes which have a 'VM' (Virtual Memory usage) greater than 500 MB. You can further pipe this to the 'Stop-Process' cmdlet to stop all such processes!

List all large files in a drive
```
Get-ChildItem -Recurse | Where-Object {$_.Length -gt 300MB} | Sort-Object -Property length -Descending
```

Here we take the recursive directory listing of the drive using 'Get-ChildItem', and pipe it to 'Where-Object' for filtering. 'Where-Object' then filters out the files greater than 300 MB, and pipes them to 'Sort-Object'. 'Sort-Object', as the name suggests, is used for sorting the data. Here we sort it based on the length (i.e. size) of the file, and also tell the 'Sort-Object' to arrange them in descending order. You can use a multiple order sort by specifying multiple properties separated by commas e.g. '-Property length, name'. This information can be very useful when cleaning up your hard drive. So you can, if you want, further pass this data to the 'ConvertTo-HTML' or ConvertTo-CSV cmdlets followed by the 'Out-File' cmdlet to generate a report of sorts. For example,

```
Get-ChildItem -Recurse | Where-Object {$_.Length -gt 300MB} | Sort-Object -Property length -De | ConvertTo-Csv | Out-File report.csv
```

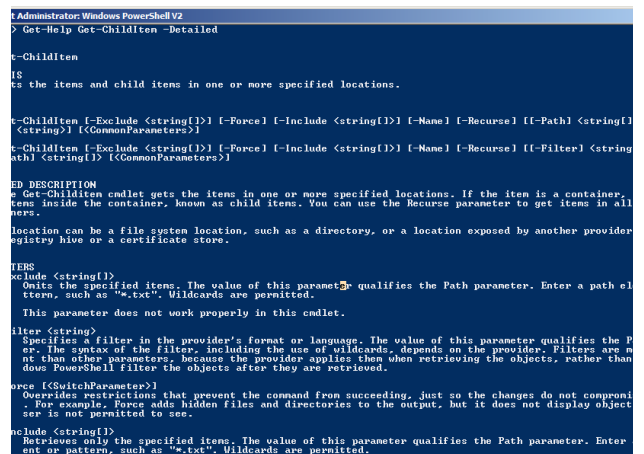### Empower the PowerShell!
You thought that was all!?

Microsoft and many third party developers have created PowerShell extensions, which add cmdlets or other features to control many more aspects of the computer. Till windows Vista, PowerShell was an add-on product that needed to be installed, however starting with Windows 7 onwards, it will come integrated with Windows. Microsoft will also drop support for the old Windows Scripting Host, and focus on PowerShell instead.

PowerShell v2, which is currently in development, is now available as a pre-release version. It will feature some powerful new features, and even a GUI based script editor called PowerShell ISE (Integrated Scripting Environment). Some of its interesting features being:

● **Remoting:** allowing you administer a remote computer
● **Background Jobs:** enables you to run commands in the background, asynchronously, without the need of the console.
● **Modules:** allow for modular programming of PowerShell scripts, by compartmentalising your code. It adds a file type '.psm1' for module files
● **Script Cmdlets:** these allow you to make cmdlets using PowerScript itself! No programming knowledge required.
● **And many other features such as:** Transactions, Eventing, Exception Handling, Steppable Pipelines, Internationalisation, Debugging etc.

Best of all, PowerShell is a free tool for Windows users, so it's worth getting even if you use it only occasionally. A large number of ready-made scripts are already available online, from Microsoft and others to ease administrative tasks, so even if you don't want to commit to learning it, it can still ease a lot of your tasks. With PowerShell becoming a core part of Windows from Windows 7 onwards, an elementary knowledge of it will surely go a long way. ■

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esc
feature

Trick Photography
Combine the power of an image editor and a camera to create mind-boggling images!

112

The best web sites to waste time on

Kumar Jhuremalani

Not going anywhere this holiday season? Have spare time to kill, but don't want to go out in the heat or watch TV at home? Well then we have the perfect solution for you – Logon to the net and visit the sites we are about to reveal to you. Spend hours and days on these fun filled sites and proudly say that you have had the best summer sitting at home.

Online videos

The first thing that pops up in your mind when reading something like Online Videos is the ever famous **YouTube.com**. This web site is considered the best web site to host videos that range from anything to everything. Even if you type something like 'I hate Mars' there will be a

List of some hilarious videos to search on YouTube
● Indian Thriller
● Crazy Kung Fu
● Buffalax

video available on YouTube. It may not be accurate, but you will find some video that will entertain you.

Why does Google keep trying to put their hand into everything. **http://video.google.com** is Google's solution to a video hosting web site. We really don't see the need for Google videos as most of the videos that are put up there are from YouTube itself.

Veoh.com is another web site that allows video hosting services. The videos on this site are nicely categorised into movies, TV, dramas, etc and there are also many Channels and Groups that you can watch videos at. The thing that is really unique with this web site is that while watching a video you can simultaneously browse the other videos through all the categories. These videos are displayed on the right side of the video you are viewing. There is a small catch to this web site though. For small videos it is fine, but Vimeo is another simple video sharing web site. The reason why we are mentioning this site is that it gives you full 720p high definition videos instead of the FLV file formats that are offered by others.

Entertainment Unlimited

hosts many individual radio stations. There are a whole bunch of radio channels that you can listen to, each having some really great music.

Online radio

For those of you who like to listen to music and want to experiment and hear new music other than what's playing on the radio, then the best thing to use your internet connection for is to tune in to an online radio station. SHOUTcast is one such online radio that

Social networking

Facebook

By now, most would already know what Facebook is. But for the benefit of the doubt for a few, Facebook is a social networking site where you can invite and make new friends from all corners of the world. There are some great applications on Facebook that will either irritate or encourage you to participate in those applications further.

Twitter

Twitter is the new fad that people around the world have got hooked onto. For those of you who don't know, Twitter is sort of an instant status update that is shared with everybody in your

Applications to try out on Facebook
● LettersCube
● Twirl
● Scrabble
● UNO
● Counter Strike: Red Team Go

Register at Twitter.com and start sending out your own Tweets

network. It's similar to the status updates that are present in Facebook, but that's it, nothing more than status updates. With these small little 'Tweets', as they are called, is how people share daily activities, experiences and news events happening across the world. Once you setup a profile, you invite your friends to follow you and you need to follow your friends to get their updates. Twitter has grown to such an extent that you can now get twitter updates from your friends on your mobile phone as well as use twitter through SMS. The next time you meet a celebrity, you could just send out a Tweet and inform all your friends about it. But beware there have been many incidents where people have used twitter to spread bogus news around just to get their 15 minutes of fame.

There are many who don't like Twitter, but then there are more than many who love it, but we feel this is just a passing phase and some of us hope that this comes to an end soon.

Gaming

Flash/casual games

Almost everybody loves to play those casual flash-based games just for fun. It's a great way to pass your time on the internet. These games have grown to a huge extent. There are a number of free games now available by Indian developers itself, such as Zapak and Indiagames. These web site even host competitions where you could win either money or some merchandise. These games are such that you just have to log in to their web site and lay them, no hassle about downloading the games, just pure fun.

The Akinator will read your mind

Text Based MMOGs

Flash games which fall under the category of a casual gamer is not the only tye of game available online. For those of you who want something more apeal-ing and a little more thought provoking and to keep you coming back for more, there are text based MMOGs available too.

Take Ogame (**www.ogame.org**) for example, the storyline of this game will just blow you away. The game is based in the future and you basically have to colonise a planet that you are assigned. You have to mine for resources to build structures. You proceed to create a fleet and you can also expand your colony by taking over another colony. Along the way to form trade alliances that help in protecting your colony. You also have the choice to attack other planets to get their resources. It's a fight for survival in this futuristic game.

If you are not that into sci-fi and intergalactic warfare then you could also give Tribal Wars (**www.tribalwars.net**) a try. This text based MMO has a little more colour than Ogame. The back story of this game is not that interesting as you start off by controlling a village. You can't go off invading other tribes right at the start, but you will have to start with just developing your village at first and then move on to forming alliances with the other tribes around you. Of course the main goal on this game is for you to be the most powerful tribe, but that will take some time and effort.

Here's an online game that is fun and interactive and at the same time will keep you busy for quite some time. We are talking about My Brute and the web site is **www.mybrute.com**. To start off all you have to do is think of a character name and select your brute. Once that is done, enter the arena, pick an opponent and the fight starts. You will be able to see the fight and just hope for your brute to win as the outcome is completely random. Well stats do play a role to lead you to win the fight. By beating other brutes you earn experience points and level up.

The Akinator knows what you are thinking. Well at least he tries to guess who you are thinking off. Head over to **en.akinator.com** and just think of somebody famous such as an actor or a sports person or even a model. Then just answer the string of questions the Akinator asks as he will try to guess who you are thinking of.

Just for fun

There are many of you who might have seen some really funny inci-dents, maybe a funny a sign board or even your pet doing something silly. Well here are a few sites that have photos of people around the world who have also shared such hilarious experiences.

Cat lovers will go crazy at **icanhazcheeseburger.com** as it has photos of cats doing really funny things. Well these pet owners are those who carry a camera at all times as they have got some really awesome pictures. And to support these pictures, they have also provided some witty phrases which make for a really fun read.

You have to check out **Failblog.org** as the site has a huge collec-tions of all the photos that are related to fail-ing in some way or the other. We can't really explain it, you just have to have a look at it.

A site similar to failblog is **engrish.com**. At Engrish, you get to see the photos of all the goof-ups made in Asian countries that are trying their best to adapt to English.

If you love to solve quizzes then **www.blogthings.com** is just perfect for you. There are so many quizzes that sometimes will appeal to you, but some just don't make sense, but at the same time you need to know the outcome of it.

Read the finest use of the English language at Engrish.com

Comics

Another really good way to waste time on the net — read online comics. There are a bunch of online comics, but we are going to share with you our personal favourites. First off, **www.ctrlaltdel-online.com** is a comic about two guys who love to play video games all day. Integrated into this comic is the writer's personal reviews on the latest games too. The Noob Comic (**www.thenoobcomic.com**) is a comic that makes fun of mostly all MMORPGs and mainly the Everquest series. They not only make fun of role playing, but also bash up the way a game company runs a game itself.

Ctrl Alt Del the comic

Looking For Group (**www.lfgcomic.com**), the comic, has more of a subtle storyline where a group of people accidently meet and they begin a new journey together as all their fates are actually connected.

Forums

Forums are a very popular means of a community where you can discuss whatever you want to and there will be a whole bunch of other people either contradicting you or befriending you and supporting your beliefs and ideas. Forums are not only used to voice your opinions but also is a place where you can learn a whole lot of new things that you had no prior knowledge about. The NeoGaf (**www.neogaf.com**) forums is one example of such forums. NeoGaf has two basic topics — Game Discussions and Off-Topic Discussions. You can also check out **i-am-bored.com** as the last resort. As the name suggests these forums have topics that range from utter nonsense to actual intelligent debates taking place online.

We won't stop you from stepping out once in awhile, but with all the addictive web sites that we have mentioned, you will be drawn back home to your beloved computer. You should now be set to totally enjoy the summer. ∎

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Did you know that digital SLRs still use mechanical shutters?

Trick Photography
...isn't so tricky

Rossi Fernandes

We've always told you which cameras to buy and how to shoot photographs the right way, but there should also be time for fun, as there is so much that can be done with photography. You don't need a lot to have fun — a camera and decent image editing software will suffice. As much as you may prefer not to use it, Photoshop (or any other image editor) always goes hand in hand with this kind of work. We'll be using Photoshop to alter images so that they look completely over the top.

Illusions
One of the simplest photography tricks is to use perspective in funny ways. A distant object, and a nearby object, when angled correctly to the lense, gives startling results. This can include placing a distant person on a nearby person's hand, or someone about to eat up the sun. Positioning the two elements is paramount. Zoom in to the preview to check if you have got the shot that you need. There is no need to use the macro mode to get these kinds of shots right. Play it safe by taking multiple exposures.

The levitation trick
Most of the photographic illusion trick photos that we see in our mailboxes might seem very complicated, but in fact, making them is quite simple. The levitation trick might seem really difficult to pull off in a video clip but in a still photo, it really is much simpler. In fact, it's something that you can make in under 15 minutes.

We want to give people the impression that the object is hovering over the ground. For this, we need to take a couple of photos. Obviously we can't have an object stay afloat, so we'll need to get the object to be placed on a short stool or a bench. We'll then use a photo without the stool and the object and clear out the stool from underneath it

We start by taking a suitable position for the camera from where a believable photograph can be taken. We need to make sure that all the photos are taken from the exact same spot, so we'll need a tripod for this trick or at least a sturdy base on which to place the camera.

Step 1: Place the tripod and mount the camera. Make sure to set a manual setting. Try to fix an aperture size, shutter speed, ISO setting for the shot. Use a timer to click the photo so you don't have to manually operate the shutter release mechanism. This eliminates any chances of blurry images due to shaking of the tripod or your hand. You could also use a remote camera control.

Step 2: Take a photo of a scene without the object in place. Use the same steps and settings that you used for the previous step but now remove the stool and the object.

Step 3: Copy the captured images to your hard drive and open it in Photoshop or any other image editor you've been using.

Step 4: Open the two images in Photoshop (See Figure 1)and double-click the first image so that it becomes a new layer. (See figure 2) Now, open the other image, select the entire image by pressing `[Ctrl] + [A]` then, copy the second image and add

it as a layer on top. This should happen automatically when you paste the image. Make sure you arrange the layers in such a way that the layer with the object is positioned above the layer without the object (See figure 3).

Step 5: Use the Pen tool and draw an outline around the object (See figure 4). Using the eraser increases the chances for mistakes. A path drawn with the pen tool is more accurate and
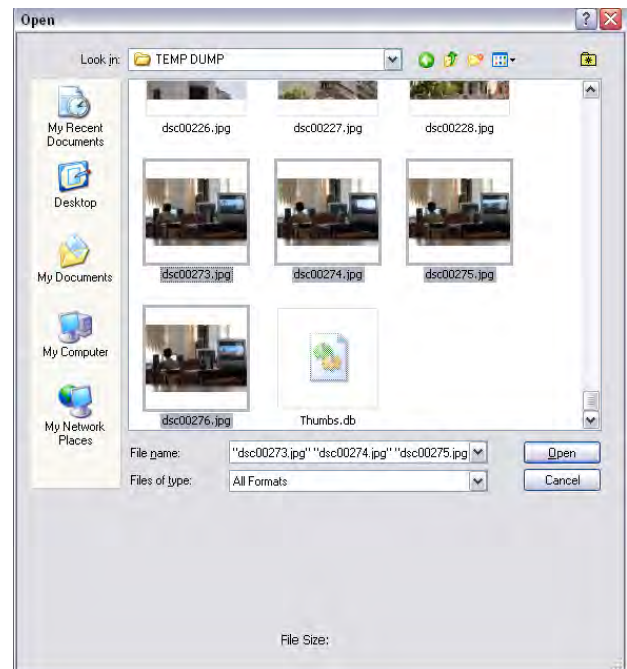

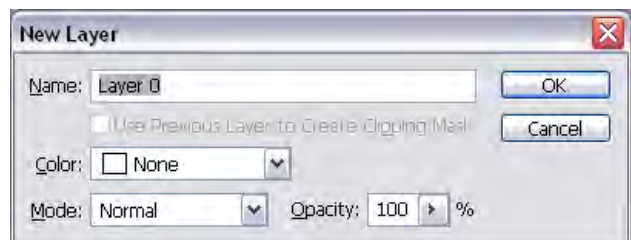**Figure 1: Opening the three slides with Photoshop**

Figure 2: Converting each of the images into a layer

can be modified easily if required. Hold down the mouse, click and draw curves around the object you're trying to cut out. Zoom into the image while you are working on this, and work your way around carefully, adding many nodes. Complete the path.

Step 6: Right-click on the path and click on `make selection`. (Figure 5) Now invert the selection by clicking on the Edit menu again. The object will be selected now. Delete the selec-

The Leica S2 has a DSLR sensor some 50 per-cent larger than other full-frame DSLRs
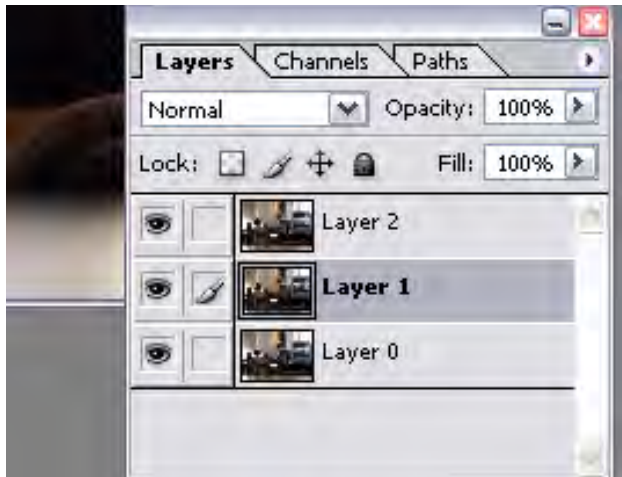

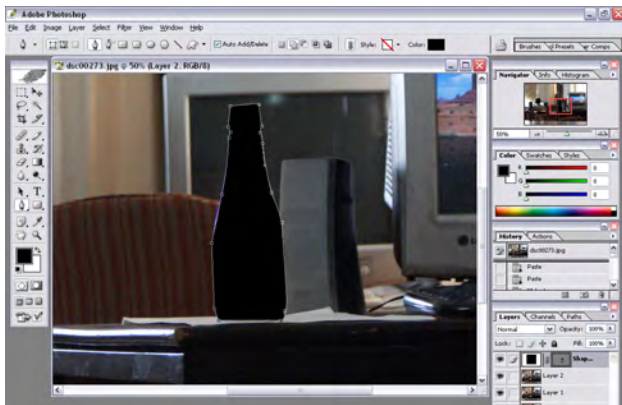Figure 3: The different images copied into a single file as layers

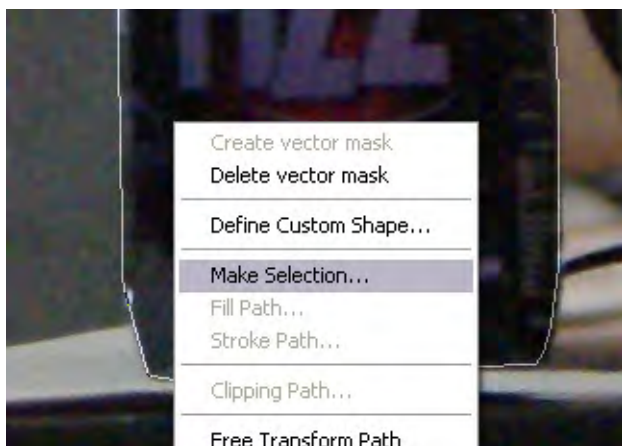Figure 4: Creating a path to isolate the object

Figure 5: Converting the path to a selection

tion by pressing the [Del] key or through the Edit menu so you are left with just the object floating in air.

Step 7: Save the image by clicking on File > Save As. Choose a format such as JPG that doesn't show layers or masks.

Improvements can always be made to this technique. Adding a shadow under the object adds more realism to the photo. You can do this by using a large sized, but soft brush tool and adding some darkness on the floor where the shadow would fall. You

can also take an additional photograph and ask someone to hold a sheet or paper or a big bag over the where the object would float so you can capture a shadow and similarly composite it into your image.

Replicating objects

There are plenty of tricks one can do with the method in the previous trick. In this particular trick, we'll use the same idea but have the same object in different places at the same time.

Take multiple shots with the camera on a tripod with the object in different places. While starting off, simply use two or three instances of yourself preferably not overlapping anywhere in the photo. Keep the same distance and do not move anything else in the scene. Use Photoshop to open all these photographs into separate layers and use the eraser tool as well as the Pen tool to clear out each of the instances.

One of the biggest hurdles has to do with the variations in colours and the characteristics of the photo that take place especially with automated point and shoot cameras. Small changes are made by the camera which result in the image turning out a little bit brighter or darker. If the outlines for the characters aren't cut
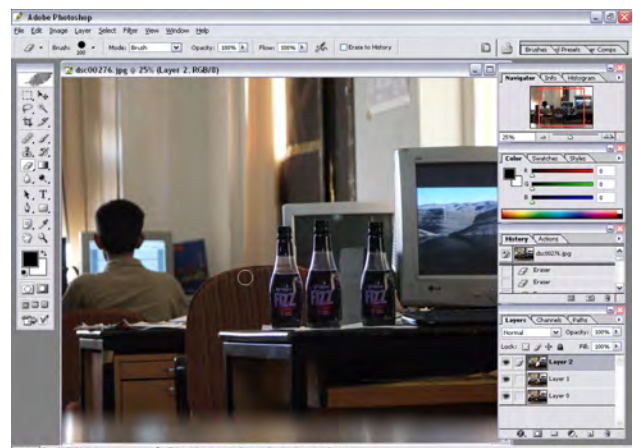
Three instances of a bottle

out clearly, then there's a layer around the subject with a slightly different shade left behind. Use a soft healing tool from the toolbar to clear these patches up. Do not merge the layers together as you can control each of the layers individually. This way, you can continue to change properties of the layers independently, such as the lighting and colour balances. Tweak these to make the final image as realistic as possible.

Gigapixel imaging

Now this isn't really a trick but it's something cool that you might have read of or seen online. People boast of really high resolution images going into gigapixel resolutions. But you don't need a really expensive camera that costs several lakh to do that. The trick is to taking a gigapixel image is to use any camera and take as many shots as possible. Obviously you can't just go around shooting random photographs — it has been done in an orderly manner. It is preferable to use a tripod for this experiment as well.

We'll be using a program called Microsoft HD View which let's you view and create your own gigapixel images with your standard point and shoot camera. You can download and install the plugin for Windows browsers from **http://tinyurl.com/dkp27g**.

Step 1: Mount the camera, set the camera to capture at its maximum resolution, and turn off the flash. Set the aperture size, shutter speed and ISO rating such that your exposure ratings are normal and you won't get dark results. Click a few test shots to be sure.

Tokina, the Japanese lens manufacturer was made by ex-Nikon engineers

Step 2: Set the zoom to maximum and click photos just as you would for any sort of panorama. Turn off digital zoom from the Settings menu in your camera so you don't lose any quality, and then zoom to the extreme end and start clicking photos from one end such as the left bottom of the view and slowly move to the right and then upwards. In short, cover the entire area in front of you. You don't have to make it a complete panorama for this.

Step 3: Download and install HD View from **http://tinyurl. com/9ymwlj**.

HD View is useful because loading a gigapixel image as large as the ones you've seen online will take forever, so software like this breaks that image into multiple smaller images at different qualities and sizes so that regular PCs can easily load them. There is no loss of quality and there's no way to make out the sliced images.

There is also a Photoshop plug-in developed by the community which lets you export panoramas directly from Photoshop into an HD View panorama. To be able to export the panorama to HD View, you also need a small add-on for Windows. It's called Windows Imaging Component and is available on Microsoft's site.

Step 4: Download the HD View making plug-in for Photoshop from **http://tinyurl.com/c35wgf**. Once installed, copy the plugin file and the `hdmake.exe` file from the `Program Files\ Microsoft Research\HD View Utilities` folder to the Adobe Photoshop's plugin folder.

Step 5: Restart Photoshop, click on `File > Automate > Photomerge`. Choose the folder or photos that you've captured. This step will stitch together the images but will take a lot of time depending on the number of photos you have. You save the completed image by clicking on `File > Save as` and then selecting a format.

Step 6: To export the image for HD View, click on `File > Export > HD View & Deep Zoom`. Choose HD View as the Output and select an output folder. You can select image compression settings and the kind of panorama. In our case, we chose flat. Click OK when done.

The output will be opened in your browser but you can also upload this file or folder to your web page for others to be able to view it. They will require the HD View plugin to do so.

Exporting the panorama to a HD View file

Using Microsoft's Image Composite Editor

If you need to fiddle with the colour parameters of the images that you've shot, then using Photoshop is required. If you feel that all your photographs have similar contrast, brightness and colours, then using Microsoft's Image Composite Editor is simple.

Microsoft Image Composite Editor (ICE) is available from **http://tinyurl.com/cs4bp3**. It's free for download and is useful for making any kind of panorama and just gigapixel images. You'll need .NET 3.5 framework for this application to work.

Once you have the software installed, drag and drop the images for the panorama from your Windows Explorer window to the Microsoft ICE window. The software will automatically align and join the photographs together. You can move the control points to crop the area you want to use for the gigapixel photo. If you want to get the best cropping, click the Autocrop link in the Crop section.

The next step is to export the final image as a photo which can be modified further in Photoshop. You can also export it as an HD View tileset. Click on the Format dropdown menu and choose the format. Finally, click the `Export` button.
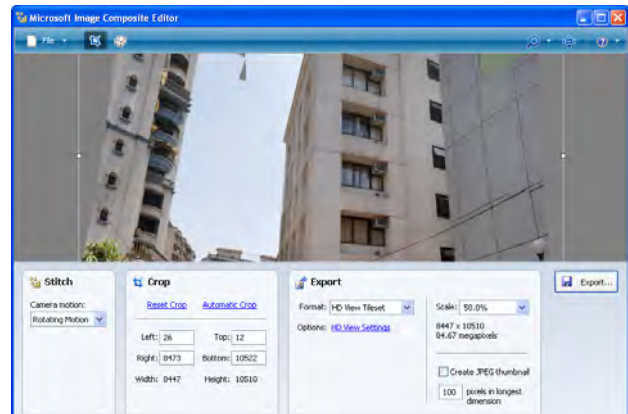
Microsoft ICE is an alternative image stitching software

Light painting

Ever seen those photos of words written in darkness using light. It's one of the simplest things to try with the camera. All you need for this is a camera, a tripod, and a volunteer with a bright object — a torch or a candle. Light painting is done in the dark so you only see the bright lights in motion captured in a long exposure photo.

Step 1: Place camera on tripod, set the highest possible resolution and quality. Turn off the flash.

Step 2: Set the camera to manual mode. The aperture settings and ISO rating requires a little bit of fooling around before you can get the perfect shot.

Step 3: Set the shutter speed to as high as possible. Most cameras can do around 15 seconds, although dSLRs offer at least 30 seconds. Some cameras will let you keep the shutter open for as long as you hold the clicker.

An example of light painting

Step 4: Set a timer for the shutter release of 10 seconds and prepare to make a design.

Step 5: The shutter will stay open for 30 seconds, so in that time, make movements with the candle or torch facing the camera. Preview the image to see the results. You will have to do this a few times over before you get the hang of completing the light painting in the time period. Move the source of light at a steady pace to get an even painting.

If you want to write text, remember to use a mirror to figure out how to draw the text. Wearing dark clothes can help hide yourself in the image. Be in surroundings with no light present at all. ■

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Genre: Third person action
Platform: Xbox 360
Studio: From Software
Publisher: Microsoft
Number of players: 1

Score: 7/10

ESC

NINJA BLADE

Sameer Desai

Ninja Blade is the kind of game that can go unnoticed. This hack 'n' slash game seems at first glance eerily similar in style, setting and even name, to the massively popular *Ninja Gaiden* series. Understandably, when Ninja Blade was announced, many shrugged it off as simply a Ninja Gaiden clone. But being an Xbox 360 exclusive and published by the platform owner does have its benefits, and as a result Ninja Blade attracted the attention the developers would have wanted. But is it able to shrug off the 'clone' tag and match up to competing titles in the genre?

Ninja Blade is not a Ninja Gaiden clone. In fact, it's quite a departure. While Ninja Gaiden's USP is its punishing difficulty, Ninja Blade stresses more on the cinematic aspects of the combat, more like *Devil May Cry*. Some of the cinematic sequences are so over the top that it'll actually give *DMC* a run for its money, as improbable as that might seem. But, while combat may not be as punishing as Ninja Gaiden, it does offer up a lot of variety in the form of different weapons, huge mutant enemies, intriguing boss fights, and some of the most awesome finishing moves you'll ever see.

You play a member of a highly-trained team of ninjas, who are sent to Tokyo to combat an outbreak of a parasite that infects humans, turning them into giant mutant monsters; the stuff ninjas are trained for. Unfortunately, your team ends up dead, leaving you to fight a lone battle. A moderately interesting story unfolds through the game, and while it won't be winning any awards, it does have its moments.

Combat is the cornerstone of a hack 'n' slash, and Ninja Blade actually handles it quite well. In your arsenal you have a selection of swords, each ideal for specific kinds of targets. You also have magical powers, known as Ninjutsu, to help you take out enemies and clear paths. The protagonist, Ken Ogawa, is also pretty nimble on his feet, able to perform acrobatic wall runs, both horizontally and vertically, and these abilities form a vital part of the game's many boss fights.

Ninja Blade is heavily reliant on quick time events or QTEs, which play out a sequence by requiring you to push a particular button at a specified time. Timing the button presses correctly lets you progress through the sequence While this can get frustrating in many games, the QTEs work quite well here and aren't as frustrating or unforgiving as in other games. If you fail, you can try again rather than having to go back to the last checkpoint, and you have a generous time window in which to press the required button. QTEs may feel like cheating, especially when you see your character performing such thrilling manoeuvres and all you're doing to make that happen is push a button. But you won't really mind that because you're going to want to watch some of the outrageous set pieces in this game.

You can carry three weapons, and as you progress, you can upgrade these weapons to make them more powerful. You can also, if you choose, customise the look of your character. Combat itself is pretty easy and the smaller enemies will pose no challenge at all. To make up for that, there are multiple boss fights thrown at you, and while these aren't particularly challenging either, they're a lot of fun, and they ensure that the pace of the game is never anything but incessant.

The one big drawback to Ninja Blade is that there's nothing here that hasn't been done before in hack 'n' slash games, and there isn't much variation or uniqueness in the implementation of those methods either. The game isn't all that difficult, either, so veterans of games like Ninja Gaiden won't really find much of a challenge here. But that having being said, what it does, it does quite well. The boss fights are fun, the cinematic set pieces are some of the most entertaining, and the game plays out at a frantic pace from start to finish. Ninja Blade may not be a genre-defining game, but it's one that fans of the genre, and in fact, fans of action games in general, might want to try out. ∎

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Esc

review

Carnival
Anniversary celebrations ne[x]t
month, Digit turns 8!

28

Sameer Desai

Hanuman: Boy Warrior is the first console game with Indian intellectual property and developed entirely in India. Created by Aurona Technologies for the PS2, it sets into motion Sony Computer Entertainment India's plans to start infusing a steady stream of localised content for the PS2 into the Indian market, even as studios and publishers elsewhere around the world are moving on from the PS2, towards the newer generation of consoles.

So the first of the many promised Indian PS2 games is finally here, and sadly it couldn't have turned out any worse. Hanuman: Boy Warrior is a third-person action game with heavy emphasis on platforming. Aurona proudly proclaimed that it had developed the game in only ten months; and it shows. The game is found severely wanting in nearly every department, and even the popularity of the Hanuman character with kids and families is not enough to salvage this train wreck.

For starters, the camera angles are overly restrictive, and at times make it nearly impossible to progress beyond a particular point. The inability to move the camera vertically makes it difficult to spot high platforms that you will need to climb to in order to progress through the level. There are also segments where you're required to get from one place to another by swinging across vines. Negotiating these sections is more a matter of luck than skill, because the same effort will at times lead to failure, and at other times you'll get to your destination just fine. But you'll more often than not fail a few times before the game decides you've suffered enough and lets you progress.

Visually, Hanuman would probably fall in the category of a bad PS2 launch title. The environments and characters seem extremely bland. Animations are some of the worst I've ever seen, particularly the jump animations, where there is almost no movement in the legs while jumping. Character animations, besides looking bad, also adversely affect gameplay. Like Hanuman, the enemies too have a limited set of animations and there is no attack animation to speak of, so you never know when they're really attacking you; they just seem to skid around and bump into you to cause damage.

Combat is standard hack 'n' slash fare. Hanuman starts out with basic light and heavy attacks. An hour or so into the game, he receives his golden mace, which also adds special moves to his combat arsenal. Again, combat is held back by the lack of animations and shifts from movement to combat, and between various combat animations is extremely jerky and delayed, which means that getting the timing right in your attacks is near impossible.

Hanuman: Boy Warrior can be played either in English or Hindi, and all dialogues and on-screen prompts will be in your chosen language. We played the game for a few minutes at the launch party, and recalled how horrible the English was. While playing, we chose Hindi, picked the easiest difficulty – Saral – and got on our way. We were shocked to find that the script-writing and voice acting in Hindi was even worse. Voice acting in particular was shockingly bad and sounded like the actors were reading off a piece of paper, sometimes without punctuation and almost always without any expression.

No matter how hard we look, there's nothing remotely positive to write for Hanuman: Boy Warrior. Even if this isn't a game targeted at the serious gamer, there are way too many flaws here even to hold a casual gamer's attention. So it becomes impossible to justify at all why anyone should pony up cash for this one, even if it does cost only 500 bucks. If you're feeling generous and would like to support the Indian gaming industry and its first console game, then pick this up. But if you intend to actually play it, save your money for one of the many other quality PS2 titles available for the same price. ∎

readersletters@thinkdigit.com

Genre: Third person action
Platform: PlayStation 2
Studio: Aurona Technologies
Publisher: Sony Computer Entertainment
Number of players: 1

Score: 1/10

ESC

The Quake III game engine getting GPL'd was the best thing to happen to Linux gaming. Alien Arena and Warsow are two great Q3 based free games for Linux.

MOST ADDICTIVE LINUX GAMES

These are small games that takes under five minutes to download and install even on the most meagre internet connections. That does not stop them from excelling in gameplay

Aditya Madanapalle

Xmoto

Xmoto is one of those few Linux games that manage to outshine the Windows counterparts. Xmoto is based on an old Windows game called Elastomania, both games involve guiding a motorcycle through a demanding set of obstacles. Xmoto comes with a lot of levels to begin with, and you will have to employ a wide range of tricks to cross any given level. At first, the graphics might look very stupid, the proportion of the biker to the bike is horribly wrong. That itself, is an aspect of the game-play, as you will quickly learn. The game looks deceptively simple, as controlling the bike on later levels gets increasingly difficult. Balancing the bike, flipping it around at the right time, and riding on the back wheel are elementary skills and there are plenty of surprises headed your way. Each level is also a puzzle, and you will be forced to use all the creativity you possess to cross it. Another element of game-play is beating the high score, which is the shortest time anyone has taken to cross the level. There are a whole range of maps that can be downloaded from the internet, and if you maintain a connection, you can compare your shortest times with other players around the world.
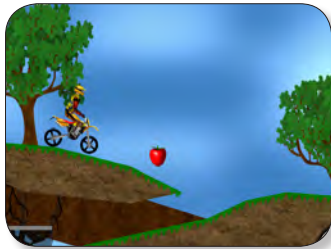
Gbrainy

Gbrainy is a casual game, but don't expect to sit back and relax. Gbrainy pushes your brain to the limit, with a wide range of puzzles and problems that you have to solve. There are three types of game-play to choose from; logic, calculation and memory. When you choose one of these, a puzzle shows up, and you have to solve it. Within the framework, the puzzles are very ingenious. By far, the best game-play is offered by the memory games. A grid of twelve words will be thrown up, then will disappear after half a minute. Then a grid of eleven words will be thrown up, and your task is to identify the missing word. Directions will be given which you have to interpret, or a grid of colours that you have to memorise and replicate. You can also choose to play a mix of the three game modes, which will throw up a random puzzle each time. Once you are done, you can click on finish to get a score reading across the different game modes. This score includes the number of games played, the win/loss ratio, and the number of time taken for each game. The more you play, the smarter you get.
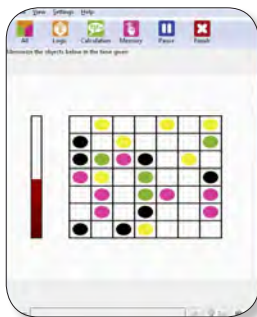
Gltron

There are many tron games available, and a lot of them for Linux, as the sci-fi fan base is bound to use the OS. Gltron is one of the simpler versions, which is nonetheless very addictive. The object of the game is to guide a lightcycle through a grid, while avoiding three other lightcycles. Each lightcycle leaves behind a trail, which becomes a wall, and which cannot be crossed. Your task is to outlast the other lightcycles, without hitting any of the light trails or the walls. At first, players will be focusing on staying alive instead of confusing the AI into crash into a wall. The game uses OpenGL to render the lightcycles and the trails, and the game itself looks like something a h4xx0r would have wet dreams over.
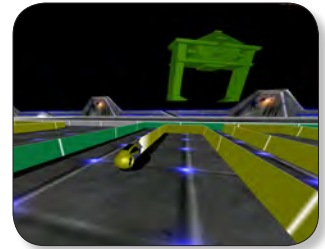
Xweltris

Imagine a cube of Tetris, without the top face. The bricks come down from the top face, the player has to guide the bricks along the walls and settle them on the floor. The game gives the illusion of dropping tetris bricks down a well. Traditionally, Tetris let you play a game with all possible combinations of four squares. This game, lets you go all the way till sixtris, and lets you play all possible combinations of anywhere from two to six bricks. Calculate the number of possible bricks. Now, your aim is to make rows along the bottom face. However, if you exceed the bottom space, the bricks leak onto one of the four walls, and the walls get locked. Wait, it gets more complicated. As you successfully make rows, you level up. Every time you level up, the well adds a layer, and then twists as it reaches the bottom. The more you level up, the more twisted the game gets.
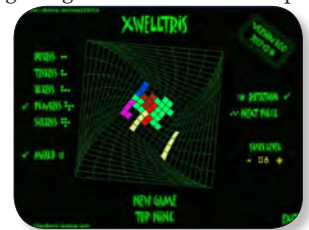
Pingus

Pingus is a real time strategy games involving penguins that have to be guided through a level. Individual penguins (or pingus) can be given specific tasks to cross a particular obstacle. These actions include building bridges, jumping across short gaps, digging holes, bashing through walls, floating down from high places and exploding on a timer. The game has a storyline with twenty two levels that have to be crossed. Figuring out the best way to cross the level is the challenge, and the game periodically focuses you to think out of the box. Many levels force you to kill as many pingus as you save, and some levels can be crossed without losing a single pingu if you can think it out. In typical Linux fashion, at least seventy more levels are hidden away despite being packaged with the game. You will have to load them up from the filesystem. There is a level editor, and a lot of user made levels available on the internet. ∎

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Astronauts and cosmonauts aboard the ISS also fight over who gets to use which toilet. The official policy now is that each team has to use their own national toilets.

Geek culture : *Hard Sci-Fi*

Hard sci-fi is a genre of science fiction, where the science within the plots, or gameplay is highly accurate. Hard sci-fi typically involves a team of scientists or space explorers playing the main characters, and possibilities of future developments in existing technology is explored thoroughly. The social, political and economic aspects are also depicted. We've come across books where equations play a part in the plot. Hard sci-fi does not mean that you need multiple doctorates to understand the fiction, just that the technologies involved are explained in detail.

Movies

Contact (1997)

An advanced civilisation receives TV signals from the earth and beams back plans to construct a device that will take one human on an unforgettable journey.

2001: A Space Odyssey (1968)

Probably the most accurate depiction of space exploration in cinema, this movie was so influential that some astronauts reported the monolith on the Moon.

Gattaca (1997)

The consequences of genetic engineering is explored. In this future Earth, your place in society is decided by your genetic makeup.

Books

The Nanotech Chronicles

Michael Flynn explores the fallout of the advent of nanotechnology on the human race. The stories trace the research, tests, deployement and impact of the technology.

A Fall of Moondust

Arthur C Clarke's masterpiece about a lunar tourist vehicle that gets trapped in moon dust. A dramatic rescue attempt by scientists on the Earth and the Moon follows.

The Mars Trilogy

Kim Stanley Robinson's three books, *Red Mars*, *Green Mars* and *Blue Mars* chronicle mankind's efforts to change the face of the red planet and make it habitable.

Concepts

Drake Equation

The Drake equation is an often used equation by Dr. Frank Drake, to calculate the number of civilisations in the galaxy that can communicate with humans.

Occam's Razor

The Occam's Razor is the rule of the thumb for all Hard sci-fi, which states that the simplest possible explanation is probably the correct one.

Clarke's Third Law

The law simply states that "Any sufficiently advanced technology is indistinguishable from magic." The law has seeped firmly into the subconsciousness of every sci-fi fan out there.

Digit Diary

April was a month of wishful thinking for the team. Technology almost always fell short of the team's high expectations. Vijay came back after a short sabbatical, and was drowned in a large amount of work, making him instantly wish he was back in America. Raaabo wanted cloning technology to be available on a commercial basis, so we could have more people like Vijay. Rossi wanted the dSLRs to come out with models for left-handed people, as only the right-handed people could hold these cameras in the "correct" position. Kumar wished to win at table tennis, but Siddharth beat him at zero. Nash wished for a new computer so he could play multiplayer games with the team, and got one too. Michael wished he would permanently get to keep the ergonomic chairs that came in for testing. A little into the month, he wished the ergonomic chairs hadn't come in for testing in the first place, as he had a tendency to nod off when he was sitting in one of them. Aditya wished the Republic would have cloned Rajnikanth instead of Jango Fett. Everyone has something ready for the next time they see a shooting star, or find one of those magic lamps.
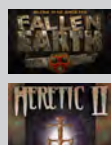
How we unwind
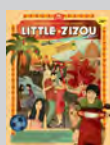
Movies
Little Zizou: A Parsi boy's views on his community.
Sita Sings the Blues: A free animated feature length movie about an epic breakup.

Music
The Dark Side of Phobos: A free electronica album with tracks from Doom remixed.
Stadium Arcadium: The team can't have enough of RHCP.

Game
Fallen Earth (Closed Beta): An MMO in a post-apocalyptic America.
Heretic II: One of the classics we still like to play.

The owners of Pirate Bay arrested and sentenced to one year in prison, but the web site is still up and running.

The latest trend to hit the web? Japanese bug fights, where insects fight each other to death in a small plastic arena.

Don't dump that old phone

You never know when a bug or glitch in an old phone turns out to be a very profitable feature. Criminals in Europe are apparently paying twenty five thousand Euros for a particular model. The Nokia 1100 had nothing distinct about it, except perhaps a flashlight on the top and a software bug that allowed you to cheat on snake and score incredibly high scores. (When the snake dies, cancel the game, navigate to the tournament mode, play a bit, cancel and come back, your snake lives, and your score is preserved). Apparently, some 1100s can be hacked and be cloaked with another number. Once this is done, messages meant for someone else will be delivered to the tampered model. This allows criminals to pretend they are someone else, and intercept their transactions during mobile banking. The model has to be made in Germany for this to work though. However, if you have a 1100 lying around, it's a good time to sell it on eBay. It's ok to cheat a criminal right?

Astronaut claims Aliens exist

UFO enthusiasts and believers are normally ignored as quacks and hacks, liable to go to prison if their blood is tested. Increasing the credibility of UFOlogists around the world, by something like a factor of infinity, are the claims of ex-Apollo astronaut Edger Mitchell. Edger Mitchell was one of the most sucessful astronauts on NASA's moon missions, accomplishing the longest moon walk by any human.

Edger Mitchell claimed in a Radio show, that the government and NASA were covering up Alien visitations. He says the Aliens are here, with superior technology, and are "little people", with large heads, large, pupil-less eyeballs and basically the typical "greys" that UFOlogists see floating over every empty field. Mitchell grew up in Rosswell, which would explain a lot. He says locals didn't want government cover-ups to die with them, so they told the most reputed person they knew all about it. NASA released a statement saying that they don't track UFOs.

Lateral universe

GOOGLE 2.0 BETA

The symantec web is here with the launch of Google 2.0 beta. The highly expanded version of the search engine, now crawls into the deep web, including bionic implants and government databases. Words in videos and lyrics in songs are also a part of the search database. Tax, phone and credit records are just a click away from now on.

Tinyurl roulette

Do this right now. Go to the address bar of your favourite web browser, and type in **http://tinyurl.com/** followed by one of the codes below. In case you are wondering where it will take you — we are not telling; we probably don't know ourselves! Are you bold enough to find out?

```
59qmg4    c5k2ok    dgjj88
2v7dfw    26mcws    663s9d
3m8xj     cmtpah    c34qw6
jqm2      c7fw3e    bxc9lt
```

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tech art

Image Credit: Jared Nickerson

Vector art uses lines and shapes for creating graphics. All the elements in a piece of vector art work can be defined using co-ordinates and matehmetical formulae. Vector artwork can be resized to fill any dimensions, and stay as clear. Vector art work itself varies in style, from minimalistic design to elaborate artwork with many layers. Generally, vector art has much of the same design sensibilities as Web 2.0, with bright contrasting colours, and highly detailed elements set against plain backgrounds. Two great places to find vector art is **www.deviantart.com** and **www.pixelgirl.com.** Head over to **www.jthreeconcepts.com** for more from this artist.

~~for those who came in late~~

Muddled by so many terms used in the mag? Here's your short guide

TED (Technology, Entertainment and Design): An annual invitation only conference where industry leaders come together to discuss the latest innovations.

Gartner Inc: A firm that is the leader in analysing technology trends. They are leading technology consultants, for statistics, figures and market analysis.

Botnet: A network of computers infected by a trojan or worm, maliciously controlled by hackers for denial of service attacks, infiltrating secure networks and other criminal activities.

VGA (Video Graphics Array) : The global standard for the minimum video specifications on any modern display system. Supports a basic 640x480 display resolution.

Swap Space: Processes running on a system store memory in the swap space, where the memory is cycled according to the needs of the programs operating on the computer.

SLR (Single Lense Reflex): A type of digital or analogue camera, where parallax error is removed completely by using a prism or mirror to direct the light coming into the lense to the viewfinder.

Toggle: Switching from one mode or state to another.

Semantic search

I have been hearing for some time now that we will soon be seeing many new search engines, and that Google's days are numbered. Given what I have seen and read so far, the developers at Google need not lose much sleep.

I met up recently with Anand Rajaraman, one of the founders of **kosmix.com**, a new search engine. I have to say that I am deeply unimpressed by the engine — it seems to give very superficial results and leans far too heavily on the sometimes unreliable Wikipedia. But, the developers have some good ideas. The engine is editorialised: it makes use of about 1,00,000 sites that the team has decided are reliable.

This means that if the subject of interest is something they have not considered, or might be found on a site with which they are not familar, your search will miss out. Now, the developers claim that if you want specific information then perhaps you should use Google, but if you want "content based on the underlying concept" then you should use Kosmix. I have not figured out what that is supposed to mean, but if the subject is not covered in those 1,00,000 sites, then you will get nothing. If the engine cannot find what you want, it serves up Google results — it is very easy to enter a query that produces such a result. This site brings new meaning to the term Limited Area Search Engine. (Look it up; but don't use Kosmix. Actually do, and you'll get only Google results; at least I did while writing this!)

One point on which I agreed with Kosmix's Anand Rajaraman was with regard to semantic search and the semantic web. He is sceptical of them both, and Kosmix is certainly not a semantic search engine. The idea behind such a search engine is that it will appear to understand questions and produce appropriate results. For example, you may be interested in a controversy related to GM foods, and want to ask the question "Why do some criticise the use of a promoter gene from the tobacco mosaic virus?" Type some of those words into Google and you will get a mix of results; go through a few of them and you will almost certainly find the answer. A semantic search engine should, however, get you straight to the right answer.

So, why the scepticism? In the long run, I think we will have semantic interfaces for our computers, the internet, probably our cars and TVs as well. It is just that the methods currently described — most famously by the web founder Tim Berners-Lee — seem to rely too much on people building semantic expression into web content. That might work well for a scientific paper database,

or genome project, but for the general web? Some would have us all entering semantic tags into content so that search engines can glean a deeper understanding of the content and answer more detailed questions, but I just do not see that happening. The work involved in creating the content is just too specialised and too time consuming — and what about all the existing content out there? Who is going to go and convert is all into some kind of semantic XML?

Their soon to be released (May) new system is not a search engine but a "computational knowledge engine". We will look into this in more detail in a future edition of Digit, but for now, the interesting point is that this engine will accept natural language questions about factual subjects and then compute an answer. Note the verb — compute. It does not look up pre-prepared answers in some kind of database; instead, it computes the answer on the basis of a huge quantity of prepared data.

The limitation here lies in the data that have been chosen and prepared and the algorithms that have been engineered for answering particular types of questions. It is said to be particularly good at scientific subjects and mathematics, but also subjects such as economics and cookery.

Not many details have been released yet, and it is unclear how broad will be the spread of data that Wolfram Alpha will cover; how and how quickly will it incorporate new data; how will it handle facts that are in dispute (something that Wikipedia is spectacularly bad at doing)?

However, the approach that is being taken is very promising, and it looks as though this is going to be a very useful tool. But one that will be used alongside Google, and not instead of it. Search is not the only thing that we need to do with the vast amount of information available on the internet. We do not really need better or different search engines like Kosmix, but we do need other ways of interacting with all that information, and the new Wolfram system looks promising.

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Edward Henning, Editor-in-Chief

"Why do some criticise the use of a promoter gene from the tobacco mosaic virus?"