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ADD AWE-INSPIRING
PAGE TRANSITIONS

JQUERY

SPECIAL EFFECTS

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Welcome to the issue

THE WEB DESIGNER MISSION

“To be the most accessible and inspiring voice for the industry, offering cutting-edge features and techniques vital to building future-proof online content”



Steve Jenkins

Highlight



We are thinkers and doers. And we aspire to combine both aspects

Web Designer heads to Cologne to talk to denkwerk
Page 32

Add amazing effects, the easy way



Query is a staple component of the web design process. Some might say that CSS has eaten into its remit, but it still has so much to offer.

The beauty of jQuery plugins is that they can offer great results relatively quickly and easily. Our latest lead feature on page 38 grabs a collection of the best plugins to start creating next-level visuals. Add a burn effect, create a neon sign, code multiple text animations, integrate amazing paper fold effects, add realistic rain drops and implement a flipbook. These are just a few special effects that have made it in to this issue.

HTML5, another staple component, in the shape of games graces page 62 and beyond. Mat Groves of HTML5 specialist and award-winning agency goodboy (www.goodboydigital.com) unveils what you need to know to design, build and monetise browser-based games. Plus, he imparts his expert advice on how to package any creations into valuable apps.

Ruby On Rails. You may have heard the name but do you know what you can do with? Our getting started guide on page 70 looks to demystify how you can deliver secure and well-structured applications quickly.

Plus, we have our staple selection of CSS and HTML tutorials to keep you busy.

As always enjoy the issue and see you next time out.

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- Textures** - 80 Beautiful frosted backgrounds from SparkleStock
- Templates** - 3 HTML templates packs from W3 Layouts; Suthri, Church and Cube
- Fonts** - Charbroiled and Dacquise fonts from Typodermic



www.filesilo.co.uk/webdesigner

This issue's panel of experts

Welcome to that bit of the mag where we learn more about the featured writers and contributors...

Amplify your jQuery and propel your sites to new heights with these special effects. Find out the best plugins for giving your project those next-level visuals



JQUERY SPECIAL EFFECTS

Tam Hanna

Tam simply loves code and has years of experience working with a host of popular languages. This issue he brings together an impressive collection of jQuery plugins that bring style, panache and a touch of the different. Add text effects, realistic raindrops and more to your project. **Page 38**

Mark Shufflebottom



Mark is a professor of Interaction Design at Sheridan College, Ontario. This issue, Mark takes Ulkit through its paces. Ulkit is an easy-to-use framework that enables complex, responsive websites to be built quickly. **Page 44**



Mat Groves



Mat is a creative developer with ten years of agency life to his name. In 2013 he cofounded Goodboy Digital, a digital agency that builds HTML5 games, stretching the limits of current tech to just the right side of breaking point. **Page 62**



Matt Gifford



Matt Gifford is a lead RIA consultant developer and industry author from Cambridge who specialises in mobile development. This issue he reveals how to create secure and well-structured apps using Ruby on Rails. **Page 70**



Leon Brown



Leon is a freelance developer and trainer who assists web developers in creating efficient and secure code. This issue he pushes CSS to its boundaries with some impressive sweeping animations. **Page 50**

Sean Tracey



Sean is a creative technologist living and working in the South coast. He spends most of his time making things with JavaScript and Python. This issue he shows us how to animate SVG with the help of the Vivus.js library. **Page 56**

Mark Billen



Mark is a freelance technology journalist with a background in web design and development. This issue he tackles the Lightbox pages and reveals how to create a host of quick-fire techniques you need to know. **Page 16**

Tim Stone



Tim is a front-end developer at Redweb and has a first-class degree in Interactive Media. He loves coding and in this issue he demonstrates how to use Socket.IO to bring real-time functionality to your web apps. **Page 76**

Richard Lamb



Richard is a web designer, writer and founder of Inspired Lamb Design. He has a passion for creating great content and design. This issue he reveals how to code different image hover effects using the king of styling, CSS. **Page 54**

Got web skills?
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Imagine Publishing Ltd
Richmond House, 33 Richmond Hill
Bournemouth, Dorset, BH2 6EZ
+44 (0)1202 586200
Web: www.imagine-publishing.co.uk
www.webdesignermag.co.uk
www.greatdigitalmags.com

Magazine team

Editor Steve Jenkins
steve.jenkins@imagine-publishing.co.uk
01202 586233
Designer Benjamin Stanley
Production Editor Carrie Mok
Photographer James Sheppard
Senior Art Editor Will Shum
Editor In Chief Dan Hutchinson
Publishing Director Aaron Asadi
Head of Design Ross Andrews

Contributors

Ray King, Mark Billen, David Howell, Tam Hanna, Mark Shufflebottom, Richard Lamb, Leon Brown, Sean Tracey, Mat Groves, Matt Gifford, Tim Stone, Luke Guppy

Advertising

Digital or printed media packs are available on request.

Head of Sales Hang Deretz
01202 586442
hang.deretz@imagine-publishing.co.uk
Advertising Manager Alex Carnegie
01202 586430

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Production

Production Director Jane Hawkins
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Founder

Group Managing Director Damian Butt

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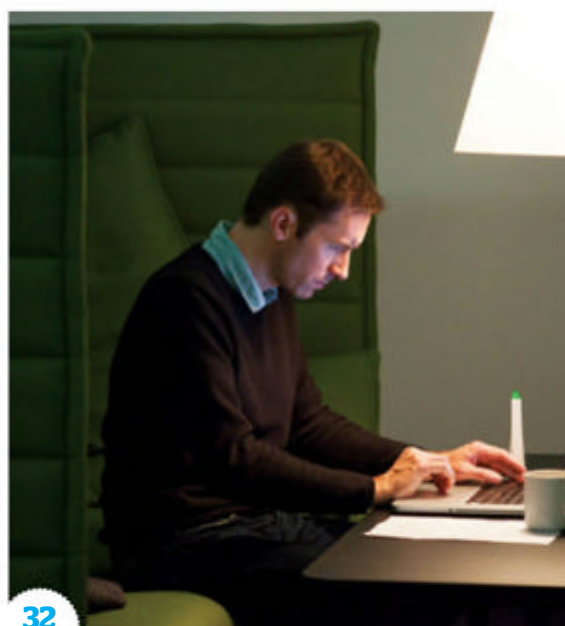
Cutting-edge features, techniques and inspiration for web creatives

Chat with the team and other readers and discuss the latest tech, trends and techniques. Here's how to stay in touch...

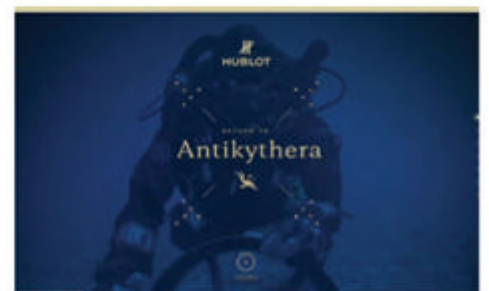
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Those that move first will have a significant leg up on the competition

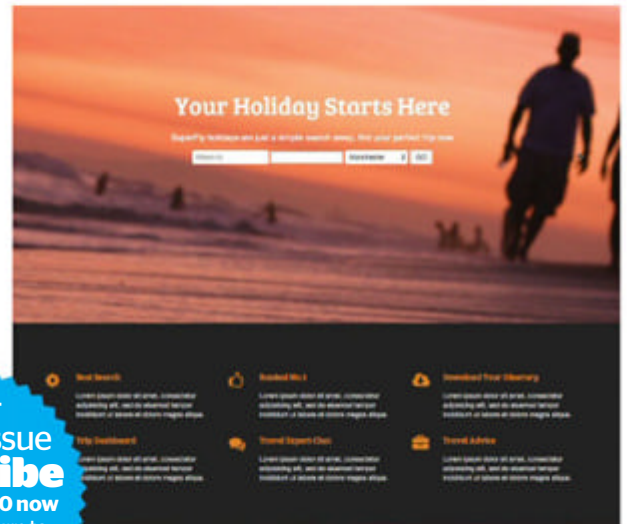
Ray King

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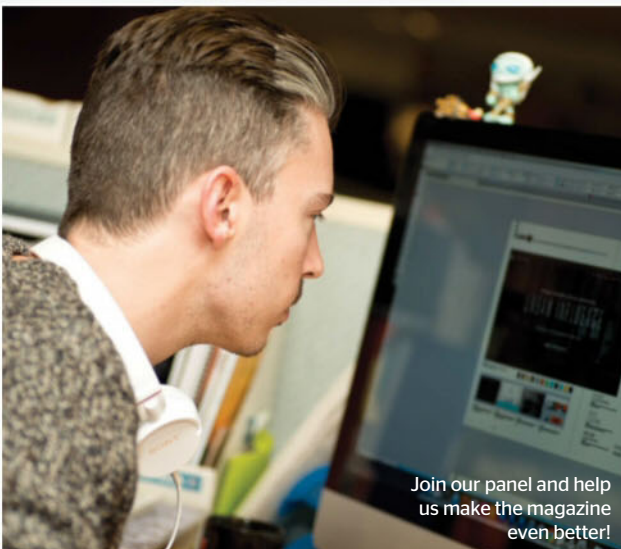
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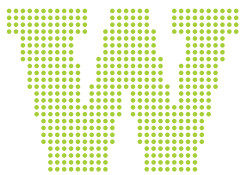
The tools and trends to inspire your web projects

If you have a creative project, new web product or great designer story, contact the editorial desk

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Prepare for the Web of Things

For the IoT to fulfil its potential it needs to adopt open standards. The WoT is here to make it happen and you can help



W e've all heard about the Internet of Things, but what about the Web of Things? In principle, The Internet of Things is a great idea, but

it shares something in common with native apps because it is tied to a product base. To overcome this app issue, web apps are now making sure that they rely on standards that can be used across all platforms. The intention of the Web of Things is to adopt a similar stance. As the W3C states "The Internet of Things is currently beset by product silos. To unlock the commercial potential there is a need for open ecosystems based upon open standards."

Right there is the crux of the matter - the issue of open standards. Until open standards are applied to the principle of web-connected devices, WoT will struggle to work... or will it? The big tech companies may well be

happy not to adopt open standards as this gives them the opportunity to make people buy their products. Apple has done a very good job of this.

However, unless open standards are pushed forward then very little will happen. For those of you who want to help make it happen then take a look at the boxout below. This tells you how you can sign up and help shape the future.

Now you know how you can help, what is it that the Web of Things is trying to achieve? The overriding concept has already been mentioned, open standards for an open ecosystem, but what are the details? The W3C page offers more details www.w3.org/WoT and gives a good idea of which direction W3C is heading in.

Standards, there's that word again, for identification, discovery and interoperation of services across platforms from different vendors are a key point. There will also be a need to take a close look at security, privacy, scalability and accessibility.

So, what can be used to make this happen? There is the potential for using scripting languages such as JavaScript, data encodings formats like JSON and EXI, and formats for data and metadata and protocols such as HTTP and WebSockets.

According to the W3C, "JavaScript could be used for direct access to IoT sensors and actuators from the browser, in service platforms in the cloud or at the network edge, and for device drivers in gateways that use IoT protocols to access embedded or constrained devices, and web protocols to expose them to service platforms." Remember to visit the W3C website if you would like more information.

The beauty of open standards is that developers won't have the burden of tailoring products to specific vendor platforms. Anyone who has had to develop apps for more than one platform, ie iOS, Android and beyond, will know the joys that come with that. Join up and let's help make the Web of Things happen sooner rather than later.

👉 Web apps are now making sure that they rely on standards that can be used across all platforms. The intention of the WoT is to adopt a similar stance 👉

Join the Web of Things revolution

Think you have something to offer? Then sign up and start making a contribution

The Web of Things is going to be big, there is no doubt about that, but the driving force behind its power will be from the community. These people will help shape the future and there is an opportunity to get involved.

The Web of Things Interest Group was recently put together with the goal to "build a shared vision and identify specific opportunities for standardisation... based upon the Internet of Things (IoT) and the web of

data. This involves the identification of use cases and requirements for direct access to sensors and actuators." If you think you have what it takes then you can join the Web of Things Interest Group at bit.ly/1AKyJDP.

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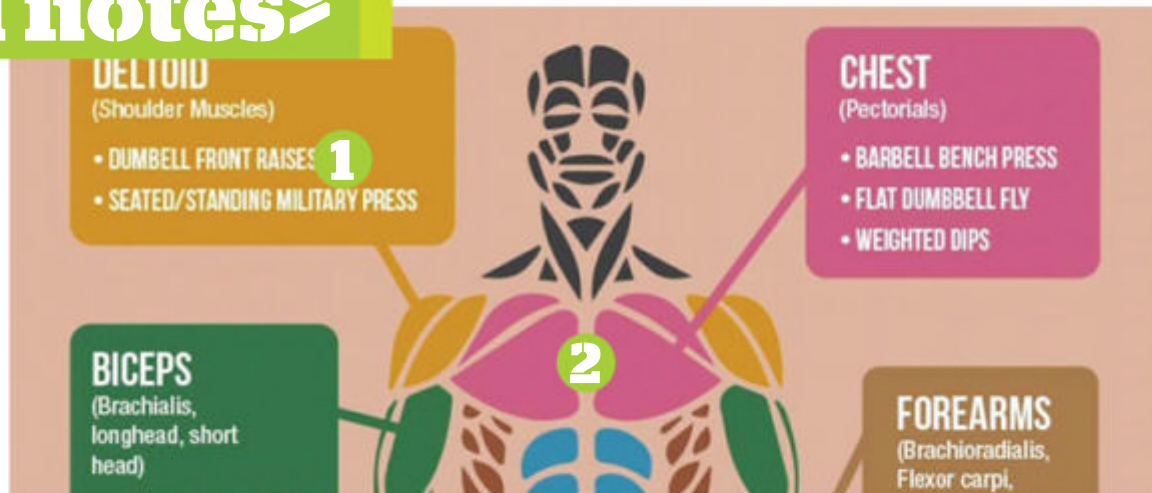
A collection of inspirational visuals

Master your muscles

bit.ly/1y9job5

1 The text is informative and educational. It offers some simple but interesting facts as well as advice for those who like to work out.

2 The graphic is instantly obvious and separates the crucial content with some simple colour coding. The colours clearly demonstrate which muscle group the information refers to.

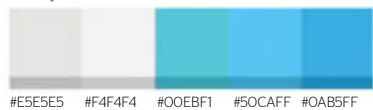


Colour picker

Hot hexadecimal codes

Bloblue

bit.ly/1EoH8NP



Sunrise

bit.ly/1MxyHp8



Typesetter

The best fonts you need

ABC abc

Amsi Pro

bit.ly/1CVI7YO

A handsome sans serif with great potential as a headline font.

ABC ABC

Burford

bit.ly/1CJ5r6A

A multitalented family with a host of styles, from drop shadows to dots.

Graphics

Great visuals to inspire



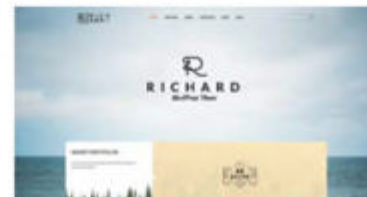
TOTAL Calendar

www.behance.net/gallery/21721697/TOTAL-calendar

A collection of 12 beautiful illustrations that demonstrates how the energy firm TOTAL operate in an artistic form.

Themematic

Style up your WordPress



Richard

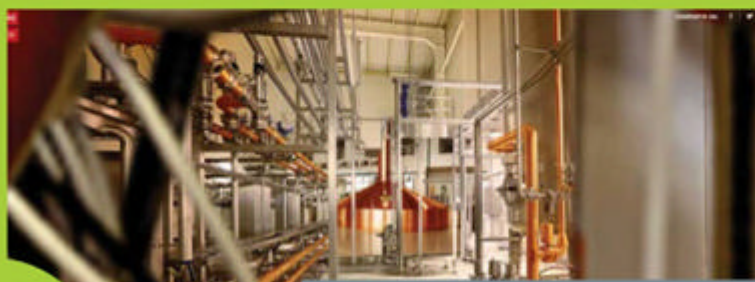
www.kozyon.com/theme/richard

This theme adopts the fullscreen image persona but adds a little twist to set it apart from the rest. A neat but obvious grid contains the content.



60 years of Eurovision 60th.eurovision.tv

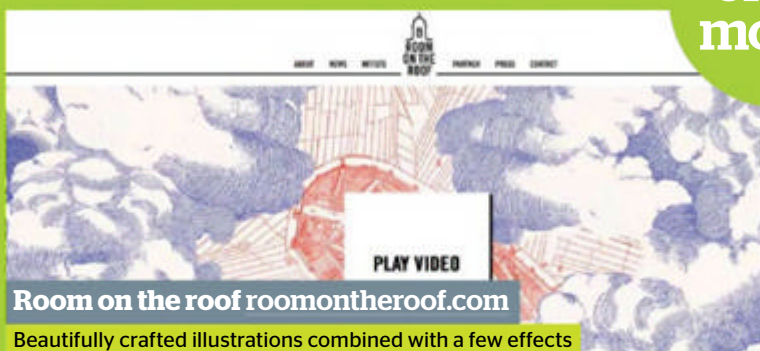
A comprehensive, design-driven look at the much maligned contest



Cerveza Cusquena bit.ly/1Alvm5Y

A mesmerising example of storytelling

Sites of the month



Room on the roof roomontheroof.com

Beautifully crafted illustrations combined with a few effects



VIZIO uhd.vizio.com

Contemporary design with stunning effects

<webkit>

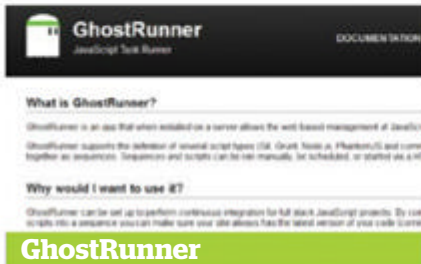
Discover the must-try resources that will make your site a better place



Interact.js

interactjs.io

Interact is a JavaScript library that offers drag and drop, resizing, multitouch gestures with inertia, and snapping for modern browsers.



GhostRunner

goghostrunner.com

GhostRunner is an app that allows the web-based management of JavaScript files. It supports Git, Grunt, Node.js, PhantomJS and command line too.



Tuxx

tuxedojs.org

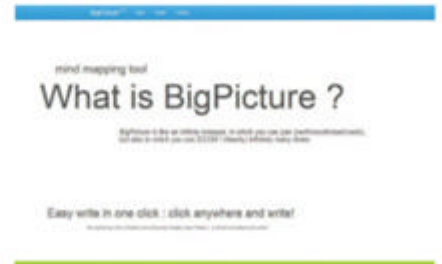
Tuxx, or tuxedo.js, is a client-side CommonJS-based web development framework built on Facebook's React library. It uses the React view layer and Flux architecture. Tuxedo.js provides a selection of prebuilt animation components that will make animating transitions nice and easy. Its links with CommonJS means that it provides a completely modular framework. This makes it more efficient, only loading the pieces of Tuxx that actually need to be used. For those who want to tackle the framework and get a better idea of what it can do, there is a useful getting started guide on the site.



Blockrain.js

aerolab.github.io/blockrain.js

Embed the classic game *Tetris* into your site with some simple code. Select from different themes and customise to suit your site.



BigPicture

bigpicture.bi/demo

BigPicture makes the screen a much bigger place. Type directly into a window, pan in all directions and zoom, zoom and zoom.

TOP 5 CSS animation tools and resources

Add animation quickly and easily with this must-know collection

01



CSS Animate

cssanimate.com

A browser-based tool that enables users to choose a selection of properties via a GUI and see the animation in action in a quadrant.

02

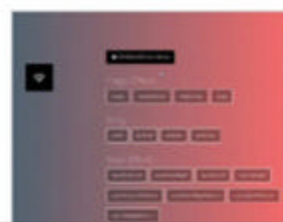


SpinKit

tobiasahlin.com/spinkit

A neat collection of simple, spinning animations complete with all of the HTML and CSS needed to add them to your own page designs.

03



Magic animations

bit.ly/1zOsRp4

A comprehensive collection of prebuilt effects ready to use. Simply browse the list, click the buttons and preview.

04



CSS Animation for Beginners

bit.ly/1uQeKNW

It says what it does on the tin. This is an intro to CSS animation on syntax, key properties and their purposes.

05



CSS Shake

elrumordelaluz.github.io/cssshake/#1

Want to give a little, or big, or crazy shake, to your pages? Then this neat little library has just what you need.

Designing a new domain

Ray King, CEO at domain name registry TLDesign, looks at the impact of the new world of web extensions on the design industry



web address has long been part of any organisation's identity, becoming all the more poignant as digital engagement becomes more ubiquitous in people's lives. For design businesses - or

indeed any company from any industry - many will have strived to attach their brand name to a .com or .co.uk web extension (more formally known as a top-level domain or TLD). With many of the best addresses taken, especially as competition for the right .com domain name has grown, alternative options are as follows - choose different words on the left of the dot that don't match the name of the business or use one of the other generic TLDs that carry less prestige such as .info or .biz.

You may have seen a new system has launched to mitigate the above. The new gTLD programme has been created by ICANN (Internet Corporation for Assigned Names and Numbers), which has opened up the domain world so that there are no longer a mere handful of generic extensions to choose from such as .com or .net or the country specific domains like .co.uk or .de. Between November 2013 and the end of this year, we are likely to see in excess of 600 new gTLDs launch. In addition, hundreds of businesses have applied to create their own dotBrand extension, such as American Express' .amex.

Given the media attention surrounding its launch, the extension that is most likely to have caught people's attention in the UK will have been .London. But beyond this, there are a number of industry-focused extensions that will support specific industries that are better suited to a wider geography. The design world is no different - .design will be opening its doors early this year. As is the case with any of the new extensions launching, businesses with



PROFILE

RAY KING
CEO at TLDesign
www.tldesign.co

trademarked terms will be able to have the first opportunity to claim .design domain names featuring their intellectual property/brand names during a sunrise period, which will run from February to April. Following on from that, anyone will be able to register .design domain names from later that month.

There are several striking benefits why design businesses might consider registering a domain name featuring one of these new extensions.

First, they may do so for a domain that carries meaning - imagine a business with the brand name 'Smith & Jones' that provides support services to the design sector. As the company grows and wants its

audience to know the nature of its business, **www.smithandmiller.design** readily identifies them in a way that **www.smithandmiller.com** doesn't.

Second they may want a snappier domain name for marketing. Taking the example above, promoting the website **www.smithandmiller.com/design** is a bit of a mouthful. The world of new domains makes for much cleaner marketing, such as **www.smithandmiller.design**.

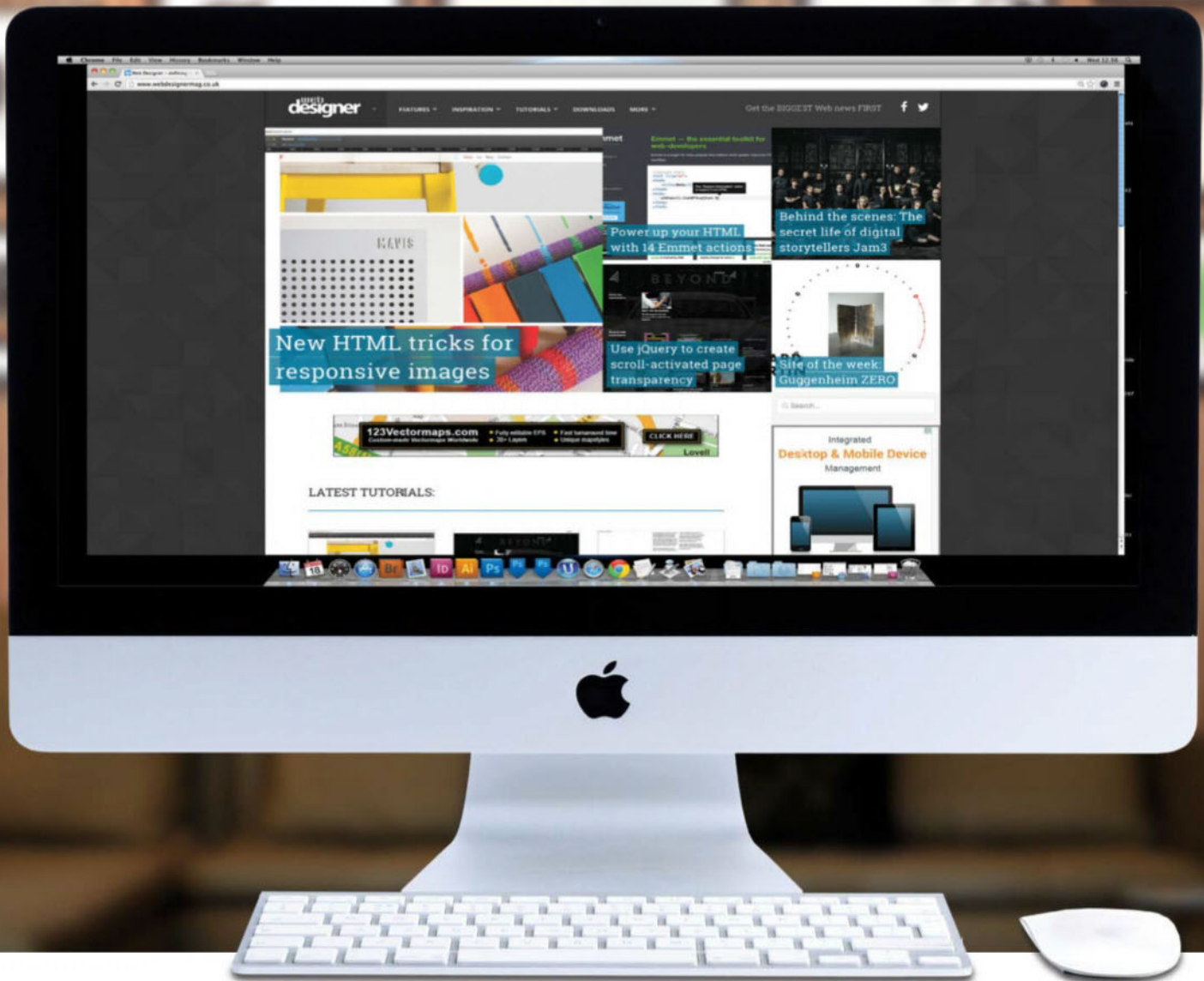
Third it could be that these new extensions can mark an industry leader. Adoption of huge industry TLDs like .design is all but assured, but those that move first will have a significant leg up on the competition and enjoy the branding benefits of being a first-mover and thought leader.

Lastly, it can offer an alternative to the overcrowded .com space - where .com has become increasingly thought of as a premium domain name it has become a competitive and expensive TLD to engage with. If a brand wants the right .com or .co.uk domain and doesn't have it already, there's a good chance it's taken - what's more the current owner will expect substantial financial recompense to part ways with it.

The new gTLD programme puts forward other fresh extensions that are more attractive, relatable and affordable. A quick

search on Google points to a huge number of potential beneficiaries, for example the lengthy address **www.michaelsmithdesign.co.uk** could easily be redacted to **www.michaelsmith.design**.

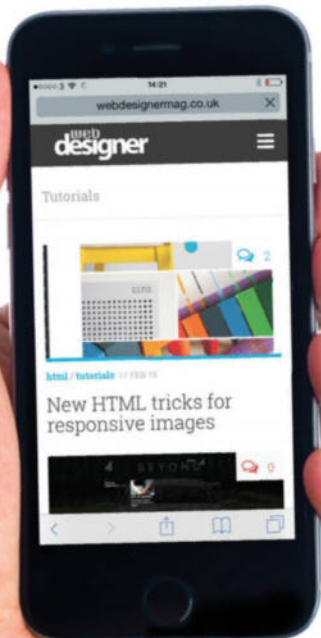
The gTLD's arrival is a great step towards giving the design industry its own stamp on the internet and provides businesses with a fresh opportunity to engage in a more personalised way with their customers. Proactivity is key, however, the sooner an enquiry is made as to whether a business can purchase its desired new domain name, the more likely they are to be able to actually keep it out of the hands of competitors.



NEW WEB DESIGNER SITE

Web Designer has a new website that perfectly complements its contemporary content, boasting a clean and intuitive design and of course, it's responsive. Pay a visit now

www.webdesignermag.co.uk



Steven Jenkins

Editor, Web Designer

As a leading web design publication, our website needs to reflect this. And, our new website does exactly that. It offers a fresh new feel and is fully responsive. Visitors will now be able to view and enjoy our brilliant content on any screen.



Martin Porter

Head of Digital, Imagine Publishing

This is the first phase of an update to bring the look and feel of the **Web Designer** site into 2015 and beyond. It's now fully responsive and quick to load. Plus, readers will find it easier to navigate the ever-growing wealth of features and tutorials it has to offer.

Receive £25k
tax-free to train as a
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and help develop
the great minds
of tomorrow.



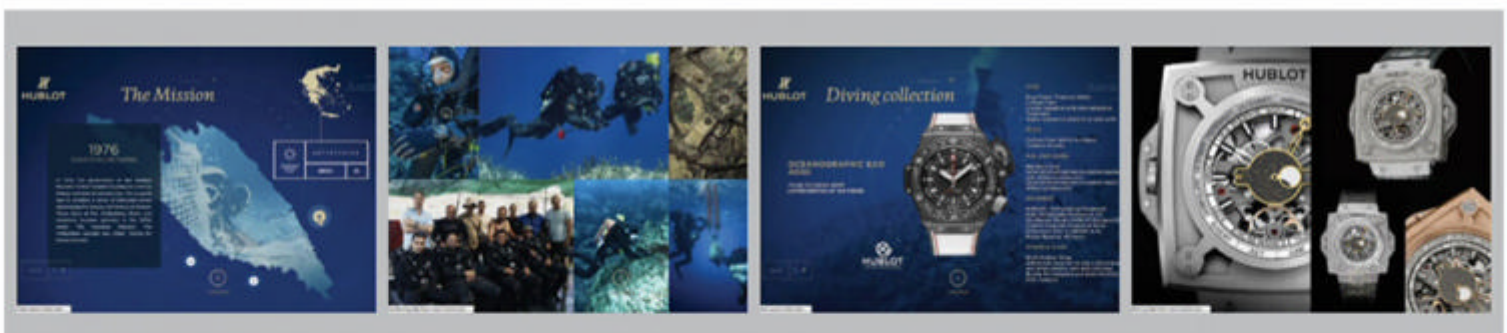
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<Above>
 • A rotating compass element and diving clip served by HTML5 video puts things into immediate context



<Above>
 • Key details describing the Antikythera mission are illustrated with the help of a smooth rollover, pop-ups and image wipes

<Above>
 • Incredible shots from the Antikythera dive demonstrate the history and scientific themes associated with the Hublot brand

<Above>
 • Luxury watch collections are showcased with key features and imagery, without breaking away from the overall theme

<Above>
 • Timepieces influenced by the Antikythera mechanism are spliced together, with subtle zooms on rollover

Return to Antikythera

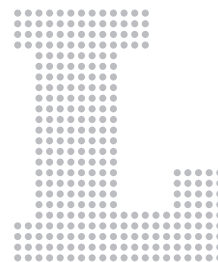
hublot.com/antikythera

Development technologies HTML5 (video), CSS3, SVG, jQuery, TweenMax, Hammer.JS



Designer **Hublot Digital Team, Details**
 details.ch

Dive straight into this Swiss watch campaign that is envisioned via a sumptuous, detailed microsite of genuine depth



ast year a new diving expedition was conducted on the Antikythera shipwreck, first discovered off the Greek island in 1900.

The mission, dubbed Return to Antikythera marked the latest of numerous attempts to resurface ancient artefacts dating back to 4th Century BC. Famously in 1902

research efforts revealed one such artefact to be the 'Antikythera mechanism' or astrolabe - an early analogue computer. Inspired by this clock-like find, Swiss luxury watchmaker Hublot has introduced a line of themed timepieces and this microsite to celebrate the event. Directed by the in-house Hublot Digital Team and led by Yann Lauener, the project enlisted the talents of

Geneva-based studio Details. This digital communications agency of twenty staff, formed in 2004, produces websites, mobile applications and social media campaigns. Named from a Leonardo da Vinci quote "Details make perfection, and perfection is not a detail" - this is a project where that attention to "detail" pays dividends. Rich in HTML5 <video> backgrounds and bubbling with Antikythera dive photography, the content adopts a smooth scrolling vertical navigation more akin to a slider than a series of static pages. Evoking that sense of plumbing the depths, when visitors uncover a treasure trove of featured watches the experience comes alive. Subtle zoom effects enliven juxtaposed shots of stunning product, switching to fullscreen on click. These timeless techniques are realised with modern web standards. Bon voyage!

abcABC
 1234567890

<Above>
 • Galaxie Copernicus by Constellation in Book Italic provides the distinctive curly headings throughout

abcABC
 1234567890

<Above>
 • Gotham font in Medium Bold handles the typography for the subsequent page paragraphs

Subtle zoom effects enliven juxtaposed shots of stunning product, switching to fullscreen on click

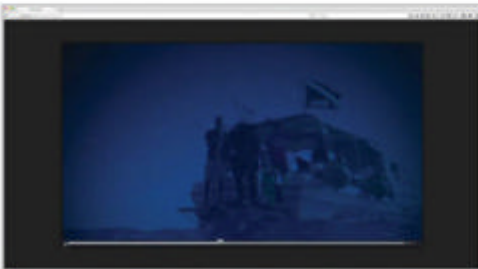


Make a full page video backdrop

Inspired by Hublot's Return to Antikythera project, uncover core techniques behind fullscreen HTML5 video clip backgrounds

01 The video assets

The site uses a series of clips for each <section> of the content, serving MP4 and OGV versions to the <video> tag. These consist of short clips that are set to repeat once loaded. So for example, the second Mission section features a clip of just eight seconds long at a native resolution of 1920 by 1080. Shorter clips not only loop better but also remain lighter in terms of file size for loading, in this instance 6.7MB (MP4) and 3.7MB (OGV).



02 Use a video tag

In the site's page, the <video> tag points the browser to each pair of clips via a valid path within the src attribute of the <source> tag. This is standard HTML5 stuff, with the more important definitions made inside the <video> tag itself. Here the element is made to cover the page simply by setting the width and height dimension to 100% of the viewport. Preload and looping options then follow, while 'autoplay="autoplay"' would be required to start the video from the tag itself.

```
001 <video class="bkg-image movie"
002 id="topvideo2" width="100%"
003 height="100%" loop="loop"
004 preload="auto">
005 <source type="video/mp4"
006 src="filename.mp4"></source>
007 <source type="video/ogg"
008 src="filename.ogv"></source>
009 </video>
```

03 Implement an alternative

As you then move through each section the clip is replaced by a static JPG background image (1920 by 1134), which is defined in the HTML directly after each video. By leveraging the 'class' names, the site then uses JavaScript to check device compatibility or screen suitability. By then setting the 'display' attribute of the attached CSS class for movie and image, the site can toggle initial visibility depending on the experience:

```
001 
005 JAVASCRIPT:
006 if(android || iOS) {
007   isTouchDevice = true;
008   initHammer();
009   $('<code>.movie</code>').css('display', 'none');
010   $('<code>.topimage</code>').css('display',
011   'block');
012 }else{
013   $('<code>.movie</code>').css('display',
014   'block');
015   $('<code>.topimage</code>').css('display',
016   'none');
017 }
```



04 Use the basic CSS class

The <video> and backgrounds have a bkg-image class that sets up the basic styling that applies to both. Absolute positioning, full width and snapping to the top are all self-explanatory, while the z-index ensures the background is set to the lowest level of the focus stack. The 'backface-visibility' property isn't wholly relevant here, relating to 3D transforms where any faces at the rear of a rotated element are not visible from the front.

```
001 CSS:
002 .bkg-image {
003   position: absolute;
004   width: 100%;
005   top: 0px;
006   z-index: 0;
007   -webkit-backface-visibility:
008   hidden;
009 }
```

05 Keep ratios consistent

Additionally within the site's main JS listing, the code has an onResize() function for ensuring both

movie and backgrounds maintain elegant ratios on browser resize. By declaring a videoAspectRatio variable of 1920/1080 before grabbing current \$(window) dimensions, the code updates the width, height, top and left CSS properties based on certain calculations and conditions:

```
001 JAVASCRIPT:
002 var videoAspectRatio = 1920/1080;
003 winWidth = $(window).width();
004 winHeight = $(window).height();
005 vidWidth = winWidth;
006 vidHeight = vidWidth/
007 videoAspectRatio;
008 if(vidHeight<winHeight){
009   vidHeight = winHeight;
010   vidWidth =
011   vidHeight*videoAspectRatio;
012 }
013 $('<code>.movie</code>').css({width:vidWidth,hei
014   ght:vidHeight,left:($(window).width()-
015   vidWidth)/2, top:($(window).height()-
016   vidHeight)/2});
```

06 Add optional overlays

You'll notice the videos across the site have a pattern overlay actually 'watermarked' within the sequences themselves. This could also be achieved by wrapping the video in a <div> element containing a transparent tiled background. By again setting this to be full width and height, the video should span the viewport. You also need to set your video element's z-index sufficiently below zero to force it underneath:

```
001 CSS:
002 #pattern {
003   background: url(pattern.png) fixed
004   repeat;
005 }
006 .full {;
007   width: 100%;
008   height: 100%;
009 }
010 #backMovie {
011   ...
012   z-index: -100;
013 }
014 HTML:
015 <div id="pattern" class="full">
016 <video id="backMovie">
017 <!-- HTML5 video goes in here -->
018 </div>
```

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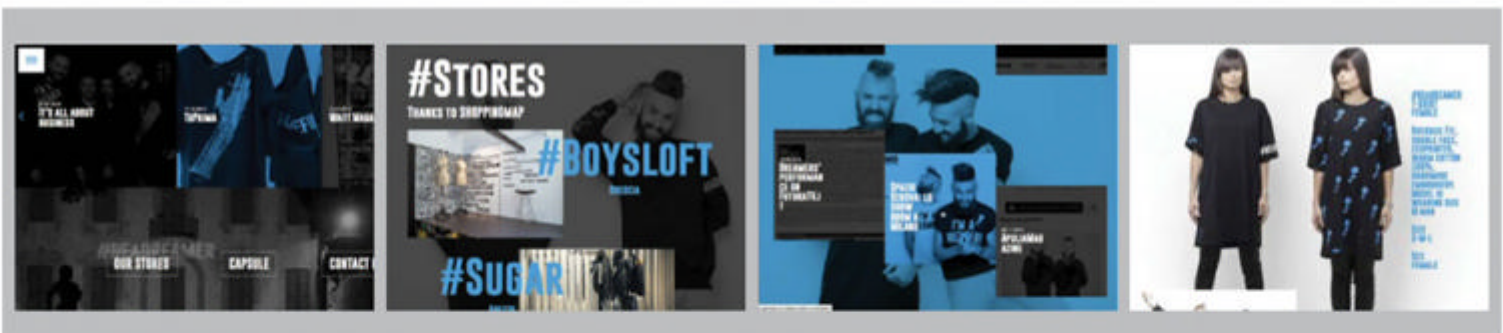
Award & Recognition

expertreviews
BEST BUY





<Above>
 • The capsule represents Dream Yourself's 2014 to 2015 collection with the site showcasing the various designs



<Above>
 • Navigation is achieved via the pop-out top menu along with content blocks scattered throughout the Dream Yourself site

<Above>
 • Typography is oversized and bold, favouring snappy #hashtag headings over using wordy, overcomplicated and lengthy paragraphs

<Above>
 • A parallax scrolling technique is employed at regular opportunity to float content over photographic backdrops

<Above>
 • Catalogue pages are simple model shots alongside stacked page text, which then form the new background



Dream Yourself

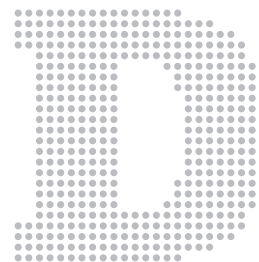
www.dreamyourself.it

Development technologies HTML5, CSS3, JavaScript/jQuery, Bootstrap.js, WordPress



Designer **Progetty**
<http://progetty.it/>

This purveyor of typical Italian style shows you needn't build a huge site to achieve big dreams



reamyourself.it is the online home for two young creatives Lorenzo and Emanuele Manta who produce a collection of 'urban-cool' clothing made and sold in Italy. Within moments of visiting the site you get a feel for a distinctly trendy 'hipster' vibe full of bold typography and yes, beards - big beards. Dream Yourself as a brand promotes a fashion philosophy for "igniting that spark for ideas, passion and energy" and so, such a web presence required the efforts of an agency in tune with that vision. The project was managed by Progetty Design Studio, with the site's design conceived by Totò de Lorenzis

while development and programming was handled by Giuseppe Ciullo. This local studio in Lecce, southern Italy, offers multidisciplinary services across website, graphics, advertising and branding - boasting notable industry awards for similarly striking work. "The website has been conceived on a simple base of three colours (light blue, black and white) with quite big headings and sharp cuts on fullscreen images that give the website a strong street wear fashion touch," explains Progetty's Totò de Lorenzis. "HTML5, CSS3 and JavaScript have been used to design the website while utilising frameworks like Bootstrap and jQuery. For the backend we have used a CMS that's based on WordPress, and all the pages are responsive and can be used on mobiles, tablets or other devices."

abcABC
 1234567890

<Above>
 • The strong, angular and bold Nevis font by Ten by Twenty handles the subheading links

ABCABC
 1234567890

<Above>
 • Gobold by Situjuh Nazara is responsible for the striking typography throughout Dream Yourself

HTML5, CSS3 and JS have been used to design the Dream Yourself site utilising frameworks like Bootstrap and jQuery



Control varied scroll box speeds

Progetty Design Studio's IT programmer Giuseppe Ciullo reveals the simple parallax scrolling trick used on Dream Yourself using CSS and jQuery

01 Populate the page elements

On the 'News' page of dreamyourself.it you'll find a series of independently scrolling content boxes of varying speeds. To emulate this technique we need to add at least three boxes to an HTML page. For our dummy example these boxes simply consist of <div> elements containing 300 by 300 pixel PNG images, a <small> date label, plus an <h1> headline heading. Add the following markup within your <body> section:

```
001 <div class="news-item first-col">
002 
003 <div class="overlap-title">
004 <small class="date">01.02.2015</small>
005 <h1 class="title">FIRST NEWS TITLE</h1>
006 </div>
007 </div>
008 <div class="news-item second-col">
009 
010 <div class="overlap-title">
011 <small class="date">02.02.2015</small>
012 <h1 class="title">SECOND NEWS TITLE</h1>
013 </div>
014 </div>
015 <div class="news-item third-col">
016 
017 <div class="overlap-title">
018 <small class="date">03.02.2015</small>
019 <h1 class="title">THIRD NEW TITLE</h1>
020 </div>
021 </div>
022
```

boxes. Here you basically have to position and dimension each news-item. After you've added these styles, save and link the CSS file in the <head> of your HTML page with a <link> tag or simply define them within <style> braces:

```
001 .news-item{
002 width: 300px;
003 height: 300px;
004 top: 700px;
005 position: absolute;
006 }
007 .first-col{ left: 0px; }
008 .second-col{ left: 300px; }
009 .third-col{ left: 600px; }
```

03 Add scroll-speed data attribute

Next up we must add the custom HTML data attribute scroll-speed into the opening <div> tag of each of our three boxes. Using this attribute, we will be able to assign each box a different speed with a series of staggered values. Basically, those elements given a lower value will be faster once the effect is invoked. For the sake of illustration we'll use the values 2, 6 and 1 but by all means experiment with your own!

```
001 <div class="news-item first-col"
002 data-scroll-speed="2">
003 ...
004 </div>
005 <div class="news-item second-col"
006 data-scroll-speed="6">
007 ...
008 </div>
009 <div class="news-item third-col"
010 data-scroll-speed="1">
011 ...
012 </div>
```

below links to the latest CDN and so it's easy to simply insert this into the <head> of your page before the code we'll add in the next step:

```
001 <script src="http://code.jquery.com/jquery-1.11.2.min.js"></script>
```

05 Add some JavaScript code

With jQuery added, next we'll add some JavaScript to produce the desired effect. In order to create it we will attach a simple parallax animation on each box. To achieve this we need to divide the value of the current vertical position of the window by the value of the scroll-speed attribute of the box and set the result as the vertical position of the box. To calculate this and apply it, we need to add the following code in an external JS file or within <script> tags below our jQuery include within our HTML document:

```
001 var myBoxes = $(' .news-item');
002 $(window).scroll(function(){
003 var scrollTop = $(window).scrollTop();
004 myBoxes.each(function(){
005 var $this = $(this);
006 var scrollspeed = parseInt($this.data('scroll-speed'));
007 offset = - scrollTop / scrollspeed;
008 $this.css('transform', 'translateY(' + offset + 'px)');
009 });
010 });
```

06 Save, test and scroll!

To finish, save the HTML page and preview in your chosen browser. You should notice that when you start scrolling the page the boxes should respond and move to the different speeds. This produces a very subtle parallax effect making it appear as though the elements are floating independently!



02 Style the boxes

Next we will add the required CSS classes and begin adding the basic styles for our three content

04 Include the jQuery library

This step is a pretty simple one - basically it's time to attach the latest jQuery library to our page. You can do this one of a few ways, although the <script> tag



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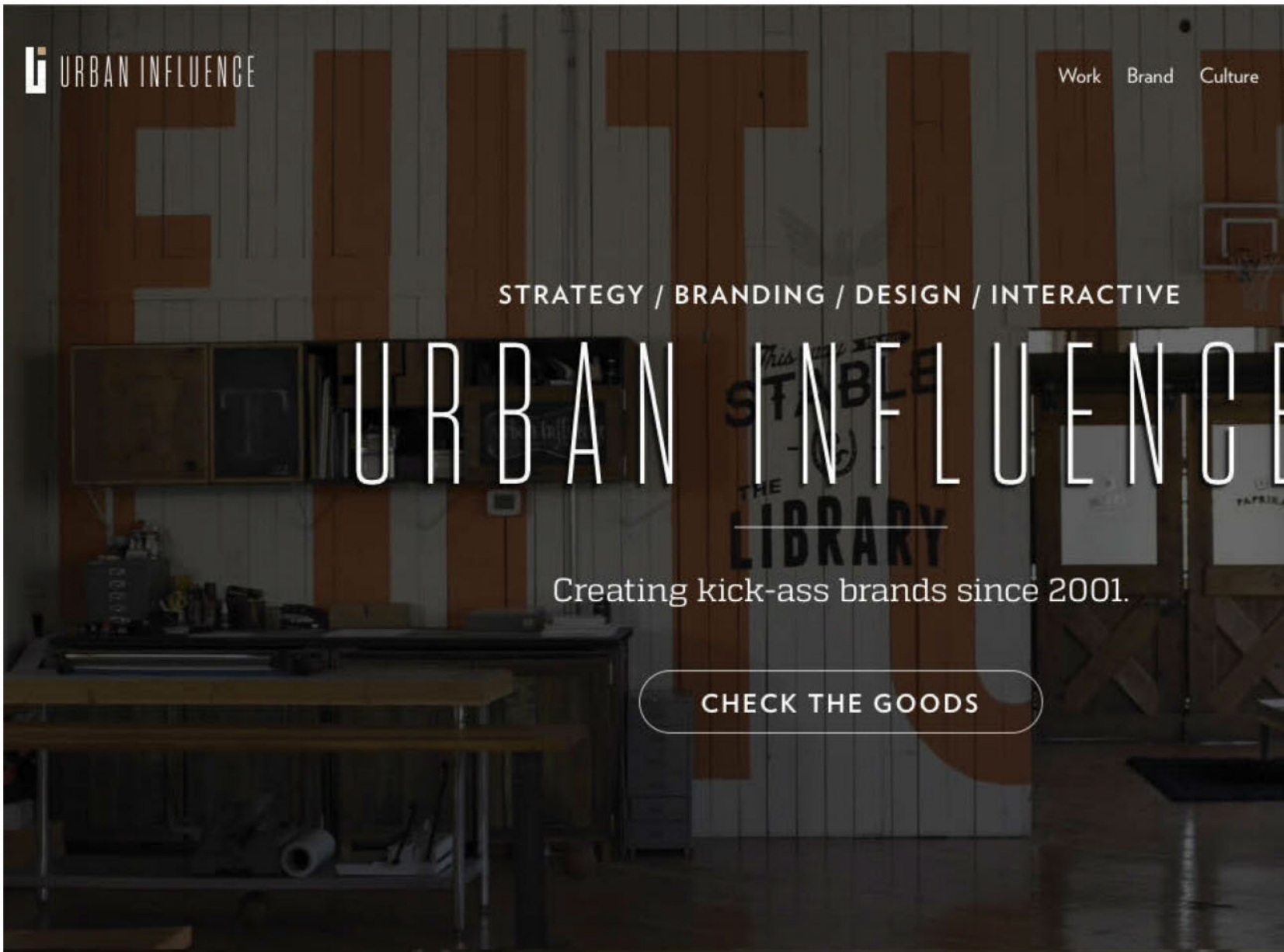
*** IT'S A CONTEST!!**

tweet **#[\[insert:wordfoundabove\]tools](#)** @coffeecup for a chance to win one of the apps. More info at www.coffeecup.com.

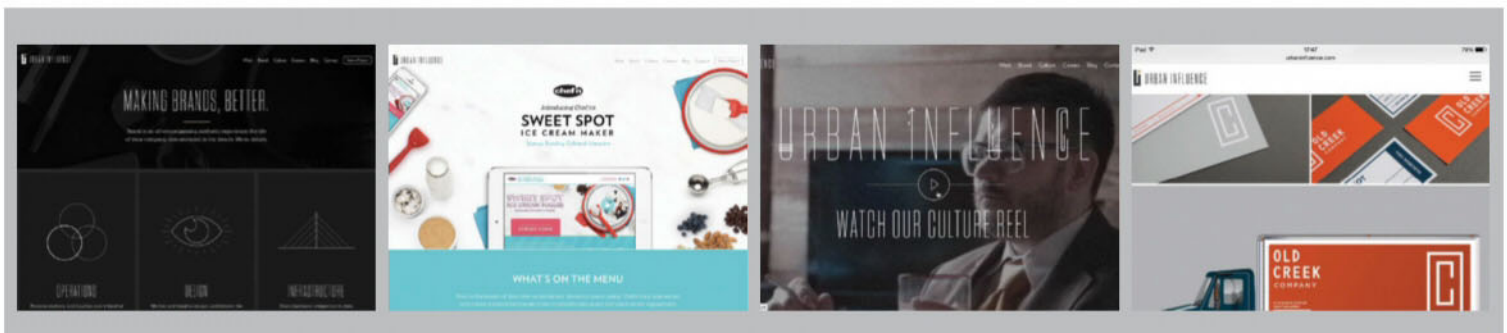
by



CoffeeCup



<Above>
 • A looping fullscreen background video adds engagement. An overlay fades out as the window gets smaller



<Above>
 • The Brand section adopts a slightly different look with hieroglyphic-like icons inspired by the Tungsten typographic

<Above>
 • Eye-catching graphical headers, swathes of bold colour, simple icons and photography exhibit featured work beautifully

<Above>
 • Animated elements add welcome dynamism and movement to the content, thanks to the work of SVG

<Above>
 • On tablets and smartphones alike, the site adapts well, achieving their ethos of "fluidity in form" truly



Urban Influence

urbaninfluence.com

Development technologies HTML5, CSS3, WordPress, PHP, Modernizr, JavaScript, jQuery, @font-face, SVG Animation



Designer **Urban Influence**
urbaninfluence.com

A mobile-first approach to developing this portfolio site highlights stunning cross-device work



nce upon a time, web design was simple. You designed for computers, albeit then for a dizzying array of browsers, but still.

These days with a myriad of web-enabled devices to cater for, your content needs to be far more sophisticated. This portfolio site for Seattle-based, cross-disciplined

agency collective Urban Influence rejoices in the responsive. From a notion of “fluidity in form”, sumptuous project case studies can be experienced consistently across multiple screens. “For those seeking to share and sell to the web-based world, competently displaying a product or service across a range of devices isn’t simply ideal, it’s necessary,” explains Urban

Influence’s Alexandra Matthiesen, lead strategist. “As the use of mobile devices among all audiences increases quarter over quarter, designers and developers must account for the flux of small and smaller screens. But, as with the best design, a well-executed single size can often fit all.”

However it’s not as though this ‘one size fits all’ approach pulls any design punches either. Out of a WordPress CMS backend serving gorgeous image-laden templates, there is an injection of tasteful CSS choices and SVG-based animation layers on memorable identity. Featured work bounds from the browser, any browser, telling an agency story with actions rather than words.

“At Urban Influence, brand is the life of a company, demonstrated in the details,” reveals the site’s Culture page. “We do details.”

abcABC
1234567890

<Above>
• Quadon by Rene Bieder adds a nice mixture of serif and sans serif text styles

ABCABC
1234567890

<Above>
• Tungsten Compressed Book and Light from Hoefler & Co provides the distinctive spindly typography

ABCABC
1234567890

<Above>
• Verlag in Bold takes care of heading links with crisp clarity for multiple screens

As with the best design, a well-executed single size can often fit all



Build proportional fluid layouts

Lead front-end developer Stephen Scaff explains how Sass mixins, SCSS and media queries kept typographic ratios golden across Urban Influence

01 Encapsulate fluidity in form

The web is a natively responsive medium without intentional design. Imposing fixed measurement units for pixels broke this inherent fluidity. By ditching pixels in favour of relative sizing units (ems, rems, percentages and viewports), we can establish a more meaningful relationship between layouts (grid systems) and typography. This enables global and proportional control over your entire site via a single font-size declaration on the body tag. Over the following steps we'll look at how this can be done!

02 Establish typographic scale

Set up your typographic scale and vertical rhythm. While there are plenty of Sass functions or mixins to assist here, Gridlover (gridlover.net/app) is a great tool that calculates modular scale of your headers from common ratios. For example, if you go with the famous golden ratio (1:1.618), your headers will have mixins for greater flexibility and consistency.

```
001 /*--- Typography Mixins ---*/
002 @mixin font-h1 {
003   font-size: 4.238095238em;
004   line-height: 1.213483146em;
005   margin-top: 0.80898876em;
006   margin-bottom: 0.40449438em;
007 }
008 @mixin font-h2 {
009   font-size: 2.619047619em;
010   line-height: 1.30909091em;
011   margin-top: 1.30909091em;
012   margin-bottom: 0.65454546em;
013 }
014 @mixin font-h3 {
015   font-size: 1.619047619em;
016   line-height: 1.058823529em;
017   margin-top: 1.05882353em;
018   margin-bottom: 1.05882353em;
019 }
020 @mixin font-h4 {
021   font-size: 1em;
022   line-height: 1.714285714em;
023   margin-top: 1.71428571em;
024   margin-bottom: 1.71428571em;
025 }
026 /*--- Typography Styles ---*/
027 h1, .font-h1 {
028   @include font-h1;
029 }
030 h2, .font-h2 {
031   @include font-h2;
```

```
032 }
033 h3, .font-h3 {
034   @include font-h3;
035 }
036 h4, .font-h4 {
037   @include font-h4;
038 }
039 p, ul, ol, pre, table, blockquote {
040   margin-top: 1.71428571em;
041   margin-bottom: 1.71428571em;
042 }
043 }
```

03 Keep layouts fluid

Start by ensuring layout elements are using percentage and relative sizing. This includes your grid system, container width, margins, paddings, and especially, media queries. With your media queries, move away from the mobile, tablet and desktop break. Instead let content determine your breakpoints, and use as many as needed to create a fluid experience. For consistency, it's best to rely on SCSS variables to define the breaks, such as:

```
001 $mq-xsmall: 22em;
002 $mq-small: 36em;
003 $mq-med: 58em;
004 $mq-large: 86em;
005 $mq-xlarge: 115em;
006 $mq-xxlarge: 125em;
007 $mq-xxxlarge: 145em;
```

04 Set body font-size

Font-size in the body is set to 100% at mobile. Leave <p> (paragraph) tags alone, as they'll inherit sizing from the body. In the past, a common approach was to set the body to 62.5 per cent and baseline ems to 10 pixels. But in a proportional setup, pixel to em equation is not relevant. So as you move up from mobile/100 per cent, incrementally increase the body's font-size over a series of min-width, em-based breakpoints using the mq variables set up from the last step.

```
001 /*--- Fluid body sizing ---*/
002 body {
003   font-size: 100%;
004   @media (min-width: $mq-small) {
005     font-size: 110%
006   }
007   @media (min-width: $mq-med) {
008     font-size: 120%
009   }
```

```
010 @media (min-width: $mq-large) {
011   font-size: 130%
012 }
013 @media (min-width: $mq-xlarge) {
014   font-size: 140%
015 }
016 @media (min-width: $mq-xxlarge) {
017   font-size: 150%
018 }
019 @media (min-width: $mq-xxxlarge) {
020   font-size: 160%
021 }
022 }
```

05 Use a single declaration

From a single declaration we can now globally and proportionally increase the entire site - typography and all, while sustaining the modular ratio. Since browser width and typography are also linked, modify your container's max width to maintain the characters per line for best readability. This is generally accepted as 45 to 75 (webtypography.net/2.1.2).

```
001 /*--- Container Class ---*/
002 .container {
003   width: 95%;
004   margin-left: auto;
005   margin-right: auto;
006   @media (min-width: $mq-small) {
007     max-width: 86%;
008   }
009   @media (min-width: $mq-med) {
010     max-width: 80%;
011   }
012   @media (min-width: $mq-large) {
013     max-width: 50em
014   }
015   @media (min-width: $mq-xlarge) {
016     max-width: 45em
017   }
018 }
019 }
```

06 Change the viewport size

Viewport relative sizing (vh, vw, vmin, vmax) in CSS3 represents a game changer for responsive design and especially typography. Here each unit represents one per cent of the viewport axis, with 'viewport' of course being the current browser window size. Once full, consistent browser support arrives, sizing units truly relative to the viewport will make creating proportional systems easier than ever before.

there's no fancy advert here
just the details that you need to read

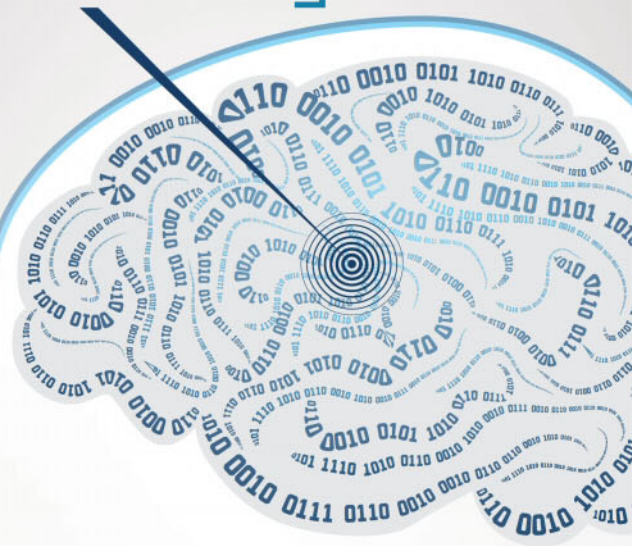
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Style

Des chaussons aux allures de mocassins de « grands », de quoi marcher la tête haute ! Qui a dit que la mode et le design n'étaient réservés qu'aux « grands » ? Les chaussons de Mélanie F sont entièrement réalisés de façon artisanale.



Pratique

Avec sa languette en cuir, l'enfilage du chausson est facilité tant pour les enfants que les parents.



Antidérapant

Le suède, la partie chamue du cuir a des propriétés antidérapantes et procure aux chaussons une résistance à toutes épreuves. Ainsi nos enfants peuvent gambader, grimper, sauter... en toute sécurité.

Confort

En cuir souple, la semelle a une forme adaptée aux pieds des petits bouts. Elle assure une totale liberté de mouvement et un confort optimal.



Maintien

Tenue idéale du talon, tout en conservant le confort de la cheville.



Raffinement

Un toucher velours et soyeux pour le plaisir des yeux et des doigts. Une sélection de textiles très pointilleuse et un lacet de cuir orné de pompoms : c'est la signature de Mélanie F.

A new lookbook

A small team of French designers toiled evenings and weekends to bring Mélanie F's universe and products to digital live.

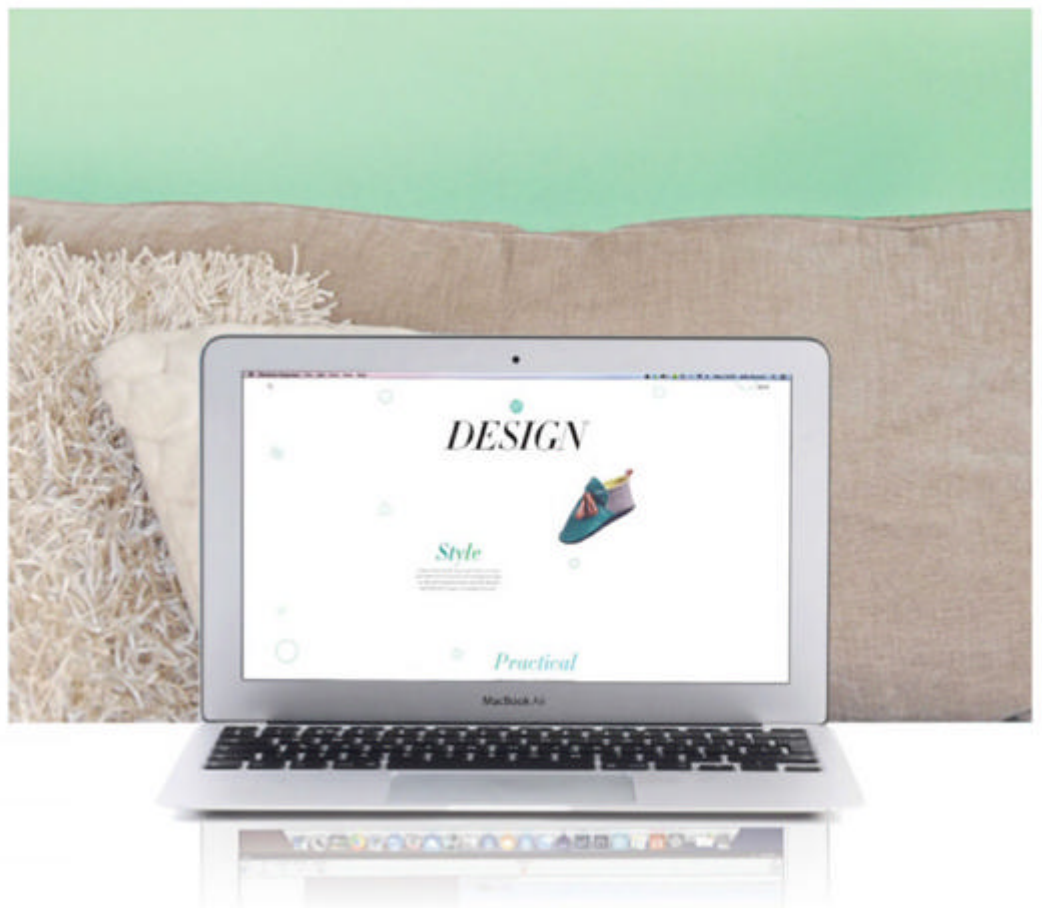
Project	Mélanie F
Web	melanie-f.com/en/
Designer	Lionel Durimel
Web	wmnvm.com
Duration	3+ weeks
People involved	3
Total hours	Lots of overtime

Great web experiences are not the sole domain of the big agencies with vast resources and financial power. Creating a great web presence is all about a passion to succeed. It doesn't matter if you are a solitary soul or an army of talent, it is the will to express and create that takes precedence.

This is perfectly demonstrated by the creative talents of the latest Design Diary protagonists. The Mélanie F Lookbook is the work of a small team of dedicated French designers and developers. One art director, one creative developer and one motion designer, who were all working full-time at different agencies, decided to work on the project in their free time. This meant a lot of late nights and long working weekends. But, it was all worth it as designer Lionel Durimel reveals, "It was an incredible journey, and we honestly did not expect so much good feedback."

The Mélanie F Lookbook 14/15 tells you the story of the new collection of slippers for children, immersing you inside Mélanie's universe. What was the end goal for Lionel and the others? "What we wanted to achieve, and what we kept in mind as baseline, was to make the website as beautiful as possible, trying to give life to every single slipper, and also bringing Mélanie's spirit in every detail of the website."

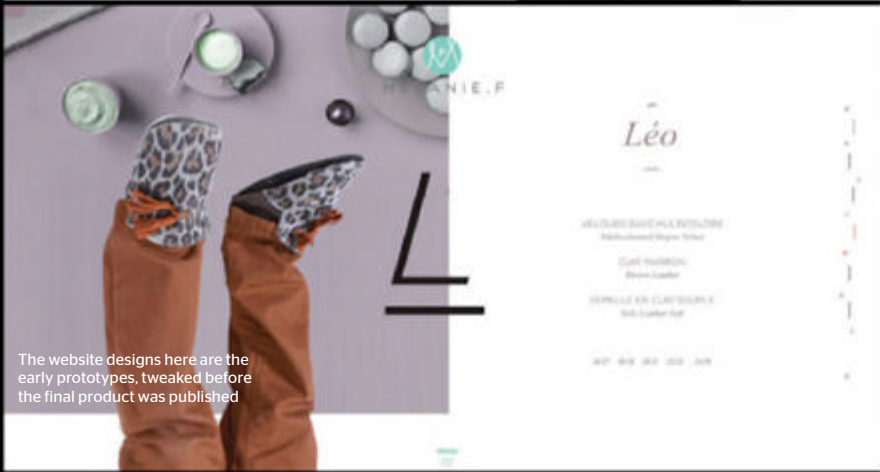
The latest Mélanie F Lookbook is not the first, it all started the previous year and it proved to be the catalyst



for the current design. "Last year we launched the very first Autumn/Winter 2013/2014 collection with a new design. We did our photoshoot using two children, where we had to work with certain challenges, such as finding an atmosphere that reflects the brand's colours. Using children for a photoshoot with strict time limits is an added complication. Once the atmosphere was obtained, we realised that we hadn't sufficiently highlighted the product,

which were slippers, on the first version of Mélanie F's website. So, for the new Autumn/Winter 2014/2015 collection, we focused on highlighting the slippers."

Large-scale projects typically follow a set pattern, but smaller teams that are working on small-scale projects get to choose a far less rigid path. The interaction between a designer and client can be far more personable. "We are more like an artisanal production, a human structure,"



The website designs here are the early prototypes, tweaked before the final product was published

Lionel explains. "I'll remind you that we were working with handcrafted leather products.

"Because we were working from different locations, regular written and telephone exchanges were needed between us throughout the project to ensure follow-up.

"At the end of the initial briefing, I already had a precise and clear idea in mind about the setting that I wanted. Once I presented my ideas to [Melanie] she was charmed.

"In return, she asked that the Lookbook be as colourful as the collection she designed. We wanted to create a coherent and happy universe, where the future viewers and potential buyers would be immersed in Mélanie F's world."

What was it that charmed the client? Lionel believed that it was a combination of his ideas evolving from the previous year, with a focus much more on the product. "The initial idea took time to emerge as we had to avoid repeating our previous mistakes from the 2013/2014 collection. We absolutely had to come up with a unique angle to represent the slippers.

"Our goal was to present them in the best light possible. The end result is visible on the website. The arrangement marks a substantive change from other shoe websites, where feet and legs are brought to the fore. As children are active and constantly in motion we wanted the viewer to have a sense of their dynamism and energy.

"Several shots were made because the first ones did not show enough of the notion of movement. We discarded the first of them as they failed to highlight the adherence of the slippers. We were pleased to have settled on the best angle for their display by the end of the shoot. At that point we had the desire to place slippers on the side to respect a one-page scroll. To indent this idea of movement and childhood, we used wired primitive forms: triangle, circle,

“ All our content is static, and the dynamic part is handled by the store ”



An audio and visual delight

As we all know, beautifully crafted sites need to be seen to be fully appreciated. The challenges of getting a site launched, and seen, are rarely easy, but sometimes, it can be easier than expected as the team behind the Mélanie F Lookbook reveal, "Our biggest challenge was to transfer the smoothness of the desktop version, onto other responsive devices (tablet and smartphone) so that it remains accessible

to a wide audience. Other than that small detail, nothing too challenging!

"The final launch of the site was only made on Twitter with just a tweet, which was retweeted and shared in turn. A huge and pleasant surprise!

"Not to mention it was broadcast on the leading sites in the field of web design, such as Awwwards, FWA, CSS Design Awards, Siteinspire... and many

others, which gave it great visibility. It was a huge success for everyone involved (designer, developer and creator of the brand). As a result we received many congratulations and requests, including some special orders for adults!

"Our first objective was reached - to create a crush by a simple sound and visual experiment for eargasm and eyegasm!"

square and parallax. To reinforce the message we used the first letters of the names of slippers as a way of learning the alphabet eg B for Bastien and V for Victoria."

The visual discovery and presentation of a product is key to how it is viewed. Julien Renau, the developer on the project gives a quick insight into how the frontend and backend were brought together. "One thing we can be proud of on this project is the relation between design inspiration and code. We work closely and this is how we like to do. All our visual decisions were taken to serve the final experience.

"What we wanted was to tell a story, let people discover Mélanie's universe. In fact, the sound, the smooth navigation, the shapes moving, the letter animations, are here to emphasise our story around the slippers. This website is a good example of design and code working together in the same direction."

When it came to coding there were a few back-end challenges to contend with to ensure a smooth operation as Julien explains, "The biggest coding challenges were definitely not back-end related. We basically do not have a backend for the Lookbook. All our content is static, and the dynamic part is handled by the store.

"Our real challenge was, how to drive people from the Lookbook to the store. Because at the end, this is what we want people to do. The user flow we came up with was to let people enjoy the experience and let them, at the end, buy our slippers. In the meantime, we obviously faced

some front-end challenges, especially about image size for our sprites animations. I think that we did pretty well, and the final result looks like what we wanted."

Trust in the people behind the build of a website is critical. When the people involved say they will deliver, they need to deliver. Therefore it's very telling how dedicated the team behind the Lookbook are as they are still on hand to help, even two years after taking on the project, "We've been advising and assisting Mélanie in the development of her brand for two years now. Advice on marketing networks, print marketing, design (packaging) and store management were provided to her. We remain available to promote her company. Her trust in us allows us unfettered creative freedom, and that's what we appreciate in her!"



Julien Renau helped to ensure a seamless combination between site design and development

Lionel Durimel has worked on the Lookbook two years in a row, but still presented unique designs





THE THINK

The breadth of experience that denkwerk can call upon is unmatched in today's digital design space. This agency has redefined what innovation truly means

who denkwerk
what Digital innovation, design, marketing and communications
where Vogelsanger Str. 66
50823 Cologne
web www.denkwerk.com

Key clients

Condor
OBI
Deutsche Telekom
Moovel
Storck

Few agencies have the perspective that denkwerk enjoys. As one of the oldest digital design services, the company has seen how the internet and digital design has evolved over the last two decades. From their vantage point, denkwerk leverage their vast knowledge and experience to create truly ground-breaking design that has seen them become one of the most successful companies at the iF Design Awards and Red Dot Design Awards.

FACTORY

The agency was founded in 1998 in Cologne by four students as one of several business startups. Two of them, Marco Zingler and Jochen Schlaier, still manage the agency today. The founders have typical new economy résumés, as Marco studied history before founding denkwerk and worked as a project manager for art galleries and television channels. Meanwhile, Jochen studied communication design, but left university so he could fully devote himself to denkwerk.

“Back in 1998 we recognised that there were a lot of potential clients for these new things called

websites and not a great many businesses offering web design services,” said Jochen. “We could see that there was a great demand for these types of services. And since then the company has grown organically to the size it is today.”

Jochen continued: “We could see that many businesses were looking at new technologies like the internet and seeing the potential. There were of course many that felt that the internet was just a passing fade, but we spoke with many companies that were excited by the technology and what it could bring to their businesses. At that time of

course there were few digital design companies, so the founders could see an opportunity.

“When the dot.com bubble burst in 2001, this certainly affected the agency. We did a lot of our early work with internet start-up businesses many of which simply disappeared during the dot.com crash. We actually also developed a separate business called ‘oneview’ that was a social bookmarking business. This was several years before social media. The idea of sharing links and other media was new then, but the business hit the dot.com bubble and had to be closed down.



There are six principles that are key to denkwerk's work ethos, including focus on the user, speed and quality among others



"Of course sharing over the Internet is now commonplace, but back then we had a business that was somewhat ahead of its time."

Jochen explains how the agency got its name: "The name denkwerk, which roughly translates as 'think factory', comes from our belief that a unique idea needs a consistent implementation in order to reveal its full power. We are thinkers and doers and we aspire to combine both aspects at the highest level. The name denkwerk is a result of this approach. Luckily the domain was still free, but the name came first."

As a calling card, the website of any design agency is critical to showcase a portfolio of work and as a point of contact. "The website of an agency is very, very important, especially as a port of call for job applicants and potential clients," said Marco. "This makes it all the worse that our current website is somewhat outdated! To be honest, due to client projects we have neglected it terribly for a long time. But we are working on it. In mid-March our new website will be going live, with a

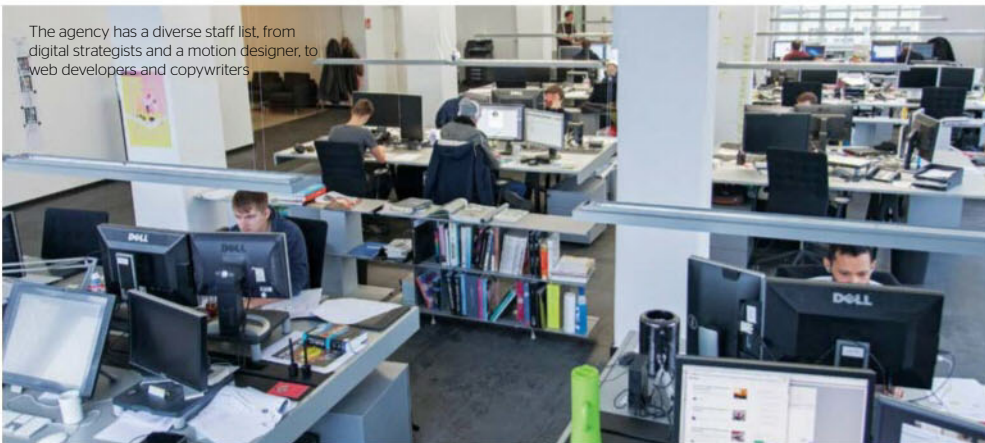
responsive design of course. We will also showcase some of the deeper insights we have gained from our internal research projects."

With a history as long as denkwerk's, attracting new clients isn't as difficult as it once was. "Our reputation means that the work comes to us," Marco commented. "But for blue chip companies in particular, there's often no getting around a pitch. As every pitch is associated with the corresponding internal effort, we carefully weigh up which pitches we participate in at the end of the day and which ones we choose not to."

"We are in the fortunate position that we have exciting projects to work on and can freely decide which projects we take on and which ones we don't. This decision doesn't depend purely on how big a project is. We are more interested in whether the task is challenging in terms of its contents and whether it suits denkwerk."

Jochen also said: "Our approach to client selection certainly has a number of criteria attached to it, but we always first and foremost focus on the work that they have approached us to do. We are interested in partnering with clients that want to do something different. Clients that simply want to bring their latest offline campaign to the web are of no interest to us. We want to do great work, so clients that understand the digital space and want to innovate are always of great interest - we will work as hard as we can to accommodate all of their needs."

"The major changes we have seen over nearly two decades that the agency has been in existence is how digital content is approached by the clients we work with. In the early days of the agency, few of the businesses we did work for had any idea what the internet was, or what its vast potential could be. Today that has completely changed."



The agency has a diverse staff list, from digital strategists and a motion designer, to web developers and copywriters



industry insight

Marco Zingler, chief operating officer

“jQuery will remain the library that on the one hand provides the developer with an elaborate means to manipulate the DOM. They will also be able to use the core API of jQuery and extend it with plugins. The triad of HTML5, CSS3 and jQuery is the basis for today’s sites. Other frameworks either supplement it or have another specialised focus”

“We have conversations with clients who now understand how digital products, services and content we create enhance their businesses. There is now a much more strategic approach to digital content. Of course the CEOs of new companies are digital natives.”

Design agencies tend to gain a reputation in some key areas. Is there a project that defines the ethos or the DNA of denkwerk? Marco explained: “A project that highlights what denkwerk has stood for during the last 15 years is one of our first experimental pieces of work. In 1998, inspired by Robert Silver, we developed the world’s first video mosaic software. The project was the result of a bet between a designer and a developer. What they were doing were they were betting for a crate of beer. And that’s exactly what makes denkwerk stand out against other agencies: the individual initiative of our employees. The pleasure in experimenting, the urge to make things new and better, the connection of art and science as well as of design and technology.”

How agencies approach the projects they complete from, what can be, highly diverse clients is always fascinating to discover. Jochen explains denkwerk’s approach: “Our projects usually take six months to a maximum one and a half years. We mostly work for large, international companies and we are involved in projects which accompany and enable the digital transformation of our clients. Very often we find ourselves in a process in which the product is continuously and iteratively improved, even after the launch. So sometimes it’s hard to say when a project really ends.”

“Most of our projects are full-service projects, which is why most of our departments – strategy, design, technology and communication – are usually involved in the creation process. The teams consist of digital strategists, visual designers, interaction designers, motion designers, web developers, software developers and copywriters.”

“Our process is based on the ideals of agile development and human-centred design. Different disciplines work in these processes together.”

We try to develop prototypes as early as possible, to test them directly and to iteratively improve them. This is why our project teams are interdisciplinary. This enables us to constantly communicate during the process and to solve many problems quickly.”

How denkwerk approaches each project is also a product of how the company is structured. Jochen continued: “The hierarchy at denkwerk is very flat. We deliberately have an open-plan approach to our offices and encourage everyone in a project team to contribute. We have found that this often reveals a completely different approach to a piece of work we had not considered, and also often results in a better finished piece of work that the client is happy with. We call our approach ‘short distance’, which literally means we want our people to have the active conversations that would be impossible if they were in separate offices or cubicles.”

“We also dispensed with the name ‘creative department’ as we feel that everyone, no matter what they do in our company, is creative in their own way. We didn’t want to have traditional barriers that are often in existence between the developers, marketers and

what would have been known as ‘creatives’. Producing great digital content means everyone is a creative.”

With such a rich environment of tools and frameworks to develop with, denkwerk’s approach begins very simply. “Our most important tools are, and remain, pencil and paper,” said Marco. “That’s what all of our ideas and plans begin with. Later we move on to the commonly used tools like Photoshop, Illustrator or Axure in order to put our ideas in concrete terms and further develop them. However, it is our goal to develop functional products as quickly as possible and not to spend too much time with static layouts.”

“HTML5, CSS3 and jQuery have already evolved over the past two to three years. In the last couple of years, browser engines have started to support HTML5 features as well as CSS3. Sure, there are still pitfalls and we still have to take browsers like IE8



Teye

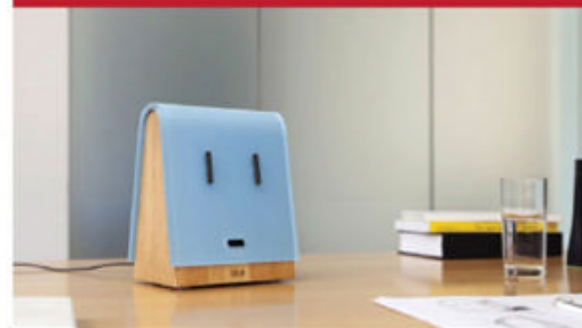
teye.denkwerk.com

It has been possible for some time to control multiple devices with voice commands, but people feel strange talking to an inanimate object. Yet, if we are to believe the technology visionaries, most of our devices will soon have no screens, or touch screens for that matter.

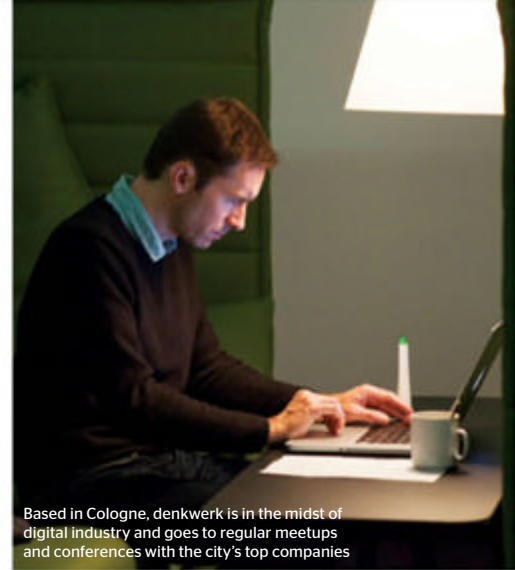
We believe that a pair of eyes will also become a control mechanism in the future. Why? Because initially we recognise everything that has eyes as a



living being – whether human, animal or machine. With this in mind we developed the VoIP telephone Teye, completely without a screen but with abstracted eyes. We use it to communicate between our company offices in Cologne and Berlin. The emoticon-like eyes fulfil two functions at



once: they help to operate the device by visualising different states (ready for use/switched off), and they also reinforce the emotional content during telephone calls. The telephone interprets speech – if certain words or word combinations are said, the expressive position of the eyes conveys the corresponding feeling.



Based in Cologne, denkwerk is in the midst of digital industry and goes to regular meetups and conferences with the city's top companies

into account, because there are a lot of legacy systems out there that impose old browsers on their users, but they will vanish soon. Helpers like Modernizr will become more and more superfluous. The other browsers will support even more HTML5/CSS3 features.

"jQuery has become almost an industrial standard. When JavaScript frameworks started to become popular along with new features like xhr and prototyping, the core feature of JavaScript, various libraries were developed. Some became quite popular, like Dojo, Prototype or MooTools. In the end, they all arised for the same reason: to overcome browser limitations and provide developers with a means to manipulate the DOM and come up with sneaky new effects.

"In today's developer toolsets, jQuery has superseded competitors. The other day, I was studying several corporate sites that had been developed some years ago. Some of them had already gotten a facelift. You could distinguish the time of development by the doctype that was chosen and the JavaScript frameworks that had been used. The old ones still made use of Prototype and script.aculo.us or even others. Newer ones had switched to jQuery.

"jQuery will remain the library that on the one hand provides the developer with a elaborate means to manipulate the DOM. On the other hand, they will also be able to use the core API of jQuery and extend it with plugins. The triad of HTML5, CSS3 and jQuery is the basis for today's sites. Other frameworks supplement it or have another specialised focus."

Jochen also commented: "If responsive design is well thought out and well done, all standard devices

can be operated with it, in a context-specific and user-friendly way. But sometimes it makes sense to develop solutions explicitly and exclusively for mobile devices. For example, you'd use it when native functions have to be controlled or an offline operation should be guaranteed."

Clearly, for an agency to remain at the cutting edge of design for so long, denkwerk has been able to attract world-class people to work on their innovative projects and join the team. Marco said: "We look for people who share our enthusiasm for the work we do and take on responsibility. They need to have talent, a strong inner drive and the ability to continuously learn."

With Jochen also stating: "When we do take on new people we can of course see the work they have completed via their portfolios, but it's the thinking behind these designs we are really interested in. Mastering the tools isn't the end when it comes to digital design, so we are always looking for people who can innovate and think about how a piece of work could be completed, but more importantly, how a client brief could be improved. We want to know if they are problem solvers."

And what does the future hold for denkwerk? "We are currently experimenting a lot with I AM Cardboard from Google," said Marco. "We are exploring new possibilities of use and examining the method of operation and management of virtual worlds. Combining the whole thing with a Kinect and the principle of gesture commands results in exciting opportunities."

Jochen concluded: "In the future we will invest even more in researching our own products. Several exciting projects have also already been confirmed for this year. The majority of them

involve the development of digital products and services. But a big, international shop relaunch and a social intranet project will also be keeping denkwerk very busy."

After starting up at the beginning of the digital revolution, denkwerk survived the dot.com crash as a champion of digital experiences, shaping the digital strategies of many blue chip companies. Few agencies can boast the long history that denkwerk has and the journey of evolving into a business that helps them to understand communication across today's digital landscape.

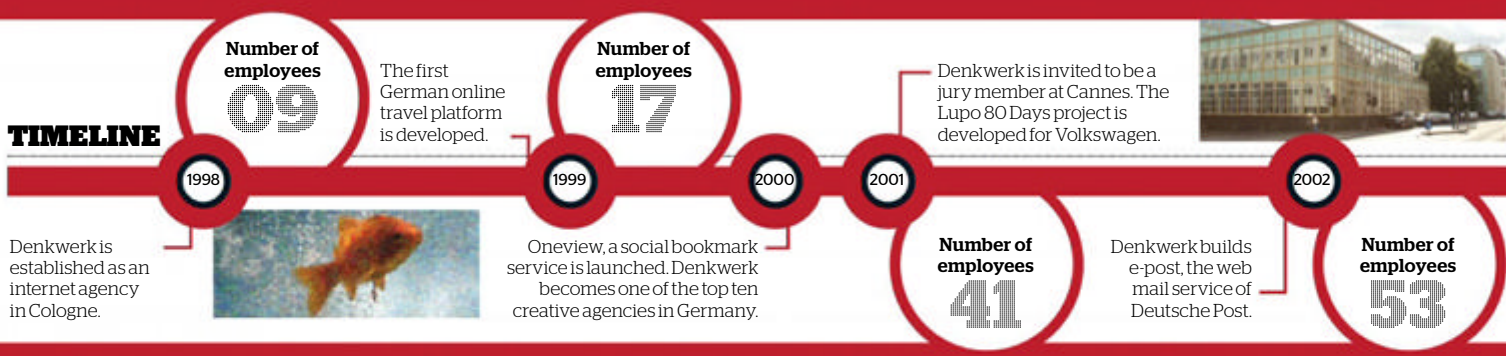
denkwerk

WEB..... www.denkwerk.com
FOUNDERS..... Jochen Schlaier, Marco Zingler
YEAR FOUNDED..... 1998
CURRENT EMPLOYEES..... 197
LOCATION..... Cologne and Berlin, Germany

SERVICES

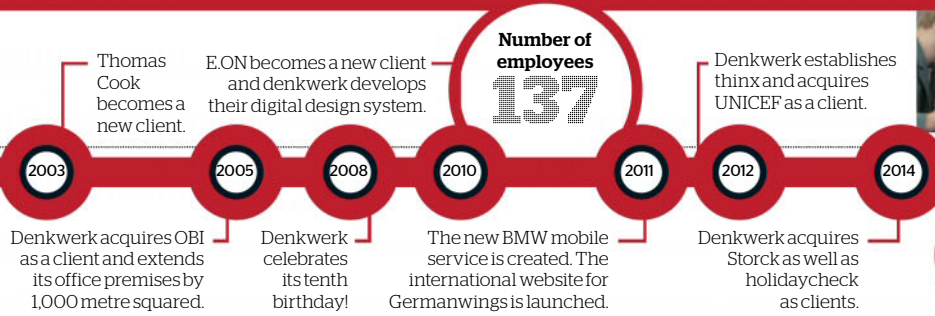
- > Business transformation
- > Digital innovation
- > Brand communication
- > Insight and strategy
- > Digital design

TIMELINE





Our project teams are interdisciplinary. This enables us to constantly communicate





JQUERY

SPECIAL EFFECTS

Amplify your jQuery and elevate your websites.
Discover the best plugins for giving your project
next-level visuals



GET GOING WITH NEON

Getting started with NoVacancy is really easy
github.com/chuckyglitch/novacancy.js

Neon can lighten up boring spaces. Their signs adorn cheesy shops and upscaleness can be proportional to the number of burnt-out bulbs, so let's get some!

INCLUDE THE LIBRARIES

Being a jQuery plugin, NoVacancy requires its mother library along with a copy of the actual source code for the neon blinking. NoVacancy is currently hosted at GitHub, so copy it to your web server.

```
001 <script type="text/javascript" src="http://
ajax.googleapis.com/ajax/libs/jquery/1.9.1/
jquery.min.js"></script>
002 <script type="text/javascript" src="jquery.
novacancy.js"></script>
```

INSERT ELEMENT

NoVacancy animates one or more elements created from `` tags located inside of a `<h1>` headline. You can set font styles and background colours in an accompanying CSS stylesheet, try Google's Monoton.

```
001 <h1>
002 <span id="1A">AAAAA</span>
003 <span id="1B">BBBBB</span>
004 </h1>
```

INVOKE METHOD

Starting NoVacancy can be done by invoking the `novacancy()` method on a reference returned from

jQuery's `$()` function. Blinking can be controlled via a trigger that lets you turn blinking on and off.

```
001 $('#no').novacancy();
002 $('#no').trigger('blinkOn');
003 $('#no').trigger('blinkOff');
004
```

SET PARAMETERS

`Novacancy()` can take a JSON object with settings, and thereby let you adjust the behaviour of the plugin. For example, the blinking frequency can be decreased to give the site a 'calmer' appearance.

```
001 $('#no').novacancy({
002 'reblinkProbability': 0.1,
003 'blinkMin': 0.2,
004 'blinkMax': 0.6,
005 'loopMin': 8,
006 'loopMax': 10,
007 'color': '#ffffff',
008 'glow': ['0 0 80px #ffffff', '0 0 30px
#008000', '0 0 6px #0000ff'],
009 'off': 1,
010 'blink': 1,
011 'classOn': 'on',
012 'classOff': 'off',
013 'autoOn': true
014 });
015
```

JQUERY SPECIAL EFFECTS

EXPLODE

bit.ly/1MgJzHP

Explosion effects provide a simple and effective way to draw the user's attention to any facts. This plugin provides a ready-made effect composed of a group of red tiles. Invoking it is as easy as calling the `explosion()` function on the element which will act as 'host':

```
001 $("body").explosion({
002 origin:{
003 x:xClick,
004 y:yClick
005 },
006 particleClass:"particle"
007 });
```

FALLING SNOW

workshop.rs/2012/01/jquery-snow-falling-plugin

Snow is fun and not only during the winter.

Adding snowflakes can be accomplished by generating a group of particles, which are then moved across the screen slowly. Alternatively, use this plugin - just one call changes the weather:

```
001 $.fn.snow({ minSize: 5, maxSize: 50,
newOn: 1000, flakeColor: '#0099FF' });
```

POP-UP WINDOWS

inserthtml.com/2013/08/modal-image-slider

Image galleries can be simple but adding in pop-up windows can also add something extra.

This is especially true if you use them in an effective way to present large amounts of data in a compact fashion. This plugin can handle both aspects of the problem: it takes care of bringing the little images on screen, and furthermore will provide you with an attractive animated pop-up window with detailed information.

SCROLLER COASTER

joelb.me/scrollpath

Traditional websites are scrolled in a linear fashion. This plugin permits you to change the scroll flow: when scrolling, your users will find content flowing left to right, up and down and even in a circular fashion. It is no longer maintained, but works well on all widely supported browsers.

BURN EFFECT

sinetheta.github.io/burn

This plugin adds a flame-like effect to text on your website, making use of the human age-old conditioning related to burning objects. Its flexible physics engine can be configured to create blue, green or yellow fires of varying intensity.



TEXT ANIMATION | VINTAGE TEXT TYPING

plugins.jquery.com/letter-drop

Users hate websites that are slow to load. Adding animations is a sure-fire way to sweeten the wait. This plugin permits you to deploy a cool letter-drop effect and your headlines will appear to fly in from the top.

Invoking the letter drop is as easy as calling the `letterDrop()` function on an element of choice. It should be provided with a set of CSS parameters.



VINTAGE TEXT TYPING

github.com/ericterpstra/jqVintageTxt

Traditional terminals are a simple and convenient way to display command-line systems. This plugin provides a ready-made virtual terminal, which comes complete with its own input handling. While its practical usage might be limited, hipsters will not be able to resist its retro awesomeness.

COLOUR CHANGE

henrygd.me/colorflow

Smart bulbs are popular due to their ability to change the current light colour in a smooth and perfectly animated fashion. This plugin provides the maths, making gradation-style colour changes a single method invocation.

SCROLLER

bit.ly/16YtLZx

Scrolling LED displays give websites and web apps a steampunk-esque look. This plugin takes care of everything: you pass in a text and a target element and the rest is handled for you. Large panels take up quite a bit of processing power – this is not suited for performance-sensitive pages.

PARALLAX SHADOWS

jimmylocoding.com/lilt

Static shadows are so 2009. This plugin creates shadows that changes their position as the user scrolls across the page. Implement it by adding the `lilt` class to elements deemed worthy of any 'shadowy attention'.

3D FOLD SCROLL

github.com/nickavignone/responsive_3dfoldscroll

Nick Avignone's plugin divides your website's content into a group of 'panes'. Scrolling is then accomplished by collapsing and unfolding panes in a perspective-correct fashion. Using the product is not recommended on a website that contains large blocks of text which must be read continuously. This is because the scrolling and folding effect means that any important information is folded away as you read.



AIRPORT FLIPBOARD

github.com/zemax/jquery-splitFlap

One of the most iconic images of the since-overhauled Baghdad Airport was its split-flap flight information system. This plugin permits your websites to provide a similar effect with options to set

the flaps to scroll upon a mouse click. Be warned though, the performance demands of this plugin are extreme and it will struggle on lower-powered desktop machines and devices.



github.com/maroslaw/rainyday.js
 Animated backgrounds might be distracting, but artistically inclined readers will love them nevertheless. RainyDay is an impressive plugin which simulates rainfall on your screen, but be wary as it's resource hungry.

LET IT RAIN!
 Adding a svelte rain effect can be accomplished in six easy steps

FIND A BACKGROUND
 RainyDay works best when combined with night shots showing a busy city with well-lit buildings. If you don't have such an image at hand, use Flickr's creative commons search to look for one. But do keep in mind that attributions must be given under all circumstances to avoid copyright issues.

INSERT TAGS
 Adding the library is to be accomplished via a `<script>` tag. Its magic will be done in a `` tag, which should be pointed to the image obtained in the step before. By default, RainyDay will apply a blurring effect automatically to your image.

```
001 <script src="dist/rainyday.0.1.1.min.js"></script>
002 
003
```

CREATE ENGINE
 RainyDay is managed via an instance of the engine class. It must be provided with a JSON array containing at least the image attribute pointing to the `` element. You can pass in further attributes to modify rendering behaviour.

```
001 var engine = new RainyDay({
002   image: element,
003   parentElement: someDiv,
004   crop: [0, 0, 50, 60],
005   blur: 10,
006   opacity: 1
007 });
008
```

ADD RAINDROPS
 Individual raindrops are spawned by the `rain()` method. It takes an array of tuples describing drop size and drop count, and furthermore accepts a numerical parameter describing the amount of milliseconds that must elapse between each spawning.

```
001 engine.rain(
002   [
003     [1, 0, 20],
```

```
004 [3, 3, 1]
005 ],
006 100);
007 });
008
```

LEAVE A TRAIL
 Raindrops don't flow down windows without leaving a trace. RainyDay provides a group of ready-made constants that permit you to change the way your drops move. Be aware that longer trails increase CPU load significantly.

```
001 engine.trail = engine.TRAIL_SMUDGE;
002
```

MIND OVER MATTER
 By default, RainyDay will use linear gravity pointing downwards. You can modify the direction of the gravity vector in the engines initialisation. Finally, the type of gravity can be modified by setting the engine's gravity attribute to `GRAVITY_NON_LINEAR` or `GRAVITY_NONE`.

```
001 var engine = new RainyDay({
002   image: this,
003   gravityAngle: Math.PI / 9
004 });
005
```


IMAGE ZOOM

github.com/waynegr/imgViewer

One well-placed image says more than a thousand words. However, presenting figures always requires compromise: large images take up a lot of valuable screen real estate.

This innovative plugin provides users with a scroll viewer similar to the one that is used on desktop operating systems. Drag and drop is used for modifying the visible area, while the

mouse wheel permits users to zoom in and out flexibly.

It is worth remembering that not all users will have access to a mouse with a scroll wheel. A prime example would be users working on laptops. So when implementing this plugin, be mindful of who will be using the site and if they are able to take advantage of the zoom effect the plugin offers.



MULTIPLE SCREENS

ian-devries.com/multiscreenjs

Multiscreen workstations permit users to keep multiple things in view at the same time. This plugin tries to mimic this by creating multiple virtual pages. You must then provide links that permit the user to switch between the individual views.

Each view is composed of a <div> tag, which must be provided with a class attribute of ms-default in order to be 'attractive' to the plugin code:

```
001 <body>
002 <div id="screen1" class="ms-
003 <!-- screen1 content -->
```

```
004 </div>
005 <div id="screen2" class="ms-
006 <!-- screen2 content -->
007 </div>
008 <body>
009
```

Crafty web designers will cleverly combine Multiscreen with a hot key-based navigation so that websites displaying stock quotes or similar information can use this process to present their users with multiple views that are independent from one another.

FLIP BOOK EFFECT

turnjs.com

Whether you like it or not, eBooks are hot. Provide a stack of images which show the individual pages of a printed document, and this nifty plugin will take care of the rest.

The book view enables users to scroll through the individual pages with realistic page-flip animations. Putting

the mouse pointer into page corners reveals a smoothly animated handle and you can scroll through the content with arrow keys.

Since the website is made up of individual images, any users that don't know about wget will have a hard time saving (and pirating) your content.



ANIMATED TEXT MASK

jqueryscript.net/text/Animated-Text-Mask-Background-with-jQuery-CSS3.html

Some effects are so wacky that they can barely be described in words. This plugin takes the outline of a font, and then 'fills' it with a permanent varying part of a background image.

Please be aware though that the motion logic is not contained within this plugin. Developers must provide it in a method such as the one that we have written below:

```
001 $(document).ready(function(){
002 var mouseX, mouseY;
003 var ww = $( window ).width();
004 var wh = $( window
005 ).height();
006 var traX, traY;
007 $(document).
008 mousemove(function(e){
```

```
007 mouseX = e.pageX;
008 mouseY = e.pageY;
009 traX = ((4 * mouseX) / 570) +
010 40;
011 traY = ((4 * mouseY) / 570) +
012 50;
013 $(".title").css({"background-
014 position": traX + "%" + traY +
015 "%"});
016 });
```

Note that Animated Text Mask does not currently support all the major browsers. Chrome and Safari will present the plugin's full potential whereas Firefox and Internet Explorer do not currently.



ERGONOMICS ARE IMPORTANT

We've presented a selection of impressive plugins which permit you to create websites with movie-worthy effects. Please keep in mind that overdoing animation is harmful: users with slow PCs will find their browsers locked, while sufficiently fast PCs will have your readers distracted from the content at hand.

ANIMATED COUNTDOWN CLOCK

class.pm/files/jquery/classycountdown

In today's fast-moving industrial environment, rumours and prerelease announcements can make or break a company. This toolkit ups the ante by providing a set of fancy-looking countdown timers which can really drum up attention.

ClassyCountdown does its magic by abusing a dial component. Thus, you must include the knob plugins along with the CSS stylesheet. The actual widget is then created like this:

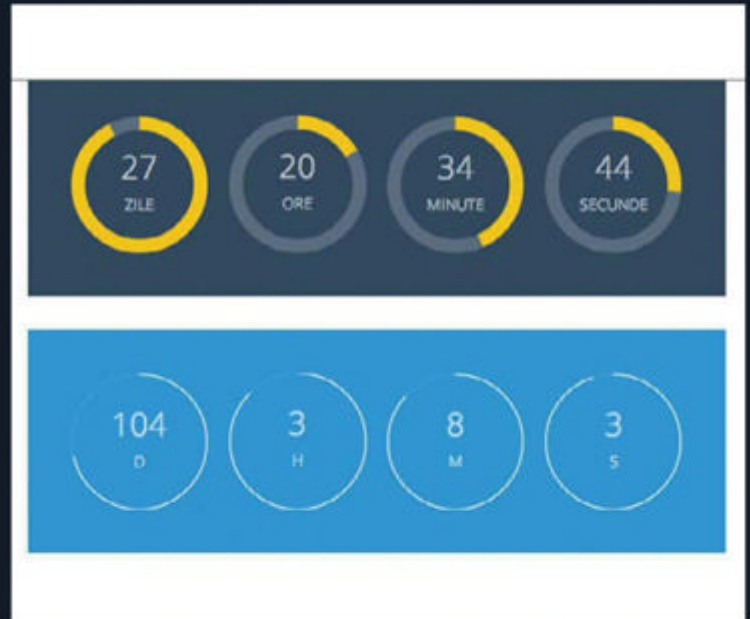
```
001 <div class="countdown"></div>
002
```

Starting the actual countdown process can be accomplished by invoking the ClassyCountdown method:ww

```
001 $(''.countdown').
ClassyCountdown({
002 theme: "flat-colors",
003 end: $.now() + 10000
004 });
005
```

Initialising a ClassyCountdown widget requires you to pass in two parameters. 'Theme' informs the rendering engine about the desired colour scheme, whereas 'end' is responsible for setting the end time.

Please keep in mind that the timer does its magic using the system time. But be aware that malicious users can manipulate it with ease in order to reveal any of the hidden information.



MULTIPLE TEXT EFFECTS

jschr.github.io/textillate

Motion makes otherwise-bland texts more interesting. This plugin provides you with a set of canned animations which can be applied to the blocks of prose littered across your web site.

Adding Textillate requires you to include a total of three different libraries. One or more items must be provided with the 'tlt' class in order to mark them as 'willing to be moved':

```
001 <h1 class="tlt">My Title</h1>
```

Starting the actual animations is then accomplished by invoking textillate():

```
001 $(function () {
```

```
002 $(''.tlt').textillate();
003 });
004
```

Further customisation can be done via tags. Alternatively, textillate() can also take a JSON array with settings:

```
001 <h1 class="tlt" data-in-
effect="rollIn">Title</h1>
```

Be aware that motion on the page can be distracting. It is important to think of the user experience when implementing any type of animation. Do you really need to add the animation? Do not overdo it, less is often more.

WATER RIPPLES

alligatr.co.uk/lake.js

Be it Lake Balaton, the coast off Portorož or the thermal sea of Héviz: water is tranquil and can calm people down. Lake.js takes a random image, and expands it with a nicely animated water effect.

The lake.js plugin can be deployed on top of any tag. Its first act will involve the creation of a canvas tag on top of the image, and this will then be used to display the actual waves that we want displayed.

```
001 $('#lake-img').lake({
002 'speed': 1,
003 'scale': 0.5,
```

```
004 'waves': 10
005 });
006 });
```

Three parameters will let you change the speed and the intensity of the waves. In most cases, the default values shown above work well - change them if your customers feel that the water is not calm enough.

Lake.js works with precomputed frames. This means that the product will take some time after loading with the effect, but afterwards it will then play back the actual animation with amazing speed - this is regardless of if it's shown on low-end or high-end devices.

ORIDOMI

oridomi.com

Ever since the ancient Chinese developed paper, folding it has been an endless source of pleasure to the childishly inclined. OriDomi lets you create parts of your site to fold and unfold in response to external events.

Getting started with OriDomi is accomplished by creating a new instance of the OriDomi class. It can take a pointer to an object, but is also able to process a DOM selector:

```
001 var folded = new
OriDomi(document.
```

```
getElementsByClassName('paper')
[0]);
```

Your instance can then be customised via a variety of methods. Animations can be tied into your application logic by the passing-in of callback functions. They get invoked as an animation step is complete: you can use them to fire off a new animation, or can also take them as impetus for more significant changes in the DOM of your website.


OriDomi uses CSS3 transforms. The plugin will not work on IE10 and older. OriDomi.isSupported can be invoked in order to find out whether your code is running in a supported browser.



Master complex UI grids with UIkit

Making responsive websites with complex interfaces is easy with this framework

tools | tech | trends Brackets, UIkit
expert Mark Shufflebottom



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Responsive websites are the standard for any design job, and the task of creating complex layouts and getting a great design across mobile, tablet and desktop is a hard trade off. Often this requires

many lines of CSS code to ensure that you are getting the right look. In recent years there are many responsive grids that have come to the forefront and have helped us in creating these designs.

A relative newcomer to this space is UIkit, but what makes UIkit worth taking a look at over the others? There is one clear advantage. UIkit has base CSS and JavaScript files that you include as normal, but there are also add-ons. This means that to use these add-ons you have to opt in to them and include them in the pages that need them, as not all pages will. With Bootstrap and Foundation, you will notice that you get a mass file of everything and it's up to the designer to opt out of the things that they don't actually need. This alone makes UIkit worth taking a look at as it keeps pages loading the minimum not the maximum they need to run.

01 Start the project

Open the start folder in Brackets or place it in your local web server folder. You can download UIkit from ([getUIkit.com](#)), but we've included the files in the Start folder on FileSilo too. Create a new file and save it as 'custom.css' and save into the css folder. In the head section of the index.html page add the code as shown to link the style sheet.

```
001 <link rel="stylesheet" href="css/custom.css">
002 <link rel="stylesheet" href="css/custom.css">
```

02 Create the menu

In the body section of the code add the code shown here to create the menu. Create more list elements to build up your menu inside the unordered list tag. We've added another couple of menu elements. This builds the UIkit navigation bar that will be at the top of the web page.

```
001 <div class="hero">
002 <div class="uk-container uk-container-center">
003 <nav class="uk-navbar uk-margin-top uk-margin-large-bottom">
004 <a class="uk-navbar-brand uk-hidden-small" href="index.html"><i class="uk-icon-tags">></i> SuperFly</a>
005 <ul class="uk-navbar-nav uk-hidden-small">
006 <li>
007 <a href="holidays.html">Holidays</a>
```

```
008 </li>
009 </ul>
010 <a href="#offcanvas" class="uk-navbar-toggle uk-visible-small" data-uk-offcanvas"></a>
011 <div class="uk-navbar-brand uk-navbar-center uk-visible-small">SuperFly</div>
012 </nav>
```

03 Build the hero section

Below the menu we want to have a large section that has a some text aligned vertically in the centre, so we are setting up a one-column grid element. We add the text into the middle of this with a heading and some paragraph text. At the moment there is no background image and no height to this container.

```
001 <div class="uk-grid" data-uk-grid-margin">
002 <div class="uk-width-medium-1-1">
003 <div class="uk-vertical-align uk-text-center heroText">
004 <div class="uk-vertical-align-middle uk-width-1-1">
005 <h1 class="uk-heading-large">Your Holiday Starts Here</h1>
006 <p class="uk-text-large">SuperFly holidays are just a simple search away, find your perfect trip now</p>
007 <form class="uk-form">
```

04 Add a form

Now add a small form to capture user input and use text input fields and a datepicker field, we will add the functionality to the date in Step 6. Following those

fields we add a drop menu and a submission button for the form to complete the look.

```
001 <fieldset data-uk-margin">
002 <input type="text" placeholder="Where to">
003 <input type="" data-uk-datepicker="{format: 'DD.MM.YYYY'}">
004 <select>
005 <option>Manchester</option>
006 <option>London Airports</option>
007 </select>
008 <button class="uk-button">GO</button>
009 </fieldset>
```

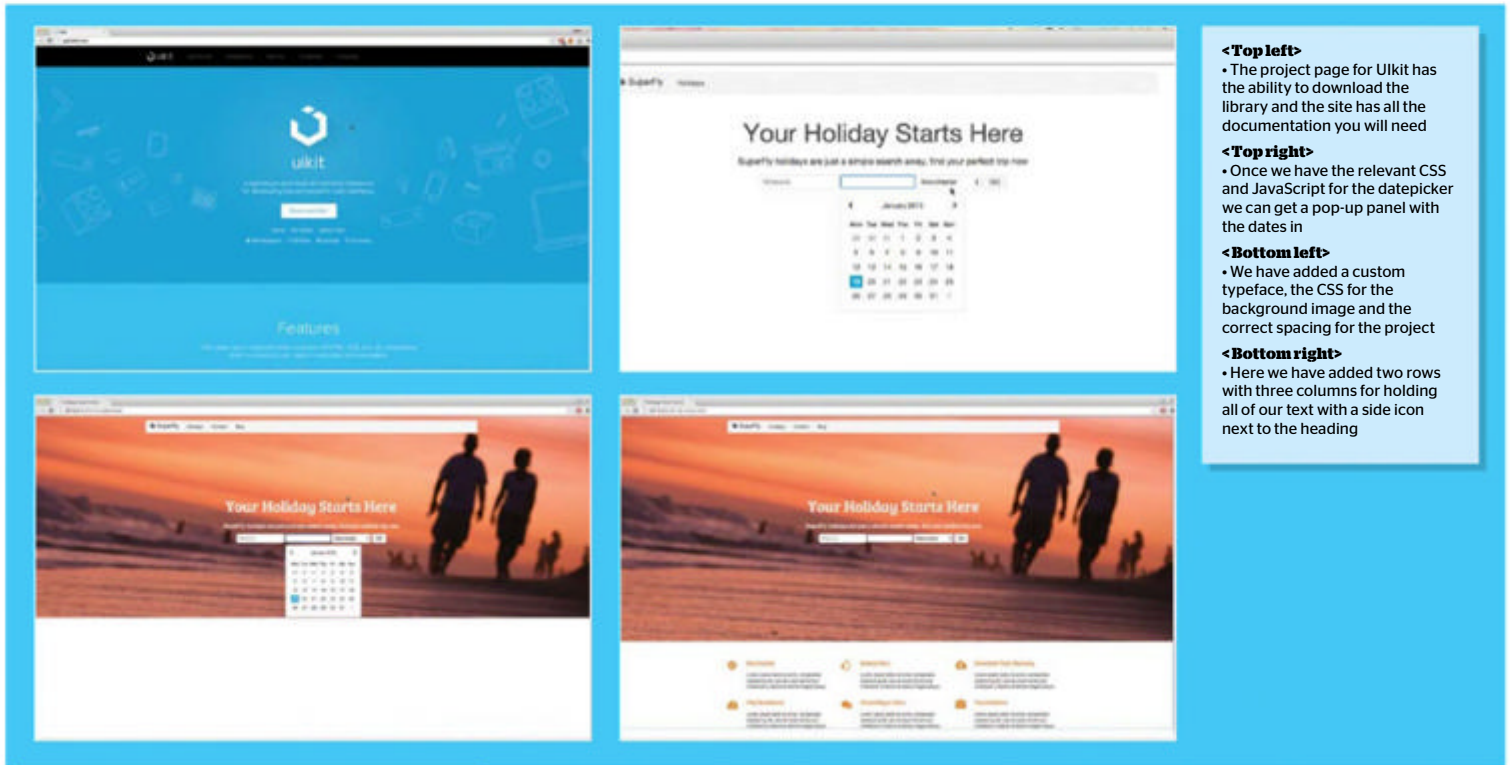
05 Close those sections

As with a lot of user interfaces and grid layouts you can inevitably end up with a lot of open div tags, so in this step we are closing them down after first closing the form element. In a decent code editor such as Brackets the closing tags are generated as you create the code, so this step might be redundant for some.

```
001 </form>
002 </div>
003 </div>
004 </div>
005 </div>
006 </div>
007 </div>
```

06 Add functionality

In order for the datepicker to work properly, move back into the head section and include the following two



- <Top left>**
 - The project page for UIkit has the ability to download the library and the site has all the documentation you will need
- <Top right>**
 - Once we have the relevant CSS and JavaScript for the datepicker we can get a pop-up panel with the dates in
- <Bottom left>**
 - We have added a custom typeface, the CSS for the background image and the correct spacing for the project
- <Bottom right>**
 - Here we have added two rows with three columns for holding all of our text with a side icon next to the heading

Off-canvas menu

The term for menus, which sit to one side of the screen but are hidden until needed and then slide in, has become known as the 'off-canvas' menu, which UIkit supports.

lines of code. The first adds the styling for the datepicker and the second has the JavaScript functionality for the datepicker. These would take some time to create by ourselves so it's good to have UIkit do the hard work.

```
001 <link rel="stylesheet" href="css/components/datepicker.min.css">
002 <script src="js/components/datepicker.min.js"></script>
```

07 Create the CSS
Switch to the custom.css file that we created in Step 1 and add the following CSS code to style up the hero section. Here you can see that we have added in the background image and made this cover the width of the browser too. The hero text section is given some height and we make the text stand out by setting the colour to white.

```
001 .hero{
002 background: url(../img/hero.jpg) no-repeat center center fixed;
003 background-size: cover;
004 padding-bottom: 80px;
```

```
005 }
006 .heroText{ height: 500px;}
007 .heroText h1, .heroText p { color: #fff; }
```

08 Add the right typeface
In the index.html page add the first line of code shown below. This links the right typeface from Google Fonts so that we can use this in our design. Save the page and move to the custom.css file and add the second line of code, which will style the headings up with this typeface. Save and test the design in the browser.

```
001 <link href='http://fonts.googleapis.com/css?family=Bree+Serif' rel='stylesheet' type='text/css'>
002 h1, h2, h3, h4{ font-family: 'Bree Serif', serif;}
```

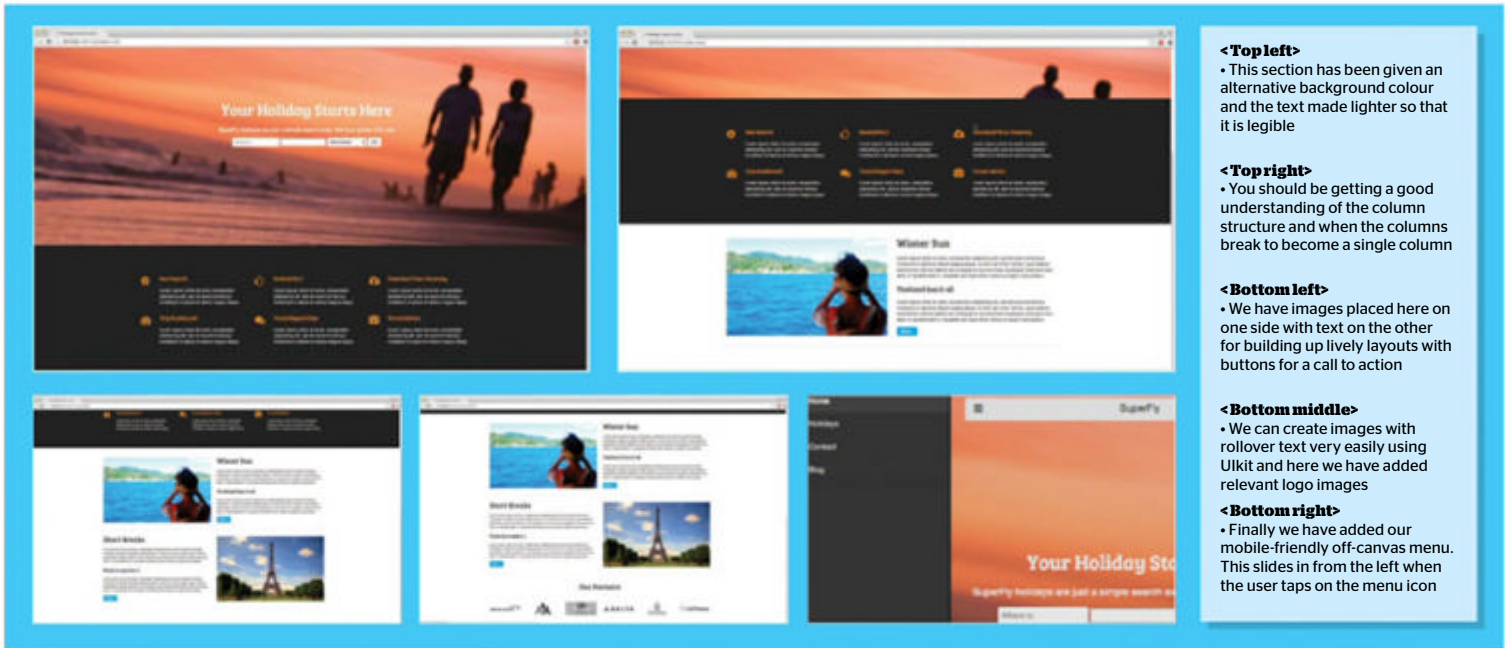
09 Add more content
Before the final body tag add the code as shown below. This will create another section for us. We will have three columns in this section and that will be subdivided down into two smaller sections, one for an icon and one for a heading and description. Notice we've subdivided the column up further with a very small column for the icon and larger for the text.

```
001 <div class="darkbg">
002 <div class="uk-container uk-container-center uk-margin-large-top uk-margin-large-bottom">
003 <div class="uk-grid uk-margin-top" data-uk-grid-margin
```

```
004 <div class="uk-width-medium-1-3">
005 <div class="uk-grid">
006 <div class="uk-width-1-6">
007 <i class="uk-icon-cog uk-icon-large uk-text-warning"></i>
008 </div>
009 <div class="uk-width-5-6">
010 <h2 class="uk-h3 uk-text-warning">Best Search</h2>
011 <p>Text here.</p>
012 </div>
013 </div>
014 </div>
```

10 More columns
Once we have that code copied, we can paste it in twice more to add our three columns - this is our final column as shown below. You can see that there are different icons for each one, the icon names are found at getUIkit.com/docs/icon.html. Add icons as appropriate for your headings.

```
001 <div class="uk-width-medium-1-3">
002 <div class="uk-grid">
003 <div class="uk-width-1-6">
004 <i class="uk-icon-cloud-download uk-icon-large uk-text-warning"></i>
005 </div>
006 <div class="uk-width-5-6">
007 <h2 class="uk-h3 uk-text-warning">Download Your Itinerary</h2>
008 <p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor
```

<Top left>
 • This section has been given an alternative background colour and the text made lighter so that it is legible

<Top right>
 • You should be getting a good understanding of the column structure and when the columns break to become a single column

<Bottom left>
 • We have images placed here on one side with text on the other for building up lively layouts with buttons for a call to action

<Bottom middle>
 • We can create images with rollover text very easily using UIkit and here we have added relevant logo images

<Bottom right>
 • Finally we have added our mobile-friendly off-canvas menu. This slides in from the left when the user taps on the menu icon

UIkit add-ons

There are a whole bunch of UIkit add-ons, we've used the datepicker add-on. To find out more visit <http://getUIkit.com/docs/addons.html>.

```
incidunt ut labore et dolore magna aliqua.</p>
</div>
</div>
</div>
```

11 Close the row

Each time we create a row around our columns it is important to ensure that after finishing the columns there is a closing div tag as shown. Your code editor might have generated this for you already but this is a good time to ensure all opening div tags are closed off, then we can open the new row.

```
</div>
<div class="uk-grid" data-uk-grid-margin>
```

12 Second row of columns

Add the code below to create another column and, as before, copy and paste this code exactly to create two more columns. Add icons, text and headings as appropriate to get the content. You will notice that our icon is given a warning text colour, this will make it orange and match our opening background image.

```
<div class="uk-width-medium-1-3">
<div class="uk-grid">
<div class="uk-width-1-6">
```

```
<i class="uk-icon-dashboard uk-icon-large
uk-text-warning"></i>
</div>
<div class="uk-width-5-6">
<h2 class="uk-h3 uk-text-warning">Trip
Dashboard</h2>
<p>Text goes here.</p>
</div>
</div>
</div>
```

13 Close down the sections

We are now going to make sure that we have all of our opening div tags closed off. Code editors such as Brackets will highlight the opening tag as you click on the closing tag, this is invaluable in ensuring that all of your code is correct. Save the page and then take a quick view in the browser.

```
</div>
</div>
</div>
```

14 Style this content

You may have noticed that we wrapped the content in the div tag with a darkbg class. Then switch over to the custom.css file, and in there add the following styles. As you will see, this makes the background a very dark grey colour and the text colour is made white so that it stands out against this background. Save this and view it in the browser.

```
.darkbg{
background-color: #222;
padding: 40px 0;
}
.darkbg p{ color: #ddd; }
```

15 Next section

We are now creating a new series of rows and this time we are placing an image in one half of the screen. When we define '1-2' as the class, this splits the design into two columns. We will retain this for medium-resolution screens such as those that are found on tablet devices.

```
<div class="uk-container uk-container-
center uk-margin-large-top uk-margin-large-
bottom">
<div class="uk-grid" data-uk-grid-margin>
<div class="uk-width-medium-1-2">

</div>
```

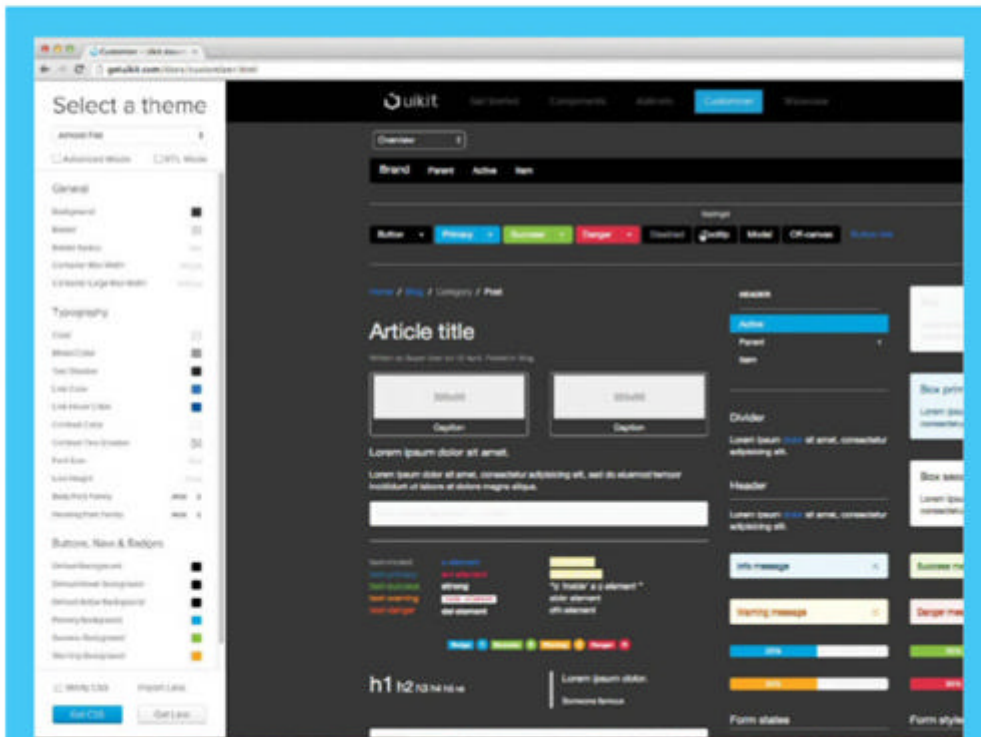
16 Finish the second column

We are adding text to the second column so here we add the heading tags and paragraph text tags. Add a button to the screen, in case the users want to read more. After closing off the row, add a dividing horizontal rule to space out the content before our next section.

```
<div class="uk-width-medium-1-2">
<h1>Winter Sun</h1>
<p>Text goes here</p>
<h2>Thailand has it all</h2>
<p>Text goes here</p>
<a class="uk-button uk-button-primary"
href="#">More...</a>
</div>
</div>
<hr class="uk-grid-divider">
```

17 Another row of content

Again we are creating another row of content and this time we will have text in the first column and an



Customising your design

In our tutorial we have added a minimal amount of customisation to our design, to do this we simply created some new classes, which we applied through CSS. This is fine if you are not straying too far from the original look, but there are times when the whole design might actually change, say from a white background to a different colour. At this point you will probably want to explore the online customiser which takes a few moments to load, but once up and running you can edit the colours until your heart's content before downloading an entirely new CSS file. This is a great step to take if you have been designing your layout first of all in a package such as Illustrator or Photoshop and you know how you want your design to look.

image in the second column. Now we are adding the text section, which is almost the same as in the previous step, except we are not closing the row.

```
001 <div class="uk-grid" data-uk-grid-margin>
002 <div class="uk-width-medium-1-2">
003 <h1>Short Breaks</h1>
004 <p>Text goes here.</p>
005 <h2>Paris is number 1 </h2>
006 <p>Text goes here.</p>
007 <a class="uk-button uk-button-primary"
href="#">More...</a>
008 </div>
```

18 Finish the image

Finally for this section of the design we add an image to the second column of the design. Following on from this we are closing the row and adding a horizontal rule to break up the design into sections. Now save the page and take a look at it in the browser with the relevant sections in place.

```
001 <div class="uk-width-medium-1-2">
002 
```

```
003 </div>
004 </div>
005 <hr class="uk-grid-divider">
006
```

19 Make rollover images

We are adding a heading to this section along with a number of images that will have a hover effect on them so that text becomes visible on rollover with a semitransparent background colour. You can see this in the section below when there is rollover text.

```
001 <h1 class="uk-text-center uk-margin-large-top uk-margin-large-bottom">Our Partners</h1>
002 <div class="uk-grid" data-uk-grid-margin>
003 <div class="uk-width-1-2 uk-width-medium-1-3 uk-width-large-1-6">
004 <a class="uk-overlay" href="#">
005 
006 <div class="uk-overlay-area">
007 <div class="uk-overlay-area-content">British Airways</div>
008 </div>
```

```
009 </a>
010 </div>
```

20 Add more images

Here we add the second image to the columns. When you have done this copy this code three more times add the heading and image for Air Canada, Delta and Emirates. The images are in the img folder so just link through as shown in the code here.

```
001 <div class="uk-width-1-2 uk-width-medium-1-3 uk-width-large-1-6">
002 <a class="uk-overlay" href="#">
003 
004 <div class="uk-overlay-area">
005 <div class="uk-overlay-area-content">American Airlines</div>
006 </div>
007 </a>
008 </div>
```

21 Get the final image

We now add the final image so that this gives us the full six images across the screen at desktop resolution, three across the screen at tablet resolution and two for mobile. This also has the closing row div tag in here as well. Save this and view in the browser to see the overlay text.

```
001 <div class="uk-width-1-2 uk-width-medium-1-3 uk-width-large-1-6">
002 <a class="uk-overlay" href="#">
003 
004 <div class="uk-overlay-area">
005 <div class="uk-overlay-area-content">Lufthansa</div>
006 </div>
007 </a>
008 </div>
009 </div>
010 </div>
```

22 Build the mobile menu

If you resize your browser down to mobile size the menu doesn't really work - that's because we haven't added the mobile version. Place the code shown before the closing body tag and add more list elements to make up your menu. Save and view in your browser to see the mobile 'off canvas' menu working.

```
001 <div id="offcanvas" class="uk-offcanvas">
002 <div class="uk-offcanvas-bar">
003 <ul class="uk-nav uk-nav-offcanvas">
004 <li>
005 <a href="index.html">Home</a>
006 </li>
007 </ul>
008 </div>
009 </div>
```


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Create CSS animated background text

inspiration talkpr.com



Over the last few years a 'less is more' ethic has taken root in web design practice and presentation. At present, the use of text rather than images to create initial impact on a website has become more widespread. The old slideshows are being replaced with bold, stark fonts and plenty of white space. There is also, however, the re-

emergence of the font as an image in its own right - an artistic element rather than a simple means to deliver language. Typography has become a far more creative endeavour in design than it has been in many years, and we will explore just one way of turning a single word into a piece of design.

1 INSPIRATION

Talk to me

Talk PR is a global communication and public relations company specialising in brand marketing and launches, SEO, and social media management (among many other things). They boast a very sleek and brilliantly created website featuring parallax delivery of content and a simple, but striking landing area. This landing area contains little more than the Talk PR logo, but with an animated background that creates an engaging introduction to the site.

The Talk PR text is created using an animated GIF image, which is a simple and effective way to achieve this.

However, we will create our own text with an animated background using CSS3 in two distinct methods.

Simple works

Talk PR's animated GIF method for creating the text background may seem too simple for those wishing to use more modern methods, but it works. It also resizes smoothly within the framework of this responsive website, and avoids browser issues.



Simplicity

The animated background text is a striking introduction to Talk PR's website and the landing page's simplicity is a brilliant gateway to the site's many features.

Menu position

Unusually, the navigation menu for the Talk PR site appears initially at the bottom of the landing screen. It readjusts to the top on scroll for easier usage.

Social media grid

Scroll down to see what else this great site has to offer. The responsive grid layout below, which contains Talk PR's social media updates, is particularly pleasing and interesting.

Clear links

Take a look at the impressive list of clients, for some smooth scrolling links from each well-known client logo. Some of them are given colour upon rollover, which then link to a page about the client.

Sliding grid links

It's also worth taking a look at the blog, from one of the front page links. Another good example of grid image layout for content links that slide into place.



<comment>
What our experts think of the site

Old tricks, new techniques

“There was a time when this effect would have been handled quite adequately in Flash, but in the present, HTML5 and CSS3 enable us to replicate old animation tricks without losing device access or SEO standards. Sometimes the effects don’t change, just the method of delivery. This website is one of those sites that could have been built for other web designers.” **Richard Lamb**

2

TECHNIQUE

Image-based method

01 Create the images

Make two images. The first should be a white background rectangle (width of 950px and height of 395px) within which there is the word “WOW!” in transparency. The second image should be a series of background images, each measuring the same width and height as the text image, arranged in one long strip (w:4750px). Name them ‘wow.png’ and ‘bg.jpg’.



02 The base HTML

The first step of our image-based method involves creating the base code into which our elements will be placed. We are using a simple wrapper containing two nested divs. The .wow div will house the text PNG image and nested within that is the ‘inner-wow’ div, which will house the animated background image.

```
001 <body>
002 <div id="wrap">
003 <div class="wow">
004 <div class="inner-wow"></div>
005 </div>
006 </body>
```

03 The base CSS

Initially, we are centring our .wow div with automargins and setting a width of 950 pixels, matching the wrapper div, and a height of 395 pixels. This will house the wow.png image. Within this div we nest the .inner-wow with a 100% width and the padding values which enable the div to fill the height of the parent div.

```
001 #wrap {
002     margin:100px auto;
003     width:950px;
004 }
```

```
005 .wow {
006     width:950px;
007     height:395px;
008     background:url(wow.png);
009 }
010 .inner-wow {
011 width: 100%;
012     padding: 0% 0 41%;
013 }
```

04 Arrange the background

Declare the bg.jpg image as the background to the .inner-wow div. Hide the overflow to be safe, and then begin declaring our animation styles for the background. You can tweak the duration to suit. Don’t forget to add vendor prefixes for non-webkit browsers. At the end we add a relative position and a minus scale z-index to ensure the image remains in the background.

```
001 .inner-wow {
002 ...
003 background: #fff url(bg.jpg) repeat;
004 overflow: hidden;
005 -webkit-animation-name: bg;
006 -webkit-animation-duration: 35s;
007 -webkit-animation-iteration-count:
infinite;
008 -webkit-animation-timing-function:
linear;
009 position: relative;
010 z-index: -1;
011 }
```

05 Add the keyframes

Our animation won’t do anything if we don’t assign the keyframes to it. This particular set involves a relatively simple animation, ensuring the background image slides right to left and then repeats on an infinite loop. Once again, remember to include vendor prefixes.

```
001 @-webkit-keyframes bg {
002     0% { background-position: 0%
50%; }
003     100% { background-position:
100% 0%; }
004 }
005 @-moz-keyframes bg {
006 }
007 @keyframes bg {
008 }
```

3

TECHNIQUE

Text-based method

There is a way of creating the same effect with actual text, rather than an image. But it uses the webkit-only property ‘-webkit-background-clip: text’, which currently only works on webkit-enabled browsers.

01 Use a span

Set the wrap to the same dimensions as before. Discard the wow.png but retain the bg.jpg image. This time, instead of an image within the .wow div, we’ll use a simple element. Write your word within it.

```
001 <div id="wrap">
002 <span>WOW!</span>
003 </div>
004
```

02 The CSS

Replicate the font, font-size and, if required, font-weight used for the text image from the previous method. Use the original background image, but this time as the background for the span.

```
001 span {
002 position:absolute;
003 font-family: 'Open Sans',
sans-serif;
004 font-size:300px;
005 font-weight:800;
006 background:url(bg.jpg);
007 }
008
```

03 Add properties


Now for the properties – add these and the background-clip and text-fill-color too, which enables the background image to display within the confines of the span text. This will, in effect, turn the text into a mask. We will replicate the animation from the previous method, as well as the keyframes.

```
001 span {
002 ...
003 -webkit-background-clip:
text;
004 -webkit-text-fill-color:
transparent;
005 -webkit-animation: bg 20s
linear infinite;
006 }
007
```


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Advancements in CSS in recent years have delivered an opportunity to reconsider how we approach the management of visual animations that form part of user experience design. In larger projects that

involve specialists in design, programming and content authoring, it makes sense to keep content, design and functionality completely separate.

The use of CSS to control both design and animation enables designers to take full control of how websites and web-based applications are presented, resulting in the ability to complete visual components faster without distracting programmers from their main project activities. The ability to define and control animations entirely from within CSS is helpful because it can eliminate the risk of design changes breaking the JavaScript component as all design will have been kept separate to Javascript's functionality code. This tutorial looks at how a swiping page transition effect can be built in CSS, with minimal JavaScript used to detect user interactions and trigger responding animations through the use of CSS.

01 Get started

First declare the main HTML page structure, including the head and body section within the HTML page. Keep styling and functionality separate from the main content by linking from the head section. It is important that browsers know to apply HTML5 standards, so make sure the correct doctype is used.

```
001 <!DOCTYPE html>
002 <html>
003 <head>
004 <title>Example</title>
005 <link rel="stylesheet" type="text/css"
href="styles.css" />
006 <script src="javascript.js"></script>
007 </head>
008 <body>
009 </body>
010 </html>
```

02 Insert navigation

The content elements are now ready to be inserted. Start with adding the navigation element. This is a HTML5 nav element that acts as a container for links that will show each page when clicked. Using the nav element will be useful later for both styling with CSS and applying interaction listeners through JavaScript.

```
001 <nav>
002 <a href="#page1">Page 1</a>
003 <a href="#page2">Page 2</a>
004 <a href="#page3">Page 3</a>
005 <a href="#page4">Page 4</a>>
```

```
006 <a href="#page5">Page 5</a>
007 </nav>
```

03 Create content containers

There is need to contain the different groups of content so that we can show and hide them later. Use the article element to create our individual page/screen containers that the different content will be placed in later. Let's make use of a data-status to describe which content section is currently open and visible.

```
001 <article id="page1" data-status="open">
002 <h1>Page 1</h1>
003 </article>
004 <article id="page2">
005 <h1>Page 2</h1>
006 </article>
007 <article id="page3">
008 <h1>Page 3</h1>
009 </article>
010 <article id="page4">
011 <h1>Page 4</h1>
012 </article>
013 <article id="page5">
014 <h1>Page 5</h1>
015 </article>
```

04 Insert the swiper

The swiping effect will be produced by a rectangular element that produce a rotation itself into the screen. Place the element to be animated as part of the HTML. We'll use a div with a unique ID called animElm_swipe for easy reference.

```
001 <div id="animElm_swipe"></div>
```

05 Create resource files

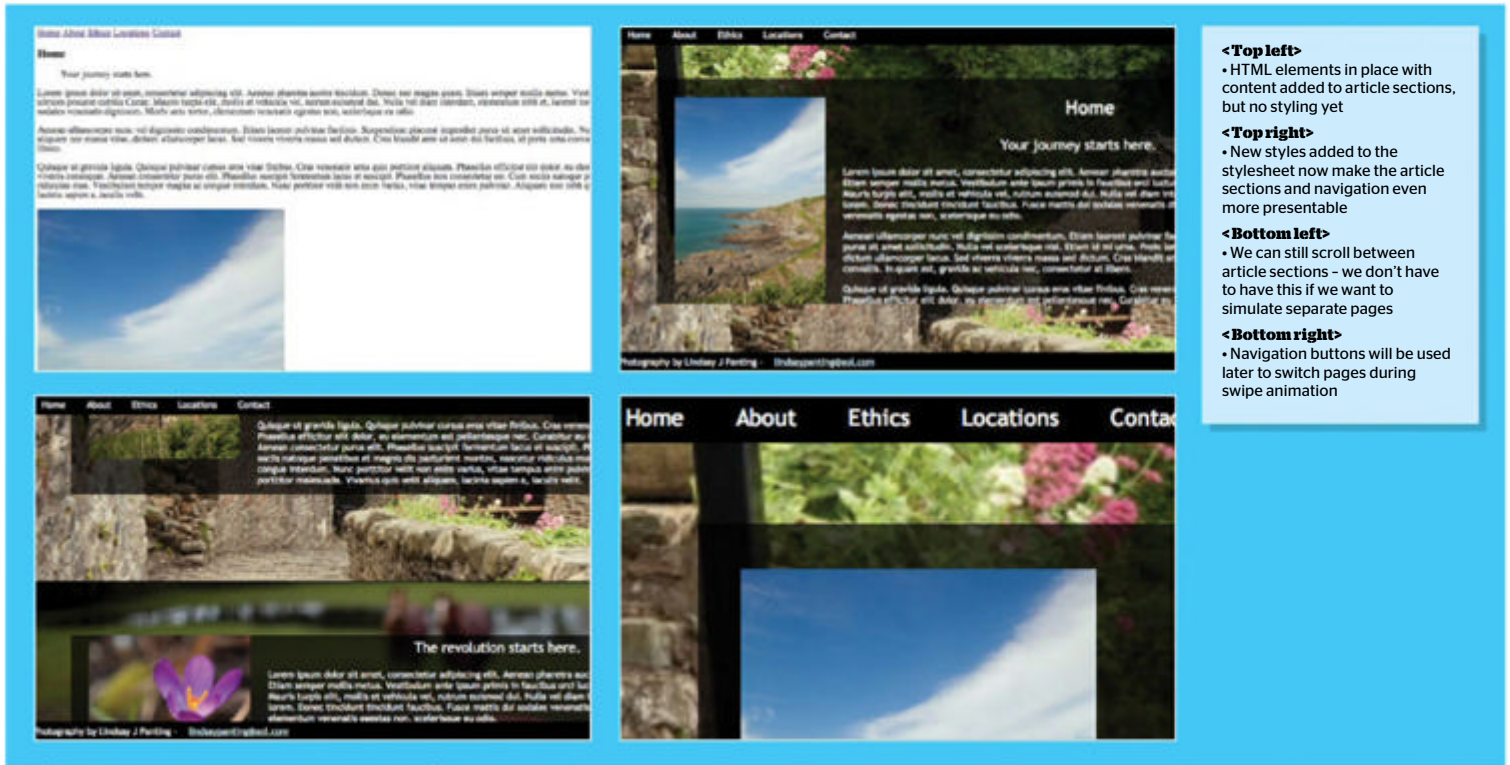
The additional JavaScript and CSS stylesheet resource files are required to add styling and interaction functionality. Create two text files called 'styles.css' and 'javascript.js', making sure that your text editor does not add TXT as a file extension.

```
001 <html>
002 <head>
003 <title>Guided Learning</title>
004 <link rel="stylesheet" type="text/css"
href="styles.css" />
005 <script src="javascript.js"></script>
006 </head>
```

06 Style the articles

Open the styles.css file you have created in your code editor. The first styling to be created will be the articles. Each article represents a screen and will be styled as block elements of full width and length of the screen. Some padding will be used to ensure spacing of content, so the width percentage needs to deduct the percentage used for padding.

```
001 article{
002 display: block;
003 width: 90%;
004 height: 100%;
005 clear: both;;
006 padding: 2em 5% 0 5%;
007 border-bottom: 1px solid #000;
```



<Top left>
 • HTML elements in place with content added to article sections, but no styling yet

<Top right>
 • New styles added to the stylesheet now make the article sections and navigation even more presentable

<Bottom left>
 • We can still scroll between article sections - we don't have to have this if we want to simulate separate pages

<Bottom right>
 • Navigation buttons will be used later to switch pages during swipe animation

Style separation benefits

Keeping your visual styling and animations in CSS means that you can keep your JavaScript cleaner and make it easy to update your styles and animations without risking functionality breakage.

```
008 background: #fff;
009 }
```

07 Article overflow
 We want to adjust the article so that content that doesn't fit onto a single screen can be scrolled without breaking future steps in the tutorial. So set each article to have an overflow of auto, meaning that each article can be scrolled individually without affecting the main screen.

```
001 article{
002 display: block;
003 width: 90%;
004 height: 100%;
005 clear: both;;
006 padding: 2em 5% 0 5%;
007 border-bottom: 1px solid #000;
008 background: #fff;
009 overflow: auto;
010 }
```

08 Fix navigation
 The navigation needs to cover the full width and have a relevant height and follow the user wherever they are looking. Attach the navigation to the top-left corner of the web page using fixed positioning so that the coordinates provided using 'top' and 'left' always remain the same and have a z-index on top.

```
001 nav{
002 display: block;
003 position: fixed;
004 top: 0;
005 left: 0;
006 width:100%;
007 min-height: 2em;
008 background: #000;
009 z-index: 9999;
010 }
```

09 Navigation links
 Links inside the nav element need to be easily selectable for easy access to each page so make each link a block element that has padding. We want each link to appear next to each other, so a display type of inline-block is used to enable padding to be added without forcing each element onto a new line.

```
001 nav a{
002 display: inline-block;
003 color: #fff;
004 padding: 0.5em 1em 0.5em 1em;
005 text-decoration: none;
006 }
```

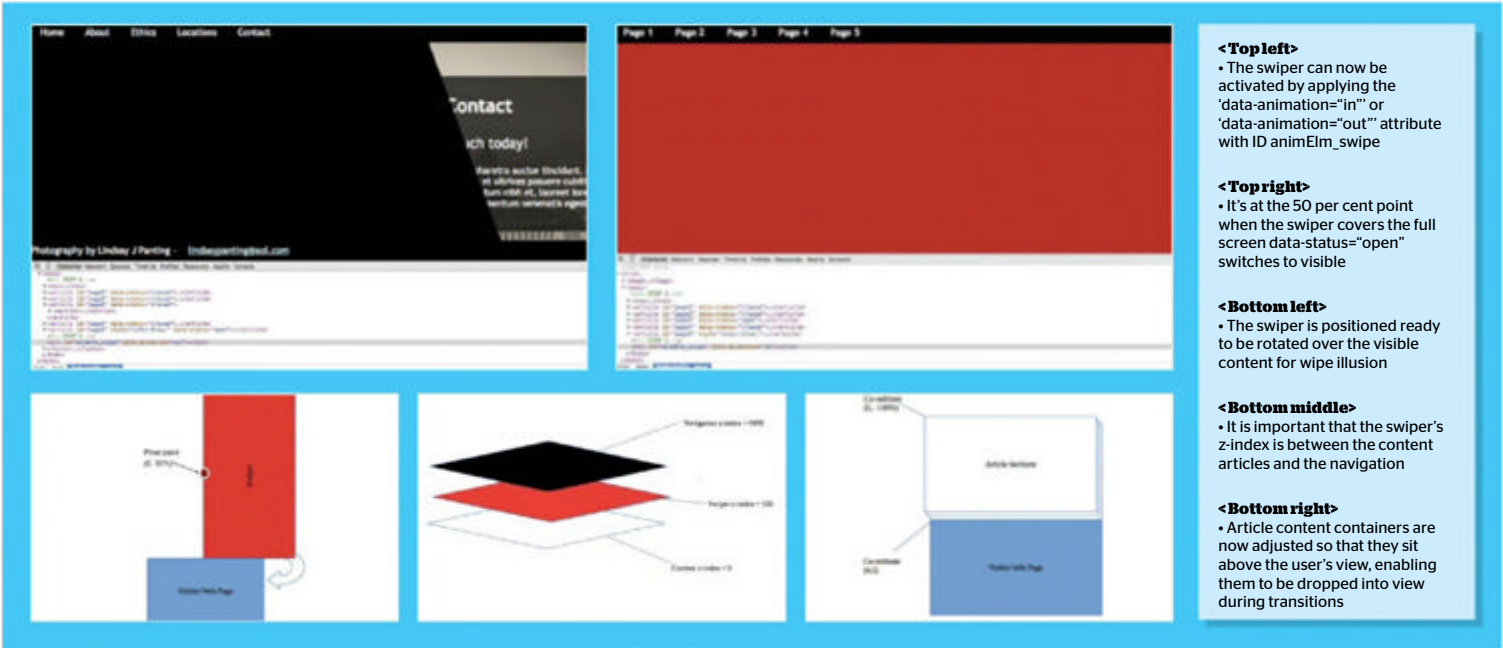
10 Navigation hover
 It makes sense to show the user what they are about to select. Add a hover rule so that the links inside the nav element can be used to change the appearance of the links that are about to be clicked. In this example, we'll change the colour of the text to red.

```
001 nav a:hover{
002 color: #c00;
003 }
```

11 Style the swiper
 The swiper will be a big box that is rotated over the content to give an illusion that the content is being wiped away. This box needs to be big enough so that no side gaps can be seen when it is being rotated to cover the content. Experiments show that a width of 200% and height of 500% are adequate.

```
001 #animElm_swipe{
002 display: block;
003 width: 200%;
004 height: 500%;
005 background: #c00;
006 }
```

12 Swiper positioning
 It is important that the swiper is hidden from view and also easy to rotate when required. Update the swiper to be positioned halfway across the screen and rotated at an angle ready to be rotated into view. Set the transform origin to the top-left corner to make sure the sweep uses the full box as the sweep effect.



<Top left>
 • The swiper can now be activated by applying the 'data-animation="in"' or 'data-animation="out"' attribute with ID animElm_swipe

<Top right>
 • It's at the 50 per cent point when the swiper covers the full screen data-status="open" switches to visible

<Bottom left>
 • The swiper is positioned ready to be rotated over the visible content for wipe illusion

<Bottom middle>
 • It is important that the swiper's z-index is between the content articles and the navigation

<Bottom right>
 • Article content containers are now adjusted so that they sit above the user's view, enabling them to be dropped into view during transitions

```
001 #animElm_swipe{
002 display: block;
003 position: fixed;
004 top: -240%;
005 left: 50%;
006 -webkit-transform: rotate(-90deg);
007 -webkit-transform-origin: 0 0;
008 transform: rotate(-90deg);
009 transform-origin: 0 0;
010 width: 200%;
011 height: 500%;
012 background: #c00;
013 }
```

13 Swiper layer
 There needs to be guaranteed visibility of the swiper over the content for the effect to work, but it shouldn't appear over the navigation. No z-index has been declared for the article containers and a z-index of 9999 has been used for the nav element, meaning that the swiper can use a z-index between 1 and 9998.

```
001 #animElm_swipe{
002 display: block;
003 position: fixed;
004 top: -240%;
005 left: 50%;
006 -webkit-transform: rotate(-90deg);
007 -webkit-transform-origin: 0 0;
008 transform: rotate(-90deg);
009 transform-origin: 0 0;
010 width: 200%;
011 height: 500%;
012 background: #c00;
013 z-index: 100;
014 }
015 }
```

14 Declare swiper animations
 There will be two animations for the swiper going from left to right on alternate clicks/taps. Animations work by declaring keyframes and specifying unique keyframes at each percentage. As a minimum, there must be a keyframe at the start (0%) and at the end (100%). Safari and Opera will need a special -webkit version of the keyframes and transform commands.

```
001 @-webkit-keyframes anim_swipeIn{
002 0% { -webkit-transform: rotate(-90deg); }
003 100% { -webkit-transform: rotate(180deg); }
004 }
005 @-webkit-keyframes anim_swipeOut{
006 0% { -webkit-transform: rotate(180deg); }
007 100% { -webkit-transform: rotate(-90deg); }
008 }
009 @keyframes anim_swipeIn{
010 0% { transform: rotate(-90deg); }
011 100% { transform: rotate(180deg); }
012 }
013 @keyframes anim_swipeOut{
014 0% { transform: rotate(180deg); }
015 100% { transform: rotate(-90deg); }
016 }
```

15 Attach swiper animations
 Keyframes only describe animation properties that can be applied to elements. We want to specify attributes that can be attached to the swiper via JavaScript to trigger animations, enabling us to keep the animation design separate from the functionality code. We are using data-animation attribute set to 'in' or 'out' to trigger a left or right swipe.

```
001 #animElm_swipe[data-animation="in"]{
002 -webkit-animation: anim_swipeIn 2s forwards
```

```
linear;
003 animation: anim_swipeIn 2s forwards linear;
004 }
005 #animElm_swipe[data-animation="out"]{
006 -webkit-animation: anim_swipeOut 2s
forwards linear;
007 animation: anim_swipeOut 2s forwards
linear;
008 }
```

16 Position articles
 The standard position of each article is shown directly under the previous version and doesn't act like the slideshow we are aiming for. Making the article elements absolutely positioned on a fullscreen height above the visible screen will make sure they are hidden away until we need to show them.

```
001 article{
002 position: absolute;
003 top: -100%;
004 left: 0;
005 }
```

17 Article change animation
 Now define the timing for the pages to switch in the animation. We define this as an animation that runs synchronised to the main swiper animation, enabling the page to be switched when it covers the full screen.

```
001 /* ANIMATIONS: Chrome, Safari, Opera */
002 @-webkit-keyframes anim_pullIn{
003 0% { top: -100%; }
004 50% { top: -100%; }
005 51% { top: 0; }
006 100% { top: 0; }
007 }
```

```
008 @-webkit-keyframes anim_pullOut{
009 0% { top: 0; }
010 50% { top: 0; }
011 51% { top: -100%; }
012 100% { top: -100%; }
013 }
014 /* ANIMATIONS: Standard syntax */
015 @keyframes anim_pullIn{
016 0% { top: -100%; }
017 50% { top: -100%; }
018 51% { top: 0; }
019 100% { top: 0; }
020 }
021 @keyframes anim_pullOut{
022 0% { top: 0; }
023 50% { top: 0; }
024 51% { top: -100%; }
025 100% { top: -100%; }
026 }
```

18 Attach article animations

Although we have defined the animations to use in the page transition, we still need to attach them to the article pages. These animations will only be triggered when specific attributes are attached to the articles, which will be when data-status is set to open or closed.

```
001 article[data-status="open"]{
002 -webkit-animation: anim_pullIn 2s forwards linear;
003 animation: anim_pullIn 2s forwards linear;
004 }
005 article[data-status="closed"]{
006 -webkit-animation: anim_pullOut 2s forwards linear;
007 animation: anim_pullOut 2s forwards linear;
008 }
```

19 Start the JavaScript

The styling and animation definitions are now complete, but no animations are visible because there is no way to trigger the animation attributes we have defined. This can be solved with Javascript - open the javascript.js file and enter the following snippet that enables a shorthand search for elements on the page:

```
001 //.. helper functions to easily select DOM
element
002 var $ = function(cssRule){
003 return document.querySelector(cssRule);
004 }
005 var $$ = function(cssRule){
006 return document.querySelectorAll(cssRule);
007 }
```

20 Left and right

With the swiper needing to alternate between swiping left and right, there is a need to store the direction to move next. This is achieved by declaring a reference string, which we will call swipeDirection, that will store the direction to use next and will be updated to the next direction when a swipe has been performed.

```
001 //.. menu click/touch function
002 var swipeDirection = "left";
```

21 Page change function

The activation of the page swipe and change will be defined in a function called navClick. The function waits until it is called and is not executed straight away, meaning that we can define multiple events that trigger a page swipe and change without duplicating any code. The function accepts a parameter clickElm that contains details of the link clicked. Animations are activated by applying the setAttribute method to set the value of

attributes of data-animation and data-status that trigger the animations from the CSS.

```
001 //.. menu click/touch function
002 var navClick = function(clickElm){
003 //.. set swipe animation
004 if(swipeDirection == "left"){
005 $("#animElm_swipe").setAttribute("data-
animation", "in");
006 swipeDirection = "right";
007 }else{
008 $("#animElm_swipe").setAttribute("data-
animation", "out");
009 swipeDirection = "left";
010 }
011 //.. set page transition
012 $('article[data-status="open"]').
setAttribute("data-status", "closed");
013 //.. find the article ID that the link
refers to: the text after the #
014 var articleID = clickElm.href.split("#")
[1];
015 //.. attach data-status="open" to the
element with ID of articleID
016 $("#"+articleID).setAttribute("data-
status", "open");
017 }
```

22 Apply listeners

Everything is now in place, except for the ability to detect when a navigation link is clicked. This can only be done when the page loads, so this part is put inside the window's 'load' listener, which triggers code to search for all <a> tags inside the <nav> tag. These elements have a 'click' and 'touchstart' event listener attached to them that call the previously defined navClick function when the user selects them, providing details.

```
001 //.. window listener - to perform DOM
operations when the page has loaded
window.addEventListener("load", function(){
002 //.. get all navigation links
003 var navLinks = $$("nav a");
004 //.. loop through all even navigation links
found
005 for(var i=0; i<navLinks.length; i++){
006 //.. add click listener to navigation the
current navigation link
007 navLinks[i].addEventListener("click",
function(e){
008 navClick(this);
009 });
010 //.. add click listener to navigation the
current navigation link
011 navLinks[i].addEventListener("touchstart",
function(e){
012 navClick(this);
013 });
014 }
015 });
```

Code library JavaScript

The JavaScript element kickstarts the animations by listening for navigation interactions that result the application of animation attributes

These are functions that enable jQuery-style access to find the necessary web page elements, but without needing to load jQuery.

```
001 var $ = function(cssRule){
002 return document.querySelector(cssRule);
003 }
004 var $$ = function(cssRule){
005 return document.querySelectorAll(cssRule);
006 }
```

An example of how the swiper is activated through Javascript by adding the attribute data-animation="in" to the animElm_swipe element.

```
001 $("#animElm_swipe").setAttribute("data-animation", "in");
```


web workshop

Make image hover effects in CSS

inspiration woodshedproduction.com

1 INSPIRATION

Artisan branding

Wood Shed Production is an American company specialising in hand-crafted art made from reclaimed wood. They sell their wares in local markets but also on Etsy, and use the site as an introduction for the company and a channel for all of their specialist orders.

The site features a large amount of imagery, as well as an initial full-width video background. It is simple, well laid out and extremely evocative of the workshop environment. Scroll down and you'll find an Instagram-based image grid with the style of hover effect that we will be using as the basis of our Web Workshop for this issue.

In addition to the recent trends in web design towards typographics, there has also been a shift in the use of images. As broadband speeds increase and web delivery methods refine, it's no longer detrimental to the load-time of a website if it's heavy with large images. This enables imagery to be used as part of more

interactive elements, such as navigation links. CSS now provides a wealth of possibilities to animate, embellish and enhance online imagery, and turn your images into interactive elements. We will look at the process behind creating an image grid, complete with CSS hover effects and animated captions.

Image use

It really doesn't take much work at all to use your images as the basis for smooth, eye-catching, interactive effects. As with the Wood Shed Production site, try to see your images as more than just pictures to be placed in a window for display.



Progress video

This screenshot displays the Instagram image grid, but users can scroll to the top to view the initial video background, which shows clips of the production.

Coloured in

The Instagram image grid elements are initially black and white. Hovering on them transforms each element into a full-colour image, with a fade-in caption.

Varied effects

The Where to Buy section, which is located above the Instagram section, features a different set of hover effects. Hover on each link to view a slide-in underline element.

Veiled background

Look carefully as you scroll up and down, and you'll see a parallax background (of a wood detail image) covered with a black overlay. This then slides up behind the link for the Wood Shed Journal.

Unique menu

Instead of a more typical menu that slides in from the left and features text only, this one occupies half the screen width and has an image background.



Browser lag

“Building with CSS3 can sometimes bring home just how inconsistent browser support for the newer web technologies is. While Internet Explorer has improved vastly over the last few years, IE10 seemed to take some steps back. Even Firefox has fallen behind with certain CSS properties. Time for better browser standardisation?” **Richard Lamb**

<comment>
What our experts think of the site

2 TECHNIQUE

Set up the image wall

01 Build the base HTML

Start by building the first cell in our grid. The cell div contains an image with caption div underneath. These are wrapped in an 'a' link, repeat it for the images you use, then adjust the pic and caption for each cell.

02 Set cell sizes

Make sure that our images will adjust themselves to fit the cell divs when set to a 25% width. Equally sized images are essential for this grid. Note that the cell divs can have a finite width. The relative position will come into play when the caption is styled in the next step.

```
001 img {
002 max-width:100%;
003 border:none; /*for IE*/
004 }
005 .cell {
006 position: relative;
007 overflow: hidden;
008 width:25%;
009 height:auto;
010 float:left;
011 }
```

03 Use the caption CSS

We are using the caption div as an overlay to the image, by giving it an absolute position and 100% width and height. The caption will be styled in the next step. Choose your own background colour but rgba with opacity will give you transition on hover. Remember your vendor prefixes for the transition declaration.

```
001 .caption {
002 position: absolute;
003 top: 0;
004 left: 0;
005 width: 100%;
006 height: 100%;
007 background: rgba(31, 31, 31, 0.8);
008 transition: all 0.6s ease;
009 }
```

04 Set the H2 CSS tag

The actual caption H2 tag also has an absolute position to place and move it. Font size, colour and

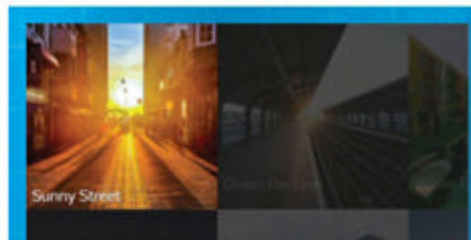
family can be at your discretion. Set an initial opacity of 0.1, to hint at the caption before hovering. We'll use the transform property to animate the caption as it fades in. Begin with a -30px height from the 0 bottom property.

```
001 .caption h2 {
002 position: absolute;
003 bottom: 0;
004 left: 0;
005 margin:0;
006 padding: 15px;
007 opacity:0.1;
008 transition: all 0.6s ease;
009 transform: translate3d(0,-30px,0);
010 }
011
```

05 Change the hover effects

Now to tie up the hover effects. First lift the opacity on the caption background, revealing the image and increase the opacity of the H2 tag to full. Animate the H2 tag by reducing that -30 pixel distance back to 0, using the transition to ease the animation.

```
001 .caption:hover {
002 background: rgba(31, 31, 31, 0);
003 transition: all 0.6s ease;
004 }
005 .caption:hover h2 {
006 opacity:1;
007 text-shadow: 1px 1px #1f1f1f;
008 transition: all 0.6s ease;
009 transform: translate3d(0,0,0);
010 }
011
```



Either as links to relevant destinations within the site or simply gallery images in their own right, adding some animation and CSS reveals to your images can make a world of difference.

3 TECHNIQUE

Fade the colour

To desaturate images and saturate on hover, we use the grayscale filter property. This is fully supported in Chrome and IE6 to 9, with some support in Safari.

01 Focus on cell

The key to implementing the filter is to make the cell div the focus of the hover action. Add the following to the .cell CSS, and change every instance of .caption:hover to .cell:hover through original animations.

```
001 .cell {
002 ...
003 -webkit-filter:
004 grayscale(1); /* Older webkit
005 versions */
006 -webkit-filter:
007 grayscale(100%);
008 filter: grayscale(100%);
009 filter: gray; /* IE6-9 */
010 transition: all 0.6s ease;
011 }
```

02 Add a new hover effect

Now add filter property transition and simply eliminate the grayscale filter with an easing transition. You can adjust the opacity levels of the original caption div now that images load in black and white.

```
001 .cell:hover {
002 -webkit-filter:
003 grayscale(0); /* Older webkit
004 versions */
005 -webkit-filter:
006 grayscale(0%);
007 filter: grayscale(0%);
008 filter: none; /* IE6-9 */
009 transition: all 0.6s ease;
010 }
```

03 Colour or monochrome


Using the grayscale filter to ease between monochrome and colour produces a very eye-catching effect. It may not be fully supported, but there are JavaScript fallbacks and SVG alternatives as browsers catch up.



Animate SVGs with the Vivus.js library

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reating graphics in the browser has become thoroughly interesting over the last few years. Cast your mind back to circa 2008, if you wanted to do some generative art or create a graphic on the fly, you'd probably

have to use a plugin like Flash to do it.

Suddenly, from out of the darkness came the HTML5 spec and it contained <canvas> and <svg>, and yay, it was good. Canvas and SVG have matured in the years since they were first implemented in our browsers and absolutely astonishing things have been done with them - whole worlds have been visualised with Canvas and the crispest of scalable graphics are displayed with SVG.

Today, we're going to look at a JavaScript library called Vivus. Vivus.js will enable us to take any SVG element on a HTML page and then animate it line by line to reveal the entire shape. If you're looking to add just a little bit of polish to your own projects, or if you are trying to show off to a favourite client, Vivus is a quick and impressive way of doing just that. So let's start working on it then!

01 Grab Vivus.js

First, we need to grab the Vivus library. Download it as a ZIP file from github.com/maxwellito/vivus and expand the archive. Open the src folder and copy both the vivus.js and pathfinder.js files into your project folder. Then, simply reference these files in your HTML.

```
001 <code>
002 ...
003 <script src="/path/to/your/script/
004 pathfinder.js"></script>
005 <script src="/path/to/your/script/vivus.
006 js"></script>
007 </body>
008 </code>
```

02 Set up for SVG

In order to animate SVGs, we need some SVGs to start off with! Create and open a simple HTML page and insert the following:

```
001 <code>
002 <!DOCTYPE html>
003 <html>
004 <head>
005 <meta content="text/html; charset=utf-8"
006 http-equiv="Content-Type">
007 <title>Web Designer Vivus Demo</title>
008 <link rel="shortcut icon" href="favicon.
009 ico">
010 <link rel="stylesheet" href="styles.css"
011 type="text/css" />
```

```
009 <meta name="viewport" content="initial-
010 scale=1.0, user-scalable=no" />
011 </head>
012 <body>
013 <svg id="box">
014 <polygon points="20,20 40,20 40,40
015 20,40 20,20" style="stroke:rgb(40,40,40);
016 stroke-width:1; fill:none;" />
017 </svg>
018 <script src="scripts/libraries/
019 pathfinder.js"></script>
020 <script src="scripts/libraries/vivus.
021 js"></script>
022 </body>
023 </html>
024 </code>
```

...and create a new CSS file called styles.css and add the following rule to it:

```
001 <code>
002 svg{
003 width: 200px;
004 height: 200px;
005 margin: 10px;
006 display: block;
007 position: relative;
008 margin-left: auto;
009 margin-right: auto;
010 }
011 </code>
012
```

This will create an SVG element in our page that is 200 by 200 pixels and aligns to the centre of our page, inside of which there should be a 20 by 20 pixels box.

03 Create the first animation

Now that we have our first quick SVG out of the way, we can make our first quick animation. Just before your </body> tag, create a new <script> tag and add the following code:

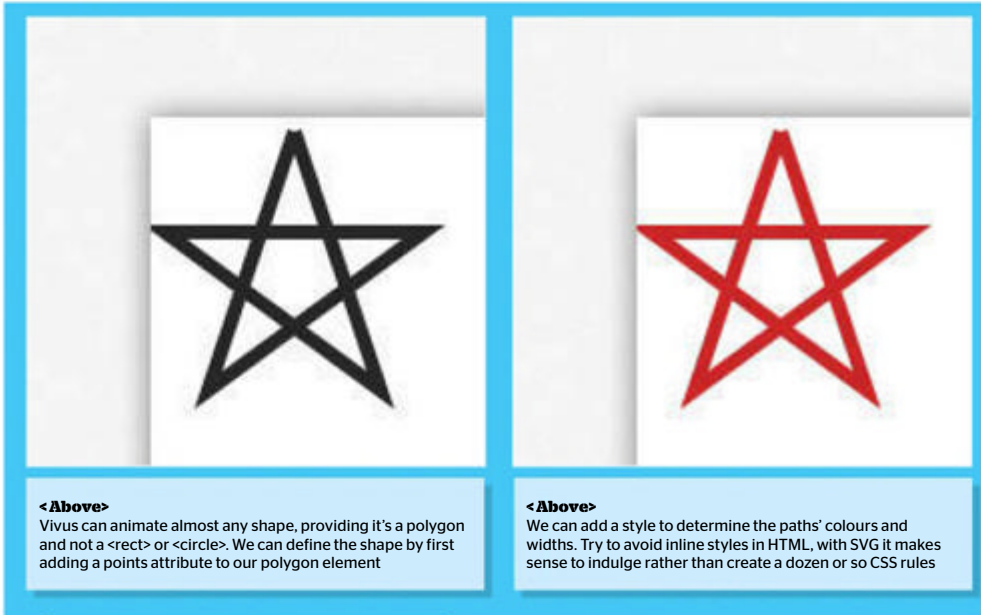
```
001 <code>
002 ...
003 <script>
004 new Vivus('box');
005 </script>
006 </body>
007 </code>
008
```

We've just created a new Vivus object and have passed the ID of the SVG we want to animate to it. If you refresh your page, you should see your box draw itself on your screen.

04 Choose Vivus animations

The code we just ran was the simplest way to get Vivus running. Vivus has a multitude of options that we can pass through as a second argument to any Vivus object. There are three types of animations available for use: delayed, async and oneByOne, which we can choose like so:

```
001 <code>
002 ...
```



<Above>

Vivus can animate almost any shape, providing it's a polygon and not a <rect> or <circle>. We can define the shape by first adding a points attribute to our polygon element

<Above>

We can add a style to determine the paths' colours and widths. Try to avoid inline styles in HTML, with SVG it makes sense to indulge rather than create a dozen or so CSS rules

Need for speed?

SVG graphics are graphics defined and drawn using nodes in the DOM. This makes it great for generating graphics on the fly, especially on the server-side. It's this quality, however, that cause its downfall when it comes to animation - manipulating the DOM like Vivus does can be very taxing and thus slower than a <canvas> equivalent render.

```
003 <script>
004   new Vivus('box', {type : "async/
005     oneByOne/delayed"});
006 </script>
007 </body>
008 </code>
```

...but in order to appreciate the difference we're going to need a more complex shape.

05 Create a multiple path SVG

To better understand the effects of the different animation types available to us, we're going to need an SVG with multiple paths and shapes. Create a new SVG element and give it an ID of 'square' and add the following points and shapes to it:

```
001 <code>
002 ...
003 <svg id="square">
004   <rect width="200" height="200" style=
005     "fill:rgba(255,255,255,0); stroke-width:10;
006     stroke:rgb(40,40,40)"/>
007   <polygon points="0,40 40,0"
```

```
008     style="stroke:rgb(40,40,40); stroke-width:6;"/>
009   <polygon points="0,80 80,0"
010     style="stroke:rgb(40,40,40); stroke-width:6;"/>
011   <polygon points="0,120 120,0"
012     style="stroke:rgb(40,40,40); stroke-width:6;"/>
013   <polygon points="0,160 160,0"
014     style="stroke:rgb(40,40,40); stroke-width:6;"/>
015   <polygon points="0,200 200,0"
016     style="stroke:rgb(40,40,40); stroke-width:6;"/>
017   <polygon points="40,200 200,40"
018     style="stroke:rgb(40,40,40); stroke-width:6;"/>
019   <polygon points="80,200 200,80"
020     style="stroke:rgb(40,40,40); stroke-width:6;"/>
021   <polygon points="120,200 200,120"
022     style="stroke:rgb(40,40,40); stroke-width:6;"/>
023   <polygon points="160,200 200,160"
024     style="stroke:rgb(40,40,40); stroke-width:6;"/>
025   <polygon points="200,200 0,0"
026     style="stroke:rgb(40,40,40); stroke-width:6;"/>
027   <polygon points="200,80 120,0"
028     style="stroke:rgb(40,40,40); stroke-width:6;"/>
029   <polygon points="200,120 80,0"
030     style="stroke:rgb(40,40,40); stroke-width:6;"/>
031   <polygon points="200,160 40,0"
032     style="stroke:rgb(40,40,40); stroke-width:6;"/>
033   <polygon points="200,200 0,0"
034     style="stroke:rgb(40,40,40); stroke-width:6;"/>
035   <polygon points="160,200 0,40"
036     style="stroke:rgb(40,40,40); stroke-width:6;"/>
037   <polygon points="40,40,40" style="stroke:rgb(40,40,40); stroke-width:6;"/>
038   <polygon points="120,200 0,80"
039     style="stroke:rgb(40,40,40); stroke-width:6;"/>
040   <polygon points="80,200 0,120"
041     style="stroke:rgb(40,40,40); stroke-width:6;"/>
042   <polygon points="40,200 0,160"
043     style="stroke:rgb(40,40,40); stroke-width:6;"/>
044 </svg>
045 </code>
```

06 Use the delayed animation

In your script tag, create a new Vivus object, passing through the ID of 'square' instead of 'box'. Now, if you reload your page, you will see our fancy box of diagonal lines draw itself. This is the default delayed animation. This animation starts drawing each line at the same time, but adds a small delay to each path, creating a staggered effect.

```
001 <code>
002 <script>
003   var second = new Vivus('square');
004 </script>
005 </code>
006
```

07 Use the async animation

To draw our SVGs with the async animation, we need to pass that option through to the Vivus object for our square. That's simple enough, all we have to do is pass through an options object with the type defined as our second argument:

```
001 <code>
002 <script>
003   var second = new Vivus('square',
004     {type : 'async'});
005 </script>
006
```

...the async animation type starts drawing all of the paths at the same time and finishes drawing them later.

08 Use the oneByOne animation

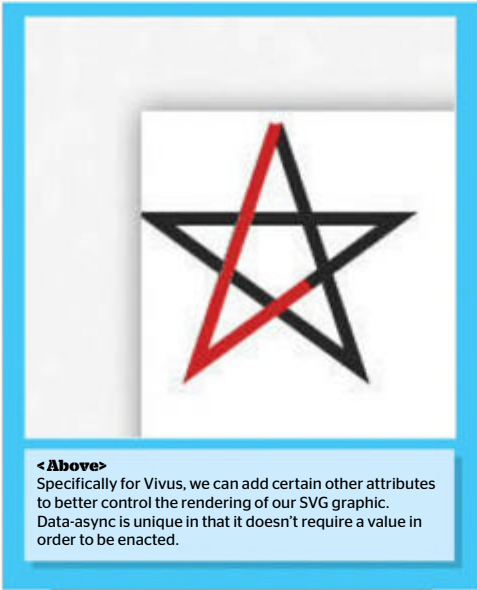
The last of the preset Vivus animations is the oneByOne. Of the three it's the simplest effect, it just draws our SVG's paths as you would expect it to - one by one. To use it, we pass oneByOne through as the type of animation to our Vivus object:

```
001 <code>
002 <script>
003   var second = new Vivus('square', {type :
004     'oneByOne'});
005 </script>
006
```

09 Call the play method

So far, in each of our steps, our shapes have started to animate as soon as our page as loaded. If we want to create custom controls and events for drawing our SVG, we can do that by passing through a 'start' variable in our options object and then calling the play method when we like.

```
001 <code>
002 var second = new Vivus('square', {type:
003   "oneByOne", start : "manual"});
```

<Above>
Specifically for Vivus, we can add certain other attributes to better control the rendering of our SVG graphic. Data-async is unique in that it doesn't require a value in order to be enacted.

On scroll

You may have observed that without action on the viewers part, our animations play straight away, but that is a mere illusion. The animations in our demo play because they are immediately visible on the page load, those that are off screen will wait until they are scrolled down to. Now you don't have to worry about missing anything.

```
003 second.el.addEventListener('click',
function(){
004   second.play();
005 }, false);
006 </code>
```

10 Overall time

For each of the animation types, regardless of the number of paths we have to draw, they're all complete after 120 frames. We can use a duration key to determine the frame numbers and change an animation's duration.

```
001 var second = new Vivus('square', {type:
"oneByOne", start : "manual", duration :100});
002   setTimeout(function(){
003     second.el.addEventListener('click',
function(){
004       second.play();
005     }, false);
006     }, 1000);
007 </code>
008
```

11 Durations and frames

Vivus doesn't use seconds or milliseconds to determine an animation's duration. Each animation has a

duration defined in frame numbers, and each line drawn or delay created is defined by that same frame count. If we have a 100-frame long animation, and we delay one of the paths by a value of 20, it will then start to draw a fifth of the full time after the rest of the animation has actually been started.

12 Add a scenario animation

So far, all of our animations have been a variant on a theme without much manoeuvrability for customisations. If we want to fine-tune the events that happen in our animation then we can create a 'scenario'. A scenario animation will enable us to define durations and delays for each path. Let's now create a new SVG graphic to demonstrate some scenarios. Add the following to your HTML.

```
001 <code>
002 <svg id="nightSky">
003 <polygon points="10,1 4,19 19,8 1,8
16,19" style="fill:none;stroke:rgb(40,40,40);st
roke-width:1;" />
004 <polygon points="30,21 24,39 39,28 21,28
36,39" style="fill:none;stroke:rgb(40,40,40);st
roke-width:1;" />
005 <polygon points="130,121 124,139 139,128
121,128 136,139" style="fill:none;stroke:rgb(40
,40,40);stroke-width:1;" />
006 <polygon points="80,71 74,89 89,78 71,78
86,89" style="fill:none;stroke:rgb(40,40,40);st
roke-width:1;" />
007 <polygon points="80,31 74,49 89,38 71,38
86,49" style="fill:none;stroke:rgb(40,40,40);st
roke-width:1;" />
008 <polygon points="150,51 144,69 159,58
141,58 156,69" style="fill:none;stroke:rgb(40,4
0,40);stroke-width:1;" />
009 <polygon points="150,81 144,99 159,88
141,88 156,99" style="fill:none;stroke:rgb(40,4
0,40);stroke-width:1;" />
010 </svg>
011 <script>
012   var scenario = new Vivus('nightSky',
{type: "scenario"});
013 </script>
014 </code>
015
```

13 Scenario delays

In your webpage, you'll now have an animation that draws a series of stars in our SVG element. The animation we are seeing is still being determined by the default async animation. If we add some data-start to our SVG polygons, we can determine a delay before that polygon begins to animate.

```
001 <code>
002 <svg id="nightSky">
003 <polygon points="10,1 4,19 19,8 1,8
16,19" style="fill:none;stroke:rgb(40,40,40);st
```

```
roke-width:1;" data-start="0"/>
004 <polygon points="30,21 24,39 39,28 21,28
36,39" style="fill:none;stroke:rgb(40,40,40);st
roke-width:1;" data-start="10"/>
005 <polygon points="130,121 124,139 139,128
121,128 136,139" style="fill:none;stroke:rgb(40
,40,40);stroke-width:1;" data-start="20"/>
006 <polygon points="80,71 74,89 89,78 71,78
86,89" style="fill:none;stroke:rgb(40,40,40);st
roke-width:1;" data-start="30"/>
007 <polygon points="80,31 74,49 89,38 71,38
86,49" style="fill:none;stroke:rgb(40,40,40);st
roke-width:1;" data-start="50"/>
008 <polygon points="150,51 144,69 159,58
141,58 156,69" style="fill:none;stroke:rgb(40,4
0,40);stroke-width:1;" data-start="40"/>
009 <polygon points="150,81 144,99 159,88
141,88 156,99" style="fill:none;stroke:rgb(40,4
0,40);stroke-width:1;" data-start="20"/>
010 </code>
011 </code>
012
```

14 Scenario times

Just as we can define when a path should start to be drawn, we can also determine how many frames it should take to do just that. Remember, the fewer the frames, the quicker, but also potentially jumpier the animation is. If there are a greater number of frames, the animation will be smooth but it will also take longer for it to fully complete.

```
001 <code>
002 <svg id="nightSky">
003 <polygon points="10,1 4,19 19,8 1,8
16,19" style="fill:none;stroke:rgb(40,40,
40);stroke-width:1;" data-start="0" data-
duration="10"/>
004 <polygon points="30,21 24,39 39,28
21,28 36,39" style="fill:none;stroke:rgb(40,40
,40);stroke-width:1;" data-start="10" data-
duration="30"/>
005 <polygon points="130,121 124,139 139,128
121,128 136,139" style="fill:none;stroke:rgb(40
,40,40);stroke-width:1;" data-start="20" data-
duration="80"/>
006 <polygon points="80,71 74,89 89,78 71,78
86,89" style="fill:none;stroke:rgb(40,40,4
0);stroke-width:1;" data-start="30" data-
duration="120"/>
007 <polygon points="80,31 74,49 89,38 71,38
86,49" style="fill:none;stroke:rgb(40,40,4
0);stroke-width:1;" data-start="50" data-
duration="160"/>
008 <polygon points="150,51 144,69 159,58
141,58 156,69" style="fill:none;stroke:rgb(40
,40,40);stroke-width:1;" data-start="40"
data-duration="200"/>
009 <polygon points="150,81 144,99 159,88
141,88 156,99" style="fill:none;stroke:rgb(40,
```



Defining SVG

When you first start coding SVG graphics into HTML, you may find the whole process a little daunting. Defining things in markup is something we, as web developers, try to avoid using unless we really have to. Positioning elements can be fairly difficult too, when you're defining points for an SVG element, you aren't passing pixel values for the screen, rather, you're passing pixel values offset by the location of the parent SVG container. If your container is 40 pixels left by 20 pixels down and you create a path at 10 by 10, it will start drawing at 50 by 30 pixels on your screen. In this regard, SVG is much akin to Canvas.

```
40,40);stroke-width:1;" data-start="20" data-
duration="240"/>
010 </svg>
011 </code>
012
```

15 Tidy up

With every DOM manipulation, the code we write is not always the code that winds up being viewed in the inspector. Normally that's okay because a state has changed and we need to reflect that. But, in this case we're changing attributes with the aim of creating those that exist in the DOM. If we want to, we can remove all of the extra values created with selfDestroy.

```
001 <code>
002 var second = new Vivus('square', {type:
"oneByOne", start : "manual", selfDestroy :
true});
003 </code>
004
```

16 Use scenario-sync

Our scenario so far has been delays and durations defined within the constraints of an overall time frame. If we wanted to, we could have even more control over when our animation starts and stops by creating a scenario-sync time of animation. A scenario-

sync animation draws each line one at a time, rather than all together.

17 Forget old paths

Now create a new SVG.

```
001 <code>
002 <svg id="curve">
003 <rect width="200" height="200" style=
"fill:rgba(255,255,255,0); stroke-width:10;
stroke:rgb(40,40,40)"/>
004 <polygon points="0,0 20,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
005 <polygon points="200,180 180,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
006 <polygon points="0,20 40,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
007 <polygon points="200,160 160,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
008 <polygon points="0,40 60,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
009 <polygon points="200,140 140,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
010 <polygon points="0,60 80,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
011 <polygon points="200,120 120,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
012 <polygon points="0,80 100,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
013 <polygon points="200,100 100,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
014 <polygon points="0,100 120,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
015 <polygon points="200,80 80,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
016 <polygon points="0,120 140,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
017 <polygon points="200,60 60,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
018 <polygon points="0,140 160,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
019 <polygon points="200,40 40,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
020 <polygon points="0,160 180,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
021 <polygon points="200,20 20,0"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
022 <polygon points="0,180 200,200"
style="stroke:rgb(40,40,40); stroke-width:5;"/>
023 </svg>
024 </code>
025
```

For this final demo we have three new attributes that we can use to control our animation - data-delay, data-duration and data-async. Data-delay and data-duration do what they say on the tin, data-async is a little different. If you have a bunch of paths that you want to animate at the same time, rather than one after another, data-async will enable that for you.

```
001 <code>
002 ...
003 <svg id="curve">
004 <rect width="200" height="200" style=
"fill:rgba(255,255,255,0); stroke-width:10;
stroke:rgb(40,40,40)"/>
005 <polygon points="0,0 20,200"
style="stroke:rgb(40,40,40); stroke-width:5;"
data-delay="0" data-duration="10" data-async/>
006 <polygon points="200,180 180,0"
style="stroke:rgb(40,40,40); stroke-width:5;"
data-duration="10"/>
007 <polygon points="0,20 40,200"
style="stroke:rgb(40,40,40); stroke-width:5;"
data-delay="20" data-duration="20" data-async/>
008 <polygon points="200,160 160,0"
style="stroke:rgb(40,40,40); stroke-width:5;"
data-duration="20"/>
009 <polygon points="0,40 60,200"
style="stroke:rgb(40,40,40); stroke-width:5;"
data-delay="20" data-duration="30" data-async/>
010 <polygon points="200,140 140,0"
style="stroke:rgb(40,40,40); stroke-width:5;"
data-duration="30"/>
011 ...
012 </code>
013
```

18 Vivus and fills

In some of our examples, you may have noticed that there is a <rect> shape included and it doesn't behave as one might expect. This was to illustrate one of Vivus caveats. Though Vivus is great at handling animation between two points, it can't animate <circles>, <rects> or other SVG elements such as text. Though this is a shame, it's not the end of the road for us though because pathfinder.js is included. Pathfinder takes your SVG shapes and converts them into paths that it can animate. The effect might not be the same but it's better than halving your content. A more noticeable problem with Vivus is that it can't actually animate any fills, for now, the fill will be shown straight away and then the paths will be drawn around it.

19 Callbacks

Like most good JavaScript libraries, Vivus enables us to fire callbacks after it has completed the action we asked it to do. If we want to pass a callback to a specific animation, we simply pass a function as a third argument to that SVG's animation object, and just like that we have mastery over animated SVGs using Vivus.

```
001 <code>
002 var scenario = new Vivus('nightSky',
{type: "scenario"}, function(){
003 console.log("The callback has been
called!");
004 });
005 </code>
006
```


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THE ULTIMATE GUIDE TO HTML5 GAMES

Design, build and package games with HTML5 using tools, technology and engines. Optimise game performance and make money from your creations

WHY USE HTML5?

That's easy, HTML5 works on everything, straight away!

HTML5 and JavaScript often get a bit of a bad rep from the developer community. But for all of its 'flaws', HTML5 has one ace up its sleeve - ubiquity! Put simply, it's your best bet for creating games that work on everything! Smartphones, desktops, tablets, and even some TVs and consoles. HTML5 is by far and away the best means of reaching as many platforms as possible with one code base. JavaScript performance has improved over the last few

years, so that all but the most demanding games can be made in HTML5. We now have full sound control, 3D hardware accelerated graphics, and smart compilers that can optimise your JavaScript to almost native speed.

Add to this the fact that you don't need the user to install your game or pass through a third-party app store, but instead they can access your game by simply clicking a link. No logins, passwords or installation shenanigans. You get it in your browser where you want it, when you want it.

DESIGN CONSIDERATIONS

Across the current device spectrum there are of course some massive discrepancies to cope with and more with every passing day. Even the once relatively stable realm of iPhone now throws no less than three different screen resolutions at us in its current line-up.

And even that isn't just a simple matter of coping with a range of resolutions. As well as raw pixels, we also need to cater for pixel density as we start creating content that covers the varying degrees of Retina superhigh-resolution displays. A simple tip when it comes to this is that it will very often prove beneficial to work to a

'sensible' native resolution for your game. Put simply, if you make a game that on iPhone 6 Plus runs its Canvas at the full 1920 by 1080 resolution, it will probably run horribly! Unless the game is so simple that the resolution will be irrelevant!

On this front you might want to explore the possibility of running your game and HUD/UI as two separate Canvas elements. As an example, *Super Spice Dash* displays the game up-scaled from a base of 800 by 600 whereas the HUD is 1024 by 768 to keep text and menus nice and crisp.

FLASH IN THE PAN

If you can make a game in Flash, you can in HTML5 too!

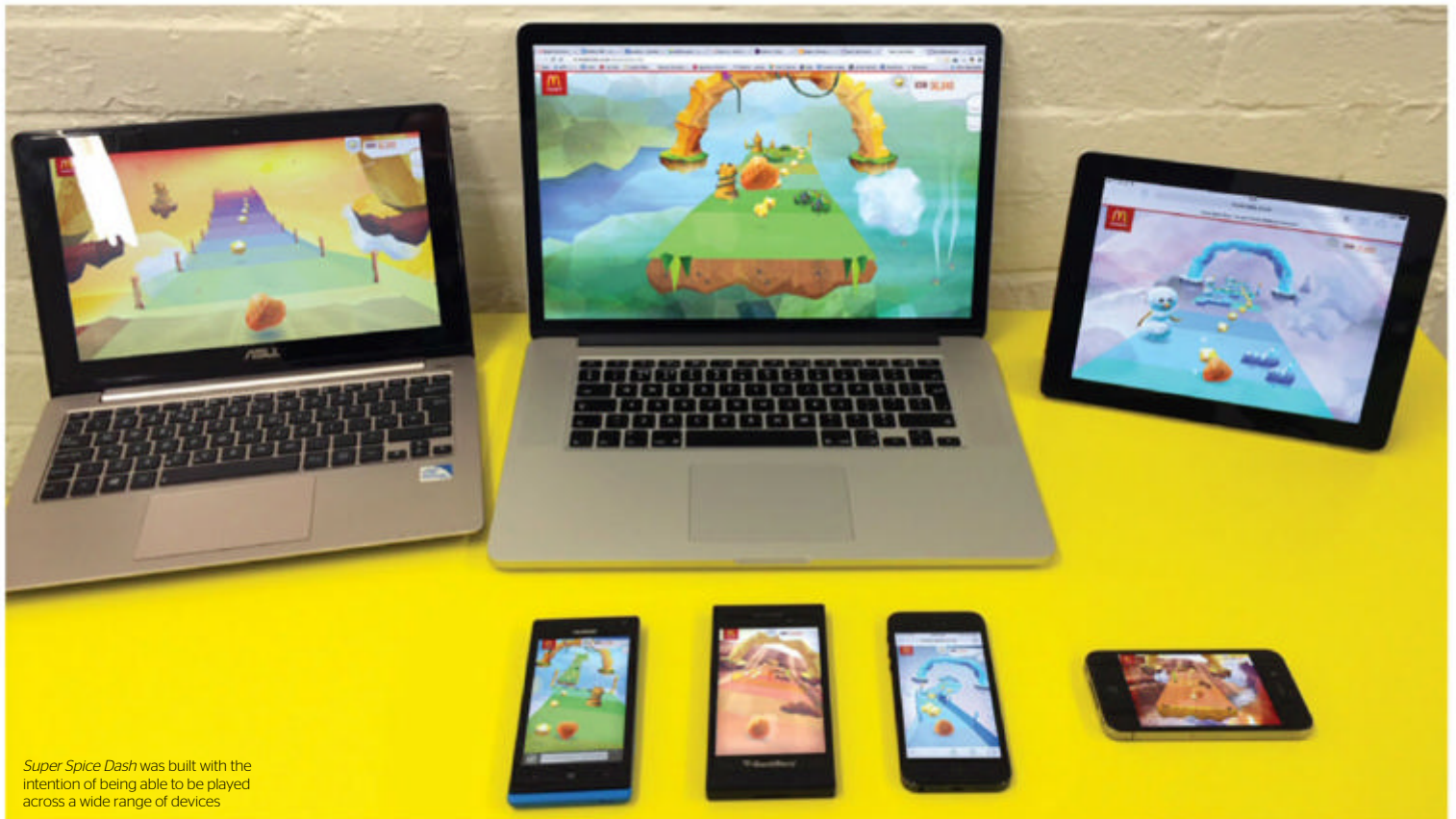
We all remember the Steve Jobs Open Letter with his thoughts on Flash (bit.ly/appleKillsFlash) back in 2010. It was a sad day for us all. Flash was the tool for making casual games and suddenly it seemed like it was being snatched away!

How could HTML5 and JavaScript even try to match the power that Flash had given game makers? It turns out that HTML5 just needed a little time to mature.

Well now it has! HTML5 not only matches the capabilities of Flash, it now exceeds them! If you're a Flash game dev, then you're already an HTML5 game dev. The recipe is the same, it's just the tools have changed...

As it was in the Flash days, increasing the pixel size of your project comes with a performance hit. Always consider the end user and specific cases in which assets are going to be used. Squandering memory and CPU on a gorgeous Retina intro might look pretty but may not be the best use of available resources!

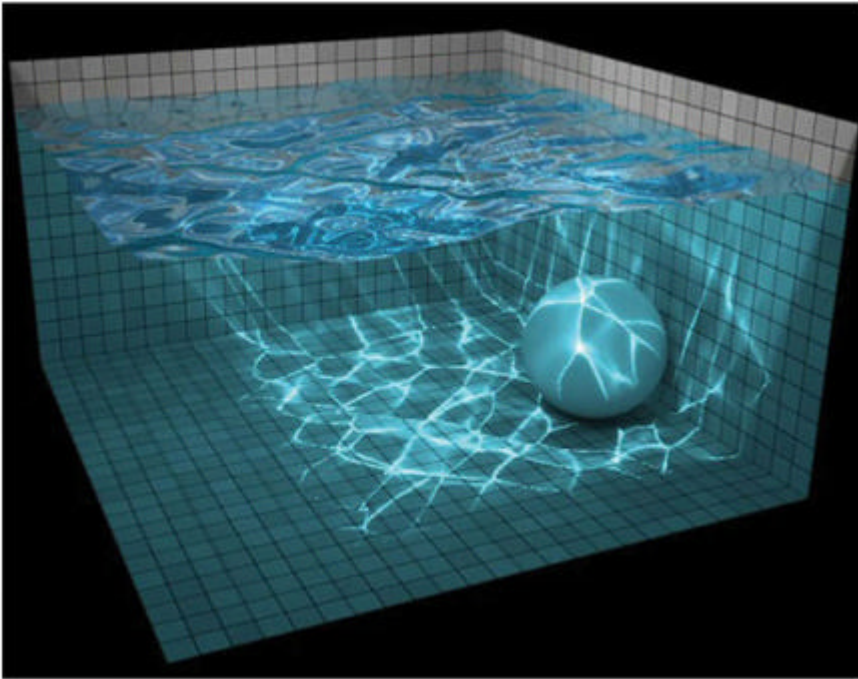
It may also be worth investigating the use of mipmap sprite sheets (each asset created at differing sizes) so that the target device can be 'sniffed' and then an appropriate sized asset will be delivered to balance performance and visual fidelity.



Super Spice Dash was built with the intention of being able to be played across a wide range of devices

TOP TOOLS TO USE

Here's a collection of essential tech, tools and engines that will help you on your quest to smashing out top draw HTML5 games



WEBGL

get.webgl.org

- Pros**
 - Direct access to the GPU enables superfast rendering
 - The power to render beautiful 3D graphics

- Cons**
 - Steep learning curve
 - Not available on all devices (especially older ones)

The arrival of WebGL means that HTML5 games can now start going toe-to-toe with other technologies. WebGL enables you to leverage the power of the GPU to render your game, enabling for a new level of fidelity not previously available.

With WebGL you can render full 3D graphics and also superfast 2D graphics. Postprocessing effects and filters such as motion blurs, blooms and displacements can also be created that makes games look great.

The downside of WebGL is that it does not run on every device. Around 75 per cent of people will be able to play your game according to WebGLstats.com. In terms of operating system, Android and iOS 8 support WebGL now and its reach is growing all the time.

WebGL is also fairly tricky to get into. The set-up code to draw a simple square alone can look quite intimidating. But getting over the hump will unlock the power to create blazing fast content so it's worth it!

THE CANVAS ELEMENT

www.w3schools.com/html/html5_canvas.asp

- Pros**
 - Supported by pretty much every mobile browser

- Cons**
 - Older browsers do not support this

The moment Canvas arrived in browsers is the moment that HTML5 games truly started to come into their own. The DOM, whilst useful for making websites, lacks the flexibility and performance required to make most games.

The Canvas element is basically a big dynamic image. It lets you draw images, shapes, text and more using pure JavaScript. Pretty much all modern browsers can throw more game sprites around in a Canvas than in the DOM. It's perfect for 2D games! The API is very simple to use and easy to understand too. The majority of all HTML5 games are built using Canvas.

WEB AUDIO API

www.developer.mozilla.org/en-US/docs/Web/API/Web_Audio_API

- Pros**
 - Superpowerful audio manipulation

- Cons**
 - Not supported by older devices or browsers

Gone are the days of having to include a Flash movie to play sound. Browser support for sound until recently has been shocking. It was buggy and often devices could only play one sound at a time. But Web Audio API now gives us more power than ever to manipulate sound. It is a versatile node system that lets you create and link audio nodes to form an audio routing graph. This system lets you create dynamic audio effects such as speed up, slow down, pitch shifting and reverbs.

THREE.JS

www.threejs.org

- Pros**
 - Makes working with 3D easy

- Cons**
 - Requires WebGL to really shine

Three.js is an open source 3D renderer used to create and display graphics using WebGL. It's great for abstracting away the inherent complexities of working with 3D so you can focus on your game. It deals with lighting, shadows, camera, animations and more. It also has a huge community so finding tutorials and examples is a straightforward affair.

Alternatives to 3D renderers out there include Babylon.js - a more game-focused renderer from some of the minds at Microsoft and the Goo engine which gives you an in-browser editor.



PIXI.JS

www.pixijs.com

- Pros**
 - Makes 2D WebGL and Canvas rendering easy
 - Lets you use WebGL to create beautiful effects

- Cons**
 - Poor SVG support
 - Not 100 per cent parity with WebGL or Canvas

Three.js is an open source 3D renderer used to create and display graphics using WebGL. Pixi.js is a 2D WebGL renderer with a Canvas fallback. Full WebGL support means the bleeding edge is taken care of, but seamless Canvas fallback means that you really can author once and it will work on every device that supports Canvas

When using WebGL, Pixi lets you use a huge set of existing filters such as blooms, blurs and displacements.

Pixijs also makes use of a scene graph and has an API that is very similar to that of Flash. This makes Pixi a great tool for Flash devs looking to dip their toe into the world of JavaScript.

Alternatives to Pixi include Create.js, which publishes content straight to HTML5, and Fabric.js which is great if you want to make use of SVG.

P2.JS

<https://schteppe.github.io/p2.js>

- Pros** • Takes care of all that tricky physics maths so you can focus on your game
- Cons** • P2 is the new kid on the block and lacks some of the features of more established engines

A key part to many games is the maths involved with physics and collisions - P2 is a 2D rigid body physics engine that takes care of that. It's small, highly optimised and works great on mobile.

Alternatives include Box2D.js, an emscripten port of the popular Box2D engine. Another great choice would be Ammo, a 3D physics engine and a port of the Bullet physics engine ported using emscripten.

TEXTURE PACKER

www.codeandweb.com/texturepacker

- Pros** • Can generate sprite sheets for pretty much all major HTML5 engines
- Cons** • It's cheap, but not free

Sprite sheets are handy because you have all your images contained in a single texture. For example, let's say that you have 1,000 single sprites at hand. If we were to draw them to the screen it would involve 1,000 WebGL draw calls! However, if all these images were in a single sprite sheet then it means that WebGL can render the 1,000 objects by using only one draw call - this

will then result in huge performance boosts for our game! Texture Packer generates these sprite sheets for you automatically. What you do is you simply drag your images in and it will use a nice algorithm to lay out all the images in a nice optimised fashion. Then hit publish and it will generate the PNG and metadata in the format of your choice.

PHASER

www.phaser.io

- Pros** • Has everything you need to build your game
- Cons** • Very rapid development cycle, quite hard to keep up with the pace of change

This 2D games engine has a ton of features that let you focus on building your game. Phaser's features include rendering (WebGL and Canvas), preloading, physics, animation, particles, camera, input and sound.

Being a full game engine, Phaser takes care of all your basic game needs. It has skyrocketed in popularity due to its rich feature set, a decent documentation and good developer support through its community and forums. It's also free and fully open source, which is great!

Alternatives to 2D game engines to Phaser include the Construct 2 (scirra.com/construct2) game engine, which lets you create games without having to code. Perfect for noncoders or beginners who want to make games!



MOBILE WEBGL

With great (WebGL) power comes great (WebGL) responsibility

Hooray! Recently Apple finally added support for WebGL to its Safari mobile browser. They were a bit late to the party but hey, it's better late than never!

The world where developers no longer need to worry about whether a device can render WebGL content is on the horizon.

But, just because WebGL has finally arrived on the majority of mobile devices it does not mean we all can put our feet up and stop caring about performance issues. But it does mean that things are faster but it does not make a phone as fast as a desktop! WebGL is not a magic bullet.

In all likelihood, a 2D Canvas-powered game that struggles on a creaky iPhone 4 will not show a drastic improvement rendering with WebGL (not least as it can't run iOS 8 anyway!). This is mainly because the bottleneck is not always the rendering.

Of course the fact that WebGL can render 3D content orders that is a magnitude faster than Canvas means we do have much more control over how we use the GPU, which is nice!



HOW TO MAKE GREAT GAMES

Creating fun is a serious business

KNOW YOUR AUDIENCE

Before you get stuck into game concepts and engine tests, it's important to do some serious research into who it is that you want your game to appeal to. As much as you want to make that arthouse indie game opus, if its purpose is to sell plush toys to five-year-olds you might want to stow that one!

Multimillion dollar earners like *Candy Crush* don't become colossal success stories by accident. Gameplay, design and feedback are meticulously balanced to create that state of 'flow' where players literally can't put the game down (yes, even in the middle of a Commons committee hearing!). Importantly though, the core system of games like this are simple. Casual games generally work on the principle of doing one thing extremely well, rather than a convoluted system of interdependent components. Ideally, make your game with in-situ tutorials so that you play your way into understanding it. If you need ten static pages of 'how to play', your game just might be too complicated.

Also worth noting is that certain audiences are much more likely to have less powerful hardware. For example kids might be using mum and dad's hand-me-down phones or inexpensive tablets and so will need content tailored to suit the delivery platform. One consideration (requiring a bit more dev effort) is to make your game so that it can scale back effects and nonessential features so that the gameplay core is preserved but some eye candy gets shut off.

SMALL IS BEAUTIFUL

Back in the day file size was an obsession, which seems to have faded slightly with the advent of broadband. That said, mobile phones with variable connection speeds and often tiny doses of RAM means that we still need to be extremely thoughtful with how large we let our creations bloat!

Perhaps the biggest loss the demise of Flash represents is its frankly awesome ability to use JPG compression on alpha transparency PNG assets.

In the world of HTML5 textures, a PNG is always a PNG. Still there are ways of squeezing them so that they become more manageable sizes and sites such as tinypng.com can be a big help if you can get that dithering under control.

Likewise, be sure to optimise and squeeze all your sounds (and make your OGGs too!). Consider whether you really need stereo for every little sound or long music piece or if it's just there unnecessarily.

REINVENTING THE WHEEL

As with any creative endeavour, starting a game from scratch can have a considerable 'blank canvas' hurdle.

There are hundreds of established genres and countless iterations, tweaks and new concepts appearing all the time. Whilst a straightforward reskin of an existing concept has pretty minimal creative reward, the great thing about creating a concept for a new game is the myriad of ways that mechanisms can be combined. Yes, there's still time for that first-person chess game.

By now, you know who your game is for. Whilst there are no hard and fast rules as to exactly who plays what, there are a number of game styles that seem to click better with certain audiences. Who likes addictive puzzles and hyperglossy sweetsies? Everyone, apparently! Who likes claustrophobic zombie scare-fests set in feudal Japan? Well, slightly less people at a guess.

Another aspect of choosing the game you want to make comes from examining the landscape. As popular as the headline grabbers are, do you really want to drop the 1,000th match-three game? Spotting emergent trends and gaming behaviours is big business, so do your due diligence and look around before starting.

DIFFICULTY CURVE

Whether your game is for a client or for yourself, you will have to consider the question of replayability.

Making a game addictive is seen as the holy grail for success and it's important that you do everything possible to keep people coming back. There are lots of ways that can be achieved and it doesn't have to come down to stacking levels or a shop of customisable hats...

Getting the difficulty curve balanced is one of the most important factors in getting players hooked. There's a whole article in this alone, so just think about the following: if you think your game is too hard, it's too hard; if you think your game is about right, it's too hard; if you think your game is stupidly easy, it's probably about right.

The fact is that as you go through the develop or play-test process, you will get really good at your game! Make sure you keep testing with new players. Friends, family and colleagues will all keep you grounded in the difference between challenge and frustration. When your game is hard, it must be fair too. *Flappy Bird* was maddeningly difficult, but every time you messed up, it was undoubtedly your own fault. Making the player feel they were 'robbed' is the fastest way to lose their interest.

Getting the difficulty curve balanced is one of the most important factors

BRAGGING RIGHTS

So you've got your players dialled into your game.

Their milk's gone off and they're in three-day-old underpants transfixed to your amazing creation! But when the game ends, what then? As well as the fact that they will want to hit 'replay' just because the game's so good, what else can be done to keep them hooked?

Leaderboards have existed since the humble *Space Invaders* cabinets invited us to fire in our three-lettered-name into the leaderboard for everyone to marvel at until the machine got turned off at the end of the day. Whilst seeing the highest all-time scores after a playthrough can be off-putting to all but the elite players, weekly and daily best scores can be attainable enough to lure people in to get their name on the board.

Social networks are a slightly more realistic way to be number one. Challenging friends via Facebook or Twitter is extremely simple to set up via existing APIs and can trigger those precious friendly rivalries!

GO WITH THE FLOW

Getting players in a state of flow has been mentioned.

But what exactly is flow and why do you want it in your game? Basically, flow is the state achieved in a player's time, where concerns and all other issues seem to melt away, and the game is the only thing that exists to them.

Sounds zen huh? Flow can be broken down into remarkably normal, attainable components that you can make present in your game. The first and most important thing to address is challenge vs ability. Players shouldn't be overly stressed but, critically, also not bored.

Within that remit there are a number of other factors that will aid the player's transition into flow. Clearly define the game's goals - if the game is to have a wide reaching appeal, it needs to signpost what the actual point is. Give satisfying feedback that rewards core interaction as well as actual 'success'. Make the player feel in control of the activity physically (good input system) and conceptually (they 'get' the game and the game gets them!)

BE INSPIRED

Time to get inspired by some of the great HTML5 games out there!

HELLO RUN

hellorun.helloenjoy.com



SUPER SPICE DASH

mcbites.sh75.net



ANGRY BIRDS

chrome.angrybirds.com



CUBESLAM

cubeslam.com



SAVE THE DAY

ga.me/games/save-the-day



HTML5 TO APPS

Even native app stores games are not safe from the HTML5 games!

Now for the second best thing about HTML5 games. Not only can your game be delivered through a browser, it can now be packaged up into an app with very little (or best case, no) changes to your code base. This means a HTML5 game can be both an app and a website! It's much harder to do this the other way round.

The best news is that the tools out there can convert your game so that it can be deployed on pretty much any platform - iOS 8, Android, Windows all in one swoop. A true 'build once, deploy everywhere' scenario! The majority of these tools use a technology called Apache Cordova. This essentially wraps up your code in a device native web view. Other tools such as Cocoon.js or Ejecta will convert your JavaScript to native code!

The downside to this is that for all the distribution and flexibility, the speed of your game will never match that of a native app. That being said though, performance is becoming less of an issue as the devices we use are becoming so powerful and the browser so optimised that this is not worth worrying about unless you are planning on building a full 3D triple-A mobile game.

Having the best of both worlds opens up new marketing strategies too. Imagine making a game and letting users play the first level, two minutes or on one life free online. Get them hooked and then you can then invite them to grab the full game from the app store. HTML5 breaks down barriers to entry and lets people 'try before they buy', or perhaps lets them have a ball, then install.

There's also the simple fact that from a business standpoint it's cheaper to make HTML5 games than build them natively. It won't be long until the ability to compile games for consoles will arrive too!



PACKAGE TOOLS

Here are three tools that will help you package up your game into a shiny app

COCOONJS

ludei.com/cocoonjs/

- Pros**
- It compiles down to native code so is extremely fast
 - Designed primarily for games
 - Supports WebGL
 - The CocoonJS Launcher App makes testing and debugging much easier

- Cons**
- You have to pay to remove the splash screen

CocoonJS is a great platform for testing. It will focus on acceleration, deploying and monetising your HTML5 apps and games on all mobile devices with many interesting features to help you turn your browser game into an app.

EJECTA

impactjs.com/ejecta

- Pros**
- Designed for games
 - Native implementation of Canvas API offers great performance
 - It's free!

- Cons**
- Only supports Canvas and audio elements
 - Only supports iOS devices

Ejecta is specifically designed for packaging iOS games and content that runs on a Canvas. You can think of it as basically a browser that only displays a Canvas element.

The Canvas 2D and WebGL API are implemented in native code, with OpenGL and the Audio API implemented with OpenAL. Several other APIs (touch, accelerometer, localStorage) behave like those in a real browser too.

PHONEGAP BUILD

build.phonegap.com

- Pros**
- Powered by Phone Gap and uses the device's native browser technology so it will behave exactly the same as if it was in your phone's browser
 - Easy to use as you simply upload your files and it will compile the project for you

- Cons**
- Phone Gap wraps up a web view which can have poor performance on pre-iOS 8 devices
 - Phone Gap Build has a maximum file upload size of 15MB (unless you pay)

PhoneGap Build is a service that lets you simply upload your files and it will handle all the compiling and packaging for you. PhoneGap Build is (unsurprisingly) powered by PhoneGap. Because it uses Phone Gap it leverages the same native browser that the target devices uses. This means your app will behave exactly the same as if it was in your phone's browser.



MONETISE

How to take that HTML5 game and get the gold! There are five routes that you can take for making money with HTML5 games

GET A CLIENT

Route 1: Make a game for someone. Due to the easily accessible nature of HTML5 games there has been a huge increase in demand for them by big companies and brands wanting to get people engaging with them. A lot of people can be reluctant to download or install that new game, but they are happy to click on a Facebook or Twitter link to play in browser! Obviously you need to find a client first, but once you have one it's a fairly low-risk affair as you will be paid upfront to make your game regardless of its success (although if it's rubbish and flops they probably won't ask you back!)

ADVERTS

Route 2: Advertise! The age-old slap an advert on the front of your game is a sure-fire way to get the pennies rolling in, again, provided your game is good!

APP PACKAGES

Route 3: Package your game as an app and follow the same route as the app developers. You can charge for your game or make use of in-app purchases. If your game is popular then you could stand to make millions! But the truth is that this is not the norm and due to discoverable issues of the various app stores, it would be well worth taking advantage of the fact your game can work in a browser!

SELL TO A PORTAL

Route 4: Once you have made your awesome game, you can sell it to a portal. A site like www.fgl.com or www.marketjs.com is a perfect place for this. You submit your game and let the various portals bid (eBay style) on your game and you get to sell it to the highest bidder. This is the same way that many indie devs make their money from Flash games. It's also worth checking out MocoSpace, BoosterMedia and TreSensa.

...OR JUST LUCK

Route 5: Sometimes it just boils down to dumb luck and it a complete mystery how it got so popular. In the same way that *The Birdie Song* was number one, you must not be dispirited from creating more and good quality games by what seems to be rubbish games making millions. That's just the nature of the beast.

HOW MUCH CAN A HTML5 GAMES DEVELOPER EARN?

These are the total amounts that FGL has earned its games developers in Spring 2014. Mobile/HTML5 games are on the rise



↑ £328,868



↑ £233,422



↓ £139,653

You can make five figures per year by making HTML5 games. This excludes development contracts and funded projects. If you get a few of those then you could stand to even hit six figures!



Matthew runs an online business and discloses the money he makes monthly



\$2,000 - \$26,000

He makes this amount every month solely based on making HTML5 games



10,161,636

The number of times the games he published were played in 2014



\$89,469

The amount he earned online from his HTML5 games in 2014

RECOMMENDED READING

Fill your brain with game knowledge the old school way!

GAME ENGINE ARCHITECTURE

gameenginebook.com

This book will teach you how every single aspect of a game engine works and how to build them. Written by Jason Gregory, the concepts and techniques in this book are used by real game studios like Electronic Arts and Naughty Dog. Even though this book is not a JavaScript book the knowledge it contains will make you a game-making master!

THE ART OF GAME DESIGN

artofgamedesign.com

So you may now know how to make a game, but what if you wanted to learn all about making games that are actually good? This is the book that will teach you the latter. Written by Jesse Schell, this book will teach you all of the basic principles of making a game fun and how to make a game that people will really love so that they will keep coming back to play it.

HTML5 GAMES: CREATING FUN

www.amazon.co.uk/HTML5-Games-Creating-CSS3-WebGL

Jacob Seidelin's book divulges all about the specifics of HTML5 game development. Each chapter covers an aspect of making games and by the end of the book you will have built your own game engine! As it's HTML5 specific, it also deals with all the nuances and gotchas of HTML5 gaming.



NEXT ISSUE

HOW TO BUILD A 2D HTML5 GAME USING THE PIXI.JS LIBRARY

In Issue 234, HTML5 games expert Mat Groves reveals the secrets of creating a simple game



RUBY ON RAILS

A MODERN APPLICATION FRAMEWORK

Developers need to be able to create and deliver applications quickly whilst still ensuring they are secure and well structured. The Rails framework for Ruby is an ideal solution to meet these demanding requirements

Too many languages, too many frameworks, not enough time. Being a web application developer can be a demanding business because you have to constantly be on the ball and keep up with all of the latest trends.

This can include knowing exactly what's available, what's new, what's deprecated and what the next tool that clients will hear about and therefore potentially demand in their application.

Whilst you may at present currently focus on a few web technologies as part of your work or personal interests, the more you can learn, the more multiskilled, marketable and knowledgeable you will be. With that in mind, let's take a look at Ruby on Rails then.

It's not a new framework as it was originally released in 2005, but Ruby on Rails has consistently grown and enhanced its functionality to help cater for demanding web app requirements and to assist developers when building to optimise their time and reduce complexity and repetitive processes.

Whether you are new to Ruby, have dabbled with it in the past or if you are a hardcore user, Rails is a powerful, viable application framework that benefits solo developers and development teams alike. This is all thanks in part to its automated processes and ability to rollback and manage any specific areas as required like migrations for example.

We'll keep it simple as we dive into the world of Ruby on Rails. We're confident that you'll like what you see and will want to try it out yourself if you haven't already.

INSTALLING RUBY AND RAILS

Some useful tools to ensure Ruby and Rails are installed properly on your development environment



RUBY VERSION MANAGER (RVM) RVM.IO

Easily switch between versions of Ruby, manage global defaults and keep gemsets separate. RVM is a community-maintained project that enables you to install multiple Ruby environments onto your system via the command line and ensure gemsets across multiple Ruby versions do not cause any issues.

RBENV BIT.LY/1U0OW9V

Open source, simple to use and a vast number of Ruby options available. Installs easier than RVM. Installed over the command line, rbenv lets you install multiple Ruby versions on your machine, and set global default and project-specific versions. It's a great multiple application manager for different Ruby versions.

RAILS INSTALLER RAILSINSTALLER.ORG

A one-stop installer to get your local Windows development machine up and running quickly. This packaged application will install Ruby 2.0.0, Rails 4.1 (at time of writing), Bundler, Git, SQL Server Support and more with a few clicks. Mac options are available but support has been lacking for OS X versions above 10.8.

TOKAIDO GITHUB.COM/TOKAIDO/ TOKAIDOAPP

Open source, clearly visible and extensible as a result. Geared for Rails setup on OS X machines. Tokaido is an open-source application hosted and available from its Github repository for all Mac OS X users. The latest versions of both Ruby and Rails will be installed on your machine.

INSTALL RAILS INSTALLRAILS.COM

Educational, clear, concise and fun. Unlike a traditional click-and-go installer, this online resource will guide you through installing Ruby and Rails yourself for your chosen OS and OS version. This is highly recommended.

RAILS APPLICATION CREATION

Let's take a look at how quickly you can create a data-driven Rails application using the command-line tools

```
rails_app -- coldfusion@Matts-Mac: ~/Dropbox/webdev
→ rails_app sudo gem install rails --no-ri --no-rdoc
Fetching: rails-4.2.0.gem (100%)
Successfully installed rails-4.2.0
1 gem installed
→ rails_app rails --version
Rails 4.2.0
→ rails_app
```

1. INSTALL RAILS

Open your Terminal window or command-line prompt. Ensure you have Ruby and SQLite3 installed. The installation of Rails is a matter of installing a new Ruby gem. Verify the Rails version matches the latest (at present 4.2.0).

```
001 ruby -v
002 sqlite3 --version
003 gem install rails --no-ri --no-rdoc
004 rails --version
```

2. RAILS CLI HELP

Before we generate an application let's take a look at some of the options available using the Rails command-

line facility. Enter the help mode by running the following command which will output all available options that can be used with the generation command, including choosing the default JavaScript library or default database for your project.

```
001 rails -h
002
```

3. NEW APPLICATION

Create a new Rails application using the Rails 'new' command, specifying a name as the parameter. A new directory will be created with that name and all project files will be placed within it.

```
001 rails new blog
002
```

4. RUN THE SERVER

The generation script has created a new application structure for you and installed all relevant gems and dependencies for your application. Start up the built-in WEBrick server to view the default Rails app in your browser. This will be on port 3000 by default.

```
001 cd blog
002 rails server
003
```

5. GENERATE CONTROLLER

Stop the running WEBrick server by using Ctrl+C. Once it has stopped we can start to build upon the application structure and add some custom views. To do all this, you will need a controller and a view as the bare minimum requirements. Using the CLI tool, generate a new controller called 'home' and then follow it with an action called 'index'.

```
001 rails generate controller home index
002
```

6. ROUTE CONFIGURATION

With our primary controller and default view created we will now need to tell Rails to use them as the primary page for the application. Open the project in your code editor of choice and then open config/routes.rb. This file holds all routing information and how Rails should respond to requests and URI resources. Go ahead and add a root definition to set the home page to use the new controller and action.

```
001 root 'home#index'
002
```

WHO USES RAILS?

With so many languages and frameworks to choose from, which big names use Rails? Since the initial release of Rails in 2005, the framework has constantly grown and been an important part of many tech stacks for various organisations and companies around the world. Until mid-2014 Soundcloud had their monolithic application built on Rails, only deciding to switch to a JVM-based architecture to assist with scalability; a move that rings similar bells to the Twitter move, who also originally dominated the 140-word social scene using Rails.

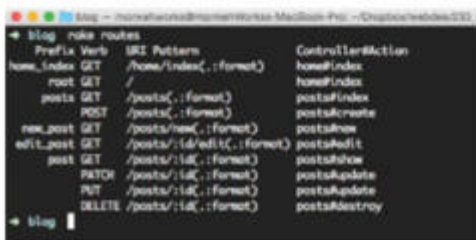
Twitch.tv, the social video streaming content provider for console games recently acquired by Amazon for a large sum of money, base their application on the Rails framework, as have Goodreads, Imgur and ThemeForest. These are but a few of the many who use and implement Rails as a solid solution for modern web applications.

Rails is free, open source, highly extensible thanks to gems, and driven by a strong community. It's certainly a very popular choice for many development teams.

7. REST RESOURCE

The routing in Rails is incredibly powerful and can manage a number of routes for specific resources. Add a new line to the routes.rb file to declare a posts resource and save the file. In the Terminal window run bin/rake routes to see the REST-ful URI patterns and routes generated for the resource in question.

```
001 // config/routes.rb
002 resources :posts
003 // Terminal
004 rake routes
```



8. MODEL CREATION

The posts resource will deal with all posts within the application. Create the Post model using the Rails command-line tools. All models use a singular name compared to the resource previously. This generation will create the model with the provided properties and their data types. The command will also generate a migration script to create the database structure.

```
001 rails generate model Post title:string
text:text
```

9. CREATE THE TABLE

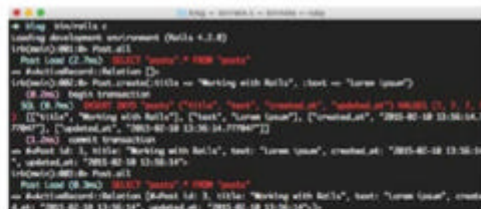
The generated migration script is a specific class extending the ActiveRecord::Migration class and includes a method called change. This is a reversible method and contains the create_table script needed to generate the database table for our Post class. To run the script open the Terminal window within the project, and use the rake tool to process the migration.

```
001 rake db:migrate
```

10. WORK WITH DATA

With the model created let's add some sample data to the database. Enter the Rails console (rails c) and at the prompt, request all 'Post' objects - the response should be empty. Create a new post by sending the properties as arguments to the create() method, which will automatically save the content into the database. Request all 'Post' objects again to see your content returned. Now exit the console.

```
001 rails c
002 Post.all
003 Post.create(:title => "Working with Rails",
:text => "Lorem ipsum")
004 Post.all
005 exit
```



11. POSTS CONTROLLER

Having set the routes.rb file to use a posts resource, we now need to create the required controller. Using the Rails CLI we can generate a new controller called 'posts' with one line. It will also create the accompanying views directory into which we'll shortly place templates for displaying retrieved data.

```
001 rails g controller posts
```



12. DEFINE CONTROLLER ACTIONS

Open controllers/posts_controller.rb in your code editor. The resource routes need actions to handle and manage responses accordingly. Create two actions in the controller. The index will fetch all Post objects from the

database for display for us, whilst the show action looks for a specific Post object using the id parameter sent in the URL. The variables are prefixed with @ to declare them as instance variables and make them available to the view templates.

```
001 def index
002 @posts = Post.all
003 end
004 def show
005 @post = Post.find(params[:id])
006 end
```

13. INDEX VIEW

Create a view template for the index action called 'index.html.erb' and place it within the views/posts directory in the application. Rails' sensible naming conventions will hook up the correct template for the action. In the template, loop over the collection of posts and output a link for each one. These links will take the user to the show action resource in the application.

```
001 <h1>All Posts</h1>
002 <ul>
003 <%= @posts.each do |post| %>
004 <li>
005 <%= link_to post.title, action: "show", id:
post.id %>
006 </li>
007 <%= end %>
008 </ul>
```

14. INDIVIDUAL POST VIEW

Create the second view template for the show action called 'show.html.erb' in the view/posts directory. The id value of the post was sent as a URL parameter and the corresponding Post object obtained in the controller, so there is no need for any loop here as we are dealing with just one object.

```
001 <p>
002 <strong>Title:</strong>
003 <%= @post.title %>
004 </p>
005 <p>
006 <strong>Text:</strong>
007 <%= @post.text %></p>
008 <p><%= link_to 'Back', posts_path %></p>
```

THE 'RAILS' COMMAND

The Rails console provides a lot of functionality and tools that help to streamline your development workflow. View the available functions in the Terminal by submitting the command 'rails' to the prompt. Most have short-hand versions too, which can save time.

DIGGING DEEPER

Rails and the provided Rails console commands can greatly enhance your development workflow and automate many tasks for you

MIGRATIONS

Data migrations are a powerful tool in Rails development. Let's look at how they can be used

1. CREATE A MIGRATION

Each migration file used by Rails is named adhering to strict conventions and they would be hard for us to manage them manually. Use the Rails generate command to create a new migration and make sure that you provide a memorable name for its purpose. The file will then be added to the db/migrate directory prefixed with a UTC timestamp and it will identify the exact moment that it was created.

```
001 rails g migration AddSlugToPosts
002
```

```
blog -- markahworks@markahworks-MacBook-Pro: ~/Desktop/web
→ blog rails g migration AddSlugToPosts
  invoke  active_record
  create  db/migrate/20150210151637_add_slug_to_posts.rb
→ blog
```

2. DEFINE THE CHANGE

In this migration we will add in a new column with the type string to the Post object and set that column as an index. The change definition was created automatically by the generation and any code within the block can be automatically reverted by Rails if it is required. More complex migrations may have to use custom up and down method definitions.

```
001 class AddSlugToPosts <
ActiveRecord::Migration
002 def change
003 add_column :posts, :slug, :string
004 add_index :posts, :slug
005 end
006 end
007
```

3. MIGRATION STATUS

Open the Terminal window and run the command to return the status of all migrations within the application. The console output will help you to highlight the importance of the UTC date file naming convention as it puts each migration in order. If a migration is marked as 'up' then it will have been already applied by the system.

```
001 rake db:migrate:status
002
```

4. RUN THE MIGRATION

By simply typing the 'rake db:migrate' command, Rails and the rake task itself will automatically manage all of the outstanding migrations in the application, ie those with the status set to 'down'. The console output will let you know how long each one took and in what order they were processed.

```
001 rake db:migrate
```

```
→ rake db:migrate
Status: Migration ID Migration Name
up 20150210152118 Create posts
up 20150210151637 Add slug to posts
→ rake db:migrate:status
Status: Migration ID Migration Name
up 20150210152118 Create posts
up 20150210151637 Add slug to posts
```

5. ROLLBACK

Should anything go wrong with your data migration scripts or you ever need to remove specific changes for whatever reason, the rake tasks give you functionality to rollback your changes. By default it will rollback the last change. Specifying an optional STEP parameter will enable you to undo the last number of migrations made to the database.

```
001 rake db:rollback
002 rake db:rollback STEP=2
```

```
→ rake db:rollback STEP=2
Status: Migration ID Migration Name
down 20150210152118 Create posts: reverting
down 20150210151637 Add slug to posts: reverting
→ rake db:migrate:status
Status: Migration ID Migration Name
up 20150210152118 Create posts
up 20150210151637 Add slug to posts
```

6. SPECIFIC MIGRATIONS

You may need to run a specific migration out of the number you have in your directory without running all of them in the queue before it. You can do so using the migration ID (the timestamp value) and setting it as the migration version to use for either your up or down changes, depending on the current migration status.

```
001 rake db:migrate:up VERSION=20150210132116
002
```

WEB CONSOLE

By default, all new applications created in Rails 4.2 come with a built-in interactive web console and are available to use on the default Rails error pages. Appearing as a black box at the bottom of the window it is perfect for tapping into the Interactive Ruby Shell (IRB) for deep data inspection and analysis.



MIGRATIONS

Migrations are a core part of the Rails workflow. They are important as they greatly assist your development and delivery, and they can be customised to suit your requirements. Find out more about them from the official documentation guides available here: guides.rubyonrails.org/active_record_migrations.html.



```
→ rake db:migrate:status
Status: Migration ID Migration Name
up 20150210152118 Create posts
up 20150210151637 Add slug to posts
→ rake db:migrate:up VERSION=20150210132116
→ rake db:migrate:status
Status: Migration ID Migration Name
up 20150210152118 Create posts
up 20150210151637 Add slug to posts
```

7. NO DUMMY DATA

Whilst migrations offer you the ability to quickly populate and delete or drop data from your database they should not be used this way. Any dummy data you may want inserted can go into the db/seeds.rb file and submitted to the database using the rake db:seed command.

```
001 posts = Post.create(
002 [{ title: 'Primary Post', text: 'Lorem ipsum dolor sit amet' },
003 { title: 'Second Post', text: 'Hello World'
004 }])
```

RUBY AND RAILS RESOURCES

Picking up any new language or framework can be problematic at times. Ease the pain with these fantastic resources designed to help you

1. RAILS GUIDES GUIDES.RUBYONRAILS.ORG

Your first port of call should be the official documentation guide. This is to ensure that you have all the latest news, techniques and walkthroughs up to date and in line with the most current stable and bleeding edge releases. The Rails guide is fully documented with archived versions for earlier releases too.



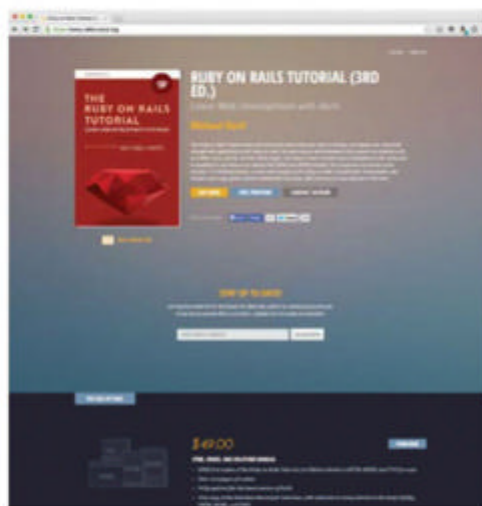
2. LEARN RUBY AND RAILS LEARNRUBYANDRAILS.COM

This site offers a curated list of online tutorials, courses and screencasts for both Ruby and the Rails framework. Whilst a number of the resources listed here do have a price tag attached there are also many free online options available to choose from.



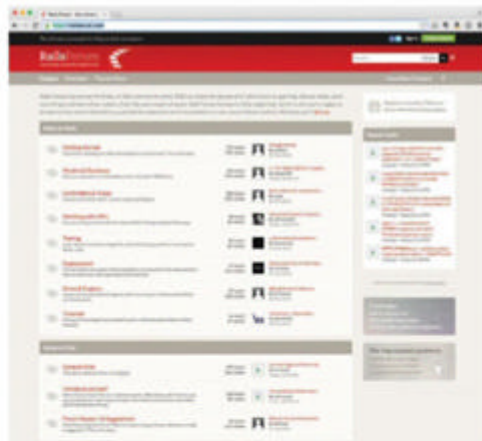
3. RAILS TUTORIAL RAILSTUTORIAL.ORG

This detailed book on Rails development is constantly updated and hailed by many as the 'must have' Rails resource. Other price tiers include screencast videos too, which have been compared to being almost as good as sitting next to the author and working with them.



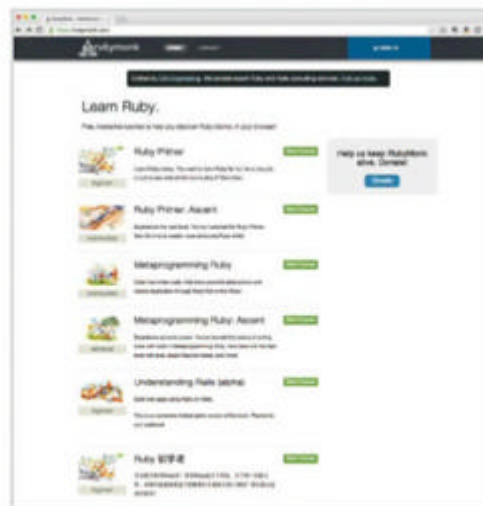
4. RAILS FORUM RAILSFORUM.COM

Never underestimate the power of a development community and the resources available through forums and community networks. They help keep you updated with news and tips, latest releases and close to a large number of like-minded developers who are all willing to help each other out.



5. LEARN RUBY RUBYPYMONK.COM

Rails development can, for some, be a fast-track way into learning Ruby thanks to the automated tools and helpers that make life a little easier. Learning Ruby will undoubtedly improve your Rails development skills and this online series of interactive tutorials is a great way to do just that.



HOSTING RAILS APPS

Deploying and hosting your Rails application should never be a problem as there are a vast number of options available to you. Heroku provides incredible support for pretty much any modern application development language and their ability to manage a deploy from a Git repository commit is still something to behold. They offer detailed, step-by-step instructions on how to get your Rails application deployed to their cloud servers. Check them out via this URL: devcenter.heroku.com/articles/getting-started-with-rails4.

If you prefer to host your own applications on self-managed production servers, or want to deploy to in-house staging servers, Phusion Passenger should be your first port of call. It works seamlessly with Apache and nginx servers as an optional module and is faster than other Ruby application servers.

Deployment is an important factor and thanks to Capistrano (capistranoorb.com), highly-configurable automated remote server deployments are a distinctly viable and proven option, used by many in the field.



We don't keep secrets



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Since its inception Node.js has been designed to be event-driven. This means that Node is very efficient at listening and responding to events. The frontend of an application is a different story. Until recently the only way to update a page was either to refresh the page or ask the data for new data. WebSockets and

server-sent events have blown this paradigm out of the water and enabled two-way transfer between client and server. We're going to look at a library that makes dealing with this type of bidirectional communication as painless as possible. Socket.IO is supported by a company called Automattic. It's a hugely popular package and is the most depended on package NPM module, with good reason. It's been around for five years and is still under active development.

To explore how to create a real-time web app, we're going to build an HTML-based presentation viewer so everyone's screen updates at the same time and anonymous questions can be posited to the presenter. We're going to be using AngularJS on the frontend but it isn't a requirement of Socket.IO.

01 Scaffold the server

We're going to start by using Express, a web framework which simplifies many things about Node including server creation and routing. Then we will use express-generator, which will create a skeleton app for us; we'll call ours 'preso'. Then install the dependencies and run it in debug mode.

```
001 $ npm install express-generator -g
002 $ express preso
003 $ cd preso && npm install
004 $ DEBUG=preso ./bin/www
```

02 App structure

You should now have a number of files and folders created for you. In the bin folder 'www' ties the application together with the previous command. Node_modules contains the server dependencies, public will contain static assets to deliver to the client, routes contains code for each route, and views comprises the template files.

```
001 !"" app.js
002 !"" bin
003 !"" node_modules
004 !"" package.json
005 !"" public
006 !"" routes
007 #"" views
```

03 Install Socket.IO

Next install Socket.IO via npm. This may take a while as it fetches, downloads and compiles everything it needs. Socket.IO's core is Engine.IO, which you can use if you just require the transport layer. Socket.IO has additional features like reconnection logic and gracefully degrades on the client, whereas Engine.IO progressively enhances.

```
001 $ npm install socket.io save
```

04 Create events.js

Now create a new file called 'events.js' at the root level (same as app.js), which will hold our Socket.IO code. Let Node know what reading the file is going to return and do this with 'exports' so that this file (module) will export a function. Then we require the Socket.IO library.

```
001 module.exports = function (server) {
002   var io = require('socket.io')(server);
003 };
```

05 Require events

Within the 'www' file require the events file we just made after the line 'server.on('listening', onListening)'. We then pass it the server instance that Express creates on line 22 ('var server = http.createServer(app);' as Socket.IO needs to be told where to attach itself to. So we're saying, load this file and as we know it exports a function, pass 'server' to it.

```
001 /** * Attach Socket.IO listeners. */ var events =
require('./events')(server);
```

06 Master layout file

Now let's get something rendering client-side. By default Node uses a template engine called Jade, which it compiles to HTML; Jade is a succinct way of describing HTML. In views/layout.jade we require some CSS files and Socket.IO automatically creates a client-side JavaScript file.

```
001 doctype html
002 html
003   head
004     title= title
005     link(rel='stylesheet', href='//maxcdn.bootstrapcdn.com/
bootstrap/3.3.1/css/bootstrap.min.css')
006     link(rel='stylesheet', href='/styles/main.css')
```

The terminal window shows the following commands and output:

```

Tims-MacBook-Pro:test timstone$ express preso
create : preso
create : preso/package.json
create : preso/app.js
create : preso/public
create : preso/public/javascripts
create : preso/public/images
create : preso/routes
create : preso/routes/index.js
create : preso/routes/users.js
create : preso/public/stylesheets
create : preso/public/stylesheets/style.css
create : preso/views
create : preso/views/index.jade
create : preso/views/layout.jade
create : preso/views/error.jade
create : preso/bin
create : preso/bin/www

```

The browser window displays a slide with the text: **BEHOLD, I AM THE MASTER LAYOUT!** and **HELLO THERE SUBLAYOUT**.

<Above>
 • Installing and scaffolding a new Express app takes seconds thanks to express-generator doing the work for us

<Above>
 • The sublayout template is also displaying, which means they are all working! This is where the directive will show the slides

```

007 block content
008 script(src='/socket.io/socket.io.js')

```

07 Use index.jade

Layoutjade gives a reusable outer shell and any other content is rendered in 'block content'. Use this with the 'extends' keyword. This tells Jade to use layout.jade and insert the following HTML where it sees block content. Now make a body tag with some Angular attributes.

```

001 extends layout
002 block content
003 body(data-ng-app="presentationApp", data-ng-controller="PresentationController")

```

08 Install Angular

Our preference is to use Bower, and you can download a local copy or link to it on a CDN. We'll also use the Angular animate module to handle slide transitions. When Bower is installed, do the following:

```

001 $ cd public
002 $ bower install angular angular-animate

```

09 Work on the structure and module

We're going to split the frontend of our application into four folders: controllers, directives, modules and templates. There will only be one file in each but if you wanted to extend this project then you won't have to restructure it. Start by specifying all of the modules our app will depend on.

```

001 angular.module('presentationApp', [
002   'ngAnimate',
003   'presentationController',
004   'slidesDirective'
005 ]);

```

10 Presentation controller

Next we'll create the presentation controller. This will contain the logic to move the slides back and forth, but for now we'll simply set up a connection to our WebSockets server. We can do this by passing '/' to connect, this will default to the site address and it works no matter if you're connecting via localhost, IP address or URL.

Is native faster?

Yes, almost always, but is it noticeable to the user? Fancy graphics are very appealing, but aren't necessary in making a good app. If you can design an app that does its job well, the average user won't notice that it's a web app unless you tell them.

```

001 angular.module('presentationController', [])
002 .controller('PresentationController', ['$scope', function
($scope) {
003   var socket = io.connect('/');
004 }]);

```

11 Add 'slides' directive

Next we'll start writing the slides directive. After the body tag in index.jade add a div tag with three attributes: data-slides so that Angular sees that it should place the slides directive template here, data-path which is the name of the folder we'll attempt to read the slide files from, and data-amount which is the amount of slides we have.

```

001 div(data-slides, data-path='slides' data-amount='3')
002   script(src='/bower_components/angular/angular.js')
003   script(src='/bower_components/angular-animate/angular-
animate.js')
004   script(src='/scripts/controllers/presentation-framework.js')
005   script(src='/scripts/directives/slides.js')
006   script(src='/scripts/modules/presentation-framework.js')

```



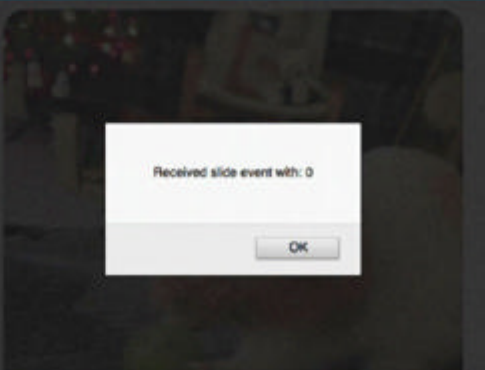

12 Slide directive functionality

Our slides directive will replace the div with the data-slides attribute and loads each slide within the path we specified. We're assuming that every slide file name follows a slide-n.html syntax. Set these templates so that they're accessible to the controller and call the update method, which we'll write later.

```

001 angular.module('slidesDirective', [])
002 .directive('slides', function () {

```

	
<p><Above></p> <ul style="list-style-type: none"> • Finally we have a slide appearing thanks to our directive, there are only ever three slides in the DOM 	<p><Above></p> <ul style="list-style-type: none"> • Now that we have our keyboard events hooked up we can change the slide by pressing the arrow keys
	
<p><Above></p> <ul style="list-style-type: none"> • We've received an event from the server, which triggers the 'changeSlide' method and updates the UI 	<p><Above></p> <ul style="list-style-type: none"> • The question dialog box will simply send the text inside that has been input here straight to the presenter

Example applications
 The Socket.IO site (socket.io) has some impressive demos, including the ubiquitous chat app and the Pokémon game that is playable by everyone connected to the site called WePlay.

```

003 return {
004   templateUrl: 'scripts/templates/slides.html',
005   replace: true,
006   link: function ($scope, element, attributes) {
007     var templates = [],
008         amount = parseInt(attributes.amount, 10);
009     for (var i = 1; i <= amount; i++)
010       templates.push(attributes.path + '/' + 'slide-' + i +
011         '.html');
011     $scope.$parent.templates = templates;
012     $scope.update(0);
013   }
014 };

```

```

015   });
016

```

13 Slide directive template

To enable smooth transitions, the DOM will have to hold at least three slides at any one time: the previous, current, and next. Otherwise, you'd get a jarring FOUC (Flash Of Unstyled Content) as the slide loads. This directive will automatically update when the slide object is updated thanks to ng-model.

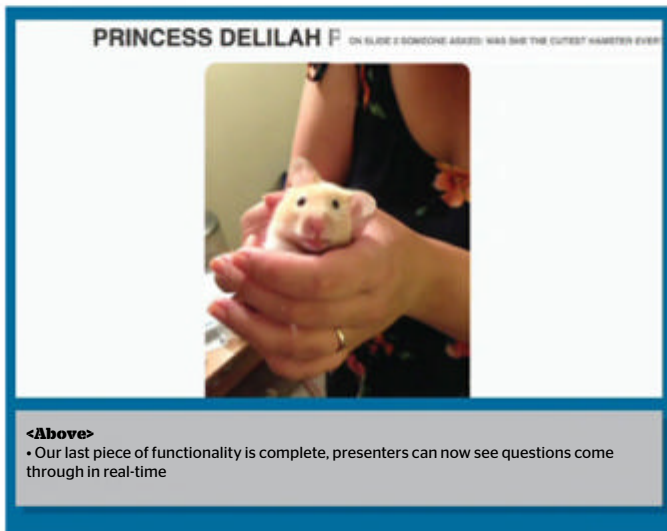
```

001 <section class="slides" ng-model="slide">
002   <div class="slide slide-previous" ng-include="slide.
previous">{{previous}}</div>
003   <div class="slide slide-current" ng-include="slide.
current">{{current}}</div>
004   <div class="slide slide-next" ng-include="slide.
next">{{next}}</div>
005 </section>

```

14 Stay within boundaries

We have to perform some fairly tedious boundary checking to make sure that we're not going to go over or under the slide's length, so before manually setting a value for previous or next values we'll pass them through these functions respectively to get a valid index.



Stream binary files
We've only transported plaintext but Socket.IO can also stream binary. This opens up many possibilities as it means you could stream files like audio or video.

```
001 $scope.setPreviousIndex = function (index) {
002   return index - 1 >= $scope.slides.length ?
003     index - 1 : 0;
004 };
005 $scope.setNextIndex = function (index) {
006   return index - 1 >= $scope.slides.length ?
007     index + 1 :
008     $scope.slides.length - 1;
009 };
```

15 Check index

We're doing a further check for the current index so it doesn't go to slides that don't exist. Nor do we want to press right and go beyond the amount of slides that we specified. If we do find ourselves at either extremity then we return the minimum or maximum index value.

```
001 $scope.setIndex = function (index) {
002   if (index >= 0 && index <= $scope.slides.length - 1) {
003     return index;
004   }
005   if (index < 0) {
006     return 0;
007   } else {
008     return $scope.slides.length - 1;
009   }
010 };
011
```

16 Update method

The update method receives an index value for the current slide and simply updates the next, current and previous slides with the helper functions we've just written and contains them all within the \$scope.slide object. The

templates object holds the HTML for each slide as a string and this is what's rendered in the slides directive.

```
001 $scope.update = function (index) {
002   if ($scope.slides) {
003     $scope.slide = {
004       next: $scope.slides[$scope.setNextIndex($scope.index)],
005       current: $scope.slides[$scope.setIndex($scope.currentIndex)],
006       previous: $scope.slides[$scope.setPreviousIndex($scope.
index)]
007     };
008   }
009 };
```

17 Determine the user

ChangeSlide receives a keypress event and we'll use this to work out which key was pressed in the next step. If this user isn't the presenter then we won't enable any keyboard control. If they are a presenter then use the 'emit' method on the socket manager to send the server the current slide's index.

```
001 $scope.currentIndex = 0;
002 $scope.changeSlide = function ($event) {
003   if (!$scope.isPresenter) {
004     return;
005   }
006   /* next step */
007   socket.emit('slide', $scope.currentIndex);
008   $scope.update($scope.currentIndex);
009 };
```

18 Control keyboard events

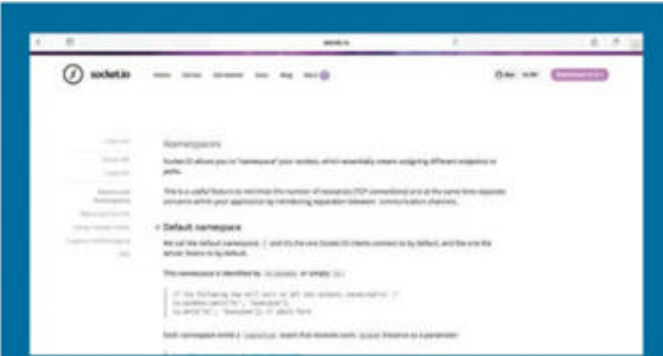
Sandwiched between deciding if the current user is a presenter and emitting the 'slide' event we check which way the slide should transition. We're also adding a way to quickly go to a slide between one and nine with the final clause - each keyCode for one to nine is sequential (starting at 49 for 0).

```
001 var key = $event.which;
002 if (key === 39) {
003   // right arrow key
004   $scope.currentIndex = $scope.setIndex($scope.currentIndex +=
1);
005 } else if (key === 37) {
006   // left arrow key
007   $scope.currentIndex = $scope.setIndex($scope.currentIndex -=
1);
008 } else if (key >= 49 && key <= 57) {
009   var desiredSlideIndex = key - 49;
010   $scope.currentIndex = $scope.setIndex(desiredSlideIndex);
011 }
012
```

19 Change external slides

Still within our presentation controller we can listen to events from our server in a similar fashion to other JavaScript events by specifying the event name that we're going to listen for and a callback to execute. When we receive new slide information it'll be the index to go to.

```
001 socket.on('slide', function (index) {
002   $scope.currentIndex = index;
003   $scope.update(index);
```



Using rooms and namespaces to partition users

We've got a very basic system where the first person to connect is the presenter. A result of this is that only one presentation can occur at any time. We could fix this because Socket.IO has a concept of rooms and namespaces, which we could use to create a room per presentation. A user would choose which presentation to view and then be connected to that room so only relevant messages would be received.

```
001 $scope.submitQuestion = function () {
002   room.on('connection', function (socket) { });
On the client you can connect to this in the same manner as the default namespace.
001 var socket = io('/presentation-1');
From there you can use it the same way as we've detailed in the rest of this tutorial.
```

```
004 $scope.$apply();
005 };
```

20 Presenter listener

Likewise we'll listen to another event called isPresenter and set that value to whatever is applied (it'll either be true or false). We have to manually update the scope as when a Socket.IO event is fired it's independent of Angular so it doesn't know that the UI needs updating.

21 Listen to connections

Our client is now listening to all the right events but the server needs to control who sees which messages. We'll start filling in the rest of our server in events.js. When we receive a new connection we set up a listener that will listen to emits from that socket. We then relay the data received to other connected users with broadcast.

```
001 io.on('connection', function (socket) {
002   socket.on('slide', function (data) {
003     socket.broadcast.emit('slide', data);
004   });
005   /* next step */
006 });
007
```

22 Set presenter

We need someone to present our presentation! This implementation is very rudimentary but the first person to connect will be the presenter. If there is not a current presenter then we set the next socket to connect as the presenter and let them know this by emitting the isPresenter event. Each socket is given an ID and it's important we store this ID for later.

```
001 if (!presenter) {
002   presenter = socket.id;
003   socket.broadcast.emit('slide', data);
```

```
004   socket.emit('isPresenter', true);
005   console.log(socket.id + ' is presenter');
006 }
```

23 Emit to a specific user

When the server receives a question we only want to tell the presenter about that question. We can access all of the current socket connections with `io.sockets.connected` and because we stored the presenter's socket ID, we specifically emit an event to them (in this case, the question event with the question data).

```
001 socket.on('question', function (question) {
002   if (io.sockets.connected[presenter]) {
003     io.sockets.connected[presenter].emit('question', question);
004   }
005 });
```

24 Submit questions

Switching back to our presentation controller we'll add the functionality to submit and see these questions. We haven't got any validation checks on here, whatever is input into the textbook will be sent to the presenter. We up the currentIndex value by one because it's zero-based and don't want the presenter to always be one off!

25 Push notifications

When the presenter receives a question we'll display it as a notification on the top-right of their screen. We receive the slide's number and question so we'll do some quick microtemplating to format this data to be slightly more readable. We then push this to an array that holds all of the notifications.

```
001 $scope.notifications = [];
002 socket.on('question', function (question) {
003   var text = 'On slide {{slide}} someone asked: {{question}}'
004     .replace('{{slide}}', question.slide)
005     .replace('{{question}}', question.question);
006   $scope.notifications.push(text);
007   $scope.$apply();
008 });
```

26 Submit a question

We'll add a button to show to viewers of the presentation (but not the presenter) which, when clicked, will open a modal window with a text area for them to ask their question. By using ng-model we can reference this within our controller as \$scope.question.

27 Show notifications

Finally, as a presenter we'll list each of the question notifications with ng-repeat and show a close button so that the presenter can keep track of what has been answered. We haven't covered this functionality but it splices the notifications array; the full code for this tutorial is available on FileSilo.

```
001 <ul class="questions">
002   <li data-ng-repeat="notification in notifications">
003     {{notification}}
004     <button type="button" aria-label="Close" data-ng-click="removeNotification($index)">x
005   </button>
006 </li>
007 </ul>
008
```


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Construct an image gallery with CSS and AngularJS

Combine AngularJS and CSS transitions to create an impressive image gallery user interface quickly

tools | tech | trends AngularJS, JavaScript, HTML, JSON
expert Luke Guppy

Gallery UIs are often required within clients' website projects, and having a reusable, modular solution can save valuable time in your builds. There are many jQuery gallery plugins available, but these are often quite large. These plugins rely on jQuery's DOM first approach to UI interactions, requiring your content data to be held and referenced from the DOM. AngularJS separates your data and presentation so the UI can load and run superfast and any functionality is bound directly from your DOM.

This tutorial will cover the basic application setup, creation of a directive with its own HTML template, and the setting of data for that directive within a controller. Angular directives do more than just manipulate the DOM, they can also receive arguments through HTML attributes, enabling config option adjustment for your resultant UI. In addition the CSS3 transition property will be used for efficient transitions. After completing this tutorial you will be able to take this structure and approach to build up a range of reusable directives for your common interactive components.



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01 Create the main HTML page

Start by adding a reference to AngularJS from the Google CDN to your HTML page. Then add a reference to your application on the body tag using an attribute as shown. If you use the data-ng- prefix for your Angular attributes opposed to 'ng-' your HTML will be valid.

```
001 <!DOCTYPE html>
002 <html lang="en" xmlns="http://www.w3.org/1999/xhtml">
003 <head>
004 <meta charset="utf-8" />
005 <title>Angular Gallery App</title>
006 <link href="css/styles.css" rel="stylesheet" media="screen" />
007 <script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.3.10/angular.min.js"></script>
008 </head>
009 <body data-ng-app="galleryApp">
010 </body>
011 </html>
```

02 Create the core application

In your scripts folder create a file named 'myGallery.js', this file will define your core application and any dependencies will be added to your application here. Ensure the namespace defined here matches the namespace set within the 'data-ng-app' attribute in the HTML. Reference this file within your HTML.

```
001 <head>
002 <meta charset="utf-8" />
003 <title>Angular Gallery App</title>
004 <script src="http://ajax.googleapis.com/ajax/libs/angularjs/1.3.10/angular.min.js"></script>
005 <script src="scripts/myGallery.js"></script>
006 </head>
```

```
007 //scripts/myGallery.js
008 var myGallery = angular.module('galleryApp', []);
```

03 Add your CSS

Add references to your CSS files in your main HTML page. Within the tutorial files there are both 'normalize.css' and 'styles.css', feel free to work with these or your own presets.

```
001 <link href="css/normalize.css" rel="stylesheet" media="screen" />
002 <link href='http://fonts.googleapis.com/css?family=Poiret+One' rel='stylesheet' type='text/css'>
003 <link href="css/styles.css" rel="stylesheet" media="screen" />
```

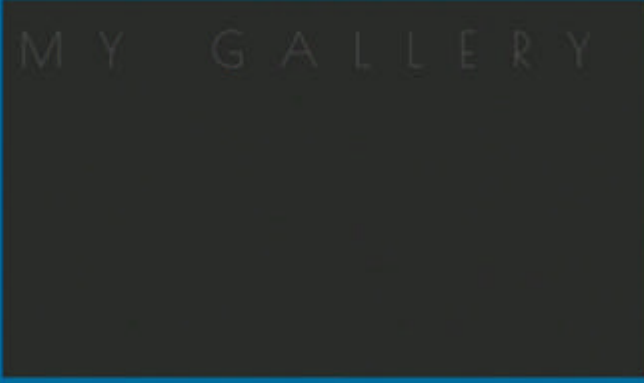
04 Add a directive

Now add a directives folder in your scripts folder and create a file named 'galleryDirective.js'. In this file create a new angular.module and add a 'myGallery' directive as shown. A directive returns a range of properties, for now set restrict to 'A' (it makes the directive available as an attribute) and templateUrl as shown.

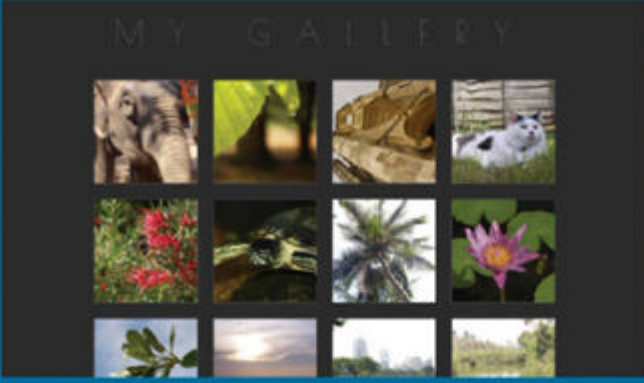
```
001 angular.module('gallery.directive', [])
002 .directive('myGallery', function () {
003   "use strict"
004   return {
005     restrict: 'A',
006     templateUrl: "scripts/directives/templates/gallery.html"
007   }
008 });
```

05 Create your directive template


Within the directives folder add a folder named 'templates' with a file named 'gallery.html' and put in a piece of sample HTML in this file. Now add a reference to your new directive within your main HTML page and add the



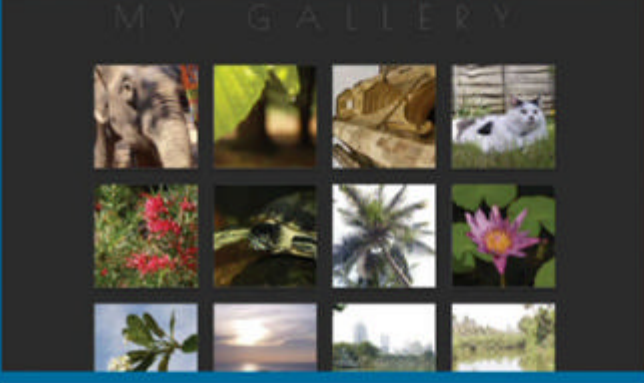
<Above>
• You should see your Gallery Title displayed through your directive. Any text value can be rendered using simple handlebars syntax



<Above>
• Angular repeaters are very useful for many UI scenarios, the context of each object within an array is the scope within a repeater



<Above>
• Arrays held within \$scope can be handled just as in any JavaScript syntax. In this case we select the first item using [0]



<Above>
• Box-shadow can be a really useful CSS property. It can add great depth to your designs and, if combined with pseudo elements, can produce some interesting effects

Why use CSS animations?

If we were building this gallery with jQuery we could use the `fadeIn` and `fadeOut` methods to animate the main image appearing. CSS transitions perform much better in browsers and are easy to adjust.

directive as a dependency in your core app file as shown. Your directive template should be rendered within your HTML page in the browser.

```

001 <body data-ng-app="galleryApp">
002 <div data-my-gallery></div>
003 </body>
004 //scripts/myGallery.js
005 var myGallery = angular.module('galleryApp', ['gallery.
directive']);
006 //scripts/directives/templates/gallery.html
007 <h2>My New Gallery</h2>
    
```

06 Create a controller

To add the data needed for the gallery we will use a controller to hold it within a \$scope object. Within your scripts folder add a folder named 'modules' with a file named 'galleryModule.js'. Within this file create a controller and set your title text within the \$scope object.

```

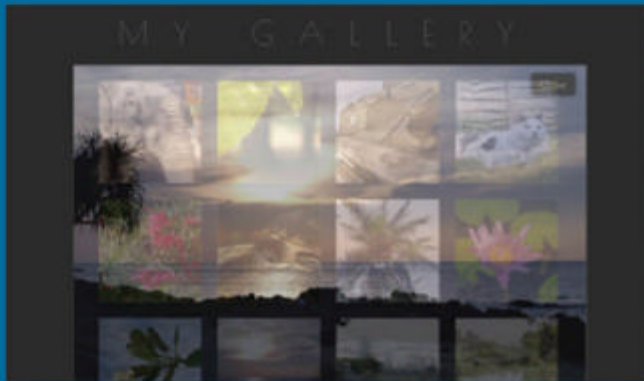
001 angular.module('gallery.module', [])
002 .controller('galleryCtrl', ['$scope', function($scope) {
003 "use strict";
004 $scope.galleryTitle = "My New Gallery";
005 }]);
    
```

07 Use your new controller

Add your controller as a dependency to your core app file, then reference your controller within your main HTML page. Extend your 'galleryDirective.js' file with the 'scope' property. This will isolate the scope of the directive and enable you to reference your 'data-my-title' attribute.

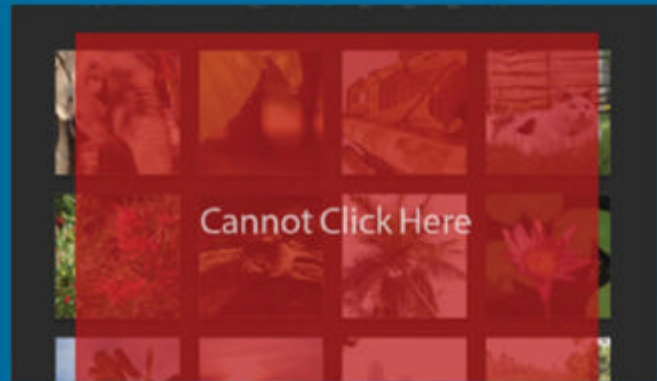
08 Add a controller to your directive

Now the scope of the directive is isolated add a controller. This controller will hold any functionality directly tied to the gallery interface. The controller accepts arguments for the current scope, the HTML element the



<Above>

• The transition property is great to add efficient animation transitions to your UI. It is also really quick to experiment with



<Above>

• When using opacity to hide HTML elements the browser will still behave as if they are there. This can block click events on lower elements



<Above>

• Incorporating z-index into the CSS transition gives you more control over the hidden element. Chaining transitions can be really useful



<Above>

• Try visiting css3gen.com/box-shadow. It is a great tool for creating box shadows as well as a host of other CSS3 effects

File separation of your application

The folder structure within this tutorial may seem excessive, but when integrated with a larger application, a well-defined structure makes maintenance and extension very easy to manage.

directive is bound to, and any attribute on that element. Then reference your new 'title' property and set in the scope within your directive Template.

```
001 scope: {
002   title: "=myTitle"
003 },
004 controller: function($scope, $element, $attrs){
005 }
006 //scripts/directives/templates/gallery.html
007 <h2>{{title}}</h2>
008
```

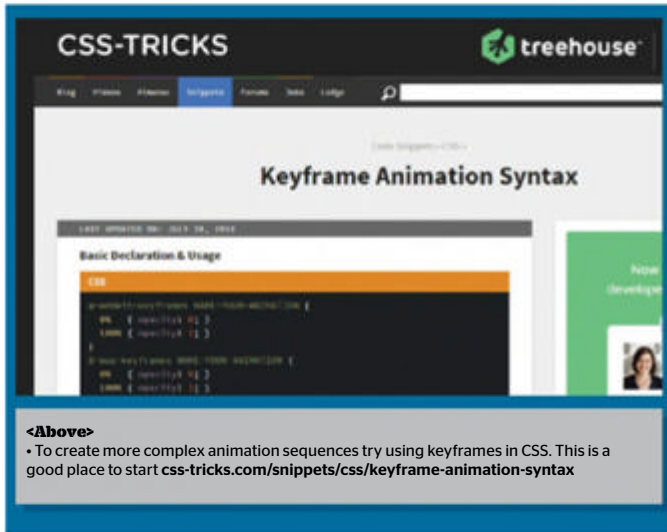
09 Add some images

Now the structure of the application is set up you can add some images. Add image files (both full size and thumbnail) to an images folder. Then create a JSON object within your 'galleryModule.js' file, include both the main and thumbnail paths to each image, along with a short description. This data could be generated from a web service provided by a CMS platform.

10 Pass your images to your directive

Now use the same technique as with the 'galleryTitle' property to pass the images array to your directive, using a new attribute named 'data-my-images'. Extend the scope of your directive to set these images and make them available to your gallery.

```
001 <body data-ng-app="galleryApp" data-ng-
002   controller="galleryCtrl">
003   <div data-my-gallery data-my-title="galleryTitle" data-my-
004     images="galleryImages" class="gallery"></div>
005 </body>
006 //scripts/directives/galleryDirective.js
007 scope: {
008   title: "=myTitle",
009   images: "=myImages"
010 }
```

11 Build your thumbnails

To display your thumbnails you can use an Angular repeater. This is a core Angular directive used for repeating a block of HTML based on an array of data. Add an unordered list to your directives template file, with 'data-ng-repeat' bound to the LI. You should now see your thumbnails in your gallery.

```
001 <h2>{{title}}</h2>
002 <ul class="inline">
003 <li data-ng-repeat="image in images"></li>
004 </ul>
```

12 Use an image selection method

Now add a 'data-ng-click' attribute to the repeated LI item calling a method named 'selectImage' and passing the 'image' property into it. Then add a new function to the directive controller to receive this image data. Once received you can log out the data and check in your browser console to check the correct image is being passed.

13 Add a main image

Within your directive template file gallery.html, add a div to hold a main image enabling you to display the larger version of the selected image. Then create a new \$scope property within your directive controller, setting \$scope.mainImage to the first item within the \$scope.images array. Then change this \$scope.mainImage within the \$scope.selectImage function.

```
001 <h2>{{title}}</h2>
002 <div class="mainImage">
003 
004 </div>
005 <ul class="inline">
006 <li data-ng-repeat="image in images" data-ng-
click="selectImage(image)"></li>
007 </ul>
008 //scripts/directives/galleryDirective.js
009 controller: function($scope, $element, $attrs){
010 $scope.mainImage = $scope.images[0];
011 $scope.selectImage = function(image){
012 $scope.mainImage = image;
```

```
013 }
014 }
```

14 Hide the main image

Set the 'mainImage' div as hidden in your CSS and then create a class of 'show' to display it. Now change the class attribute on this div to a 'data-ng-class' attribute. You can write a shorthand if statement directly into this attribute and bind the class to a new '\$scope.showMainImage' property within your directive's controller.

15 Show the main image when selected

Within your directive controller set the '\$scope.showMainImage' property to 'false' as default. Then set this property to 'true' within the selectImage function. Create a new function named '\$scope.close' to set this property back to 'false'. Now add a close link into div.mainImage within your HTML and call the 'close' method using a 'data-ng-click'.

```
001 <div data-ng-class="showMainImage ? 'mainImage show' :
'mainImage'">
002 <a href="#" class="close" data-ng-click="close()">Close</a>
003 
004 </div>
005 //scripts/directives/galleryDirective.js
006 controller: function($scope, $element, $attrs){
007 $scope.mainImage = $scope.images[0];
008 $scope.showMainImage = false;
009 $scope.selectImage = function(image){
010 $scope.mainImage = image;
011 $scope.showMainImage = true;
012 };
013 $scope.close = function(){
014 $scope.showMainImage = false;
015 };
016 }
```

16 Handle default events

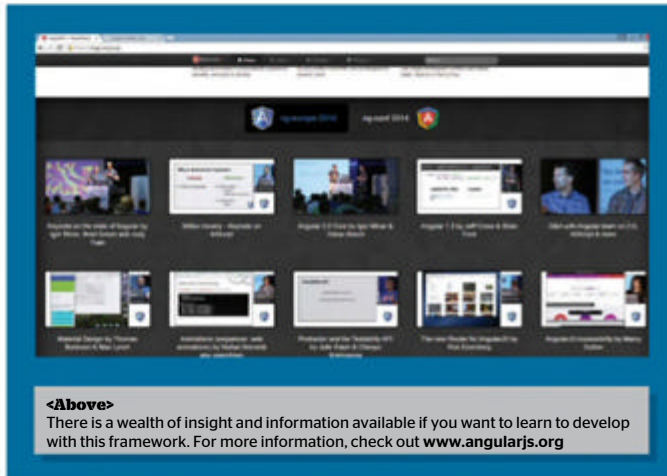
As the close functionality is now bound to an anchor link with a # href attribute, the browser window will scroll to top when clicked. You can use the preventDefault method to stop this. Simply pass \$event to your 'close' method and then call preventDefault() on it within your directive controller.

```
001 <a href="#" class="close" data-ng-
click="close($event)">Close</a>
002 //scripts/directives/galleryDirective.js
003 $scope.slide = {
004 $scope.close = function(e){
005 e.preventDefault();
006 $scope.showMainImage = false;
007 };
```

17 Add some depth

Your gallery may be looking quite flat at this point, to add some depth to your gallery you can use CSS3 box-shadows on both the thumbnails and main image. Create a shadow class within your CSS and apply it to the thumbnail images. Also add a larger box-shadow to the main image.

```
001 .shadow {
002 -webkit-box-shadow:0 4px 4px rgba(0, 0, 0, 0.3), 0 0 40px
rgba(0, 0, 0, 0.1) inset;
```



```
003  -moz-box-shadow:0 4px 4px rgba(0, 0, 0, 0.3), 0 0 40px
    rgba(0, 0, 0, 0.1) inset;
004  box-shadow:0 4px 4px rgba(0, 0, 0, 0.3), 0 0 40px rgba(0, 0,
    0, 0.1) inset;
005  }
006  .mainImage img {
007  -webkit-box-shadow: 0 0 80px #000;
008  -moz-box-shadow: 0 0 80px #000;
009  box-shadow: 0 0 80px #000;
010  }
```

18 Position the main image

Within the CSS file provided with this tutorial the entire gallery is centred, however centring the absolutely positioned main image takes a little extra CSS. You may have used this technique in the past, but it is often forgotten and if you haven't used it before it can save you lots of CSS hacking.

```
001  .mainImage {
002  position: absolute;
003  top: 130px;
004  left: 50%;
005  margin-left: -500px;
006  width: 1000px;
007  }
008  }
```

19 Add some animation

To add an animation to your main image appearing you can use the CSS3 'transition' property. This will only work with CSS properties that have numerical values, so you will need to switch from using 'display' to 'opacity' to hide/show the main image. Then add a transition property to .mainImage to animate this change over one second.

```
001  .mainImage {
002  position: absolute;
003  z-index: 10;
004  display: block;
005  top: 130px;
006  left: 50%;
007  margin-left: -500px;
008  opacity: 0;
009  width: 1000px;
010  -webkit-transition: opacity 1s;
```

```
011  -moz-transition: opacity 1s;
012  transition: opacity 1s;
013  }
014  .mainImage.show {
015  opacity: 1;
016  }
```

20 Use pointer-events

You may notice that you cannot click on any of the thumbnails that are overlapped by the main image. This is because even though the main image is hidden with opacity, the browser interprets it as being an active HTML element, therefore blocking any click events. If you add 'pointer-events: none;' to .mainImage in your CSS this should be fixed.

```
001  .mainImage {
002  position: absolute;
003  z-index: 10;
004  display: block;
005  top: 130px;
006  left: 50%;
007  margin-left: -500px;
008  opacity: 0;
009  width: 1000px;
010  -webkit-transition: opacity 1s;
011  -moz-transition: opacity 1s;
012  transition: opacity 1s;
013  pointer-events: none;
014  }
```

21 Fix the close button

The only problem with using pointer-events is that they are inherited by child HTML elements. This means the close button no longer works. An alternative approach is to chain transition properties, set the z-index property on .mainImage to zero and then to ten on mainImage.show. Now you can add z-index as a second transition value and your animation should work fine.

```
001  .mainImage {
002  position: absolute;
003  z-index: 10;
004  display: block;
005  top: 130px;
006  left: 50%;
007  margin-left: -500px;
008  opacity: 0;
009  width: 1000px;
010  -webkit-transition: opacity 1s, z-index 1s;
011  -moz-transition: opacity 1s, z-index 1s;
012  transition: opacity 1s, z-index 1s;
013  }
014  .mainImage.show {
015  opacity: 1;
016  z-index: 10;
017  }
```

22 Reuse your directive

Now you will have a gallery directive that is simple to integrate with any website build. Just ensure the gallery.directive file is injected into your application and then you can use the attribute 'data-my-gallery' wherever you need to. If you need to add further options to extend and configure your gallery you can add more to the scope of the directive itself.

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123-reg (www.123-reg.co.uk)	Bus Pro (MS)	0845 859 0018	£179.88	10GB	150GB	1,000	✓	✗	✗	✓	✓	✓	✓	✗
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2020Media (www.2020media.com)	ASP.Net	0870 321 2020	£275	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✓	✗
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4D Hosting (www.4dhosting.com)	Bigger Web Hosting	0207 183 0602	£120	10GB	Unlimited	75	✓	✓	✓	✓	✓	✓	✓	✓
4D Hosting (www.4dhosting.com)	Biggest Web Hosting	0207 183 0602	£180	20GB	Unlimited	100	✓	✓	✓	✓	✓	✓	✓	✓
4D Hosting (www.4dhosting.com)	Big VPS	0207 183 0602	£204	75GB	500GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
4D Hosting (www.4dhosting.com)	Bigger VPS	0207 183 0602	£360	100MB	1,000GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
4D Hosting (www.4dhosting.com)	Biggest VPS	0207 183 0602	£720	200GB	1,500GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Home	N/A	£40	500MB	5GB	5	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Business	N/A	£50	1GB	20GB	100	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	eCommerce	N/A	£100	2GB	40GB	200	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Professional	N/A	£150	3GB	60GB	300	✓	✓	✓	✓	✗	✓	✓	✗
Blacknight (www.blacknight.com)	Minimus	35359 918 3072	£45	10GB	200GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Blacknight (www.blacknight.com)	Medius	35359 918 3072	£79	20GB	400GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Blacknight (www.blacknight.com)	Maximus	35359 918 3072	£45	30GB	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
CityCM (www.citycm.couk)	City250	0330 223 0120	£10.99	250MB	5GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	City500	0330 223 0120	£14.99	500MB	10GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	City2000	0330 223 0120	£29.90	2GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	City10000	0330 223 0120	£49.90	10GB	100GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	CityR10	0330 223 0120	£120	10GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	CityR20	0330 223 0120	£180	20GB	100GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	CityR30	0330 223 0120	£240	30GB	150GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	City VPS15	0330 223 0120	£180	15GB SSD	400GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	City VPS30	0330 223 0120	£300	30GB SSD	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.couk)	City VPS75	0330 223 0120	£420	75GB SSD	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Designwasp (http://designwasp.com)	Starter	0844 372 9848	£30	3GB	20GB	1,000	✓	✓	✗	✓	✓	✓	✓	✗
Designwasp (http://designwasp.com)	Home	0844 372 9848	£40	10GB	50GB	10,000	✓	✓	✗	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	Business	0844 372 9848	£60	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	Windows Unlimited	0844 372 9848	£60	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	Windows Home	0844 372 9848	£40	10GB	50GB	1,000	✓	✓	✗	✓	✗	✓	✓	✗
Designwasp (http://designwasp.com)	CheapHost	0844 372 9848	£10	300MB	100MB	5	✗	✗	✗	✓	✗	✓	✓	✗
Digital Gibbon Ltd (http://digitalgibbon.com)	Cheeky Chimp	NA	£0	500MB	Unlimited	5	✓	✗	✓	✓	NA	✓	✓	✗
Digital Gibbon Ltd (http://digitalgibbon.com)	Digital Gibbon	NA	£12	5GB	Unlimited	10	✓	✗	✓	✓	NA	✓	✓	✗
Digital Gibbon Ltd (http://digitalgibbon.com)	Silverback	NA	£24	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	NA	✓	✓	✗
Digital Gibbon Ltd (http://digitalgibbon.com)	Wordpress hosting	NA	£12	5GB	Unlimited	10	✓	✗	✓	✓	NA	✓	✓	✗
Donhost (www.donhost.co.uk)	Reseller Unix	0845 226 5566	£399.99	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Reseller Windows	0845 226 5566	£499.99	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Enterprise	0845 226 5566	£89.99	1GB	2GB	250	✓	✗	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Commerce	0845 226 5566	£179.99	2GB	5GB	500	✓	✗	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Designer	0845 226 5566	£119.99	1GB	2GB	250	✓	✗	✓	✓	✓	✓	✓	✗
Donhost (www.donhost.co.uk)	Developer	0845 226 5566	£259.99	2GB	5GB	500	✓	✗	✓	✓	✓	✓	✓	✗

Featured host of the month: **111WebHost** 111webhost.com



Getting more out of one of our quality listed hosting providers

111WebHost is a provider committed to making website hosting easy to use while offering the best possible value. It provides solutions for small- and medium-sized businesses as well as individuals – and web designers and developers are high on their list. 111WebHost offers a range of top-value packages starting at

the ridiculously low price of £1 per month. For this, users get 1GB of webspace and 1GB of monthly traffic. For those looking for more, there is 5GB of webspace and unlimited traffic for just £2.50 a month. Unlimited webspace and traffic is available for just £5 a month. They also provide specialist hosting for WordPress, Joomla and Drupal.

NAME AND URL	PACKAGE	PHONE NUMBER	COST PER YEAR	WEB SPACE	MONTHLY BANDWIDTH	POP3 ACCOUNTS	DATABASE SUPPORT	SHOPPING CART	VIRUS FILTER	FIREWALL	PHONE SUPPORT	EMAIL SUPPORT	WEB CONTROL PANEL	SERVICE LEVEL AGREEMENT
eHosting (www.ehosting.com)	Starter	0844 999 4100	£23.88	1GB	25GB	10	X	X	X	X	X	✓	✓	✓
eHosting (www.ehosting.com)	Personal	0844 999 4100	£59.88	2.5GB	Unlimited	50	✓	X	X	X	X	✓	✓	✓
eHosting (www.ehosting.com)	Expert	0844 999 4100	£95.88	5GB	Unlimited	250	✓	X	X	X	X	✓	✓	✓
eHosting (www.ehosting.com)	Virtual	0844 999 4100	£227.88	50GB	Unlimited	Unlimited	✓	X	X	X	✓	✓	✓	✓
Equipphase (www.equipphase.net)	Bronze	0121 314 4865	£30	200MB	2GB	10	✓	✓	X	✓	X	✓	✓	✓
Equipphase (www.equipphase.net)	Silver	0121 314 4865	£42	400MB	5GB	20	✓	✓	X	✓	X	✓	✓	✓
Equipphase (www.equipphase.net)	Gold	0121 314 4865	£72	800MB	10GB	100	✓	✓	X	✓	X	✓	✓	✓
Equipphase (www.equipphase.net)	Platinum	0121 314 4865	£114	1,200MB	40GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Eurofasthost.com (www.eurofasthost.com)	Email Only	02380 249 823	£40	1GB	2GB	10	X	X	✓	✓	✓	✓	✓	✓
Eurofasthost.com (www.eurofasthost.com)	Essential	02380 249 823	£75	2GB	5GB	10	X	X	✓	✓	✓	✓	✓	✓
Eurofasthost.com (www.eurofasthost.com)	Superior	02380 249 823	£140	5GB	10GB	25	✓	✓	✓	✓	✓	✓	✓	✓
Eurofasthost.com (www.eurofasthost.com)	Premium	02380 249 823	£250	10GB	25GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Evohosting (www.evohosting.co.uk)	Starter	N/A	£29.99	500MB	1GB	3	✓	✓	✓	✓	X	✓	✓	✓
Evohosting (www.evohosting.co.uk)	Home	N/A	£54.99	2.5GB	30GB	50	✓	✓	✓	✓	X	✓	✓	✓
Evohosting (www.evohosting.co.uk)	Business	N/A	£79.99	6.5GB	Unlimited	Unlimited	✓	✓	✓	✓	X	✓	✓	✓
Evohosting (www.evohosting.co.uk)	eCommerce	N/A	£159.99	30GB	Unlimited	Unlimited	✓	✓	✓	✓	X	✓	✓	✓
Fasthosts (www.fasthosts.co.uk)	Personal	0808 168 6777	£32.87	5GB	Unlimited	50	✓	X	✓	✓	✓	✓	✓	X
Fasthosts (www.fasthosts.co.uk)	Business Bronze	0808 168 6777	£58.38	50GB	Unlimited	500	✓	Option	✓	✓	✓	✓	✓	X
Fasthosts (www.fasthosts.co.uk)	Business Silver	0808 168 6777	£76.39	Unlimited	Unlimited	Unlimited	✓	Option	✓	✓	X	✓	✓	X
Fasthosts (www.fasthosts.co.uk)	Business Gold	0808 168 6777	£101.89	Unlimited	Unlimited	Unlimited	✓	Option	✓	✓	X	✓	✓	X
Fasthosts (www.fasthosts.co.uk)	WD Starter	0808 168 6777	£149.99	20GB	Unlimited	Unlimited	✓	Option	Option	✓	X	✓	✓	X
Fasthosts (www.fasthosts.co.uk)	WD Advanced	0808 168 6777	£199.99	Unlimited	Unlimited	Unlimited	✓	Option	Option	✓	X	✓	✓	X
Giacom (www.giacom.com)	Business Pro	0800 542 7500	£199	100MB	2GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Heart Internet (www.heartinternet.co.uk)	Starter Professional	0845 644 7750	£29.80	2.5GB	10GB	1,000	X	X	X	✓	X	✓	✓	✓
Heart Internet (www.heartinternet.co.uk)	Home Professional	0845 644 7750	£89.99	Unlimited	Unlimited	10,000	✓	✓	X	✓	X	✓	✓	✓
Heart Internet (www.heartinternet.co.uk)	Business Professional	0845 644 7750	£129.99	Unlimited	Unlimited	Unlimited	✓	✓	X	✓	X	✓	✓	✓
Heart Internet (www.heartinternet.co.uk)	Reseller Professional	0845 644 7750	£349.99	Unlimited	Unlimited	Unlimited	✓	✓	X	✓	X	✓	✓	✓
Hostway (www.hostway.co.uk)	Silver	0808 180 1880	£79.50	150MB	3GB	5	X	Option	✓	✓	X	✓	✓	X
Hostway (www.hostway.co.uk)	Gold	0808 180 1880	£139.50	300MB	5GB	10	✓	Option	✓	✓	✓	✓	✓	X
Hostway (www.hostway.co.uk)	Gold Plus	0808 180 1880	£189.50	450MB	10GB	30	✓	Option	✓	✓	✓	✓	✓	X
Hostway (www.hostway.co.uk)	Platinum	0808 180 1880	£359.50	600MB	20GB	50	✓	Option	✓	✓	✓	✓	✓	X
Hostway (www.hostway.co.uk)	Platinum Plus	0808 180 1880	£599.50	1.2GB	40GB	10	✓	Option	✓	✓	✓	✓	✓	X
Hostway (www.hostway.co.uk)	Email Plus	0808 180 1880	£49.95	50MB	N/A	5	N/A	N/A	N/A	X	✓	✓	✓	X
LD Hosts (http://ldhosts.co.uk)	LD Budget (Linux)	07891 235858	£11.88	1GB	1GB	500	✓	✓	X	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	LD Home (Linux)	07891 235858	£23.88	10GB	10GB	5,000	✓	✓	X	✓	✓	✓	✓	X
LD Hosts (http://ldhosts.co.uk)	LD Pro (Linux)	07891 235858	£41.88	50GB	50GB	20,000	✓	✓	X	✓	✓	✓	✓	X
LD Hosts (http://ldhosts.co.uk)	LD Unlimited (Linux)	07891 235858	£60	Unlimited	Unlimited	Unlimited	✓	✓	X	✓	✓	✓	✓	X
LD Hosts (http://ldhosts.co.uk)	Windows Home	07891 235858	£17.88	2GB	2GB	1,000	✓	✓	X	✓	✓	✓	✓	X
LD Hosts (http://ldhosts.co.uk)	Windows Unlimited	07891 235858	£60	Unlimited	Unlimited	Unlimited	✓	✓	X	✓	✓	✓	✓	X
Media Temple (http://mediatemple.net)	Shared-Server Pro	+1 310 841 5500	£64	2GB	1TB	1,000	✓	✓	✓	✓	✓	✓	✓	✓
Media Temple (http://mediatemple.net)	Shared-Server Advanced	+1 310 841 5500	£109	5GB	1.5TB	5,000	✓	✓	✓	✓	✓	✓	✓	✓
NameHog (www.namehog.net)	Email Only	01604 212 904	£11.99	2.5GB	15GB	10	X	X	✓	✓	✓	✓	✓	✓
NameHog (www.namehog.net)	Starter	01604 212 904	£36.99	10GB	150GB	Unlimited	X	X	✓	✓	✓	✓	✓	✓
NameHog (www.namehog.net)	Home Pro	01604 212 904	£59.99	25GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
NameHog (www.namehog.net)	Business	01604 212 904	£109.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	StartUp Plus	0845 363 3632	£89.99	500MB	5GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Business	0845 363 3632	£149.99	2,000MB	20GB	100	X	X	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Business Plus	0845 363 3632	£89.99	3,000MB	30GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Designer	0845 363 3632	£239.88	1GB	20GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Designer Plus	0845 363 3632	£479.88	Unlimited	30GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓



DEVELOPER	0800 808 5450	£32.89	1GB	Unlimited	500	✓	✓	✓	✓	✓	✓	✓	✓	✓
ONE	0800 808 5450	£109.99	5GB	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓	✓
RESELLER	0800 808 5450	£274.89	Unlimited	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓	✓
VM500 Server	0800 808 5450	£300	20GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓	✓
2200DC Server	0800 808 5450	£720	160GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓	✓
3000DC Server	0800 808 5450	£1,200	2x500GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓	✓
2600QC Server	0800 808 5450	£1,800	2x500GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓	✓

To advertise here contact Alex
 Alex.Carnegie@imagine-publishing.co.uk
 +44 (0)1202 586430

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Continued...

NAME AND URL	PACKAGE	PHONE NUMBER	COST PER YEAR	WEB SPACE	MONTHLY BANDWIDTH	POP3 ACCOUNTS	DATABASE SUPPORT	SHOPPING CART	VIRUS FILTER	FIREWALL	PHONE SUPPORT	EMAIL SUPPORT	WEB CONTROL PANEL	SERVICE LEVEL AGREEMENT
Netplan (www.netplan.co.uk)	Shared 100	0207 1000 424	£60	100MB	1GB	5	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS100	0207 1000 424	£600	5GB	5GB	5	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS200	0207 1000 424	£1,000	10GB	10GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS300	0207 1000 424	£2,000	15GB	50GB	20	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	Dedicated Servers	0207 1000 424	£3,000+	73GB+	1,500GB	100+	✓	✓	✓	✓	✓	✓	✓	✓
 Patchman Web Hosting www.patchman-hosting.co.uk	Bronze Package (Linux)	01642 424 237	£35.88	1GB	Unlimited	1	1	✓	Option	✓	✓	✓	✓	X
	Silver Package (Linux)	01642 424 237	£59.88	3GB	Unlimited	3	3	✓	Option	✓	✓	✓	✓	X
	Gold Package (Linux)	01642 424 237	£83.88	5GB	Unlimited	25	5	✓	Option	✓	✓	✓	✓	X
Reddex UK (www.reddexuk.com)	Reddex Design Starter	0843 289 4625	£18	1GB	Unlimited	10	✓	X	✓	✓	✓	✓	✓	✓
Reddex UK (www.reddexuk.com)	Reddex Design Business	0843 289 4625	£59.88	10GB	Unlimited	100	✓	✓	✓	✓	✓	✓	✓	✓
Streamline.net (www.streamline.net)	Trial (3 month)	0844 941 1000	N/A	10GB	Unlimited	1,000	✓	Option	✓	✓	✓	✓	✓	X
Streamline.net (www.streamline.net)	Starter	0844 941 1000	£23.88	500MB	Unlimited	20	✓	Option	✓	✓	✓	✓	✓	X
Swish Hosting (www.swishhosting.co.uk)	Email	08445 67 69 71	£18	-	Unlimited	Unlimited	X	X	✓	✓	✓	✓	✓	X
Swish Hosting (www.swishhosting.co.uk)	Windows Hosting	08445 67 69 71	£66	-	Unlimited	Unlimited	✓	X	✓	✓	✓	✓	✓	✓
Tidy Web Hosting (www.tidywebhosting.co.uk)	Entry	0844 884 9100	£25	100MB	1GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	X
Tidy Web Hosting (www.tidywebhosting.co.uk)	Home	0844 884 9100	£50	500MB	5GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	X
TwentyHost (www.twentyhost.co.uk)	Basic55	0845 641 0776	£24	100MB	1,500MB	25	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Standard55	0845 641 0776	£45	200MB	3,000MB	50	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Business55	0845 641 0776	£70	500MB	7,500MB	100	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Advanced55	0845 641 0776	£110	1,000MB	15,000MB	200	✓	✓	✓	✓	✓	✓	✓	✓
UK2.NET (www.uk2.net)	Starter Hosting	0808 168 2427	£24	500MB	1GB	X	✓	✓	✓	✓	✓	✓	✓	X
UK2.NET (www.uk2.net)	Business Hosting	0808 168 2427	£54	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	X
VARIHOST (www.varihost.net)	WordPress Basic	0208 144 7057	£47.88	2GB	10GB	10	✓	X	X	✓	✓	✓	✓	✓
VARIHOST (www.varihost.net)	WordPress Plus	0208 144 7057	£71.88	4GB	100GB	100	✓	✓	X	✓	✓	✓	✓	✓
VARIHOST (www.varihost.net)	WordPress Extra	0208 144 7057	£119.88	unlimited	Unlimited	Unlimited	✓	✓	X	✓	✓	✓	✓	✓
WebFusion (www.webfusion.co.uk)	Fusion Professional	0845 130 1602	£107.40	5GB	50GB	1,000	✓	X	✓	✓	✓	✓	✓	X
WebFusion (www.webfusion.co.uk)	Fusion Business	0845 130 1602	£179.40	10GB	150GB	1,500	✓	X	✓	✓	✓	✓	✓	X
Z-Host (z-host.co.uk)	Z-100	N/A	£15	100MB	10GB	Unlimited	✓	✓	✓	✓	X	✓	✓	✓
Z-Host (z-host.co.uk)	Z-200	N/A	£21	100MB	10GB	Unlimited	✓	✓	✓	✓	X	✓	✓	✓
Z-Host (z-host.co.uk)	Z-500	N/A	£42	500MB	20GB	Unlimited	✓	✓	✓	✓	X	✓	✓	✓
Z-Host (z-host.co.uk)	Z-1000	N/A	£60	1GB	40GB	Unlimited	✓	✓	✓	✓	X	✓	✓	✓
Zen Internet (www.zen.co.uk)	Bronze (Linux)	0845 058 9000	£47.88	2GB	10GB	10	✓	✓	✓	✓	✓	✓	✓	X
Zen Internet (www.zen.co.uk)	Silver (Linux)	0845 058 9000	£95.88	5GB	50GB	25	✓	✓	✓	✓	✓	✓	✓	X
Zen Internet (www.zen.co.uk)	Gold (Linux)	0845 058 9000	£143.88	10GB	100GB	50	✓	✓	✓	✓	✓	✓	✓	X
Zen Internet (www.zen.co.uk)	Platinum (Linux)	0845 058 9000	£239.88	50GB	250GB	100	✓	✓	✓	✓	✓	✓	✓	X
Zen Internet (www.zen.co.uk)	Reseller (Linux)	0845 058 9000	£479.88	150GB	500	250	✓	✓	✓	✓	✓	✓	✓	X

Golden rules to top hosting We identify and explain the key criteria for success...

- 1 The best resources for you**
 Selecting your ideal package is largely determined by the kinds of resources and quantity of features you require from your hosting solution. Key aspects such as web space and monthly bandwidth are important for those services likely to be subjected to heavy amounts of traffic, which is why package solutions for enterprise applications are typically much more expensive. The general rule of thumb is not to buy more than you need or underestimate potential requirements.
- 2 Competitive and reliable**
 The hosting market is big business and hosting providers do try to drive prices down in a bid to entice your custom. Use our chart to compare costs, but be sure to visit the vendor websites to keep track of the latest deals, as they do change. Remember that low price should not always be a deciding factor and that paying a premium for a more reliable, trusted and experienced vendor can offer you much better value for money in the long term.
- 3 Putting you in control**
 Modern hosting is all about giving customers the power to set up, monitor and maintain their web space with minimal fuss. Most commercial vendors offer access to award-winning and intuitive control panels that enable you to log in remotely and intuitively tweak your account - without the need to relay complicated instructions down the phone. Be sure to find out from your potential host as much as you can about the control panel and request a demo.
- 4 Fantastic customer support**
 If all else fails and you need some extra help to get your hosting back online, then a commitment to future customer support is key. Many vendors offer a service-level agreement which outlines what you can expect here, however most will be more explicit about whether phone support is included or email contact is preferred. Think about what you need for your own peace of mind and factor good, comprehensive technical support against the price.

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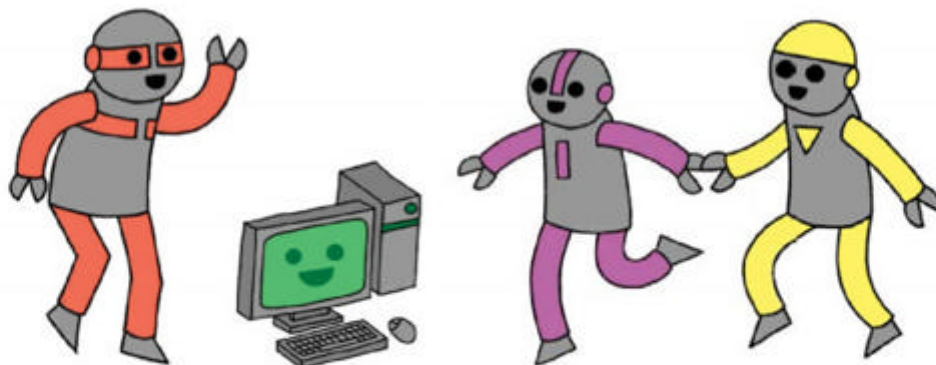
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in praise of the AMPERSAND

1950s. As in the ordinary floating posture of the leviathan the flukes lie considerably below the level of his back, they are then completely out of sight beneath the surface; but when he is about to plunge into the deeps, his entire flukes with at least thirty feet of his body are tossed erect in the air, and so remain vibrating a moment, till they downwards shoot out of view. Excepting the sublime BREACH—nowhere else to be described—this peaking of the whale's flukes is perhaps the grandest sight to be seen in all animated nature. Out of the bottomless profundities the gigantic tail seems spontaneously stretching at the highest heaven. So in dreams, have I seen majestic Satans flustering forth the tormented colossal crew from the flame Babie of Hell. But in gazing at such scenes, it is all in all what mood you are in; if in the Darkness, the devils will seem to you; if in that of Faith, the archangels. Standing at the mast-head of my ship during a storm that crimsoned sky and sea, I once saw a large herd of whales in the east, all heading towards the sun, and for a moment vibrating in concert with peacock flukes. As it seemed to me at the time, such a grand embodiment of adoration of the gods was never beheld, even in Persia, the home of the fire worshippers. An Phoenix Philosopher terrified of the African elephant, I then terrified of the whale, pronouncing him the most devout of all beings. For according to King Jaha, the military elephants of

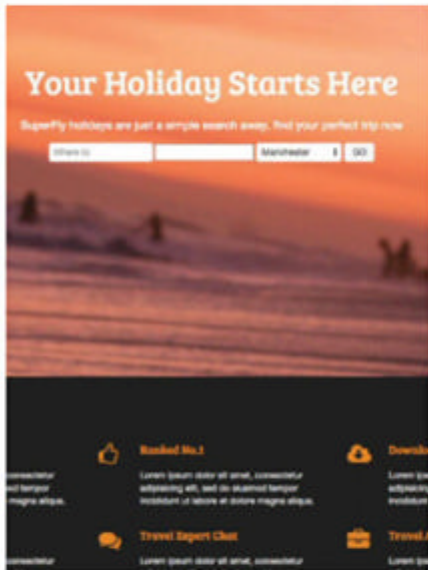
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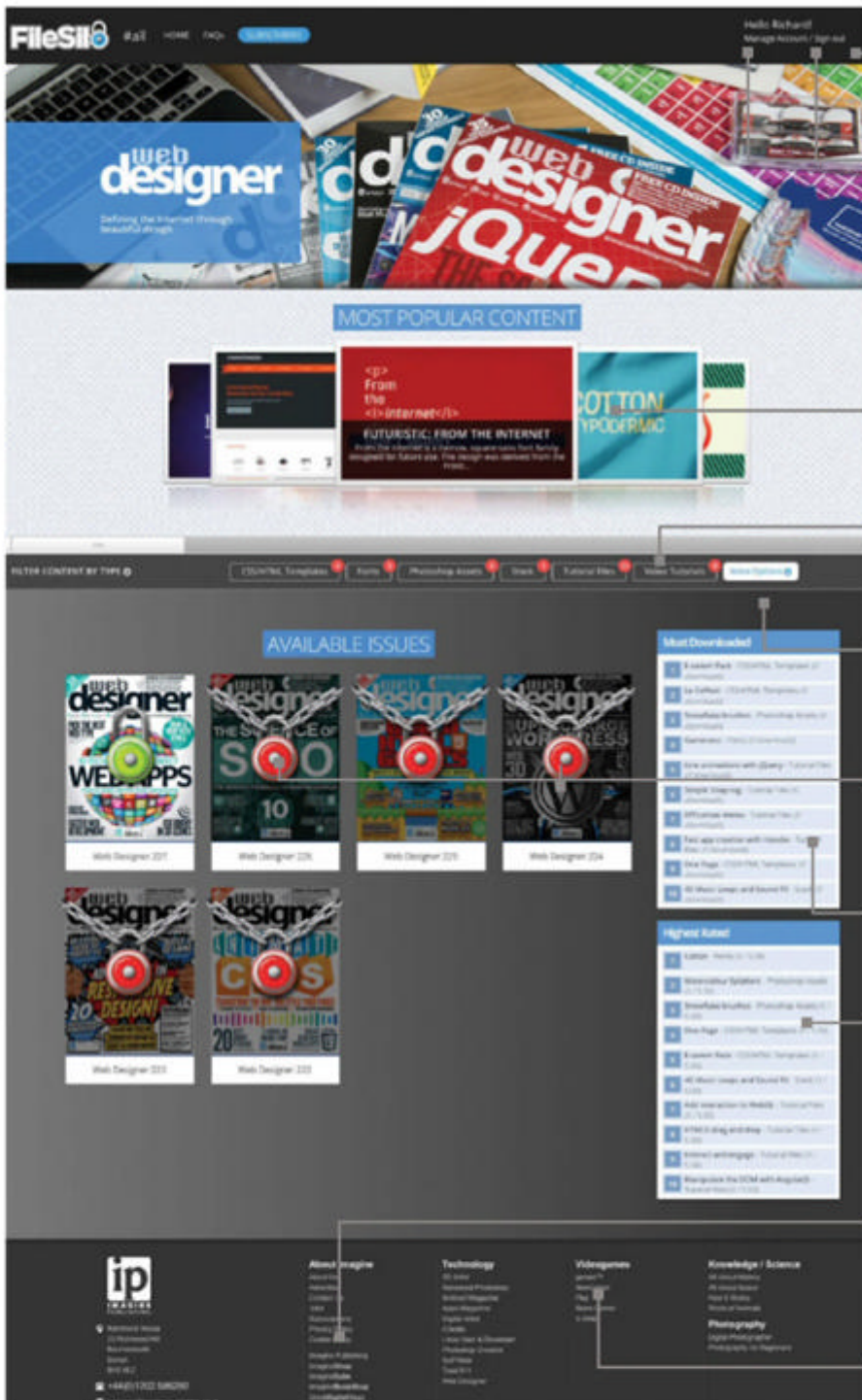


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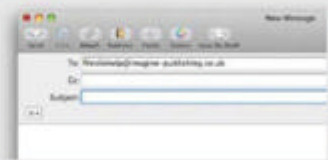


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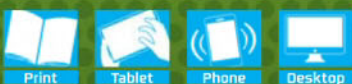


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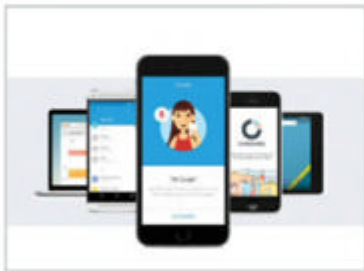
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