

**28**  
PAGES OF  
EXPERT TUTORIALS



**FREE 88** MINUTES OF  
CSS3 VIDEO

# designer

HTML5 CSS3 jQuery WordPress

webdesignermag.co.uk

## GOOGLE ANALYTICS

EVALUATE DATA, IMPLEMENT  
CHANGES & GET MORE HITS

## ANIMATED 3D MENUS

CODE ATTENTION  
GRABBING NAVIGATION

# 66 DESIGNER RESOURCES

WEB TEMPLATES, FONTS,  
MOCKUPS & BRUSHES

# THE NEXT WAVE OF RESPONSIVE DESIGN

Tools and techniques to get the latest  
industry standards for all screens

**PHP  
MADE EASY**  
QUICK AND SIMPLE  
BUILDS WITH  
CAKEPHP



**CREATE A  
HTML5 GAME**  
BUILD A 2D PLATFORMER  
WITH THE PIXI.JS ENGINE

## INTERACTIVE PROTOTYPES

HOW TO CREATE DYNAMIC  
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## FASTER REACT

CODE QUICKER PAGE-LOADING  
SPEEDS WITH FACEBOOK'S LIBRARY

## PRINT-STYLE CSS LAYOUTS

TRANSFORM DESIGNS  
TO PAGE-FRIENDLY SIZES



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ISSUE 234





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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



Every single member of our team is a freethinker

Web Designer talks to risk-taking digital masters Phantom Page 30

## What next for responsive design?



Responsive design - it's here to stay and like the hardware it resides on it's constantly evolving. Designers and developers can't simply look at set screen sizes any more, just think how many devices have web access. Then think of the hardware and different OS.

RWD is now a sophisticated animal and needs serious attention to work well. Our latest lead feature (page 36) looks at what you need to consider to create a successful design for all screens. Plus, discover how to adapt your HTML, maintain your code and where to find the best tools and resources.

Making your designs work on all screens is critical in 2015, but style still needs substance. Who can provide the necessary? Google Analytics of course. Our six-page guide reveals the key metrics you need to know, how to evaluate data and implement important design changes. It all leads to one goal: more hits, more visits and ultimately an edge over competitors.

PHP is a key back-end technology, but finding the right framework to build with isn't easy. Those looking for rapid development with less code (and who doesn't want that!) need to check out our introduction to CakePHP.

Plus, we have our staple selection of CSS, HTML and jQuery tutorials to keep you busy. As always enjoy the issue and see you next time out.

Before long, the term 'responsive' itself will become old-fashioned, as there will be few sites that are not tailored for it

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FREE - exclusive with this issue

# 66 Designer resources

- Video Tuition** - CSS3: 88 Minutes of expert video guides from CartoonSmart (www.cartoonsmart.com)
- Brushes** - 50 Glossy blood splatter brushes from SparkleStock
- Templates** - 3 HTML templates packs from W3 Layouts; Skate, Galaxy and eShop
- Fonts** - Gargle font family and Goldsaber font



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...

☞ Responsive design is a redefinition of 'good design' that acknowledges the rapid changes in how and where people browse the web ☞

**The next wave of responsive design**

**Luke Guppy**

Luke is a front-end development director at Redweb and has been in the industry for the best part of a decade. This issue he reveals the tools, techniques and know-how you will need to start creating for the next wave of responsive design and for a myriad of screens. **Page 36**

### Mark Shufflebottom

Mark is a professor of Interaction Design at Sheridan College, Ontario. This issue, he shows us how to create custom menus using 3D transforms with CSS3. These 3D effects move the page out and bring the menu in. **Page 46**



### James Watts

James is the man to know when it comes to CakePHP. He is an author, developer and director of the Cake Development Corporation. This issue he gives the low-down on CakePHP and how to create apps quickly and with less code. **Page 70**



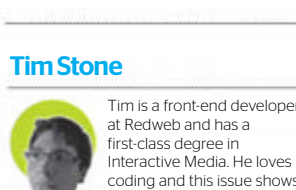
### Luke Townsend

Luke is the creative director at Found, the SEO specialists. This issue he has teamed up with Dora Moldovan, head of technology at Found. They combine to reveal how to use Google Analytics to build smarter sites. **Page 64**



### Leon Brown

Leon is a freelance developer and trainer who assists web developers in creating efficient and secure code. This issue he again unleashes CSS, along with JavaScript to create print-friendly designs. **Page 52**



### Sean Tracey

Sean is a creative technologist living and working in the South coast. He loves playing with the latest JS APIs he can get his hands on. This issue he reveals how to make wireframes interactive with the Framer.js library. **Page 82**



### 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 this issue shows how to precompile React apps on the server using Node.js for snappier performance. **Page 76**



### Mat Groves

Mat Groves is a creative developer and the cofounder of digital agency Goodboy Digital, a builder of HTML5 games. In this issue he puts his skills into action and illustrates how to build a 2D game with the pixijs library. **Page 58**



**Got web skills?**  
We're always looking for the hottest web-design talent. Email [webdesigner@imagine-publishing.co.uk](mailto:webdesigner@imagine-publishing.co.uk) with examples of your creative work

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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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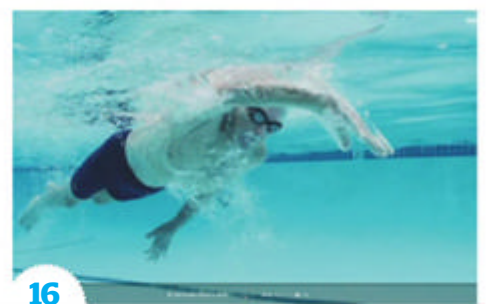
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Evaluate in-depth data, implement design changes and get more hits

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“ There is no need to install additional plugins or extensions, unlike other CMS ”

Viktor Vogel

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**s5-style.com**

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**2015.extralagence.com**

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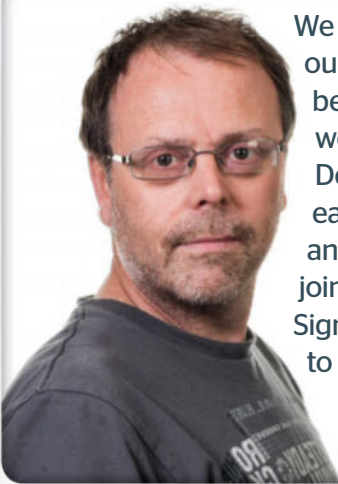
Harness the power of the Facebook library and your server to deliver a faster experience

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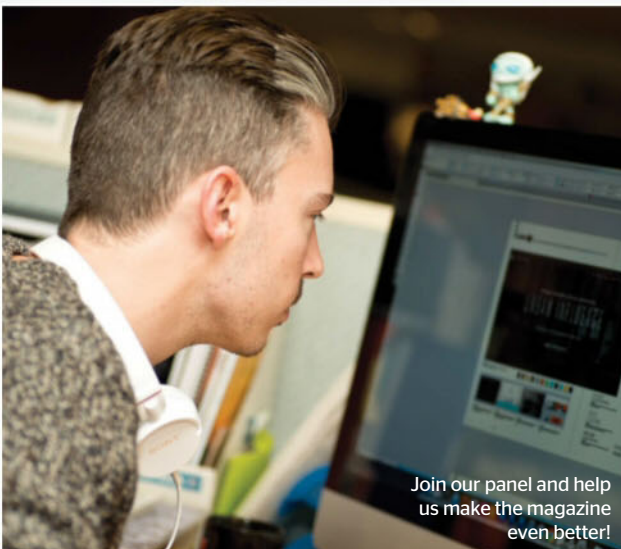
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Steve Jenkins  
Editor



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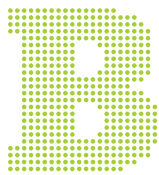
## The tools and trends to inspire your web projects

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

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# Google Chrome: pushing boundaries

Six years in the making, Google Experiments hits the 1000th experiment mark showing why Google Chrome is top dog



rowsers, why don't they all render the same? It's a valid question, but the simple fact is that currently they don't. Each vendor has an agenda, or a way of working that they think

works best. We won't dwell on it too long but Internet Explorer was a fine example for forgetting web standards, pushing their own standard into the DOM and making the masses work the way they want them to – of course that didn't work out so well.

Back when IE was king there were very few viable alternatives, but its empire quickly started to crumble when Mozilla brought Firefox to the market. But, one alternative was never going to be enough and who was looking to take over from Microsoft as world leaders? Google of course, and Google Chrome was born. Back in 2010 Google Chrome only had 6 per cent of the

worldwide browser market, while Firefox was hovering around 31 per cent and IE 54 per cent. Five years later and those figures have changed radically. Chrome is now streets ahead with nearly 50 per cent of the market. Both IE and Firefox are on a downward spiral with both hovering around the 18 per cent mark. That's a drop of 36 per cent for IE and 13 per cent for FF.

Chrome's impressive rise can be pinned on a number of factors, but its desire to adopt web standards and push forward rather than shoehorn in its own is definitely a major factor in its success.

A browser should enable designers and developers to be creative and experimental, a concept perfectly demonstrated by Google Experiments. Launched in 2009 its goal was to showcase the work of coders who were pushing the boundaries, pushing the very limits of HTML5 and JavaScript.

From humble beginnings of just 19 experiments, the site recently unveiled its

1000th experiment. To celebrate Google has created "a special Experiment #1000 ([1000.chromeexperiments.com](http://1000.chromeexperiments.com)) that visualises every other experiment on the site".

The concept really took when WebGL was added to Chrome back in 2011. Check out the first WebGL experiment by Gregg Tavares ([webgl.samples.org/aquarium/aquarium.html](http://webgl.samples.org/aquarium/aquarium.html)). Imagine how this worked four years ago. There have been some truly stunning and amazing additions to Google Experiments. Remember 100,00 Stars? It's a big favourite at **Web Designer**, and we've included a few others below.

Adding a little extra icing to the Experiments cake, Google has engaged another of its newcomers Polymer. The new designed site is mobile-friendly and adopts the core design principles.

Here's to the next six years of experimentation and imagination. Wondering what Google Experiments will look like in 2021? Well we can't wait to find out.

👁️ A browser should enable designers and developers to be creative and experimental 👁️

## Three unmissable Google Experiments

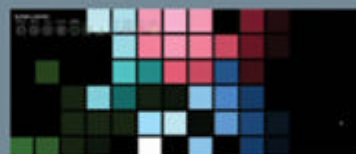
Innovation and imagination have combined for some truly awe-inspiring digital creations



### Small Arms and Ammunition

[armsglobe.chromeexperiments.com](http://armsglobe.chromeexperiments.com)

A impressive example of how to transform data into an interactive entity.



### SuperLooper

[superlooper.universlabs.co.uk](http://superlooper.universlabs.co.uk)

Release your inner musician with this easy-to-use music-making app.



### Flat Surface Shader

[bit.ly/1f5RCJW](http://bit.ly/1f5RCJW)

A mesmerising mix of WebGL, Canvas 2D, SVG and JS create beautiful patterns.

## Get Web Designer digital editions

Want to build HTML5 games? Check out Web Designer's latest digital special

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A collection of inspirational visuals

# <design notes>

## 365 Days of YA

[epicreads.com/blog/365-days-of-ya-a-2015-reading-calendar-infographic](http://epicreads.com/blog/365-days-of-ya-a-2015-reading-calendar-infographic)

**1** The nature of the subject matter dictates that a condensed design is needed to illustrate the information. The circle design perfectly encapsulates the data in an engaging way.

**2** The colour palette is separated into four colours to represent the seasons. Complementary colours are used to emphasise the seasons.



## Colour picker

Hot hexadecimal codes

### Underwater Sanctuary

[bit.ly/19eGjOd](http://bit.ly/19eGjOd)



#5DB4E5 #459CD6 #2195D3 #007289 #015058

### TPI red mix

[adobe.ly/1H3Dk6b](http://adobe.ly/1H3Dk6b)



#EF3B28 #371310 #BA3026 #C83127 #A12722

## Typesetter

The best fonts you need



### Jabana Alt

[bit.ly/1GVeIVq](http://bit.ly/1GVeIVq)

This smooth hand-written font is supercompressed and tall.



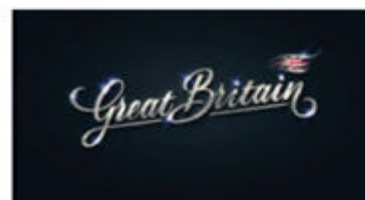
### Code

[fontquirrel.com/fonts/code](http://fontquirrel.com/fonts/code)

A free circular font that is available in bold and light variations.

## Graphics

Great visuals to inspire



### Alphabet of the Countries

[on.be.net/1BMQBj7](http://on.be.net/1BMQBj7)

We love typography and this collection of 25 (no countries beginning with X) handlettered logotypes are beautifully crafted. Take a look to see it all.

## Themematic

Style up your WordPress

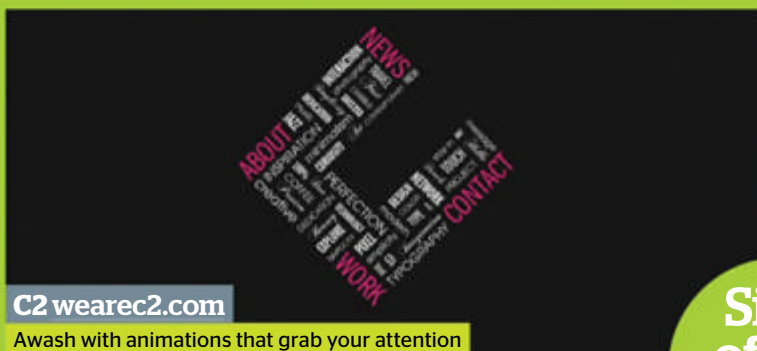


### MAMA

[jeweltheme.com/wordpress/mama](http://jeweltheme.com/wordpress/mama)

A new perspective on the single page scrolling design ethos. Shadows and section resizing add depth and guaranteed interest.

## Sites of the month



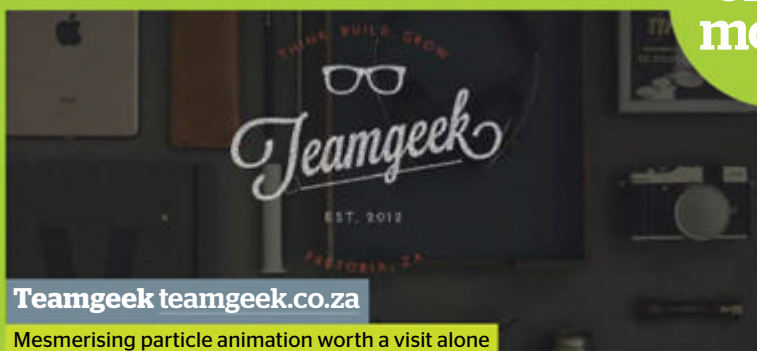
[C2 wearec2.com](http://C2wearec2.com)

Awash with animations that grab your attention



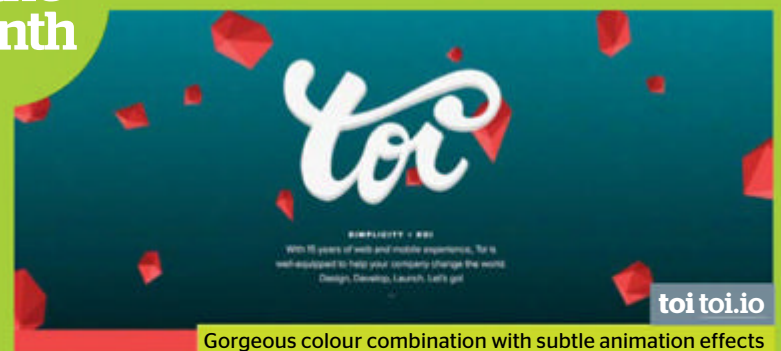
[westKowloon news.westkowloon.hk/cny](http://westKowloonnews.westkowloon.hk/cny)

A simple well-constructed example of animated 3D



[Teamgeek teamgeek.co.za](http://Teamgeek teamgeek.co.za)

Mesmerising particle animation worth a visit alone

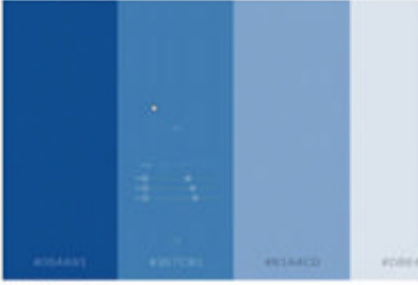


[toi toi.io](http://toi toi.io)

Gorgeous colour combination with subtle animation effects

# <webkit>

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



## Coolors

[coolors.co](http://coolors.co)

This is the "Super fast colour schemes generator for cool designers". Quickly create and customise colour palettes in a few clicks.



## Circulus.svg

[sarasoueidan.com/tools/circulus](http://sarasoueidan.com/tools/circulus)

Choose a shape, specify a number of items, drag a few sliders to fine-tune them and then download the perfectly created circular SVG menus to use in your designs.



## NativeScript

[telerik.com/nativescript](http://telerik.com/nativescript)

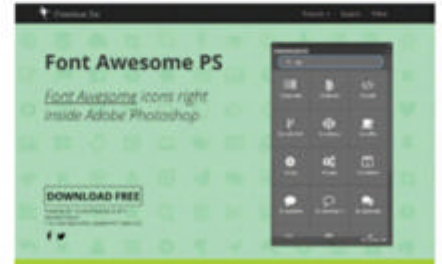
Building native apps from a single code base with current web technologies is something that vendors and developers are keen to conquer. NativeScript from Telerik, the makers of Kendo UI, is a cross-platform solution that utilises JavaScript and CSS to build iOS, Android and Windows Phone apps. What makes it appealing is its ability to use existing skills, re-create the performance and experience of a truly native app with a fraction of the development effort. Plus, it can reuse all the available JavaScript libraries that do not have browser or other platform dependencies, and it's free and open source.



## Nibbler

[nibbler.silktide.com/en\\_US](http://nibbler.silktide.com/en_US)

Is your site up to standard? Add a URL and Nibbler analyses and rates its accessibility, marketing, experience and tech in seconds.



## Font Awesome PS

[creativedo.co/FontAwesomePS](http://creativedo.co/FontAwesomePS)

Font Awesome icons are exactly that, awesome. With the help of this handy tool you can get direct access to them in Photoshop.

# TOP 5 JavaScript frameworks

Need something apart from the obvious to get your JS in shape? Try these

# 01

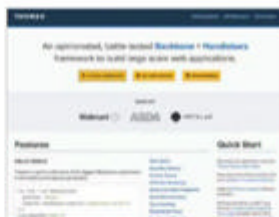


## Enyo

[enyojs.com](http://enyojs.com)

An app development framework for building native-quality HTML5 apps that run everywhere. Plus, it's open source and free to use.

# 02



## Thorax

[thoraxjs.org](http://thoraxjs.org)

Looking to build large-scale web applications? Thorax combines the well known and popular Backbone and Handlebars to get the job done.

# 03



## CanJS

[canjs.com](http://canjs.com)

A library that looks to develop and deliver complex apps quickly and easily. CanJS is flexible, working with jQuery, Mootools and Zepto.

# 04

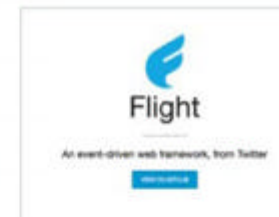


## Stapes.js

[hay.github.io/stapes](http://hay.github.io/stapes)

This framework is described as the "little JavaScript framework that does just enough". It is 2KB in size, making it ideal for mobile sites.

# 05



## Flight

[flightjs.github.io](http://flightjs.github.io)

This is a lightweight, component-based JavaScript framework that maps behaviour to DOM nodes. Twitter uses it for its web apps.



# Time to switch to Joomla?

What does the latest version have to offer? Is it time to try an alternative to WordPress?



**Joomla! is making large strides and constantly reaffirming itself as the CMS-of-choice for many web developers.**

Debuted in late February, the latest installment of the platform (version 3.4) is

leading the way for future releases and brings many benefits to end-users and developers. Designers creating dynamic websites and powerful online applications should take note of these improvements and consider how they can take advantage of this and contribute to the future of Joomla!.

The platform's evolutionary path led to powerful capabilities being integrated into the core, making it a secure out-of-the-box solution. Favourably, there is no need to install additional plugins or extensions, unlike other CMS, since the default installation fits most user requirements. For example, recent noticeable improvements have been made to responsive design and compatibility with other CSS-style frameworks. Designers do not need to expend any effort for their Joomla! websites to automatically adjust to fit the screen size of their visitors mobile device. Other significant advancements were made to backwards compatibility and internal routing. Features that improve search engine optimisation, such as changes to internal routing, have been (and will continue to be) dominant trends.

The biggest change for user experience with the newest version is that it is even easier to edit websites. A new feature, called 'Front-end Module Editing', enables users to edit directly from their page without needing to access the admin dashboard. This capability also adds a layer of security since it is not necessary to grant back-end access for text and visual modifications. The reCAPTCHA plugin was also updated so users can benefit from Google's new No CAPTCHA reCAPTCHA API. Users will notice that their login and registration forms are protected against



**VIKTOR VOGEL**  
1&1 Joomla! Expert  
1and1.co.uk

Viktor Vogel has been contributing to the improvement and expansion of the Joomla!

core and community for more than ten years. As 1&1 Internet's Joomla! expert, Viktor also furthers the optimisation of 1&1's hosting environment for Joomla! installations.

To achieve this, the production leadership team will work to remove some components of the core and maintain a separate core-supported extension category. This will enable additional customisation through the use of third-party alternatives for extensions such as: contact, finder and weblinks.

As an open source CMS, Joomla! relies on crowdsourced software development and an active global community to progress the platform. The development community dreams big and works as a team to actualise the goals of improving the CMS together. From supporting users to fixing bugs and developing new features for its vast user base, contributing to Joomla! can be a very rewarding experience.

Being community-minded, Joomla! users and developers help each other. Support for using the platform and its extensions are always available. Furthermore, this mindset contributes to the continued evolution of the platform. Always improving, websites built with Joomla! are secure and modern while the latest ideas are continuously being implemented with every release.

Joomla! users that do not possess in-depth understanding of coding can take a more knowledge-sharing role and participate based on their strongest skillset, like providing assistance with documentation for example. They can also report bugs that can be fixed by the developers in the community.

Those looking to get involved in the hands-on development of the platform first need to know about the Joomla! coding standards. After some experience addressing existing bugs, it is possible to apply to become a member of some specialised, official Joomla! teams. Attending community events, which occur around the world, is also a great way to get started with the CMS.

All involvement and support for the improvement of Joomla! are greatly appreciated. To become a Joomla! contributor, you can first see what assistance is needed and then you can join a working group at [volunteers.joomla.org](http://volunteers.joomla.org).

spam through one-click authentication, instead of solving an 'old-fashioned' CAPTCHA.

From a technical standpoint, the base version is now smaller and more flexible, providing a streamlined installation. With this release, the first step was made toward achieving the long-term goal of a lighter core: com\_weblinks were removed from the core distribution. Version 3.4 also boasts major strides towards standardising all of the en-GB language strings in the Joomla! core. The full list of improvements in Joomla! 3.4 can be found on GitHub.

One specific aspect that will continue to improve over the next releases is the move to a light core.

# UNDERSTANDING THE VALUE OF MOBILE

Is mobile advertising the most efficient and effective way to target existing and new customers?

**Q. Research has shown that mobile internet access now outstrips desktop access. What services do you offer that will enable advertisers to take advantage of this?**

With more people using mobiles than desktops, mobile advertising is now undoubtedly the most efficient and effective way to target your existing customers and new prospects whenever and wherever they are.

Our specialist mobile exchange technology has been serving advertisers and publishers since 2009. We give advertisers access to tens of thousands of publishers with both in-app and mobile web ad inventory. We work with dedicated mobile data partners to increase the user insights provided with ad requests.

We've also recently launched an industry first - a technology platform that enables any business to launch their own mobile ad exchange. Our White Label Ad Exchange gives premium publishers, ad networks and data providers the ability to set up a self-branded programmatic trading environment to retain the maximum value from their inventory and data. Our goal is to transfer trading power back to the supply side - eliminating hidden margins and optimising data security.

**Q. Ads can be seen as an irritant for many. What methods/techniques do you find work best to engage?**

We've found that the answer is reaching people at the right time with the right message as well as not bombarding people en masse with irrelevant and impersonal adverts.

But how do we do this most effectively? In our opinion, engagement must be engineered through the use of programmatic tools. Programmatic advertising through ad exchanges brings the ability to buy and sell advertising in real-time and target



**SIMON BAILEY**  
Chief commercial officer  
Axonix

Prior to Axonix, Simon was at Velti as vice president of global demand, managing the global

advertising business. Simon has spent the past 15 years working in the digital space where he has sold media, developed sales teams and built cutting-edge advertising technologies.

audiences with the right messages at scale, which is even more applicable for mobile due to its unique characteristics.

**Q. Introducing mobile ads is not always a golden bullet for a sudden influx of wealth. What tips would you give to maximise revenues?**

Better targeting means improved ad relevancy, increasing the value for both consumers and advertisers, and delivering a higher price for publishers' media space. There are also significant cost efficiencies when outsourcing the heavy lifting to algorithms and reducing the dependency on buying or sales teams. A key differentiator between ad networks and ad

exchanges is that the latter can provide full transparency to both buyer and sellers of the media space, thus maximising revenue.

Another tip is to tailor ad spaces to a user's schedule and browsing behaviours. This will yield greater mobile ad engagement, and therefore higher prices. When users are researching a product they want to buy, they are less open to being distracted and clicking on an ad. It's best to incorporate ads when ads are more likely to be seen, ie between eight to nine am, five to seven pm and after nine pm.

And of course data can immeasurably boost ad space value.

Advertisers will pay higher prices if they know their specific target audience will see a certain campaign. Unlike cookie-driven desktop advertising, mobile ad space is currently less intuitive and is sold with no user data attached to it. Therefore publishers who have user data, such as their gender, can boost the value to ads by appending this data to ad requests.

**Q. Mobile incorporates a vast array of devices, platforms and screen resolutions. What are the challenges in designing ads to work on them all?**

True, there's an ever-growing plethora of mobile devices for us to choose from; all with different screen sizes, design and interfaces, so ads must be tailored to suit the user viewing content on each and every one of these. Businesses must now explore ad formats embedded within the user's overall experience, such as videos and full-screen interstitials during natural breaks in content. Fewer large ads may be displayed, but their value will be greater and advertisers will prefer the improved user engagement they offer.

**Q. How do you see the market evolving over the next five years?**

Advertising will undoubtedly be led by the insights gathered from mobile data, meaning that any publisher or advertiser who isn't fully mobilised will soon be left behind. Programmatic and real-time ad exchanges will become the preferred and essential channel to keep ahead of competition and reach the target audience first.

Advertisers and premium publishers may also look to incorporate their own white label ad exchanges like ours. These will empower businesses to take control over the way their data is traded and create a secure marketplace which will enormously maximise the value of their mobile ad inventory.



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THE MOST REQUESTED  
SYNOLOGY NAS EVER IS HERE!

Full HD  
1080

DLNA

# DS415 play

FOUR-BAY NAS SERVER FEATURING  
VIDEO TRANSCODING WITH LOSSLESS QUALITY

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Featuring 1080p Full HD video transcoding, DS415play satisfies multimedia enthusiasts' requirement for on-demand high-quality video streaming.

## A TRUE DLNA® CERTIFIED MEDIA SERVER

Serving as a ready DLNA DMS (Digital Media Server) with the capability to host digital multimedia contents for remote playback, DS415play could stream music, photos and videos to DLNA-compliant devices.

## BACKED UP WITH ENHANCED COMPUTING PERFORMANCE

Dual core CPU powered by a built-in Floating-Point Unit and hardware transcoding engine, speeds up thumbnail processing and enables photo-viewing. A refreshingly new experience.

Other models available include DS214play, DS213j and DS414j. To see the full product range visit [www.synology.com](http://www.synology.com)

### Where to Buy

[amazon.co.uk](http://amazon.co.uk) [dabs.com](http://dabs.com) [ebuyer.com](http://ebuyer.com) [broadband buyer™  
buyer.co.uk](http://broadbandbuyer.co.uk)

### Award & Recognition

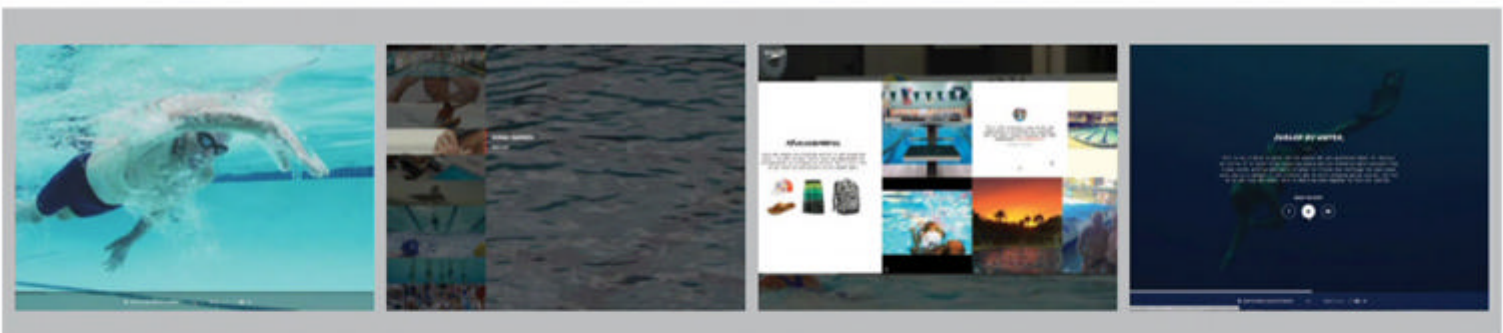
[expertreviews](http://expertreviews.com)  
BEST BUY







**<Above>**  
 • The site opens to no mistake over the focus - water is very much the star here!



**<Above>**  
 • Fueled by Water is a video-driven tribute bringing 17 short films together into one enjoyable experience

**<Above>**  
 • A neat menu on the left makes way for clear, direct navigation between each video, with rollover previews

**<Above>**  
 • Visitors can share their own stories via the social networks Twitter and Instagram, with the best ones winning Speedo gear

**<Above>**  
 • The featured stories chosen for the site may also be shared via popular social media channels or via email to gain more traction

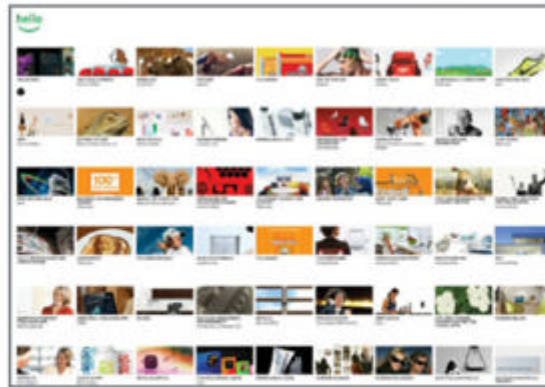




# Speedo: Fueled by Water

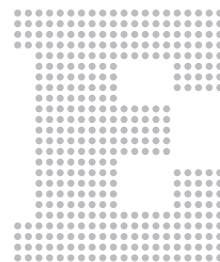
bit.ly/1zryJKM

**Development technologies** HTML5, CSS3, JavaScript, Typekit



Designer **Hello Design**  
hellodesign.com

Iconic swimming brand Speedo splashes out big web design waves for an immersive video-filled tribute to water



ver since vlogging was popularised around 2005, modern websites have increasingly embraced video content. The desire for social sharing, coupled with HTML5's useful <video> standards has also made video more prominent in our browsers. So when aquatic sports brand Speedo wanted a microsite for conveying the excitement and motion of water, there was just one solution.

Showcasing the talents of Culver City's LA-based digital agency Hello Design, Fueled by Water is a love-letter to the playground of swimmers, surfers and divers around the globe. It opens on videos collated together showing different kinds of water sports interspersed to

make the feeling of the rush of water. In addition, the experience invites visitors to share and submit their own water-based exploits via social channels and win Speedo gear. "Fueled By Water is our tribute to water and the people who are passionate about it," explains Hello Design's CEO/creative director, David Lai. "Hello Design and Speedo partnered to create a series of 17 short films in a unique digital destination. The resulting HTML5 and CSS3-based website is an immersive experience where everything is video driven, even the navigation. Video loops in navigation hover states allow visitors to preview the content, either from the menu or from the sidebars that highlight the next video in the series. To get the best performance, the code had to be very precise – stripped of all unnecessary events and JavaScript behaviours to maximise video playback."

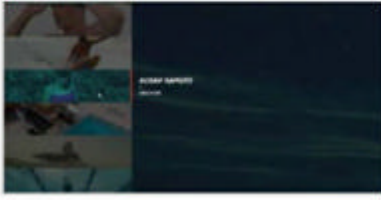
ABCABC  
1234567890

<Above>  
• Flood by Adobe and available via Typekit, provides the wavy brush-like typography throughout

abcABC  
1234567890

<Above>  
• Source Code Pro, again by Adobe and served via Typekit, styles the snippets of supplementary text

The resulting HTML5 and CSS3-based website is an immersive experience where everything is video driven

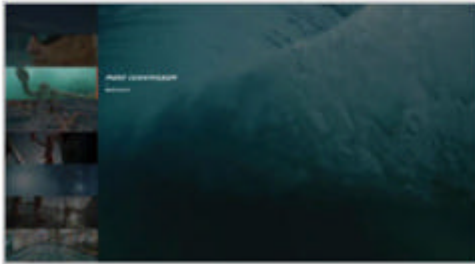


## Code video rollovers with HTML5 and jQuery

Inspired by Fueled by Water, the designers at Hello Design reveal the technique behind the video rollovers found on the site

### 01 Set it up

The Fueled by Water site features video rollovers for previewing and navigating between the various stories. Over the next few steps we will examine the basic technique behind how this was done. You will need a video clip of at least MP4 format plus a JPG thumbnail image - preferably a descriptive still frame. We'll add these to an HTML page within a link to capture rollover, along with adding jQuery and some JavaScript functions to toggle the effect.



### 02 Include jQuery

We will be utilizing jQuery for this technique, so we will need to include the latest library before our main script. In the example we have made here we will use the online jQuery CDN to attach version 1.11.2 to our page, but you can find the latest link by going to [jquery.com/download/](http://jquery.com/download/). In the <head> section of your page insert the following:

```
001 <script src="http://code.jquery.com/jquery-1.11.2.min.js"></script>
002
```

### 03 The HTML markup

When the user moves the mouse inside the thumbnail image, we want it to switch to a video. In order to do this, we need to specify the objects inside our <a> tag. Our video object will only have one source, an MP4, but to maximise compatibility you will also want to include both an OGG and a WEBM video file. As you can see preload is set to auto and loop is enabled:

```
001 HTML:
002 <a class="over-video" href="#">
003 
004 <video preload="auto" loop>
005 <source src="loop.mp4" type="video/mp4">
006 </video>
007 </a>
008
```

### 04 Add the JavaScript

In the current state our result isn't looking as pretty as it should. Let's next add some JavaScript code to manage when to show the still image and when to show the looping video. You'll have to add this chunk of code in a <script> brace after our jQuery include or just before your closing </body> tag. The code is now ready to be tested within a browser.

```
001 JAVASCRIPT:
002 function toggleVideo($elm, show){
003 var $img = $elm.find("img");
004 var $video = $elm.find("video");
005 var video = $elm.find("video")[0];
006 if (show)
007 @media (min-width: $mq-med) {
008 {
009 video.play();
010 $img.hide();
011 $video.show();
012 }
013 else
014 {
015 $img.show();
016 $video.hide();
017 video.pause();
018 }
019 }
020 $(function () {
021 $(".over-video").each(function () {
022 toggleVideo($(this), false);
023 $(this).hover(function () {
024 toggleVideo($(this), true);
025 }, function () {
026 toggleVideo($(this), false);
027 });
028 });
029 });
```

### 05 Finishing touches

If your video loop has an audio track, like our example does, you will want to mute it. Achieve this by setting the volume property to zero just after you call the play() method. Another thing to consider is setting the video to the initial position before showing by setting the currentTime property to zero. Our final toggleVideo() function would look like this:

```
001 function toggleVideo($elm, show)
002 {
003 var $img = $elm.find("img");
004 var $video = $elm.find("video");
005 var video = $elm.find("video")[0];
006 if (show) {
007 video.currentTime = 0;
008 video.play();
009 video.volume = 0;
010 $img.hide();
011 $video.show();
012 }
013 else
014 {
015 $img.show();
016 $video.hide();
017 video.pause();
018 }
019 }
```

### 06 Moving forward

This brings us to the the final full code for our tutorial, which can be found on FileSilo. It's only really a starting point, so you can do more such as having an alpha transition effect instead of a hide/show static transition. Additionally, if you have too many of these on your page you may consider creating the <video> markup on the fly. This is because some browsers can't handle too many video elements at the same time.





# THE BEST TOOLS FOR RESPONSIVE DESIGN\*



## Responsive **LAYOUT MAKER**

Prototype device-agnostic layouts from the content out with custom breakpoints. The result? Rock-solid layouts with code that is crisp, clean and production ready!

## Responsive **SITE DESIGNER**

Create complete, one-of-a-kind, responsive websites without coding. All the power CSS offers is available through intuitive visual controls. 'Nuff said!

## Responsive **EMAIL DESIGNER**

Drag-n-drop to create beautiful emails that work wonders on any device. Full story-driven design freedom, unrestricted by rigid templates. Need to tweak that font size for smaller devices? Do it!

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

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

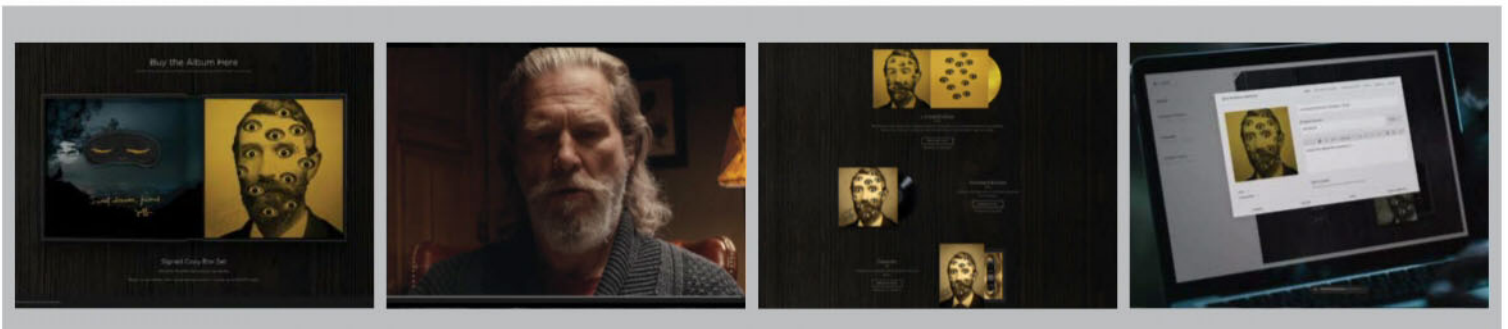
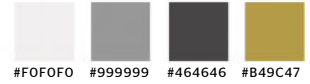
by



**CoffeeCup**



**<Above>**  
 • Squarespace believe that “even the wildest ideas should come to life in a beautiful way”



**<Above>**  
 • Special limited editions of Jeff Bridges' *Sleeping Tapes* are showcased, and these are then auctioned off for charity

**<Above>**  
 • YouTube videos show campaign promos plus Jeff's advert spot that was shown during the recent Super Bowl

**<Above>**  
 • The lengthy single page provides illustrated links to the various versions of the record available for purchase, alongside track previews

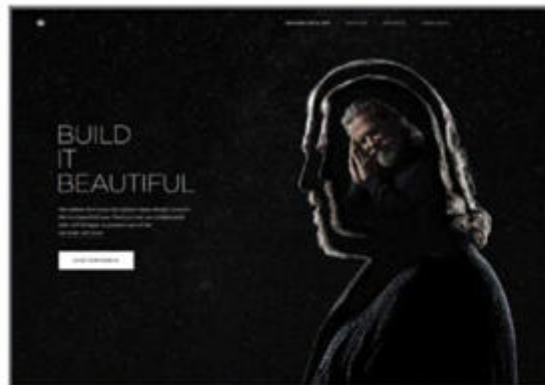
**<Above>**  
 • Jeff demos the Horizon template in the video, he shows how easy it is to drag in MP3s and images to populate his new page



# Dreaming with Jeff

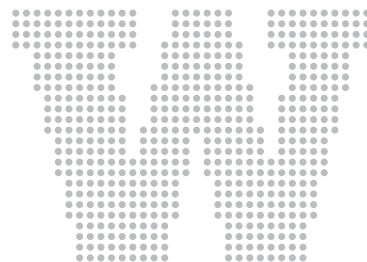
dreamingwithjeff.com

**Development technologies** Squarespace, 'Horizon' template



Designer **Squarespace**  
squarespace.com

Hollywood legend and creative maverick Jeff Bridges teams up with Squarespace to make a beautifully crafted demo site for his album



**What do you get when you give one of cinema's most intriguing stars a boom microphone as well as access to cloud-based web development?** Well the answer is Dreaming with Jeff - a beautifully beguiling website project brimming with artistry and good intentions. Actor, producer

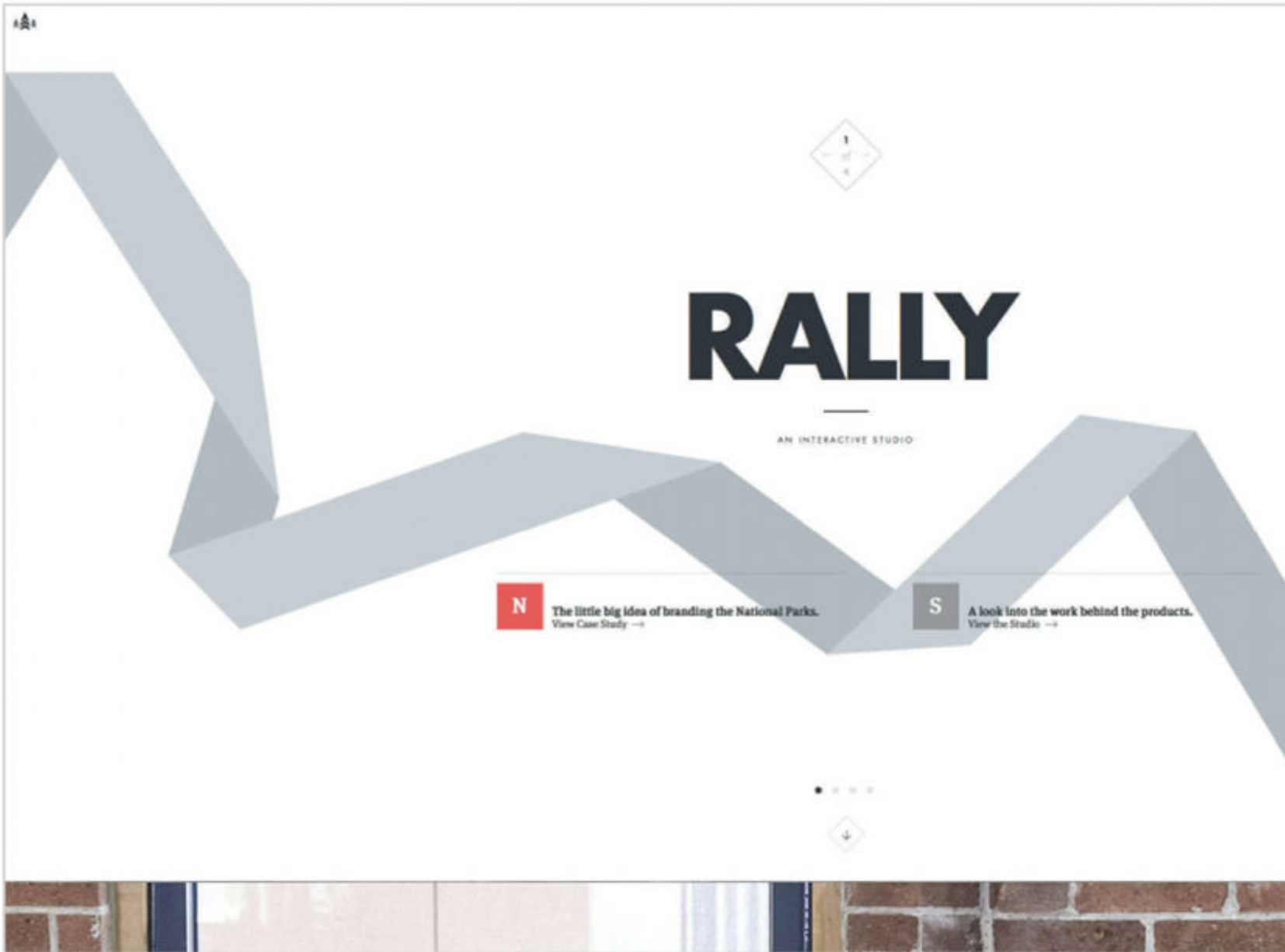
and musician Jeff Bridges joins forces with Squarespace to promote and sell his album *Sleeping Tapes*, a charity record for No Kid Hungry. In the process, visitors are given a lesson in how easily a gorgeous, contemporary web presence such as this can be crafted.

"During our ideation for our Super Bowl spot, we landed on a concept that we really liked," reveals Squarespace's founder and CEO Anthony Casalena. "Squarespace, at its core, has the power to make any idea, no matter how weird, look beautiful. To express the concept, we enlisted the help of Jeff Bridges to build a quirky idea of his own, in this case he made a series of sleeping tapes, and bring it to life on the web. The entire ad is a product demo for Squarespace, and it was critical to us to make sure the site presented the idea beautifully and stayed online during the critical moments after airing at the Super Bowl. The fully responsive site was created on Squarespace's developer platform and uses HTML, CSS and JavaScript to bring Jeff's idea to life."

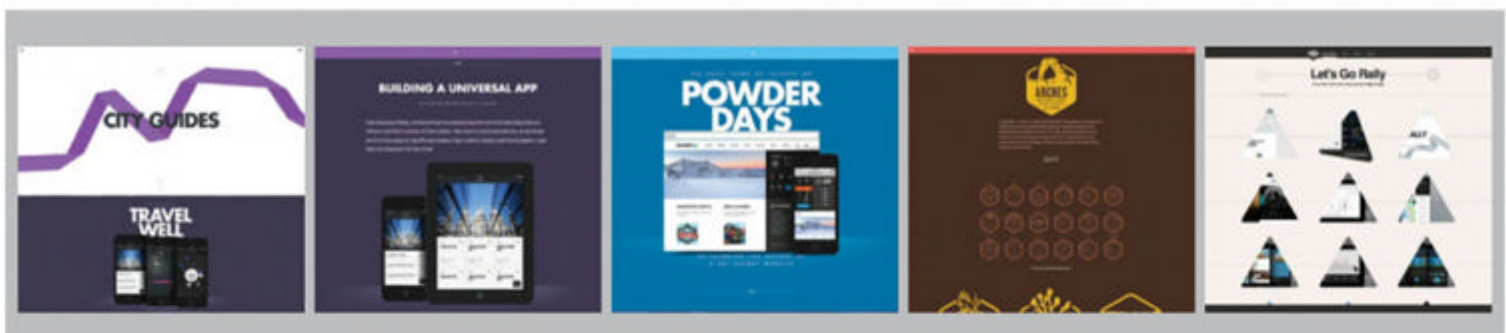
abcABC  
1234567890

**<Above>**  
• The main font used throughout the site is Gotham in normal 300 and 500 weights

**It was critical to us to make sure the site presented the idea beautifully and stayed online during the critical moments after airing at the Super Bowl**



**<Above>**  
 • A lengthy main page describes the agency, the team, clients and the studio itself



**<Above>**  
 • Moving horizontally, the site describes key featured projects - each with a new colour theme

**<Above>**  
 • Each project case study goes into detail and illustrates the work with glossy device shots

**<Above>**  
 • The slick combination of colour, typography and imagery provides a real 'custom post' feel

**<Above>**  
 • Throughout, the site shifts between a vibrant, contrasting colour palette defined within the CSS

**<Above>**  
 • The original site makes use of a triangular motif worked into the new Beta site's footer element



# Rally Interactive

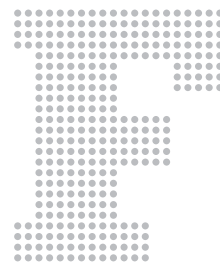
beta.rallyinteractive.com

**Development technologies** HTML5, CSS, SVG, JavaScript, Modernizr



Designer **Rally Interactive**  
rallyinteractive.com

What happens when your digital agency needs a new home page? If you're Rally Interactive you simply build a better one!



For agencies keen to market their services in ever new and engaging ways, a process of reinvention is necessary. This is precisely what Salt Lake City studio Rally Interactive has been up to with this 'beta' dotcom update. Moving away from an albeit tidy, triangular but less rich design at

rallyinteractive.com, this new presence is a much bolder celebration of the work this talented team of ten is known for.

Long pages over four easily expandable sections first describe people and place, before offering genuine depth within high-profile project cases studies. Swathes of colour and

polished device shots then cascade from unique full-width headers. Each of these feature a unique ribbon device that snaps into a straightened line which then moves to the top of the page on scroll.

"With our new site, we wanted to finally tell our story through the lens of the work we have done," admits creative director and cofounder, Ben Cline. "Long form case studies inspired by Teehan+Lax (teehanlax.com) felt like the best way to do this. As far as the visual design is concerned, we've always been suckers for details. We didn't want a cluttered interface, so we carefully chose our typefaces, colours and iconography to aid the case studies. Motion design has always been a part of our UX thinking, so we knew the new site needed a bit a motion and fluidity."

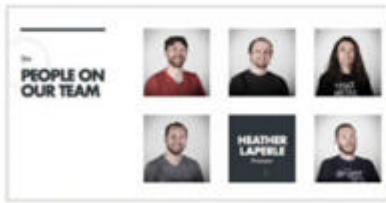
**We didn't want a cluttered interface, so we carefully chose our typefaces, colours and iconography**

**ABCABC**  
**1234567890**

<Above>  
• Futura Bold handles the chunky page headings with Futura Book styling the subs

abcABC  
1234567890

<Above>  
• FF Meta Serif Web Pro by FontFont, available via Typekit, appears in normal and italic for the main page paragraphs



## Revealing Rally's rollover portraits with CSS3 transitions

We take a look at how Rally Interactive's rollover team portraits are formed on its brand new beta website

### 01 Start with the markup

The set of team portraits on the Rally site are arranged in a grid of ten using <div> elements setup as 'column-items' with position and size set responsively with media queries. Each 'person' object consists of a container <div> with a unique id based on name, with two subsequent <div> elements nested inside holding an <h3> name label and a <span> label for person's job title like so:

```
001 HTML:
002 <div class="column-item person"
003 id="person-id" onclick="">
004 <div class="column-item-content">
005 <div class="person-details">
006 <h3 class="person-name">Person
007 Name</h3>
008 <span class="person-title">Person
009 Title 1 / <br>Person Title 2</span>
010 </div>
011 </div>
012 </div>
013 </div>
```

### 02 Column item classes

A combination of 'column-item' classes are used to set basic positioning for the first and second <div> elements. For illustration purposes of showing just a single portrait rollover, width and height is set to the actual size of our example portrait photo. On the site, Rally set this to a percentage in combination with a bottom-margin before using media queries to make the grid of portraits more responsive.

```
001 CSS:
002 .column-item {
003 float: left;
004 position: relative;
005 width: 280px;
006 height: 280px;
007 }
008 .column-item-content {
009 position: absolute;
010 top: 0;
011 left: 0;
012 right: 0;
013 bottom: 0;
014 cursor: default;
015 }
```

### 03 Add the person portrait

The portrait photos are 280 x 280px in size and are applied to the main containing <div> as a

background image. Each person in the team therefore has a #person-id class where 'id' is instead a unique first name. A 'person{}' CSS class then sets the position, repeat, size and tap-highlight-color for all of these individual JPG people shots:

```
001 .person {
002 background-position: center center;
003 background-repeat: no-repeat;
004 background-size: cover;
005 -webkit-tap-highlight-color:
006 transparent;
007 #person-id{
008 background-image: url(portrait.
009 jpg);
010 }
011 }
```

### 04 Transition the opacity state

The next few classes attach some important properties for hiding and showing the rollover details the way we require. The transition property is important for delaying the opacity change to '1' on hover and reverting back to '0' after hover. It is this that causes the subtle fading that makes the rollover effect smoother. We then observe a pseudo-class inserted 'before' the column-item-content element for controlling label positioning, while the hover class simply sets opacity to fully visible:

```
001 .person .column-item-content {
002 text-align: center;
003 background: #2f363b;
004 opacity: 0;
005 -webkit-transition: opacity 500ms;
006 transition: opacity 500ms;
007 }
008 font-size: 120%
009 }
010 .person .column-item-content:before
011 {
012 content: "";
013 display: inline-block;
014 height: 100%;
015 vertical-align: middle;
016 width: 1px;
017 margin-right: -4px;
018 }
019 .person:hover .column-item-
020 content{opacity:1;}
```

### 05 Float the text

A 'person-details' class styles the container <div> for the <h3> and <span> labels. We've added Montserrat (Google Fonts) due to its resemblance to the site's typeface, and set the text white. Beyond positioning and width, the translate3d() shifts the element by ten pixels. Setting the transition again to 500ms and removing the transform on hover creates the subtle movement:

```
001 .person-details {
002 font-family: 'Montserrat', sans-
003 serif;
004 color: white;
005 display: inline-block;
006 vertical-align: middle;
007 width: 90%;
008 -webkit-transform:
009 translate3d(0,10px,0);
010 transform: translate3d(0,10px,0);
011 -webkit-transition: 500ms;
012 transition: 500ms;
013 }
014 @media (min-width: $mq-large) {
015 max-width: 50em
016 }
017 .person:hover .person-details {
018 -webkit-transform: none;
019 transform: none;
020 }
```

### 06 Last label formatting

Finally we have the classes for styling the person-name and person-title elements that contain these text labels. Here particular aspects like font size, word/letter spacing, line height and positioning are defined - in line with the format of the overall design. Save and preview to see the rollover.

```
001 .person-name {
002 font-size: 25px;
003 text-transform: uppercase;
004 word-spacing: 99px;
005 letter-spacing: -1px;
006 line-height: 1;
007 padding-top: .25em;
008 }
009 .person-title {
010 font-size: 10px;
011 font-weight: 400;
012 display: block;
013 margin: 0 auto;
014 }
```



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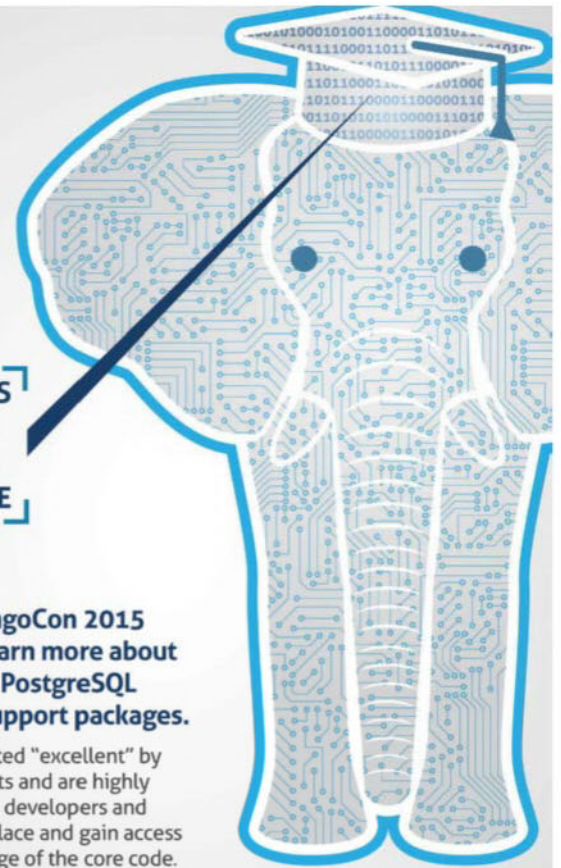


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# A STORY OF SONG

How do you tell the story of Europe's most-watched live television event over six decades? Elespacio give **Web Designer** the low-down

Project Web	<b>Eurovision 60 Years</b> 60th.eurovision.tv
Agency Web	<b>Elespacio</b> elespacio.net
Duration	<b>5 Months</b>
People involved	<b>6</b>
Total hours	<b>1240</b>

**B**ack in 1956 the very first *Eurovision Song Contest* exploded into life in the Swiss resort of Lugano.

Amazingly, 60 years later the competition is still going strong, celebrating its diamond anniversary, but this time Vienna is the stage. The competition has become a political animal leaving itself open to ridicule. But, while *Eurovision* is no longer the prime-time viewing it once may have been, its new digital presence celebrating its sixty years of existence definitely is.

Making *Eurovision* acceptably cool may seem like a challenge that is impossible to fulfil, but Barcelona-based Elespacio proved that the impossible is possible.

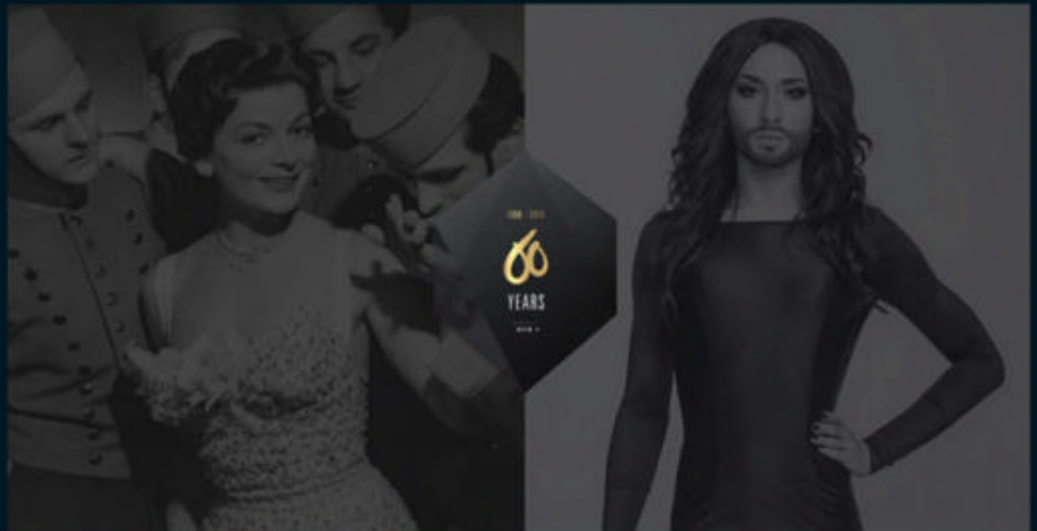
The agency's remit was to "tell the story of Europe's most-watched live television event and its exciting path through different decades".

Their main goal was to design a digital story that would give a clear overview of the history of the *Eurovision Song Contest* by using a timeline navigation to guide users through the decades and years, and by highlighting special events and cases throughout time. The experience needed to be immersive, engaging and intriguing enough to tempt users to continue reading so that different levels of content on topics or personalities involved in the show could be unlocked.





Wow!works commissioned Elespacio to create something immersive, intuitive and simple to use



Inspired by a one-page microsite following the 'snow falling' trend, the aim was to include engaging content via video and imagery. Co-producer on the project Wow!works wanted easy, intuitive navigation, and an experience that was fun, entertaining and informative, but above all, it needed to capture *Eurovision's* spirit.

After winning the pitch for the project Elespacio knew there was a lot of hard work ahead as head of production Lucas Onofre reveals, "Wow!works awarded us the pitch in the Summer of 2014. During the pitch process, our team developed a UX concept based on a timeline navigation and a storytelling narrative focusing on some key content modules, such as the galleries, fun facts and Stories Worth Telling, would highlight the key aspects of the contest. These modules would be used for every year throughout the six decades of *Eurovision*."

"Our team had literally only three days to put all of this together so we quickly nailed the concept, designing a case for the timeline and a couple of years - a recent and a late one. Next, we created a motion demo in After Effects of how the site would work including the key transitions, animations and user flows for the microsite."

"During the actual project, our design team revisited the pitch concept and refined the look and feel. [We considered] some minor changes in terms of content, but kept the same content modules. In fact, we had a hard time convincing the client to change some aspects

Wow!works wanted an experience that was fun, entertaining and informative, but above all, [could] capture *Eurovision's* spirit

of our pitch concept that we thought were needed after reviewing our initial proposal.

"This project was highly gratifying for our team. Not only was this a milestone celebration of the most popular TV show of all time, but we were also very lucky to work with a client that gave us a lot of creative freedom and who provided amazing content for our team to work with."

Collaboration is often the key for bigger projects and the *Eurovision 60* project wasn't the sole responsibility of Elespacio. Onofre reveals how Wow!works and Elespacio worked together on the project. "From the start, during the pitch process we worked very closely with Wow!works. They were mainly responsible for content creation and validation of our UX and design proposals on behalf of *Eurovision*. Wow!works provided us with the initial direction for the site in terms of structure and navigation."

"Once we started working, we set up meetings with Wow!works to review in detail our pitch proposal and how to move forward into the next phase of design, and above all, to gain

understanding of *Eurovision*, its history and what moves its enormous fan community. In addition, we set up meetings with the client's technical team to discuss their requirements and validate our strategy.

"As we started designing we met weekly with our point of contact on the client side to update on progress and planning of the project."



Embedded YouTube videos of past performances complement the galleries

## A story of song

Since both Elespacio and Wow!works were working on different fronts, namely design and development, and content production respectively, it was key to the project's success that both teams were in sync.

While Wow was providing direction the client was offering its input, however, Elespacio were hardly short of ideas. Onofre reveals how Elespacio took the unusual approach of foregoing the traditional wireframe and jumping straight in with Photoshop. "The client provided some initial direction for where we should take the UX. Wow!works asked us to develop an experience that would require minimal user interaction using long scroll pages that would invite people to discover the history of the *Eurovision Song Contest* by covering key aspects of each year and by providing background on each decade's cultural and political highlights.

"In our pitch proposal we jumped straight into Photoshop, so there was no wireframing at all. As we started the project, we basically iterated and perfected the navigation concept keeping the main elements such as the timeline and content components.

"As for the content, we developed some consistent components: In the Meanwhile, Decade Introduction, Host City, Video Gallery, The Highlights, Fun Facts and Stories Worth Telling. We used the same components throughout the years and decades and pretty much enabled the content to tell the story using a basic narrative structure.

"Another key aspect of our design explorations was the look and feel. Considering this was such an important decision for *Eurovision*, our team wanted to

make something that would look special to go with the occasion. Our design team created an elegant visual using premium fonts and graphic elements such as the diamonds to convey a sense of festivity, while the gold and black colour palettes added sophistication."

With direction in the bag, the next step was to start making the site pretty. PSDs were the key delivery tool, but additional visual effects were called into action, meaning more work for the crew at Elespacio as Onofre explains, "The design team focused on the site's key components such as The Highlights, and on the main transitions and interactions of the *Eurovision 60 Years* microsite. Besides the PSDs files delivered to the development team, our senior art director made a simulation on After Effects on how the website would work so our devs would know how to build the main animations and transitions. The After Effects demo is something we do in our projects because it really helps the client and the rest of the team to gain understanding on the project before it goes into development.

"Upon delivery of PSDs and video demos, our developers created all additional SVG assets which were emulating the rastered assets from PSDs and optimised the images for performance. Additionally, our design team spent a big chunk of the time improving the quality of the assets provided by client. A lot of the images from the older years of *Eurovision* were pretty small and lacked quality so we had to add treatment to these images to use them for different screen sizes. We also created some edge cases in the Highlights component for images which could not be changed."

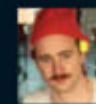
With an entry-winning product in place the delivery of the site was the next obvious step. But before the launch comes the testing, and in the case for the *Eurovision* site it was testing in more ways than one as Onofre reveals, "The main challenge of this project was getting the content ready for testing and launching. Although there's a lot of materials on *Eurovision*, much of it has copyright restrictions so it was really hard to get everything we wanted for the site.

"The Wow!works team spent months visiting *Eurovision* and the broadcasts archives in order to find suitable materials for the 60 years of the *Eurovision Song Contest*... They had a full-time team of dedicated editors researching and documenting the key facts of each year's event.

"Once the content was delivered we went through every single item and adjusted character count to fit into our designs. Altogether, content population took a much bigger portion of our time than initially estimated and towards the end of the project it left less time for testing than anticipated. Luckily we were pretty agile and set up a QA process that allowed us to test different modules separately as content became available.

## THE BIG QUESTION..

The team at Elespacio reveal their favourite Eurovision songs



👍👍 *Waterloo* by ABBA. They became a legend after *Eurovision* and their music kept going for generations after and they're still very popular nowadays. 👍👍

**JACEK ZAKOWICZ,**  
SENIOR LEAD FRONT-END DEVELOPER



👍👍 The best *Eurovision* song ever is *Hard Rock Hallelujah* by Lordi. Their performance on the *Eurovision Song Contest* was amazing and totally surprising. I am a big hard rock fan. 👍👍

**JONATHAN ICICSON,**  
SENIOR DEVELOPER



👍👍 Definitely *Satellite* by Lena. This song has such a nice vibe and beat, besides her performance on stage during the 2010 edition was awesome. 👍👍

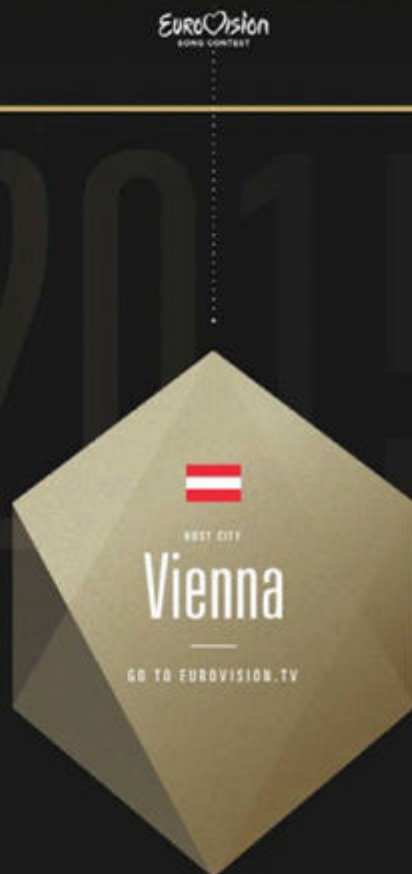
**LUCAS ONOFRE,**  
HEAD OF PRODUCTION



👍👍 Celine Dion with *Ne partez pas sans moi*. Her winning performance in the 1988 *Eurovision Song Contest* marked the start of her career as a pop star legend, and since then I have been a big fan. 👍👍

**CRISTINA FRANCO,**  
SENIOR DEVELOPER

The end result feels sophisticated thanks to the diamond shape and golden colour





The *Eurovision 60* site uses the same modules of content across all six decades to provide accessible information

## STORIES WORTH TELLING ONLY TEARDROPS!

In the end, after all the excitement and millions of votes, it was Emmelie de Forest who took home the trophy from Malmö with her song Only Teardrops!

The site enhances the editorial by teaming it up with a UX that doesn't compromise on images

"Wow!works did an amazing editorial job and once the project was live, the *Eurovision* fan community picked it up very quickly. Lots of people visited the site and shared it on social networks - it pretty much went like wildfire. Overall we received very positive feedback from the community, which to us meant a lot considering *Eurovision* was something new to us in terms of how to connect to the fans and their expectations regarding the celebration website."

The launch can be a fraught and nervous, but Elespacio were keen to ensure a handover that was as smooth as possible: "We do tend work very closely with the client to ensure a smooth handover and we do all we can to set the client up for success."

"It starts with detailed requirement gathering and thorough validation of our technical decisions at the start of the project. During the build phase we make sure

to touch base with the client regularly to update on the progress and inform of any potential technical issues during the handover.

"As the final delivery approaches we take the time to test the project on the client's server so we have a demo version up and running as early as possible in the process. Good preparation ahead of launch avoids a lot of back and forth once the project is live and although we are available for consultation afterwards, often the client does not require much support and bug fixing is kept to a minimum."

 We enabled the content to tell the story using a basic narrative structure 

## A LINEAR APPROACH

Every project brings with it different challenges, different approaches and different tools for the final product. Senior lead front-end developer Jacek Zakowicz gives an insight into the technology, tools and practices that Elespacio utilised to pull the *Eurovision 60* website project together: "The project was structured linearly which provided us with organised data divided into decades and years. This became crucial while following requests from the client, one of them being updating content without dealing with CMS or databases."

"We used JSON for content storage and {{Mustache}} templating for markup generation.

"Much more challenging tasks were presented by front-end development. As with every one of our productions we built scripts to streamline the deployment process in our local and production environment. We used the Node-based Gulp system ([gulpjs.com](http://gulpjs.com)) which enabled us to implement needed build tasks with simple JavaScript. For CSS styles we utilised Sass ([sass-lang.com](http://sass-lang.com)) with Compass ([compass-style.org](http://compass-style.org)). And for JavaScript, we utilise jQuery ([jquery.com](http://jquery.com)) with Browserify ([browserify.org](http://browserify.org)) for dependencies management. As a result we get only two compressed files to be downloaded from the server: one for JS and one for CSS too.

"The most complicated element of the website is the timeline menu. It is using a combination of DOM transformations along with HTML5 Canvas-based animations. Depending on the browser capabilities we also display different but still functional fallback solutions for this component. The road to the current version of this component led us through a solution based solely on SVGs, on CSS3 transforms and ended up with a current, mixed technologies result.

"Another obstacle to overcome was the amount of content to be displayed in every page. To limit the amount of data loaded with the page, we only load the first image of each gallery or video gallery. YouTube embeds and the rest of the images are loaded after user interaction with particular component."



# Perception magicians

They're innovative, technically advanced, and risk-taking digital masters. Phantom may be a new, small digital agency, but have quickly become ones to watch in the creative digital space







**who** Phantom  
**what** Creative digital agency,  
 intelligent design, advanced  
 engaging technical  
 solution developers  
**where** 4 Wedgwood Mews,  
 12-13 Greek Street, London,  
 W1D 4DL  
**web** www.phantom.land

### **Key clients**

Google  
 The Financial Times  
 Sony  
 Phantom

**F**ounded in late 2013, Phantom is the quintessential digital agency. All of its founders are children of the screen: denizens who live and breathe within a digital landscape of their own making.

"Phantom was formed to enable us to do exactly what we love," said Emily Shorvon, MD and cofounder of Phantom. "While [the founders] have varied backgrounds, we have all spent our careers in digital - collaborating with people and brands that have inspired us to produce incredible work, which spanned a range of exciting projects, customers and continents.

"In late 2013, the timing was right for us to create something truly special," Emily continued. "We were lucky to have remarkably talented people on board, who were ready to tackle a new challenge alongside us. It has been obvious to us for some time that the traditional agency structure are out-dated. Having been on the studio floor for

years upon years, we understood and related to every step and frustration of a project.

"We built Phantom on the foundation that we would never lose sight of this and worked to create an agency focused entirely from the perspective of the studio, rather than the management.

"Phantom is a creative agency above all else, but definitely not in the sense that we only care about making pretty things. Every member of our team is a freethinker and both creative and intellectual to the core. At just 15 months old, our team is now 22 Phantoms strong and growing. We couldn't be more proud of what our team has achieved. It's amazing to think it's only the beginning!"

Naming a new agency today can be one of the hardest things its founders face. This was certainly the case with Phantom, as Emily explained: "Deciding on a name that would embrace everything we were, and aimed to be, felt pretty near impossible. There was a lot of discussion, soul searching and mathematics that went into







choosing a name. We had lists of hundreds of words, which we either couldn't agree on, or loved but found other agencies with the same names. We even wrote a small program to concatenate a list of our favourite words and check if the domain was available for random combinations.

"In the end, our name came to us a lot more organically. We found ourselves looking across a construction site one day and chatted about how comparatively abstract our 'builds' are. Both require planning, design, construction and a whole team working together - the only difference is our work would never exist physically.

"Phantom - 'illusive', 'seen, sensed and felt but with no physical reality', 'a figment of the imagination', 'existing in perception only'. For us, the word Phantom didn't just allude to us as a team of creatives - it is also a pretty accurate description for the entire concept of digital.

"It is important to have a unique domain and this weighed heavily in our decision. We wanted our choice to be memorable, and luckily our timing presented a great opportunity. With so many new gTLDs available to register in late 2013, early 2014 we were able to be a little playful and utilise interesting domain extensions from day one."

Cara Hammett, business director also

commented: "We couldn't see ourselves as being an agency with 'media/digital/communications' in, or after our name. We certainly weren't interested in using the cofounders' own names or initials. We needed something that the growing team could be a part of, and could make their own. Something that represents what we all stand for. We're our very own (favourite) brand, and a genuine 'team of Phantoms'. So for us, perhaps the company name and URL meant much, much more."

The website of a digital agency is of course the first point of contact for many clients. Phantom's site distils the essence of what the founders intended their agency to be.

Emily explained: "Our first priority for 2015 is to launch a brand new site, having rethought the entire design and purpose. We're including some really ambitious and innovative pieces that will ensure we commit to dedicating time each week developing content. The new **phantom.land** [site is now live]."

How an agency attracts new clients are manifold. Cara outlined their approach: "We've spent our first year, dedicated to growing our Phantom team to deliver ambitious work for brands we love. We're incredibly lucky to be able to focus on the work that we want to do and be known for whilst

shaping a young company. We believe that this is fundamental to Phantom moving forward, and that's worth far more to us than a few quick quid.

"In order to do this, we don't spread ourselves too thinly or take on work or clients that deviate from the Phantom vision. We know that working with an exciting mix of diverse, progressive clients plays a huge part in our growth, and in turn attracts the right potential team members and clients.

Cara continued: "We've worked incredibly closely with our clients from the get-go. So close, that we become kind of hybrid teams, we even have desk space at Google. Our clients get to know our entire team just as well as the project managers - after all, who's better to present designs than the designer who worked on it?"

"We started the agency in order to do what we love and dream of: to deliver work that's even better than the stuff we discover and admire in our personal lives. Big or small, it doesn't leave the studio without the Phantom seal of approval. We've had an amazing response to our work, approach and team culture. The fact that people have been very happy and quick to recommend working with us is testament to this.

"When it comes to actively pitching, Phantoms are naturally always interested in projects that bring



new challenges. Where we see a partnership opportunity that makes sense in terms of skills and passion we can bring to the table, we'll get in touch. If that passion is missing, it's just a job, and it's going to show. But we'd never go knocking from door to door.

"We've been fortunate to pick up industry recognition and coverage, which really helps us reach a wider network and get our name out."

Emily also said: "We've found that our brand really seems to stick with the people we meet and have been grateful to see our studio packed with projects almost entirely through word of mouth. We're reliable to a fault and put our whole heart into everything we do, which I imagine gives people complete confidence in recommending us to their contacts. Making Phantom available to new clients this year is extremely important to us, meaning we've needed to commit to bringing on board a bunch of new Phantoms in preparation for approaching new brands."

The 'business' of being creative is often fascinating, as agencies approach the business side of their enterprises in different ways. So how do clients help Phantom to grow? "Providing there's an interesting challenge, there's no project too big or too small for us," said Cara. "We feel incredibly lucky to have such an exciting mix of diverse and progressive clients, which enables us to be selective about who and what we work on. This also means we can focus on Phantom's very own projects."

Emily also commented: "We have been really selective about who we work with - as a young agency, it had been far more important for us to put our full energy into the brands we loved to work with, rather than risk spreading ourselves thin. This has been a really successful approach for us, letting us scale quickly within our flagship clients."

"We are sometimes met with the enviable problem of being too much in demand and have developed successful strategies for scaling our full-time team accordingly. We're always open-minded about helping solve problems and our team will do all we can to facilitate requests or point our contacts in the right direction. We're building on our team again as we speak in preparation for opening our doors to new clients.



## industry insight

**Emily Shorvon,**  
managing director

“Phantom is above all else a creative agency, but definitely not in the sense that we only care about making pretty things. Every single member of our team is a freethinker and both creative and intellectual to the core”

We [were really excited to enter] 2015 with a growing capacity and look forward to sharing Phantom with everyone."

Jamie Nicoll, creative director also said: "Phantoms don't like to play by the rules. Digital is a medium that has yet to be mastered by anyone and at Phantom we will always try to seek out new ways of doing things, hopefully discovering something cool and unique along the way. For me, the way we approached the design and build of our new site defines our ethos. We like to be different, innovative and lead trends rather than follow them."

With a diverse range of clients how does Phantom organise its workflow? "So many great ideas are lost by siloing people into strict developer, designer and project manager roles," said Matt Booy, technical director. "One of the founding principles of Phantom was ensuring the team has the opportunity to be involved at all stages of a project no matter their experience or job title. One

example is involving the entire team in initial brainstorming. Better work can be created when individuals are personally invested. We encourage open discussion and experimentation between devs and designers and are proud of the fact that our devs have a creative streak and our designers are not afraid to get stuck into code."

Emily also explained: "Being entirely full-time and in-house, our team works closely together every single day. We understand each other's skills, talents and weaknesses completely. We invest a lot of thought into carefully selecting custom teams for each project by playing to each Phantom's strengths and complimentary abilities. We're also very conscious of each individual's interests and provide as many opportunities as possible to expand their skill sets on live projects."

"In our time, we've turned around plenty of sites in three days, but are equally adaptable to working on giant builds for upwards of six months. With clients like Google, we have the privilege of working on a lot of huge impact projects, where time-intensive security procedures are extremely important. The variation is actually really refreshing and we find the small, high-adrenaline projects provide great punctuation throughout the larger

PHANTOM



## Think with Google

thinkwithgoogle.com

Think with Google is the go-to website for the latest consumer trends and market research from Google. We worked with the EMEA marketing team to completely redesign and build the site.

Although the site already existed, we started this project as if we were starting from scratch and completely reworked the UX and IA of the site to create a simpler and more natural journey for the user. We also completed, in person, user research throughout the design phase of the project to deep dive into what they required most from the site.



When thinking about the design, we very much wanted to work with Google's new Material Design approach. We used cards to display and promote content to work with the clean lines throughout the website. When working on this, Material Design guidelines had only been released for apps and so we



were one of the first teams to adapt this to website design. The Think with Google site was then used as an example of how to do this in the transition period.

The site was initially launched in five different languages and we will be continuing to roll it out in different markets throughout the upcoming year.

ones. In both instances, we do pride ourselves on being extremely efficient and completely realistic. We stick to timelines, costs and our word."

With ones and zeros running through the veins of each phantom, is the toolset they use equally divergent? Matt outlined their approach: "We still heavily use Adobe Suite for design - old habits die hard! However it does make sharing files easier amongst ourselves and other clients and studios."

"We use cloud-based services and applications for development and project management: Bitbucket, Google apps (Drive, Docs and Mail). We are always creating tools and applications in-house to help us with project workflow and creation. One example is a web-based app, which lets us quickly localise and share banner creatives with our clients."

"For development we mainly use Python and Django. However our team has experience in a variety of languages and frameworks. As we work on a large number of Google projects, we use the Closure Library for JavaScript applications however we are not averse to using jQuery and TweenMax for quick prototypes."

Emily also commented: "Project creation wise, we are really open minded and happy allowing each Phantom to experiment and use tools that they enjoy working with. We find ourselves sticking with industry standards in many instances to avoid complication. In all honesty, we also find it more sophisticated across the board, especially when switching between tools on the same project."

With Jamie concluding: "We often use InVision to create walkthroughs of our designs. It lets us quickly demonstrate concepts to clients. Our designers also take the time to create example animations in After Effects. It helps explain the idea behind the interactions of a website or an ad and sells the experience, rather than just the visuals."

How any agency approaches the work they are commissioned to create means paying very close attention to how the digital environment is changing, as it evolves all the time. Matt commented: "HTML5 hasn't quite lived up to its initial utopian dream. Variation in browser implementation and performance on different hardware still means extensive testing is required. Like everyone in the industry we're still waiting for older browsers to die!"

"One positive is that browser development is now much more reactive and has much shorter update cycles than in the past. Even better is that the updates are now mostly automatic so the end user is more likely to be on the latest and greatest. This give us more freedom in pushing cutting-edge solutions with confidence that the audience will be able to experience them as intended!"

And has mobile become the dominant platform it appears to be? Matt continued: "The web is ubiquitous and we can no longer just split traffic neatly into mobile and desktop. Analysis of the actual user base can help us make an informed decision on where we focus development whilst still providing a consistent experience across devices. There is no 'one-fits-all' solution for briefs."

Jamie also concluded: "A consistent experience across mobile and desktop is something that is simply expected today and we take this into account with every website we build at Phantom. With wearables on the rise and the Internet of Things becoming more of a reality, there will be more of a focus on UI/UX. Responsive design will play a central role in keeping things consistent. There is a lot of discussion about responsive versus mobile first versus progressive enhancement, but I think it all comes down to what type of content you are working with."

"Hardware is pretty exciting - cheaper wearables and the promise of VR going mainstream is

environment is a win for everyone. We consciously refer to ourselves as a brand rather than an agency. We wanted to create a brand that not only represented us as a team, but we could visualise all wearing proudly on a t-shirt."

"We see ourselves expanding into other industries in future and created a logo that would be completely universal. 'The Phantom' to us is a complete personification of our team, something we collectively own and represents us. It is so much more to us than a logo (creative director Jamie and I even have it tattooed on us!). It's actually pretty difficult to walk into Google without seeing Phantom gear in the form of a t-shirt."

In terms of advice for burgeoning artists. Cara said: "No two days are the same, so don't be afraid to ask questions, providing you've tried to find the answer. People will quickly get fed up of doing your work for you! Likewise, be willing to go the extra mile to help your team."

"Talk and learn from everyone - go to industry meet-ups, not only do they give you heaps of

insight from people with living experience within the industry, but connections, that might end up playing a big part in your career and decisions. I'll always be grateful for the advice I've received so far and

## With wearables on the rise and the Internet of Things more of a reality, there will be more focus on UI/UX

something we are keeping our eye on," said Matt. "Devices like the Oculus Rift have been in the hands of devs for the past year. But with big hitters like Samsung and Sony joining the party, is this the year that VR (finally) takes off? We anticipate advertisers and brands will jump on board, however finding a point of difference after the initial wow factor has worn off is the real challenge."

Clearly Phantom has taken great care when choosing the people to join their team. What criteria do Phantom use to hire their next team members? Emily outlined their approach: "We started Phantom feeling really privileged to know some of the most amazing and talented people imaginable. Phantoms by nature are perfectionists, motivated, thrive on collaboration, take inspiration from their personal interests and go a hundred extra miles to help each other out. As our team grew, it was always these qualities that told us pretty quickly whether a candidate was right. We value raw talent and drive over years of experience."

"Retaining a strong team culture and identity is hugely important to us. Phantom is a clique but one that we welcome people into with open arms. It's not a place to just go to work for a paycheque - we are a close team and genuinely care about each other and absolutely everything we do. Working within Google, we have definitely been influenced by their emphasis on culture and fantastic staff treatment. Creating the best working

continue to receive."

And what does the future hold for Phantom? Emily concluded: "We're definitely on the look out for the right collaborations in fashion, consumer tech, entertainment, beverages and publishing. We've always had an agreement that we would work with brands that we ourselves would wear, watch, use, listen to and endorse ourselves. This is super important to us and something we will always have at the front of our mind when pitching for or accepting work. We want to be the perfect fit for our clients and likewise, we like for them to be a great fit for us too."

"Also, we have plans in motion to diversify outside of digital on a number of side projects that are close to our heart. We will utilise these as a way to keep developing our brand, giving our team members a creative outlet to experiment in areas that step outside their day-to-day. Last but not least, our team is growing - we're constantly hiring. It's really great to see the industry so alive, there's nothing more rewarding than being able to offer amazing people great opportunities."

There is little doubt that Phantom is an agency on a meteoric trajectory that will see them diversify into every brand category. Their creativity is the product of their deeply felt desire to work within the exciting digital spaces around all of us, with clients and colleagues who share a common desire to set the world alight.





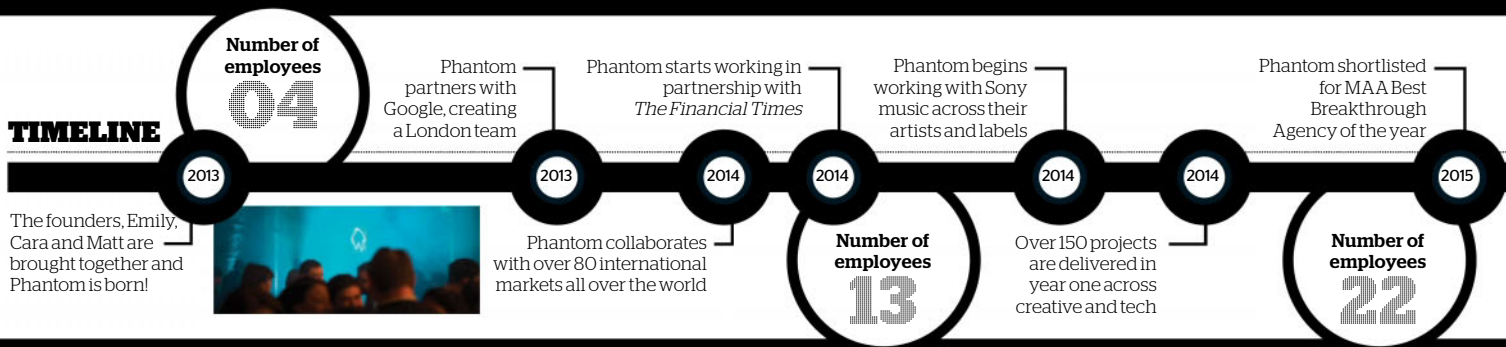
## PHANTOM

**WEB** ..... phantom.land  
**FOUNDERS** ..... Emily Shorvon, Cara Hamment, Matt Booy  
**YEAR FOUNDED** ..... 2013  
**CURRENT EMPLOYEES** ..... 22  
**LOCATION** ..... Greek St, Soho, London

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**SERVICES**

- > Web development
- > Digital design
- > Campaign strategy
- > Advertising creative
- > Experiential



# The next wave of responsive design

Go beyond just adjusting layouts across devices and work to make your websites truly perform for all your users





# The current standard

## NOT ALL RESPONSIVE WEBSITES ARE BEING BUILT EQUAL

**D**esigning and building for a range of screen sizes is expected of any new website, no matter how big or small. There are a wide range of frameworks and tools that are well established, as well as responsive techniques that are expected of any web developer or designer. Before long, the term 'responsive' itself will become old-fashioned, as there will be few sites that are not tailored for it.

It is commonplace for page layouts to be adjusted for screen sizes, and navigation menus to collapse to be available from a menu icon. It is also common for the

amount of information provided to a user to be reduced as a screen gets smaller. The rapid development of browsers and the increase of the number of organisations embracing the open web means that we can now easily access hardware features on devices from within the browser.

If we look back, the progress that has been made and level of change to web design considerations has been unprecedented. Not since the shift from table-based layouts in 2000/2001 have we seen this much change in coding approaches. That being said, there are areas where improvements can always be made.



*“Responsive design is a redefinition of ‘good design’ that acknowledges the rapid changes in how and where people browse the web”*

Phil Heywood, creative director at Redweb



## What should be done better?

THREE WAYS OF ENHANCING YOUR RESPONSIVE WEB DESIGN

### Consider the users of today

**The focus has been on learning and using new coding techniques to cater for the wealth of devices.** This has shown good progression in the quality of responsive builds but can often lead to losing sight of who the website is being built for. It may make sense when building to save on screen real estate and provide a really good-looking page layout, but this can cause frustration in users who have accessed information on a larger device and find it harder to get it on their phone.

By considering the users, better decisions can be made about how to create a good responsive experience.

### Make everything faster and perform better

**With the rate of change also comes a change in expectations of speed and performance.** When using functionality on a website any response is expected quickly and as browsers are more capable of processing information, developers are pushing more code into the browser. All of this must be done efficiently. This is also true for page-load speeds, as the differences between native device applications and websites reduce, websites are expected to load just as fast. Often something as simple as this can be the deciding factor in whether someone uses a website or not.

### Future proof your web development

**It doesn't make sense to only look at three screen widths when building a website.** This approach may cater for desktop, tablet and mobile views, but which ones? New devices are being developed all the time with differing screen sizes and resolutions - any websites that have not considered the full range of screen widths, between 320 and 1600 pixels, are likely to have problems with new devices as they are released. We could also use a simple 'check for touch method' for binding touch events and touchscreen laptops, in turn supporting future touch devices.

# New interface, new experience

ALWAYS DESIGN FOR THE USER, A RESPONSIVE SITE IS USELESS IF IT ISN'T APPROPRIATE FOR THE AUDIENCE

## Case study

# BBC iPlayer

THE BBC IPLAYER WEBSITE PROVIDES A SIMPLE AND INTUITIVE INTERFACE FOR USERS

The BBC iPlayer website has undergone substantial development over the past year. This seems to be more of an evolution than a rebuild, and this approach has led to a very well-considered solution.

The navigation is separated into two, one for global BBC sites and one for navigating within the iPlayer. This approach enables users to switch between a range of BBC sites seamlessly and reduces the amount of navigation items required within the iPlayer navigation itself. Instead of showing everything in a collapsible menu as the screen gets smaller, the iPlayer navigation keeps the key items immediately available, and even on small screens the channel menu remains.

The slider section is available on larger screen sizes including some tablets, it uses draggable touch interactions as well as hover interactions when using a mouse. This is an excellent example of the UI that considers specific input and method support of the device or browser being used.



## Improve the user experience

IT'S EASY TO LOSE SIGHT OF THIS AND CAN BE COSTLY

**There are quite a few user experience mistakes during the building phase for a range of devices.** These are mainly

due to still thinking from a desktop point of view, when information can easily be related and arranged to guide users through the online experience, or it's because the design and build has become too focused on what is technically possible and lost sight of what would be best for the user.

### Keep the navigation clear and useable

It goes without saying that the navigation of a website is vital and problems here are normally caused by the navigation being

complicated on desktop layout, and in turn being extremely difficult to support on smaller screens.

It is standard practice to switch the main navigation to a collapsible menu, but it is a good idea to keep the most popular top-level links visible for as long as possible. If the website has multiple levels of navigation, a slide-in menu works well and you can leverage swipe interactions to make it easy to use.

Make sure that a navigation menu containing lots of images that takes up more than the screen area is avoided.

This ensures that users can always exit the navigation easily. Additionally it is important to keep any navigation icons

aligned with best practice symbols as much as possible for user familiarity.

### Using touch-screen interactions

It can be infuriating for users when there is an interactive element such as a slider that isn't draggable on a touch screen. Instead of relying on button controls to move information around within the UI, make sure touch interactions are used on the UI elements themselves. This is much more intuitive for users and is always the first thing they will try.

Any elements that have click events bound to them should use a touch event when available (for example touchend). When a click event is triggered on a touch screen the following events are fired in order: touchstart, touchmove, touchend and click. The time difference between

touchend and click can be as much as 300ms - this may seem small, but within a UI it makes a huge difference in how responsive the UI feels when using it.

### Consider forms and screen size

When using a desktop computer, a form with many fields is easy to digest due to the space permitted by the screen size. As screens get smaller, forms can get unwieldy and difficult. This will impact conversion rates of your forms, which are core business drivers of websites.

To alleviate these problems forms should be broken down into smaller, logical sections and the progress through the form indicated to set the expectation with the user. Additional enhancements, such as field prompting and location lookups, can make the process easier.





The search remains prominent on smaller screens as this would be a well-used piece of functionality that would be detrimental to the user experience if removed. In addition to this the website leverages local storage to keep information about recently viewed media, this is the kind of tool that would have evolved through a combination of user testing and data analytics on the website over time.

From a performance point of view the initial page render is very fast, even when throttled to use GPRS speeds. This is predominantly down to the markup structure being ordered well and images being loaded after the rest of the page. All in all this demonstrates that by considering how a UI will be used, and adapting over time, a really elegant responsive solution can be created.

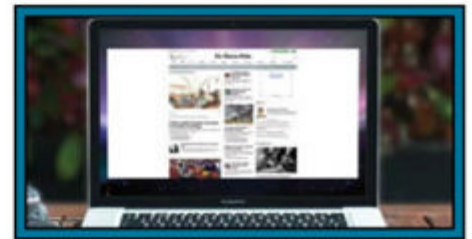
## The changing landscape

### AS WITH ANYTHING IN WEB DESIGN, RESPONSIVE DOESN'T STAND STILL

To get an understanding of the level of change to achieve responsive solutions, we need to look at what has gone before. The [bostonglobe.com](http://bostonglobe.com) website was one of the early adoptees - its simple grid layout suited a basis flexible layout solution that reflowed content as required across all screen sizes and switched the amount of columns used to display news articles based on screen size.

As the number of devices used to access the internet grew, jQuery mobile was created. This framework provided not only UI elements and functionality that had been tested and proven across devices, but also solved many issues.

A great example of modern responsive is the Department for Education beta site ([getintoteaching.education.gov.uk](http://getintoteaching.education.gov.uk)), the UI has a cross-device tailored feel, and the functionality is slick and well considered.



### The early adopters

The *Boston Globe* website was an example of a good early responsive solution



### Empowered interfaces

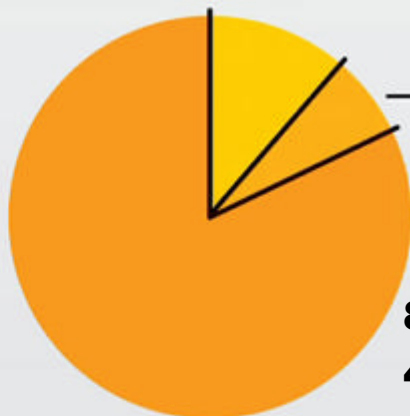
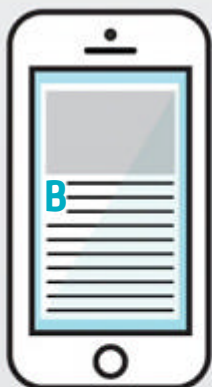
jQuery Mobile provides well-tested UI solutions for small screens and touch screen devices



### Contemporary marvel

The Department for Education website embraces everything that is great about modern responsive design

## Tablets and smartphones are now used more than desktops for internet access



**9%** of internet users own a smartwatch

**80%** of internet users own a smartphone

Average conversion rates on **8%** desktop and tablet

Average conversion rates on **4%** mobile devices

# Building for change

WITH ALL THIS ONGOING CHANGE, KEEPING UP CAN BE DIFFICULT BUT YOUR CODE SHOULDN'T NEED TO

## Think HTML first

From its conception in the early Nineties, HTML has always been considered and maintained as a standardised language. The simple and consistent structure of HTML tags means, that even if HTML contains errors, it is easy for an application to compensate and predict the desired structure. This enables the information held within HTML to always be accessible which is, and always has been, the main purpose of the world wide web since it began. HTML is largely the same as it was in the Nineties but the basic concept and use of it has remained.

HTML is the most consistently interpreted language across browsers and devices. Therefore it is important to rely on HTML whenever possible within a responsive build. Try to avoid building your markup with JavaScript and ensure that all of your vital information is present within the page as soon as possible. There are circumstances when you will need to render data within a page using JavaScript, but by thinking HTML first you can be confident in saving page-load performance at every opportunity. An added benefit of this is that you can ensure that search engines will be indexing all of your important content.

## Data separation

A web interface that requires a large dataset can cost you performance if all the data is initially held within the markup. If you have a filtered list of 500 items, you would be rendering all 500 on the initial page load. As this is HTML, this will load relatively quickly. However once you start to use JavaScript to filter and adjust this list, the data you are filtering against needs to be referenced straight from the markup. In JavaScript one of the slowest things you can do is query DOM elements, and as this will need to be done each time the data is filtered against, it can really slow down the interface.

Alternatively the data can be held within a JSON object, served to the page as a prerendered JavaScript

object or through a web service. This dataset can then be held within your JavaScript and filtered against without having to extract anything from your markup. The DOM elements will still need to be updated by JavaScript, but there are some great performance benefits to taking such an approach.

## Page load vs render

A page load is completed when all data or assets required to display the page have been loaded into the browser, whereas the page is only rendered when these assets have been interpreted by the browser and displayed to the user as intended. This means that when looking at site performance you should really be trying to

*The Guardian* unveiled a redesign earlier this year for its website, and tablet and smartphone apps. Interactive elements are now seamless across platforms, and home screen content is placed within “containers” and can be adapted to suit the story. *The Guardian* has provided most of its source code on [github.com/guardian](https://github.com/guardian)





consider both. These two considerations can contradict each other – if you make savings in page load, you are in turn asking more of the browser to piece the data or assets together during the render.

To decrease your page load you can look to reduce the number of HTTP requests your page needs. This works as a browser queues HTTP requests, therefore stopping any other pending assets loading. The largest assets are normally image files, these can be lazy and loaded with JavaScript after the initial page load which will dramatically decrease your page load-time.

To decrease your page-render time you can ensure that as much information is held within your HTML as possible, this negates the need to use JavaScript to render markup. Any JavaScript should be referenced after your page markup, as browsers not only load JavaScript but actually parse it as it is loaded. This will delay the render of any HTML/CSS that follows in your page and therefore slow down the page render.

Another thing to consider is the user's perception of load speeds, for example loading the images at the top of the page normally and then lazily loading other images as they scroll. The truth is there is not one silver

## “By thinking HTML first you can be confident in saving page-load performance”

bullet approach to gain perfect page loads and renders, but it is vital to strike the correct balance for your project.

### Precompile your code

We have all had to work with a colossal CSS file at some point. This makes ongoing development of a platform very difficult especially when working with CSS, due to its inheritance structure.

The most popular precompilation tools are for CSS, namely Sass, SCSS and Less. These tools provide a wide range of extensions to the standard CSS syntax enabling you to manage your styles in separate files and bring them together into one file. You can also utilise mixins or variables which let you declare sets of CSS properties once and reuse them throughout your code. This makes ongoing development and changes very easy to manage, and on compilation, these files are all brought together into one, ensuring that as few HTTP requests as possible are needed to load a page.

JavaScript files can be precompiled in a similar way. Many of the tools for this run on Node.js, such as Grunt, and also provide minification of your JavaScript further increasing your page performance. Imagine two developers working to produce the same UI and functionality – both solutions go through the same testing process and then fulfil all the defined requirements. Coding is such a creative medium to work in that it is extremely difficult for two solutions to match. Therefore we can assume that there are some differences, and these differences could help both developers improve their code. Now that these two approaches have been merged, a third developer can take it and make further improvements. This is the nature of web development today and is the core reason behind the success of many open source projects.

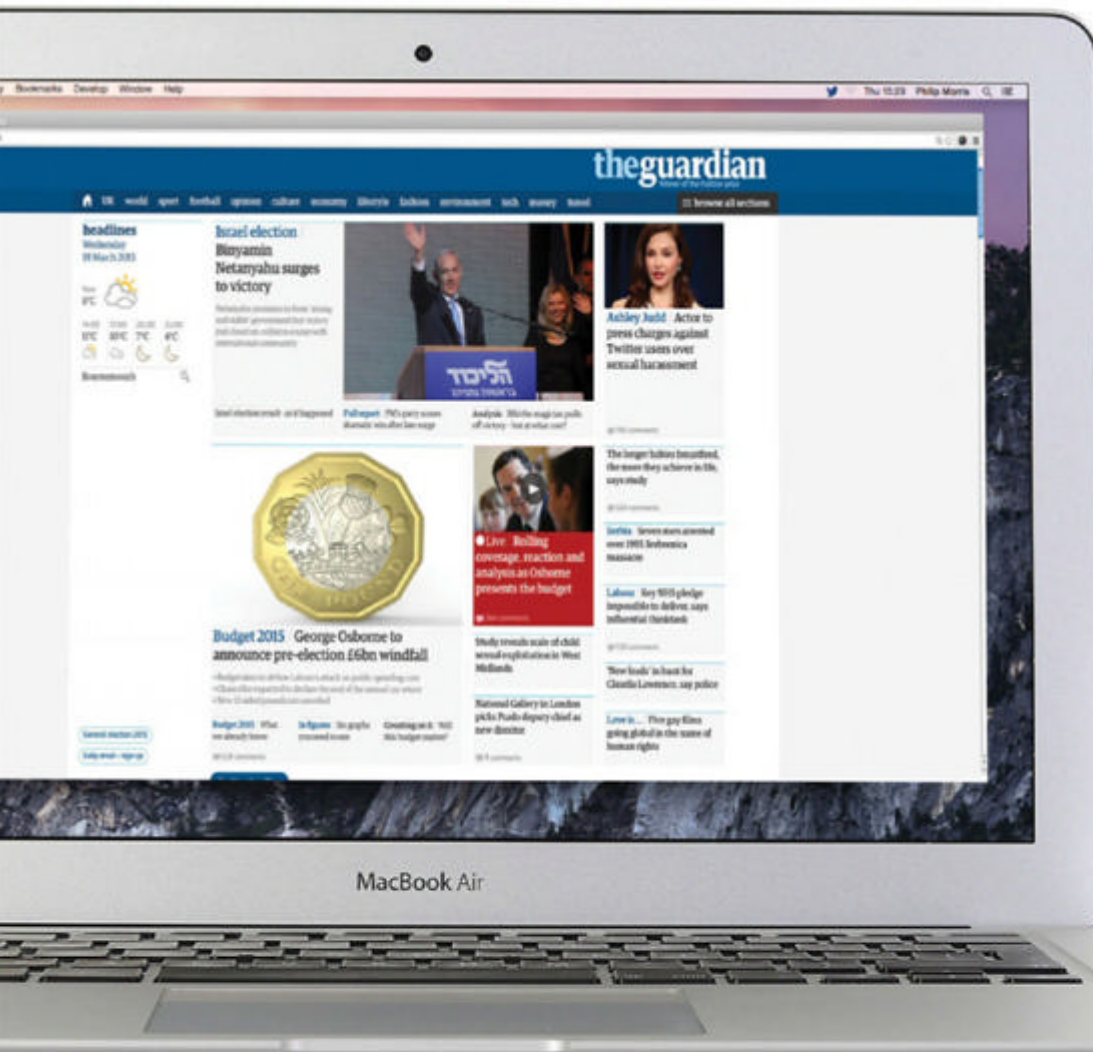
The browsers that run our code, and the tools and frameworks we use, are ever-evolving and improving, and we need to keep up. This rate of evolution combined with the range of tools available, means that one person cannot hold and keep up with everything. As soon as you realise this, be it within your team or a wider open source community, you will put less pressure on yourself to stay up to date. You will also be sure to benefit from the wealth of knowledge around you, being a jack of all trades isn't that great when you are a master of none, but being one part of a collective expert group is.

## Keep it simple

**MORE OFTEN THAN NOT THE SIMPLEST SOLUTION IS THE BEST**

If throughout your responsive design projects to date, you have found yourself reducing complexity as part of the mobile solution, then you have probably overcomplicated things. Now that we are used to designing for a range of screen sizes, there seems to be a tendency to add too much into the larger, desktop view. The thinking behind a mobile-first approach eradicates this problem from the outset, but can lead to desktop versions that are too simplistic.

How simple or complex your final solution is should be considered and defined during the wireframing and design phase of the project. If a range of screen sizes and layouts are considered from the outset, the solution will naturally be simpler. The range of information you may have included on a page may now be separated over two or three pages. This means that the user is given relevant and focused information as and when they request it, rather than being given extra information that may be relevant. This level of focus within a user journey will enhance the user experience in a similar way to breaking forms down into more sizable chunks.







# Responsive wearables

HOW WILL WEARABLES AFFECT DESIGN? WE ASK THE EXPERTS...

**Wearables are undoubtedly here to stay. How important will they become and how do you see them evolving over the next five years?**

With the emergence of new technologies and the staggering amount of web content, designers are finding it increasingly difficult to control the way users consume digital experiences.

However, the evolution of wearables isn't any different to the conversations that previously gave rise to responsive design (RD). It's just another category of device in mobile and desktop experiences that users can access content on. This is before considering technological developments such as screens that fold up like paper; as a designer, this is both liberating and a little terrifying.

Although the launch of the Apple Watch is a milestone, it only offers alerts and notifications. Wearables will become an integral part of our lives, but the fashion item will act as a digital hub that consolidates the users' existing digital tools. Therefore, the wearable screen itself is less relevant because the focus is on the user interface for the screen it integrates with.

**How can web designers take the fundamentals of responsive design and apply them to a design so that it can work on a screen such as a smartwatch?**

Content and RD go hand in hand. Responsive design is driven by content and small screen size is only one of many features that designers must take into account when creating an experience for multiple devices. A large screen may provide more space for content, but might, for example, lack the touch or voice controls that a smaller device offers. Responsive design is about designing to features and capabilities, not to devices. By embracing this fundamental concept,

designs can be appropriated across a huge ecosystem of current devices and those arriving in the near future.

When scaling down a web page you cannot expect to offer the same quality or experience due to different formats as it will not be sufficient. Designers must take advantage of RD that works across a range of devices by detecting the size and type of device in use and accessing information to complement the platform. The Apple Watch will enable designers to show small, discrete actions and create a template to perform single tasks.

It's no surprise that providing coherent content experiences that scale from handheld smartphones to smartwatches will continue to be a focus throughout 2015 and beyond.

**Can designers or developers use current technology such as HTML to create apps for smart devices?**

Designers can use current technologies to design and develop apps for smart devices, and wearables will add another layer of convenience not found with mobiles or tablets. However, the reading experience will be minimised and will only offer the reader specific action-driven content.

Although some think it will be a distraction by constantly buzzing users' wrists while draining the battery, it's a great notification platform, enabling users to quickly view the subject line. We will be in a more connected, autonomous world in which wearable technology can control many aspects of our life.

Smart, connected devices offer opportunities for greater reliability and capabilities that transcend traditional product boundaries. To keep up, design needs to continue evolving to create a fitting user experience.

**Tom Evans**

Head of UX and design at Box UK





Smartwatches add another dimension to the workflow of designers and developers. More thought will now need to go into the planning process, ensuring that UI design is more critical than ever. Plus, content strategies and approaches will need to be rethought to maximise the user experience



**What can web designers and developers do to master responsive web design on a smartwatch?**

The main and most important principle of responsive design is

adaptation to any device no matter the screen size. The right way of doing responsive design is to check things on devices and make changes as you see fit when they don't look great. Unfortunately, to make things easier, most designers have been setting a rather small number of breakpoints (small, medium, large) and designing for them. For those who have been going the extra mile, the transition towards smaller screens is going to be easier, the process is not going to change much, although fitting things in a very small screen is a massive challenge.

The lack of space will require much better planning and content strategy because there's no room for

irrelevant content, so a content-first approach will surely become more mainstream.

**What about existing technology like CSS? Will web designers and developers be able to use these when designing on a smartwatch?**

Yes, but why would they do that? HTML, CSS and JavaScript are rather limited compared to Swift, Objective-C, Java, UI kits and APIs available to create apps. As a web developer myself, if I had to create one app, I might try to use the technologies I know and create the app using PhoneGap or Cordova as a one off. For Cordova though I'd definitely have to invest the time and effort required to learn the native languages and APIs as I know it'll pay off later on in terms of performance and maintainability.

**Rafa Garcia-Lepper**  
Front-end engineer at rafalglepper.com

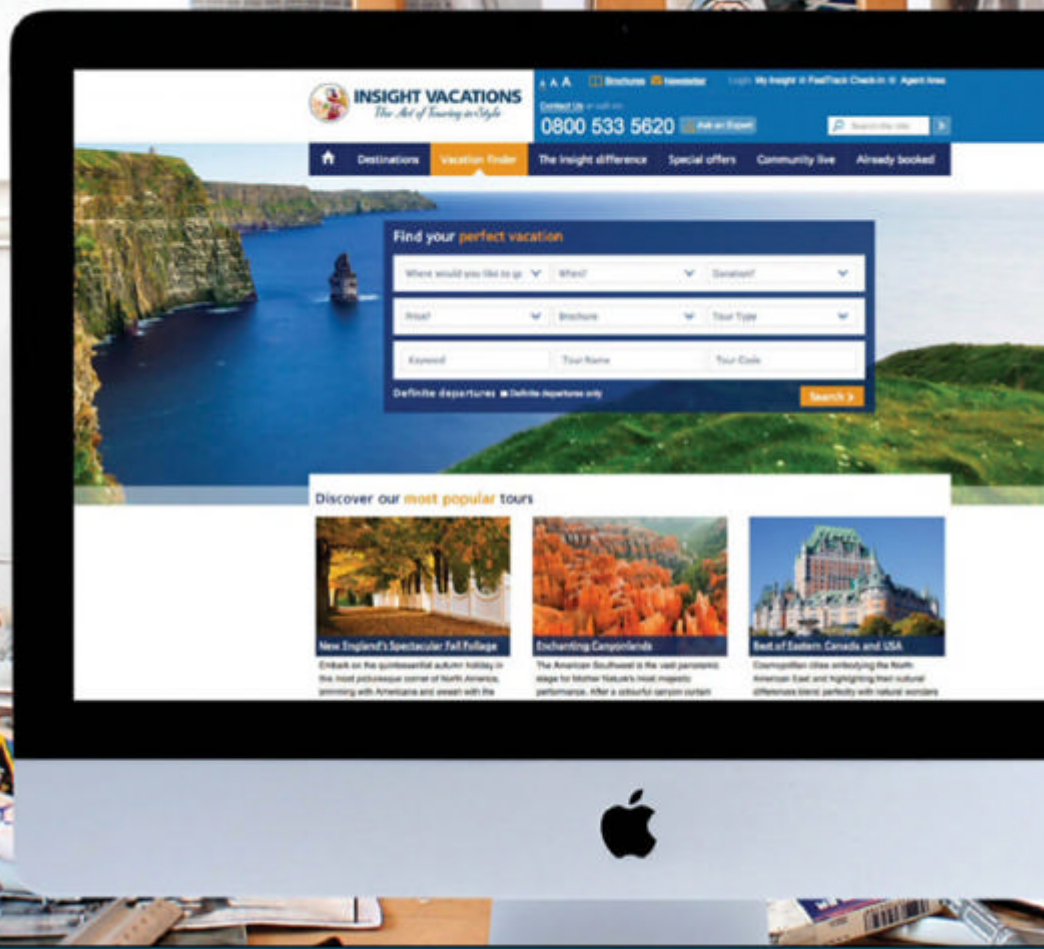


"The take up on wearables is growing rapidly. As designers and developers are getting to grips with creating user interfaces for small screens, the capabilities of such devices

are quickly evolving. A good example of UI development in this area is 5-tiles ([fivetiles.com](http://fivetiles.com)). The use of media queries, to adjust layouts and adaptive techniques, will make the transition to design and build for smaller devices easier. Smartwatches can really be seen as an extension on the possibilities of UX, different devices are not mutually exclusive but all part of the whole picture. We can't be sure how smartwatches will evolve, we do know it will change and we are more than ready for it."

**Luke Guppy**  
Frontend development director at Redweb

The [insightvacations.com](http://insightvacations.com) website is an example of a responsive build with complex UI functionality and adaptive HTML



# Adaptive HTML

IT IS REALLY DIFFICULT TO WRITE HTML THAT SUITS ALL SCREEN SIZES. WITH AN ADAPTIVE APPROACH, YOU DON'T HAVE TO

You may have had to retrofit responsive on an existing website, or perhaps tried your hand at a mobile-first approach on a new build. Either way it is very likely that your HTML structure, no matter how concise or semantic just doesn't suit all screen sizes. You can duplicate components with slightly different structures, and use CSS to hide and show them. Alternatively, you can use JavaScript to modify the HTML using the `matchMedia` method. Both of these approaches can help you achieve a responsive solution but come with their own problems.

If you can identify these problem areas and plan for them, you can use a combination of both techniques and adapt the HTML when necessary. Create alternative HTML snippets for the relevant components and use JavaScript to render them in the page at the right points using the `matchMedia` method in JavaScript. Some CMS platforms and responsive frameworks have started to introduce this adaptive approach to their toolsets. Check out Foundation's current solution [Interchange \(foundation.zurb.com/docs/components/interchange.html\)](http://Interchange.foundation.zurb.com/docs/components/interchange.html) which combines this approach with data attributes.

## Adaptive images

Images are well known to be the largest cause of slow load speeds, being able to show the ideal size image based on the screen size, pixel density and connection

speed has always been difficult. Adaptive techniques can be used to do exactly this and in JavaScript it is easy enough to check every variable we need. You will need to answer some key points for each project like, which size image do you load as default and if you rely completely on JavaScript to render any images.

There are some new approaches in HTML that are in current development, though not yet available across browsers. The first is the `picture` element, this HTML tag lets you nest image sources with media queries applied directly to them as attributes. The second is `srcset` which again leverages attributes to switch image sources based on media queries. Once these approaches are available, the current reliance on JavaScript can be reduced, increasing page performance.

## Navigation menus

Navigation menus are particularly tricky to build the same across devices - the way users interact across devices differs, and on a small screen a complex navigation is difficult to consolidate. You could try to make the navigation on larger screens match the mobile experience closer, but this always feel forced.

To solve this you will again need to use alternative HTML snippets, but plan these out and try to avoid changing the HTML too often. Another big problem in this area is that duplicating links to other site pages in

close proximity can have a detrimental effect on a website's search rankings. A workaround for this is to only render the href attributes on one version and use data attributes on the duplicate versions. You can then use JavaScript to switch the navigation markup and toggle data attributes to be href attributes when needed.

An extra enhancement when building multilevel navigation is to consider using `touchstart` events to bind showing and hiding menu options. When using a smartphone this can feel really slick, but be careful not to overuse it though as you don't want too much animation happening when users don't expect it.

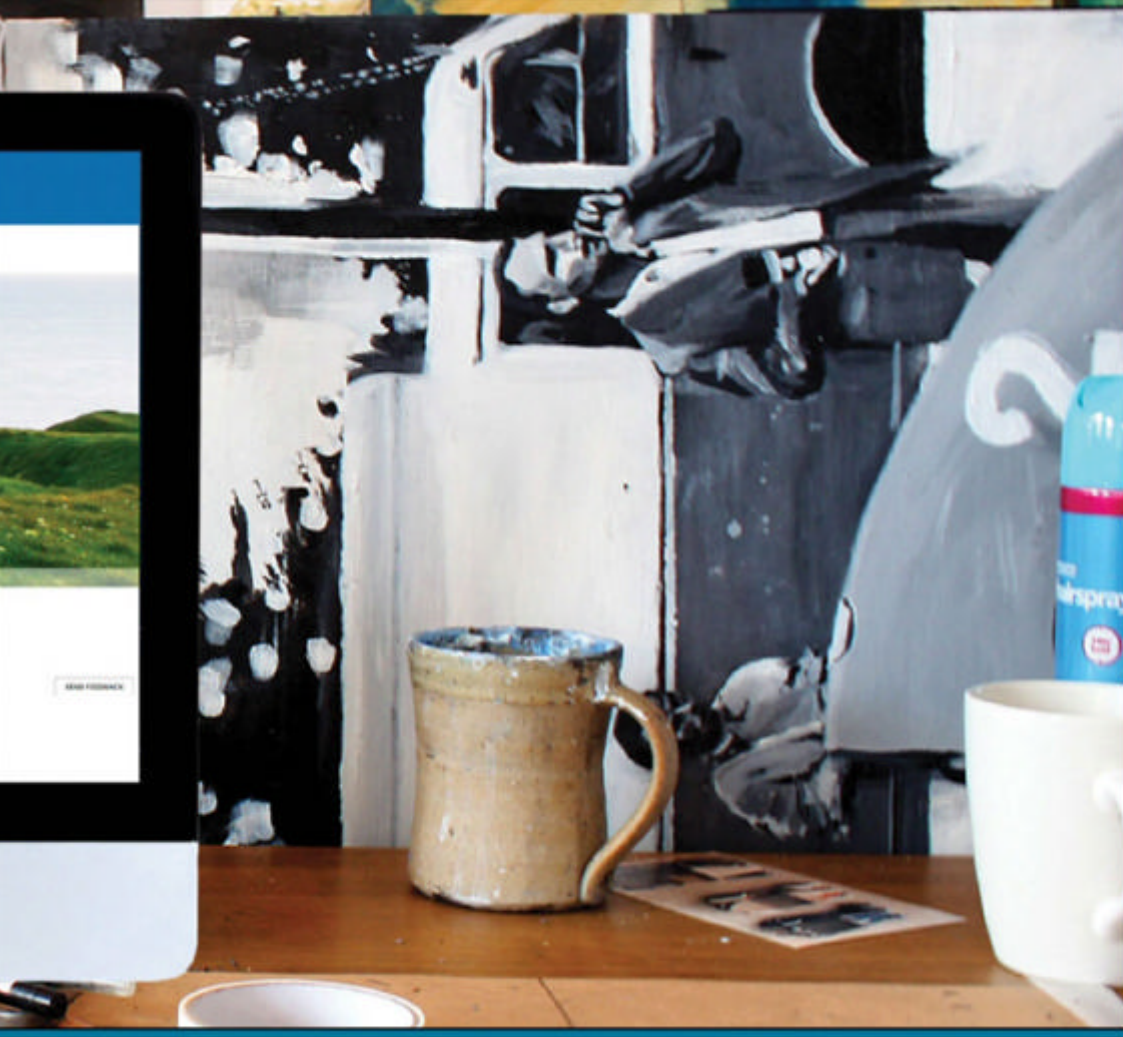
## Sliders and carousels

It seems that most websites feature a slider or carousel of some kind. A common approach to adapting them is to disable the functionality altogether and only display the first item on small screens. There is a better solution.

Firstly, if your slider automatically rotates then disable this on smaller screens as this can be very distracting on a smartphone. Then consider the size of any controls or buttons that switch between the slider items. On a touch screen these need to be larger than on a desktop computer. Just detect for touch input methods and adjust accordingly with CSS. Knowing that touch inputs are available lets you make your slider draggable, users on touch screen devices expect this functionality.

A gotcha that is often overlooked with the sliders is what happens to these elements when a user switches a tablet from landscape to portrait and vice versa. Make sure that the slider is reset to the first item and that the animations in progress will not cause unexpected UI behaviours and states.





## Maintain code

### BE PROUD OF WHAT YOU PRODUCE AND DON'T LET IT GO OUT OF DATE

Technical debt is something that you will come across at some point in your development career. If you haven't already, this is when code becomes out of date and when looking back at it, you realise it's not something you would be that proud of producing today. This is where good code maintenance can help.

It doesn't take much to maintain your code, all you need is to plan a small amount of time every month or so. With this time, review any recent changes in browser specs or new techniques that could improve your code. These changes could be minor, but can later amount to significant improvements. Any JavaScript polyfills supporting older IE versions may be able to be removed. CSS fallbacks could also be removed as CSS3 techniques gain more support across browsers. If the original build didn't use CSS precompiling, this could be gradually introduced and enhance the ease of maintenance of your code.

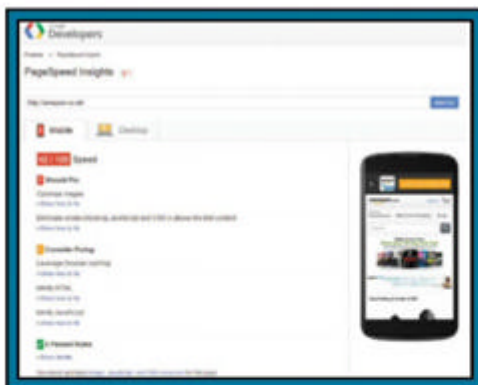
# Tools, techniques and resources

ANYTHING THAT MAKES A RESPONSIVE BUILD EASIER CAN BE WORTHWHILE, HERE A FEW GEMS NOT TO BE MISSED

## Google Page Speed Insights

[developers.google.com/speed/pagespeed/insights](https://developers.google.com/speed/pagespeed/insights)

This is an excellent tool that not only gives a good indication of performance for mobile and desktop, but also provides guidance on what steps can be taken to improve the page speed. Simply input any public facing URL and the page is analysed immediately. If there are any assets on the page that need optimising, Google will even do this for you and provide download links at the end of your report. Additionally by giving a performance score out of 100, you set benchmarks to aim for and even agree a minimum score with your clients to reassure them prior to build.



## Ghostlab

[vanamco.com/ghostlab](https://vanamco.com/ghostlab)

Tablet and mobile devices lack the debugging tools that we have become accustomed to with our desktop browsers. Ghostlab provides the same level of debugging, both inspecting HTML and CSS as well as access to console. On top of this, Ghostlab lets you view the same interactions and transitions across a range of devices at once, dramatically reducing the effort required to test across devices. This means that you can see exactly what you are presenting in your project for the user experience there and then. Ghostlab doesn't require any setup for JavaScript-enabled clients either and lets you build a custom workspace whenever you want

## Icon fonts

[symbolset.com](https://symbolset.com)

The days of creating and managing sprite sheets for icons are gone. Icon fonts are a much more efficient way of rendering icons throughout a website. These icons are based on SVG files so can be resized as required, and they look perfectly crisp on Retina displays. They are really simple to use and on a large build can have a huge impact on the render speeds of your website. Symbolset is one example of a good icon font tool, take a look at the site and try it out. Once you are comfortable with it you can move on to building your own custom icon fonts as part of your build process.

## Responsive Web Design - second edition

[abookapart.com/products/responsive-web-design](http://abookapart.com/products/responsive-web-design)

The second edition of *A Book Apart*, written by Ethan Marcotte, is an excellent resource. It provides a good overview for all the aspects within a responsive design and build. The first edition was good, but this book brings into play many new techniques and approaches that are essential for responsive web design today.

## Responsive News from the BBC

[responsivenews.co.uk](https://responsivenews.co.uk)

This is a blog site created by the developers at the BBC. It gives a good insight into techniques and approaches taken up at the BBC and the thinking behind them, well worth checking out.

## Paul Lewis on Twitter

[twitter.com/aerotwist](https://twitter.com/aerotwist)

Paul Lewis talks regularly at conferences in the UK. He has some great insight into responsive approaches especially around the importance of performance. Follow him to get all the important updates.

## Luke Wroblewski

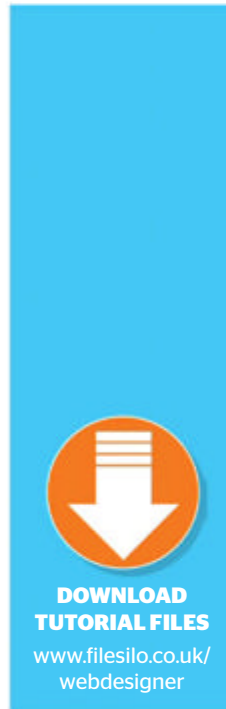
[twitter.com/lukew](https://twitter.com/lukew)

With extensive experience in responsive design Luke Wroblewski is a great source. His expertise in this landscape means that he often shares insights into data research and new thinking in this area.

# Make an animated off-screen 3D menu

Get your menu to stand out with a 45-degree page view off screen

**tools | tech | trends** Brackets  
**expert** Mark Shufflebottom



lot of the projects that are featured in this magazine are done so because they have some unique feature about them. Most of these have some quirky way of interacting with the menu and as the user tends

to do most of the interaction with the menu, it's usually a good place to start when creating a unique focal point for your site. In this tutorial we are going to look at CSS3 transformations that, by default, are hardware accelerated. As such, we can add lovely 3D effects and transitions to our content by adding and removing classes that will trigger the animations. In this menu we will have an off-screen menu that slides in from the left-hand side, nothing out of the ordinary about that, except that our page content will flip out of the way using a 3D transform enabling the menu to take full focus on the page. Then, when it's time to bring the page back, the user simply clicks on the page and the menu slides back out and the page rotates back into view. A little trick here to make this work is to stop the page being scrollable while the page is rotated out to one side.

## 01 Start the project

Open the start folder in Brackets or place it in your local web server folder. Take a look at the page, before starting the project, in a web browser to see that there is a basic page on display - a menu needs to be added to this. There is a comment in the index.html page showing the end of the twist div, add the menu in here.

```
001 <nav class="offscreen-nav">
002 <a href="#">Home</a>
003 <a href="#">News</a>
004 <a href="#">Blog</a>
005 <a href="#">Portfolio</a>
006 <a href="#">Contact</a>
007 <a href="#">About</a>
008 </nav>
```

## 02 Switch to the CSS

Save the index page and move to the style.css in the CSS folder. Add the following code in here. It can go at the bottom of the document, just make sure that it isn't inside a media query. Here the twist class is being given a relative position on the page. This will hold the menu outside of the page.

```
001 .twist {
002 position: relative;
003 }
```

## 03 Build the content

All of the real pages go inside the container class. Here it is given a white background because later the menu will be given a red background to match the

design on the screen. It's given a z-index that is higher than the rest of the menu so that all the main content will be visible above this.

```
001 .container {
002 background: #fff;
003 min-height: 100%;
004 position: relative;
005 outline: 1px solid rgba(0,0,0,0);
006 z-index: 10;
007 -webkit-transform: translateZ(0)
translateX(0) rotateY(0deg);
008 transform: translateZ(0) translateX(0)
rotateY(0deg);
009 }
```

## 04 More page positioning

There is a wrapper class just inside the container, again this needs to be set to relative so that when the design opens, it works correctly. When the menu is opened a class gets added to it and this is called 'open'. Here the twist class is made to be fixed and the perspective added.

```
001 .wrapper {
002 position: relative;
003 }
004 .twist.open {
005 position: fixed;
006 -webkit-perspective: 1500px;
007 perspective: 1500px;
008 }
009 }
```

## 05 Tidy up the open page

When the menu opens, the container that holds the regular page content is made to have no overflow. This helps it to twist out with a 3D perspective to it without having the rest of the page on display. At this point the cursor is set to be a pointer so that the container becomes the button to bring the page back into the main view.

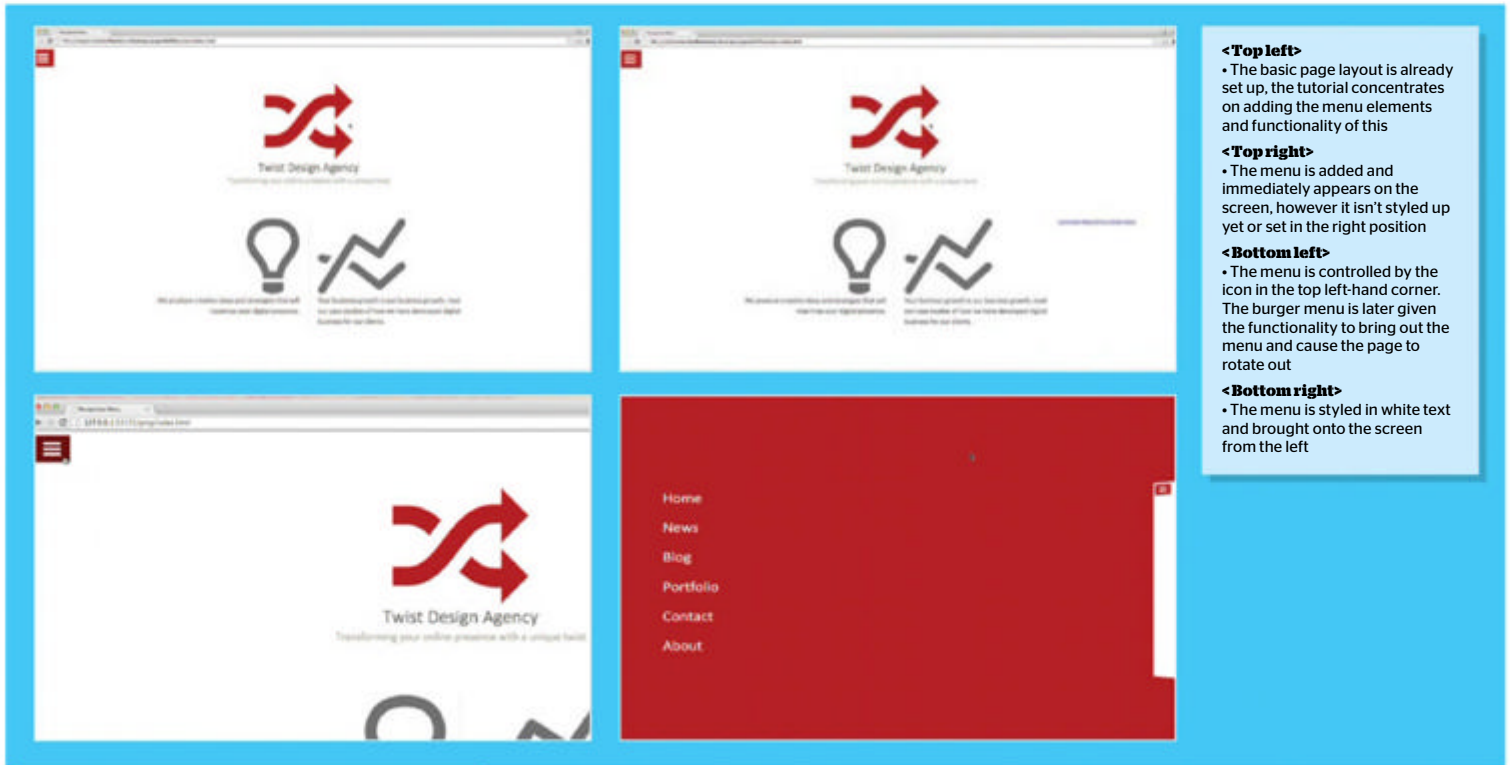
```
001 .open .container {
002 position: absolute;
003 overflow: hidden;
004 width: 100%;
005 height: 100%;
006 cursor: pointer;
007 -webkit-backface-visibility: hidden;
008 backface-visibility: hidden;
009 }
```

## 06 Add functionality

As the content is being animated in 3D space the open wrapper is given a CSS transformation on the z axis. The container is slightly altered when it is in animation to be slightly bigger than the screen with full opacity. The transition takes less than a third of a second.

```
001 .open .wrapper {
002 -webkit-transform: translateZ(-1px);
003 }
004 .animate .container::after {
005 opacity: 1;
006 height: 101%;
007 -webkit-transition: opacity 0.3s;
```





- <Top left>**
  - The basic page layout is already set up, the tutorial concentrates on adding the menu elements and functionality of this
- <Top right>**
  - The menu is added and immediately appears on the screen, however it isn't styled up yet or set in the right position
- <Bottom left>**
  - The menu is controlled by the icon in the top left-hand corner. The burger menu is later given the functionality to bring out the menu and cause the page to rotate out
- <Bottom right>**
  - The menu is styled in white text and brought onto the screen from the left

**Normalize.css file**  
 The project makes use of [normalize.css](http://normalize.css), which makes browsers rendering all elements more consistently and in-line with modern standards. It's available from [necolas.github.io/normalize.css](http://necolas.github.io/normalize.css).

```
008 transition: opacity 0.3s;
009 }
```

**07 Position the navigation menu**  
 Here the navigation for the off-screen menu is set in the CSS. The position is set at absolute so that it can be animated from the side and made to have a height that fits its content. This is given the transform position of 50% of the height and to ensure hardware acceleration the preserve-3d is set.

```
001 .offscreen-nav {
002 position: absolute;
003 height: auto;
004 font-size: 2em;
005 top: 50%;
006 -webkit-transform: translateY(-50%);
007 transform: translateY(-50%);
008 -webkit-transform-style: preserve-3d;
009 transform-style: preserve-3d;
010 left: 25%;
011 }
012 }
```

**08 Menu items**  
 Each menu element needs to be styled up in the right font weight, with the underline and the margin taken off to make it appear in the right place on the screen. A transition is added so that the text colour can change on rollover and to make it all visible.

```
001 .offscreen-nav a {
002 display: inline-block;
003 white-space: nowrap;
004 font-weight: 300;
005 text-decoration: none;
006 margin: 0 0 30px 0;
007 color: #fff;
008 -webkit-transition: color 0.3s;
009 transition: color 0.3s;
010 -webkit-transform-style: preserve-3d;
011 transform-style: preserve-3d;
012 }
```

**09 Finish the menu items**  
 The next CSS will give the hover a bright yellow colour to make it stand out against the red background. The background is set in the effect-persp class to a red colour to match the logo in the page. The white page will rotate out to the right while the menu will animate in from the left on the red background.

```
001 .offscreen-nav a:hover {
002 color: #fff72f;
003 }
004 .offscreen-nav a {
005 display: block;
```

```
006 }
007 .effect-persp {
008 background: #b40000;
009 }
```

**10 Add the transition**  
 In order to make the container swing out and twist in 3D space we need to change its transform origin point to the centre of it. This is given a slightly longer transition time than in Step 6, but it all works together to bring the effect on the screen.

```
001 .effect-persp .container {
002 -webkit-transition: -webkit-transform 0.4s;
003 transition: transform 0.4s;
004 -webkit-transform-origin: 50% 50%;
005 transform-origin: 50% 50%;
006 }
```

**11 Close the row**  
 When the container is swinging out, a class of 'animate' will be added to it. This is the class that will actually contain the animation. As you can see it rotates the interface on the y axis by 45 degrees. Try and imagine that there is a pin in the top of the screen that rotates the page 45 degrees away from the view.

```
001 .effect-persp.animate .container {
002 -webkit-transform: translateZ(-1500px)
003 translateX(100%) rotateY(-45deg);
004 transform: translateZ(-1500px)
005 translateX(100%) rotateY(-45deg);
006 }
```

# Make an animated off-screen 3D menu



- <Top left>**
  - The rollover for the menu elements is set to yellow to bring a transition highlight colour to the interface
- <Top right>**
  - The CSS controls the page rotating on the y axis so that it moves slightly over to the right and rotates 45 degrees
- <Bottom left>**
  - The menu is in midtransition as the page rotates out of the way and the menu fades in from the left of the browser window
- <Bottom right>**
  - When the menu is open, the page that is rotated becomes the link to bring this back to the forefront. Notice that scroll is disabled in the menu view

## Project add-ons

The project uses classie.js, a lightweight class editor that saves using the whole of jQuery, it's available from [github.com/desandro/classie](https://github.com/desandro/classie).

### 12 Second row of columns

The actual links are positioned off the screen to the left so the translateX CSS transform is applied to keep them 150 pixels off the screen to the left. These are animated in from a transparent opacity, in the next step they'll be given full opacity to be fully visible to the viewer.

```
001 .effect-persp .offscreen-nav a {
002 opacity: 0;
003 -webkit-transform: translateX(-150px);
004 transform: translateX(-150px);
005 -webkit-transition: -webkit-transform 0.4s,
006 opacity 0.4s;
007 transition: transform 0.4s, opacity 0.4s;
008 }
```

### 13 Final CSS

Finally the menu is brought onto the screen with the full opacity for each menu element. Save the style.css now because it has been completed. There won't be anything to see in the browser though because there is no functionality added to the page yet. That will come next by applying the CSS classes with JavaScript.

```
001 .effect-persp.animate .offscreen-nav a {
002 opacity: 1;
003 -webkit-transform: translateX(0);
004 transform: translateX(0);
005 }
```

### 14 Start the JavaScript

Open the file twist.js and you will see that it is an empty document ready for us to begin. This tutorial is using the classie.js external library for adding and removing classes with JavaScript to CSS. In this function the code returns how much the page has scrolled.

```
001 function scrollY() {
002 return window.pageYOffset || docElem.
003 scrollTop;
004 }
```

### 15 Setting variables

The next part of the code sets out some variables that are needed in the code. The biggest section is an object containing the browser prefix names. These are used to check when the transition has ended by dynamically adding an event listener to the transition later in the code.

```
001 var docElem = window.document.
002 documentElement,
003 support = "transition",
004 transEndEventNames = {
005 'WebkitTransition': 'webkitTransitionEnd',
006 'OTransition': 'oTransitionEnd',
007 'msTransition': 'MSTransitionEnd',
008 'transition': 'transitionend'
009 },
010 transEndEventName = transEndEventNames[
011 'transition' ],
012 docscroll = 0;
```

```
006 'OTransition': 'oTransitionEnd',
007 'msTransition': 'MSTransitionEnd',
008 'transition': 'transitionend'
009 },
010 transEndEventName = transEndEventNames[
011 'transition' ],
012 docscroll = 0;
```

### 16 Initialise the interface

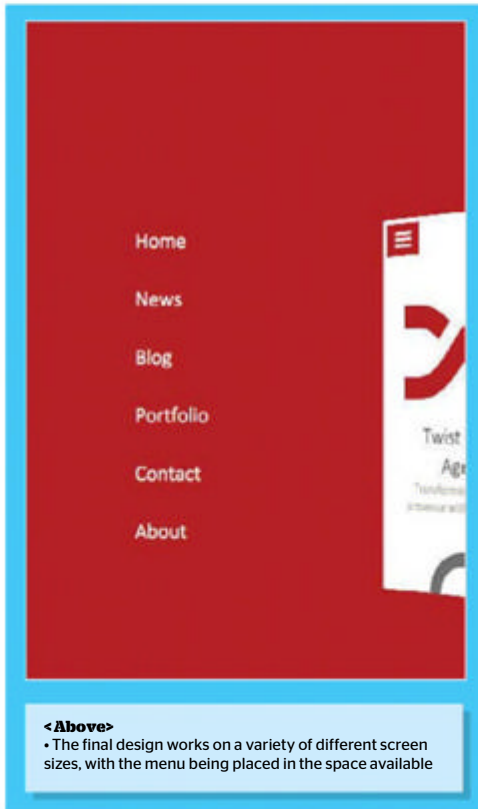
Most applications have an init function to initialise all the things that are necessary. The first part of this function will get a reference to all the necessary elements in the DOM so that these can be manipulated through the code without having to continuously traverse the DOM.

```
001 function init() {
002 var showMenu = document.getElementById(
003 'showMenu' ),
004 twistWrapper = document.getElementById(
005 'twist' ),
006 container = twistWrapper.querySelector(
007 '.container' ),
008 contentWrapper = container.querySelector(
009 '.wrapper' );
```

### 17 Show the menu

Here the menu button is detected for when a user clicks on it. The click event fires the remaining function, which is only partially shown in this step. The event is stopped from propagating and the default action of the button is also prevented. This enables the code to run without default actions interfering.





<Above>

• The final design works on a variety of different screen sizes, with the menu being placed in the space available

```
001 showMenu.addEventListener( 'click',
function( ev ) {
002 ev.stopPropagation();
003 ev.preventDefault();
004 docscroll = scrollY();
005
```

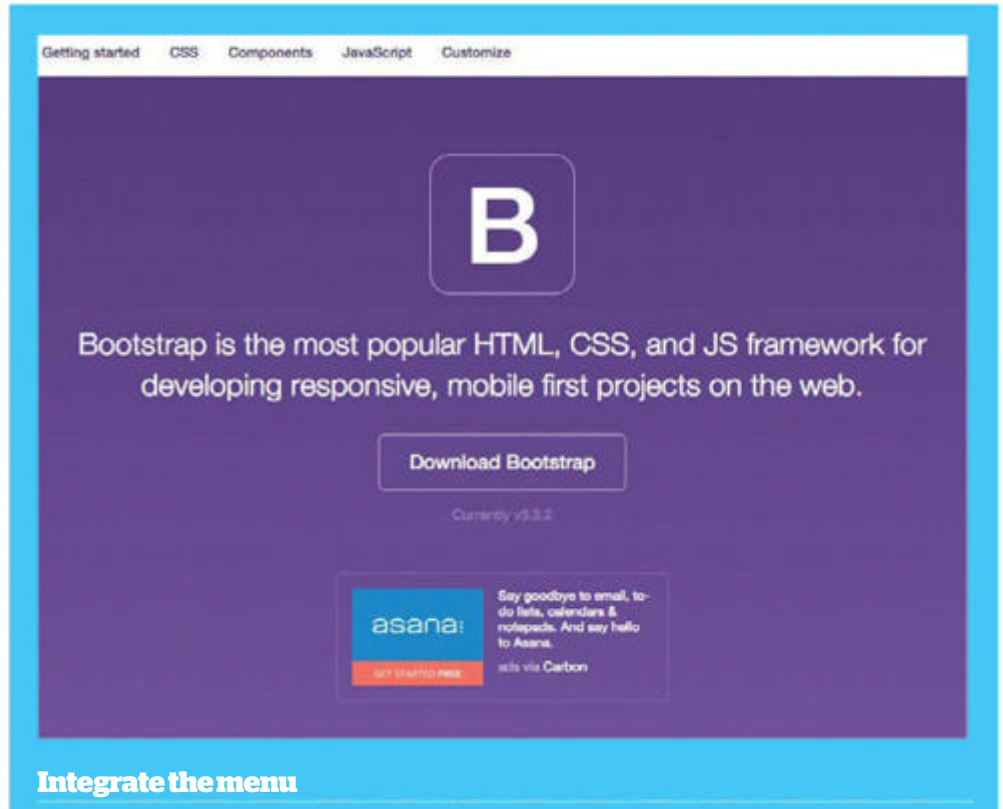
### 18 Finish the image

The rest of the function is shown here. The scrolling is set to stop at this point as the class of 'open' is set to the twistWrapper element. Just marginally after this, triggered by the setTimeout command, another class is added called the 'animate' class and this therefore starts the animation.

```
001 contentWrapper.style.top = docscroll * -1 +
'px';
002 document.body.scrollTop = document.
documentElement.scrollTop = 0;
003 classie.add( twistWrapper, 'open' );
004 setTimeout( function() { classie.add(
twistWrapper, 'animate' ); }, 25 );
005 });
006
```

### 19 Return the menu

The container gets an event listener added to it, which also detects input from a click. This should only fire if it has the 'animate' class already added to it because that means it's actually open and needs to go back when clicked, otherwise it won't fire.



### Integrate the menu

This menu could easily be implemented with a responsive framework such as Bootstrap or Foundation as an alternative to their respective menus. Remember that each of those frameworks give you a custom download of what is available, you don't need the whole framework. As such, you can leave out the existing menu that comes with those frameworks and add your own. Doing this is a great way of customising and making the design look less like an existing framework because those menus are very obvious. Custom web design menus will always create a more appropriate look for your web projects and with so many responsive frameworks, it's almost possible to take the best parts of each to kick-start your own work.

```
001 container.addEventListener( 'click',
function( ev ) {
002 if( classie.has( twistWrapper, 'animate' ) )
{
003 var onEndTransFn = function( ev ) {
004 if( support && ( ev.target.className !==
'container' || ev.propertyName.indexOf(
'transform' ) == -1 ) ) return;
```

### 20 Remove the event

If the transitions have finished then the 'open' class needs to be removed, which makes sense as the menu isn't open any more. At this point scrolling is returned to the user so that the page can carry on like a normal web page under the control of the user.

```
001 this.removeEventListener(
transEndEventName, onEndTransFn );
002 classie.remove( twistWrapper, 'open' );
003 document.body.scrollTop = document.
documentElement.scrollTop = docscroll;
004 contentWrapper.style.top = '0px';
005 };
006
```

### 21 Removing the animate class

Similar to the previous step the twistWrapper has an event listener added that detects that the transition has finished. When it does it removes the class of 'animate' as this is no longer applicable to it. Just the final finishing off of the init function is left.

```
001 twistWrapper.addEventListener(
transEndEventName, onEndTransFn );
002 classie.remove( twistWrapper, 'animate' );
003 };
004 });
```

### 22 Finish off

Add the final code and bracket to close off the init function. The final line calls this function so that the previous code is applied. Now save this JavaScript and open the index.html page in your browser to see the menu open and close while the transition takes full effect.

```
001 twistWrapper.addEventListener( 'click',
function( ev ) { return false; } );
002 };
003 init();
```

# web workshop

## Create shuffling text effects with jQuery

inspiration [s5-style.com](http://s5-style.com)



Portfolio websites for web designers and front-end developers are a really great place to show off their own work. With no clients to dictate the look, content or styling of the site, it presents the designer with an opportunity to carve out their own unique style. This has been the case for Shogo Tabuchi who has created

a CSS animated masterpiece with [s5-style.com](http://s5-style.com). This website has everything from jittery, glitch-like text effects to 3D background panels that move to new locations every five seconds or so. Even the menu unfolds and animates in a very stylish way to reveal the menu items on the right-hand side.

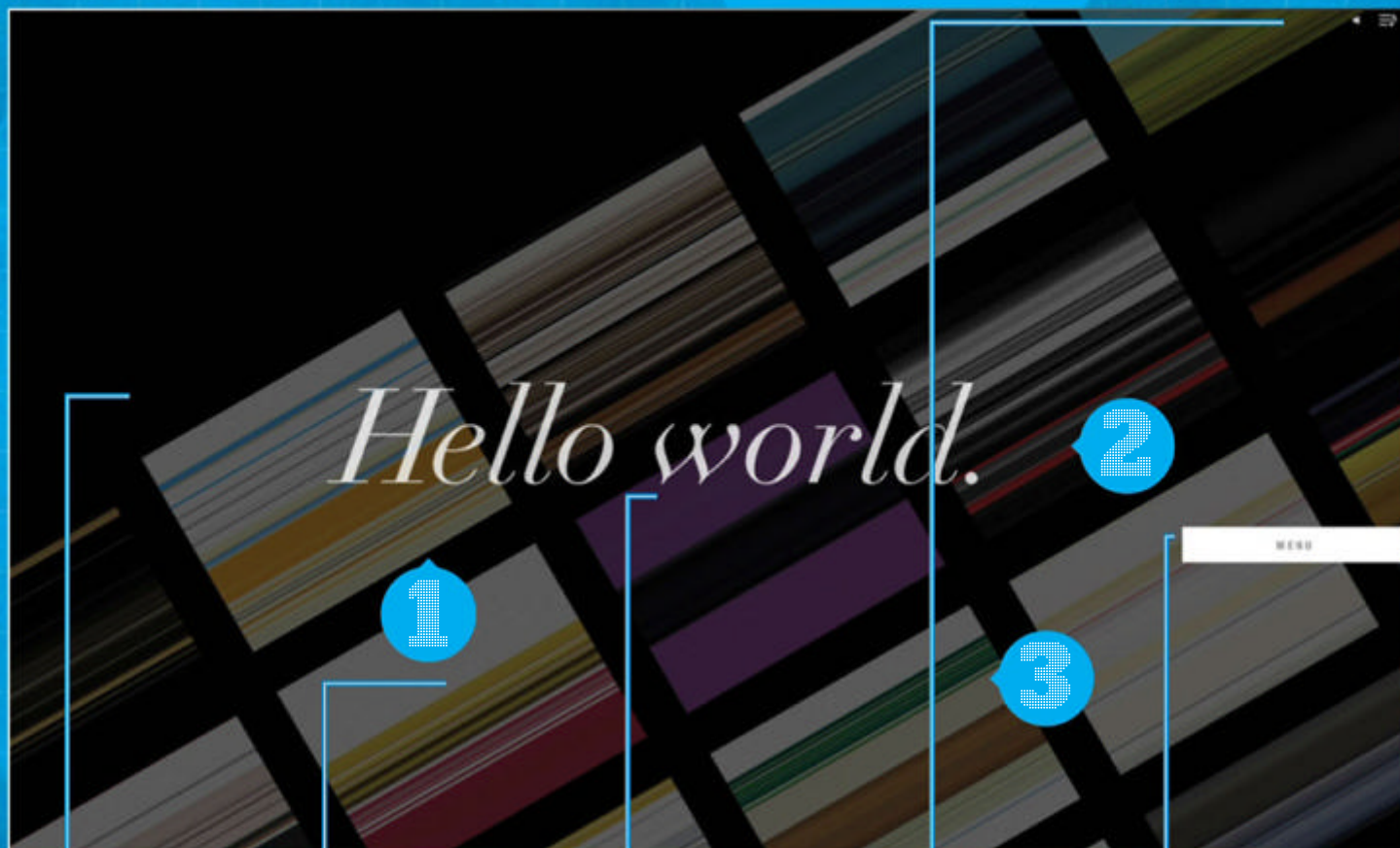
### 1 INSPIRATION

#### Background animation

The panels that appear in the background to [s5-style.com](http://s5-style.com) are beautifully crafted in code. Each panel is a canvas element and each of the panels have what appears to be a blur of lines on them. This is actually a single column of pixels from the image of that section of the portfolio. As the image appears on the screen the single column moves along the image, producing an animation of lines that are stretched beyond recognition. This type of effect is known as a slit-scan effect and it first came to prominence in the end sequences of the Stanley Kubrick film *2001: A Space Odyssey*.

#### Music on websites

S5 Style has a background music track that plays automatically, this can be annoying for some visitors or they may be in an environment where it isn't appropriate to play sound. As such, always make sure there is a way to mute the sound on the site.



#### 3D canvas

The background contains animated lines on canvas elements that are displayed in 3D space. These lines can be clicked and will lead to their own individual sections.

#### Layout shapes

Every few seconds the background tiles move to a new location in 3D space, forming different layouts such as a grid, a circular layout and a long line.

#### Jumbled text

The "Hello world" text in the centre of the page has a shuffling text effect that changes each of its letters from the initially untangleable collection into readable words.

#### Music feature

The site music can be turned off with a handy button in the top-right of the interface. There is also a button that provides more information about the musician and links to his SoundCloud too.

#### Folding menu

The menu has a prominent position which makes it very unique. Clicking this causes the menu to fold in from the middle of the right-hand side of the screen.





**<comment>**  
What our  
experts think  
of the site

## Noisy minimalism

"I have tried to keep a careful balance between a glitchy design and a minimalistic design – what I call 'noisy minimalism'. I used HTML5 PushState API to implement seamless image transitions when users click on navigation links and expressive animations on mouseover. I chose GreenSock as it's lighter than jQuery and let me create a wider range of 3D animation with CSS3." **Shogo Tabuchi**

2

## TECHNIQUE

### Make the jittery text

#### 01 Body content

In the body section of the page add some content to work with. There needs to be a div on the outside, which is named 'wrapper' and a div on the inside that has been named 'jitter'. Notice we also have a link as this makes a great rollover effect for text.

```
001 <div class="wrapper">
002 <div class="jitter"><a href="#"
003 id="text">Hello World</a></div>
004 </div>
```

#### 02 Link the code libraries

In the head section of the page, add in links to jQuery and to the locally hosted Character Cycle plugin that is available for download from <https://github.com/robinwillis/CharCycle>. It is also included in the project folder on FileSilo.

```
001 <script type="text/javascript"
002 src="http://ajax.googleapis.com/ajax/
003 libs/jquery/1.6.2/jquery.min.js"></
004 script>
005 <script type="text/javascript"
006 src="jquery.charCycle.0.0.1.js"></
007 script>
008
```

#### 03 Add jQuery

Now while still in the head section of the document add the script tags and jQuery code that will check when the document is ready. This will then start the jitter effect on the text when the mouse is hovering over the text.

```
001 <script>
002 $(document).ready(function(){
003 $('.jitter').mouseenter(function()
004 {
005 if($(this).
006 hasClass('cycling')==false){
007 $(this).
008 charcycle({'target': '#text'});
009 }
010 });
011
```

```
008 });
009 </script>
010
```

#### 04 Style the basics

Move on to creating the stylesheet now and this can be done either in an external stylesheet or in the head section. The page is given a black background with both the body and 'wrapper' div being made to fit the 100% height of the browser.

```
001 <style>
002 html, body{ background-color:#000;
003 color: #fff; height: 100%;}
004 .wrapper{ height: 100%;}
005
```

#### 05 Style the content

The final styling makes the jitter centrally aligned inside the wrapper div element. Here the link text is made a little bigger, while having a white, italic styling applied to it. Save the page now and view it in the browser, roll your mouse over the text to see the effect.

```
001 .jitter{
002 height: 100px; position: relative;
003 top: 50%; transform:
004 translateY(-50%);
005 text-align: center;
006 }
007 a {color: #fff; text-decoration:
008 none; font-style: italic; font-size:
009 60px;}
010 </style>
011
```



The jittery text effect of the [www.s5-style.com](http://www.s5-style.com) site can be reproduced quite easily thanks to the handy CharCycle jQuery plugin.

3

## TECHNIQUE

### Create moving lines

In the website there are a number of moving line backgrounds – these have been produced using the canvas element, however it is possible to recreate this using a simple animated GIF technique.

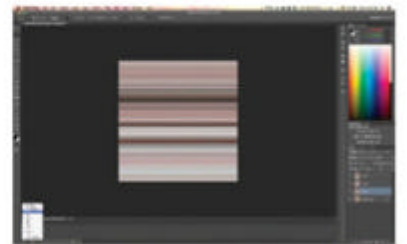
#### 01 Create selections

In Photoshop, use the single column marquee tool to grab a section of the image. Then copy and paste this section to a new layer and scale this horizontally to fill the image. Repeat this until you have several layers each slightly different.



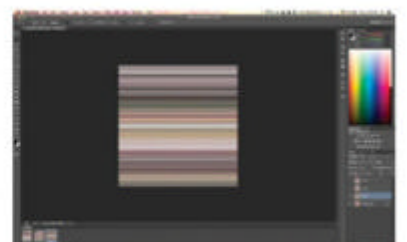
#### 02 Make the animation

Go to Window>Timeline and in the new panel that opens, click on 'Create frame by frame timeline'. Under the frame, click the down arrow and tell the frame to hold for 0.2 seconds.



#### 03 Trim the artboard


Now duplicate the frame and turn off the visibility of the top layer. Repeat this step until you have cycled through each frame. Now go to File>Save for Web and choose GIF as the file format.



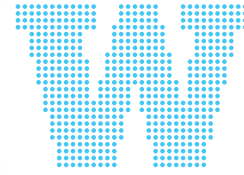
# Construct an adaptive printable CSS design

Make a self-adaptable content layout that is flexible and printable from the browser

**tools | tech | trends** HTML text editor such as Atom, and a HTML5 and CSS3 capable browser - tested on Safari, Chrome and Firefox  
**expert** Leon Brown



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bsites and web apps are considered a medium for providing on screen content, but are just as capable of delivering content ready for printing. This

alternative use for web-based content delivery opens new potential for the use of websites and web-based applications. This tutorial takes a look at how web design principles can be applied to printing from the web browser through the use of adaptive design, graceful degradation and separation of design from content. Although printable content is unlike on-screen content in that it is a static presentation format, we will take a look at how the delivered content can be supported through JavaScript-based interactivity that enables users of a website or web-based application to select which version of the content to be printed - without the need for any duplication of the HTML-based content delivered.

The tutorial shows how a leaflet design can be modified using adaptive design techniques with CSS to become a voucher that is more ink efficient.

## 01 Get started

The first step is to declare the main HTML page structure including the head and body section within the HTML page. The content container is an <article> element that has a data-printVersion attribute used later to define which print design is being used. Other HTML elements will contain specific content sections.

```
001 <!DOCTYPE html>
002 <html>
003 <head>
004 <title>City Tours</title>
005 </head>
006 <body>
007 <article data-printVersion="">
008 </article>
009 </body>
010 </html>
011
```

## 03 Action call

In addition to describing the promotion in the <header> section, the offer needs to be presented in a simplified form that can be read at a glance to be printed. We add a new <section> element inside the <article> container with class="outline" that will enable it to be selected from the CSS for specific styling. Notice how the class="screenOnly" class can enable hiding from printing.

```
001 <section class="outline">
002 <ul>
003 <li>Amazing sights.</li>
004 <li>Incredible facts.</li>
005 <li>Free tourist guide.</li>
006 <li class="screenOnly">PRINT YOUR TICKET
NOW</li>
007 </ul>
008 </section>
009
```

```
006 <span data-image="two"></span>
007 <span data-image="three"></span>
008 </p>
009 </div>
010 </section>
011
```

## 05 Terms and conditions

The leaflet must give clear details of the terms in which it can be used. A <footer> section is added to contain this content and will be styled accordingly with CSS. It is important that this section is clearly visible to avoid any conflict between the promotion and customers who use the voucher.

```
001 <footer>
002 <p>Valid on 01/02/03 before 12pm. No
refunds available.</p>
003 </footer>
```

## 02 Content overview

With the main layout elements in place, we are now ready to start inserting the main content. The leaflet will have a descriptive title and introduction in the <header> section of the HTML layout. This will be used to make it clear what is being promoted.

```
001 <header>
002 <h1>20% Discount</h1>
003 <p>Your luxury city tour awaits complete
with our 20% discount limited time offer.</p>
004 </header>
005
```

## 04 Add informative content

The leaflet will present a section detailing highly informative information. This will not be part of the voucher version of the content, so a .leafletVersion class is applied to the <section> container for later detection in CSS. This section will also have some images defined via CSS using the attribute data-image.

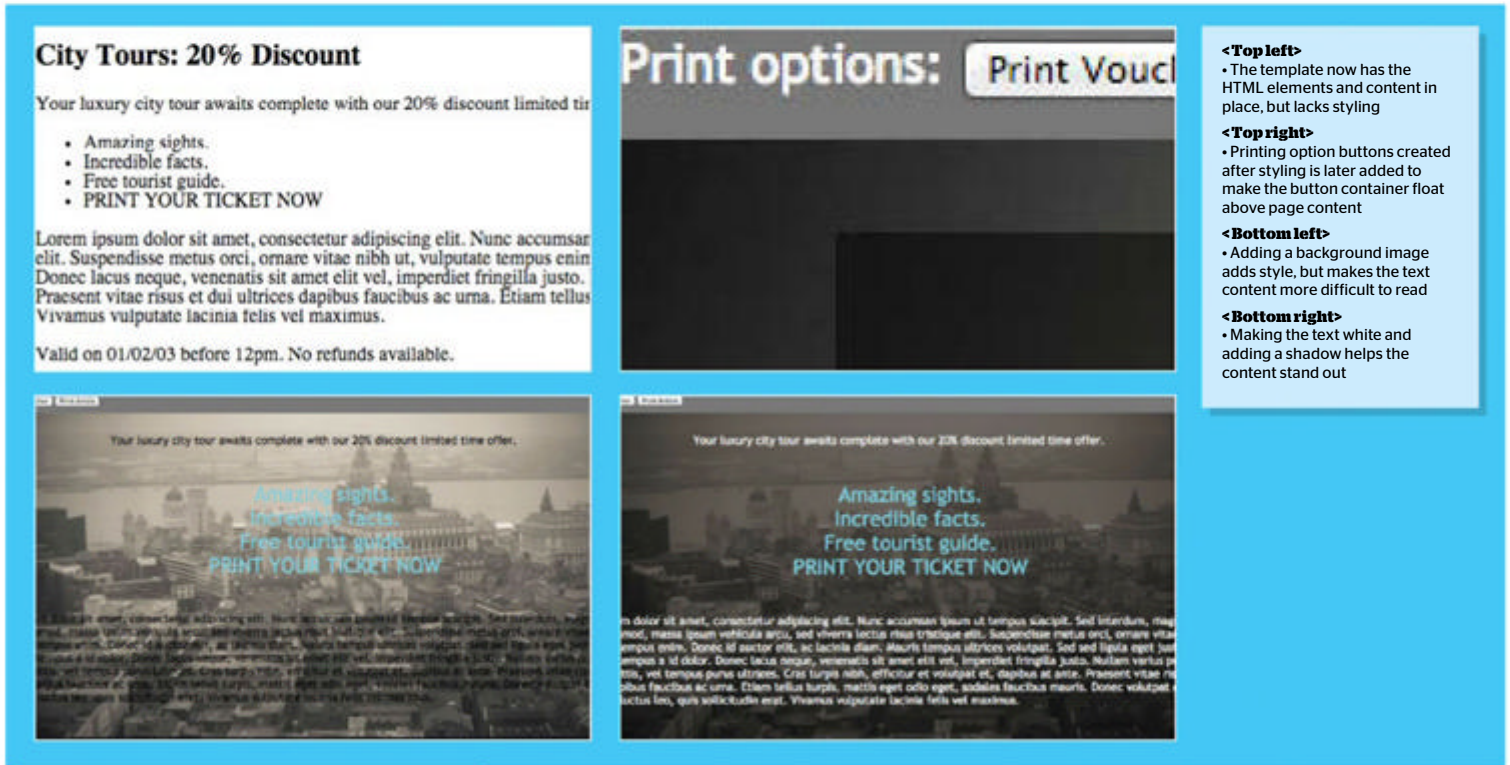
```
001 <section class="leafletVersion content">
002 <div class="columns2">
003 <p>Lorem ipsum dolor sit amet...</p>
004 <p class="imageRow">
005 <span data-image="one"></span>
```

## 06 Print interface

The preview screen will provide options to select which version of the content to print. The user interface requires buttons for each option, hence the HTML for these options will be placed after the closing </article> tag. These buttons activate the printout() function that then activates the page printing.

```
001 <div class="screenUI screenOnly">
002 Print options:
003 <input type="button" value="Print Voucher"
onClick="printout('voucher');" />
004 <input type="button" value="Print Article">
```





**<Top left>**  
 • The template now has the HTML elements and content in place, but lacks styling

**<Top right>**  
 • Printing option buttons created after styling is later added to make the button container float above page content

**<Bottom left>**  
 • Adding a background image adds style, but makes the text content more difficult to read

**<Bottom right>**  
 • Making the text white and adding a shadow helps the content stand out

## Hide unsuitable elements

Stylesheets can be used to control how different versions of the content are presented without the need for JavaScript or content duplication.

```
onClick="printout('leaflet');" />
005 </div>
```

### 07 Print buttons

The printout() function called by the previously inserted UI buttons needs to be defined in JavaScript in the <head> section. This function takes the version of the document to print as a parameter and applies it to the <article> tag's data-printVersion attribute so that CSS can detect the layout rules required for printing.

```
001 <script>
002 //.. Allow jQuery style DOM selection
003 $ = function(cssRule){
004 return document.querySelector(cssRule);
005 }
006 //.. Activate Page printing
007 printout = function(version){
008 $("[data-printVersion]").
setAttribute("data-printVersion", version)
009 window.print();
010 }
011 </script>
```

### 08 Create resource files

The main HTML template content is now complete, but the additional CSS stylesheet resource files are still required to add the styling. Create a text file called 'styles.css' and another called 'styles\_print.css', making sure that your text editor does not add TXT as a file extension. These also need attaching from the <head> section of HTML document.

```
001 <link rel="stylesheet" type="text/css"
href="styles.css" />
002 <link rel="stylesheet" type="text/css"
media="print" href="styles_print.css" />
003
```

### 09 Content container

Open the styles.css file you have created in your code editor. This file will be used to define styles that are common to both the on-screen preview as well as the print version. The <article> container is used to define the flow of the content to cover the full-page width, but adjust to however much content it contains, hence we don't need to define a height.

```
001 article{
002 display: block;
003 width: 90%;
004 clear: both;
005 margin: 1em auto 1em auto;
006 padding: 2em 5% 0 5%;
007 text-align: center;
008 }
009
```

### 10 Font sizes

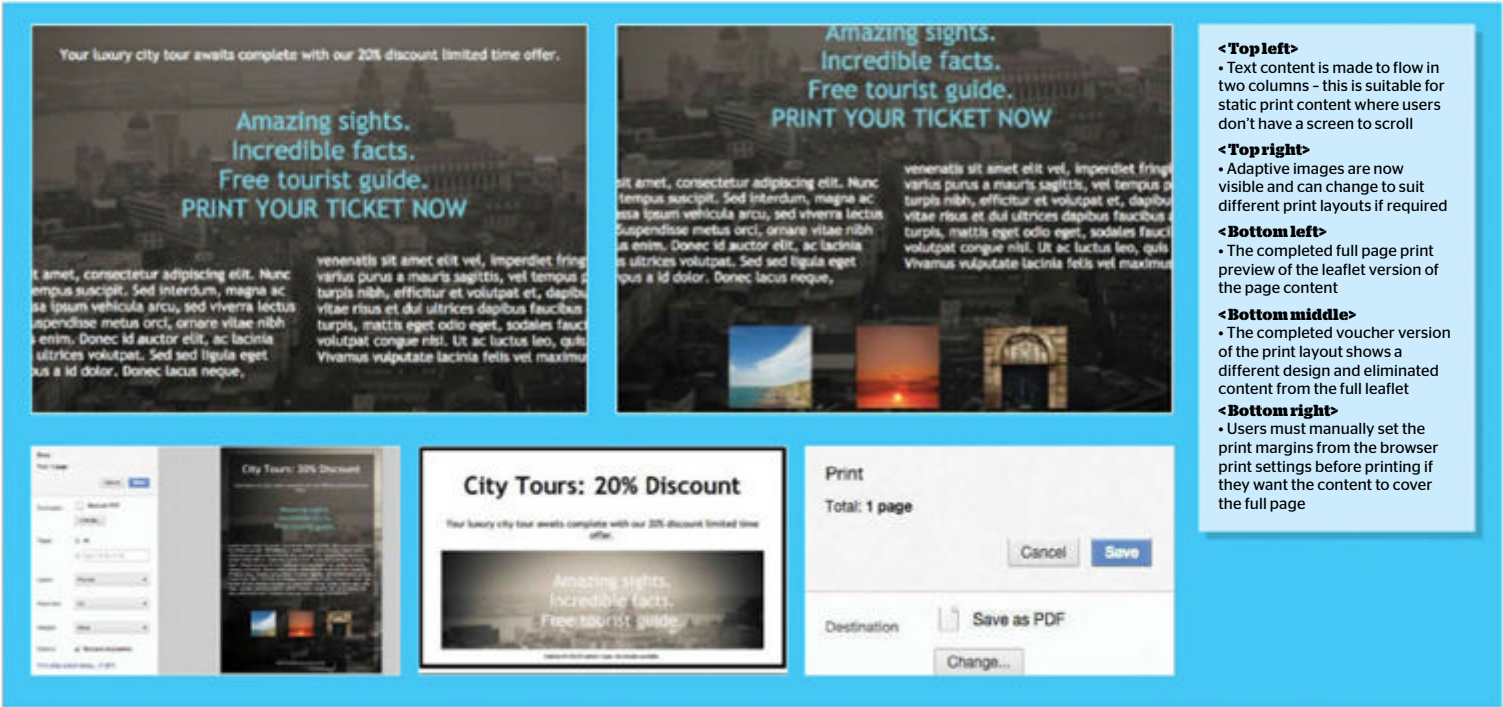
A default font size is required for the <article> container, which can then be used by other elements to base their font sizes. Not only does this enable font sizes to automatically adapt themselves when the screen version is altered, but also when altering the font sizes for print when using a different type of measurement.

```
001 article{
002 font-size: 20px;
003 }
004 header h1{
005 font-size: 2.5em;
006 }
007 section.outline{
008 font-size: 1.8em;
009 color: #5AD8E5;
010 }
011 footer{
012 font-size: 0.5em;
013 }
014
```

### 11 Background style

Setting a background image as part of the on-screen preview will make the design look more appealing. We will want the content to stand out from the image, so using a semitransparent image, cover the full background, and set the background size as 'cover'.

```
001 article{
002 background-image: url('img/background5.
jpg');
```



**<Top left>**  
 • Text content is made to flow in two columns – this is suitable for static print content where users don't have a screen to scroll

**<Top right>**  
 • Adaptive images are now visible and can change to suit different print layouts if required

**<Bottom left>**  
 • The completed full page print preview of the leaflet version of the page content

**<Bottom middle>**  
 • The completed voucher version of the print layout shows a different design and eliminated content from the full leaflet

**<Bottom right>**  
 • Users must manually set the print margins from the browser print settings before printing if they want the content to cover the full page

```
003 background-size: cover;
004 }
```

## 12 Adjust readability

The text may be difficult to read in some places with the new background. We can improve this by making the default text colour of <article> white to minimise the conflict between the colours used in the background, whilst each content area can make use of a dark transparent background to make the text stand out.

```
001 article{
002 text-shadow: 2px 2px #000;
003 color: #fff;
004 }
005 header, footer, section{
006 background: rgba(0,0,0,0.5);
007 }
```

## 13 Adding the padding

The final part that we want to add to the default CSS is the spacing to the different areas of text. Although this will increase the size of the voucher, it will also help people to distinguish the different parts of the content – making it easier for them to read and more likely that they will take notice.

```
001 header, footer, section{
002 padding: 0.1em;
003 }
```

## 14 Informative content layout

The section of the leaflet containing the informative content needs styling for its elements. With print content being static, text layout is often arranged in

columns to enable easier reading. We will use CSS to provide this formatting with browsers that support it – those that don't can gracefully degrade the presentation to a single column of text.

```
001 .columns2{
002 text-align: left;
003 -webkit-column-count: 2; /* Chrome, Safari,
Opera */
004 -moz-column-count: 2; /* Firefox */
005 column-count: 2;
006 }
007 .screenUI{
008 display: block;
009 position: fixed;
010 top: 0;
011 left: 0;
012 height: 2em;
013 width: 100%;
014 color: #fff;
015 background: #777;
016 font-weight: heavy;
017 }
```

## 15 Informative images styles

The informative content area also has some CSS defined images that are placed in a container and these will use the .imageRow class. The layout will make use of of the .imageRow container to keep the images separate from the two column text, with each data-image being a set size and displayed as an inline-block for horizontal positioning next to each other.

```
001 .imageRow{
002 display: block;
```

```
003 clear: both;
004 text-align: center;
005 margin-top: 3em;
006 }
007 .imageRow [data-image]:first-child{
008 margin-left: 0;
009 }
010 [data-image]{
011 display: inline-block;
012 width: 6em;
013 height: 6em;
014 margin-left: 3em;
015 background-size: cover;
016 }
017 }
```

## 16 Informative images styles

With the rules defined for data-image items, it is now easy to define the CSS rules for each individual image. This will be achieved using the value of the data-image items. The advantage of defining images in this way over the traditional <img> tag is that we can use CSS to change the images for different versions of the print design if required.

```
001 [data-image="one"]{
002 background-image: url('img/photo1.jpg');
003 }
004 [data-image="two"]{
005 background-image: url('img/photo4.jpg');
006 }
007 [data-image="three"]{
008 background-image: url('img/photo5.jpg');
009 }
```



## 17 Initiate print styles

We are now ready to add the parts of the CSS that optimise the page layout for the different print options. Open the `styles_print.css` file you created and define the CSS rules that will hide elements not required for the selected version of the design - notice how `!important` is used to make sure these rules take priority over any other CSS rules.

```
001 .screenOnly{
002 display: none !important;
003 }
004 [data-printVersion="leaflet"]
    .voucherVersion{
005 display: none !important;
006 }
007 [data-printVersion="voucher"]
    .leafletVersion{
008 display: none !important;
009 }
```

## 18 Size and margins

We want to make sure that there is no margin or padding getting in the way of print, whilst also making sure that the base font size used by the article container is using a measurement that is ideal for print - in this case setting the base font size to 14pt.

```
001 body{
002 margin: 0 !important;
003 padding: 0 !important;
004 }
005 article{
006 font-size: 14pt;
007 margin: 0;
008 padding: 0 5% 0 5%;
009 }
```

## 19 Full page leaflet

The leaflet needs to cover a full page, hence we make use of the `data-printVersion="leaflet"` attribute to define specific alterations to the standard presentation. In this case, we want to set a height and padding of the `<article>` container to equal 100 per cent, with the inner `.content` class element being made to have a set height that covers the required space.

```
001 article[data-printVersion="leaflet"]{
002 width: 90%;
003 height: 95%;
004 padding-top: 5%;
005 }
006 [data-printVersion="leaflet"] .content{
007 text-align: left;
008 height: 55%;
009 }
```

## 20 Optimise presentation

The promotion image used for the screen preview version of the voucher will use unnecessary ink

# Code library JavaScript print page options

Let JavaScript use jQuery style CSS rules to select HTML page elements to perform operations on.

Adjust article container to have the `data-printVersion` attribute used by CSS to identify how to print the page.

An alternative to `<img>` tag enables CSS to define image elements where their source image and settings can be changed for different print layouts.

```
001 $ = function(cssRule){
002 return document.querySelector(cssRule);
003 }
004 printout = function(version){
005 $("[data-printVersion]").setAttribute("data-
    printVersion",version)
006 window.print();
007 }
008 [data-image]{
009 display: inline-block;
010 width: 6em;
011 height: 6em;
012 margin-left: 3em;
013 background-size: cover;
014 }
015 [data-image="one"]{
016 background-image: url('img/photo1.jpg');
017 }
018 [data-image="two"]{
019 background-image: url('img/photo4.jpg');
020 }
021 [data-image="three"]{
022 background-image: url('img/photo5.jpg');
023 }
```

when printing, therefore a more printer-friendly presentation of the image should be used. This requires the backgrounds and font shadow of `<article>`, `<header>`, `<section>` and `<footer>` containers to be reset. We'll also set the `<article>` container to have a border.

```
001 article[data-printVersion="voucher"]{
002 background: none;
003 border: 6pt solid #000;
004 color: #000;
005 text-shadow: none;
006 width: 85%;
007 margin-left: auto;
008 margin-right: auto;
009 }
010 [data-printVersion="voucher"] header,
011 [data-printVersion="voucher"] footer,
012 [data-printVersion="voucher"] section{
013 background: none;
014 }
015
```

## 21 Define voucher imagery

With the main background image now gone, we need to activate the replacement. The `<section>` elements can be used to define how their content are presented; `class="outline"` will be shown with background

image, whilst the `class="content"` will be hidden from the voucher because it is labelled with a `.leafletVersion` class.

```
001 [data-printVersion="voucher"] section.
    outline{
002 background-image: url('img/background5.
    jpg');
003 background-size: cover;
004 color: #fff;
005 text-shadow: none;
006 }
007
```

## 22 Prepare for printing

Unfortunately browsers don't provide access to changing print settings from JavaScript or CSS, meaning that users must be aware of making any required adjustments. This may be required for instances such as when you only want the background image printing or if you want to set the design to print without any page border or padding. Users could be provided a notice about this when printing through an alert triggered placed in the first line of the `printout()` function.

```
001 alert("Make sure to alter your print
    settings if you don't want page borders.");
002
```

# web workshop

## Animate scroll-reveal split backgrounds

inspiration [2015.extralagence.com](http://2015.extralagence.com)

### 1 INSPIRATION Something Extra

The Extra Agency is a French digital agency specialising in communications and branding for the sports industry. They have a number of websites and blogs, but the focus of this web workshop is an effect found on their 2015 side site. This one-page website features some notable effects, including a neat split-background effect. Scroll down beyond the initial landing section and you will see that the

background for each subsequent section animates in halves, one side easing down and the other easing up. The result is an intriguing effect, one we're going to re-create, utilising the Scroll Reveal JavaScript plugin.

**T**he advent of responsive web design has gradually led to an increasing popularity in single page sites. Scrolling is now considered to be as user-friendly as clicking and the invention of more and more scroll effects to enhance the experience has given web designers some wonderful toys to play with. Working with backgrounds while

scrolling has given us parallax effects, and there are jQuery functions for changing the background colour while scrolling. But how about splitting and halving your background so that both sides change as the user scrolls? Sounds like a disaster but, it can actually deliver a striking and unique backdrop.

#### The other site

It is well worth visiting Extra's other site at [extralagence.com](http://extralagence.com) to see another example of left/right sectioning and layout from the agency. This is more complex, with slightly different content in each. Notice how the edge on each side moves left and right.

**1**

*Illuminés*  
Nos esprits libres génèrent des idées sans bornes ou les filtres sont hors d'usage. Restons allumés!

**2**

**3**

**Varied navigation**  
The site offers two forms of navigation through the sections; you can use the arrow icon at the bottom of the page, or the dot navigation on the left side.

**Megaphone motif**  
Check out the custom loading icon when the site first loads. It feels like the agency has something to say and it's based on the megaphone from another section.

**Text behind figures**  
There is a cool effect on the Fanatiques and Illuminés section where one of the staff members appears to be standing in front of text. It's a simple cropping trick.

**Mobile responsive**  
Take a look at the site on your mobile to see how each section is laid out differently, depending on the content and image. The animated backgrounds and bright colours remain, however.

**Active imagery**  
The animated images, which are central to each section, are achieved by switching the visibility of two images, each taken at a slightly different angle.





**<comment>**  
What our experts think of the site

## Don't distract

"Sometimes even the most impressive animation can be accomplished in its execution but detrimental to the project as a whole. The scroll effect in Extra's website is one of those that, if not handled well, could act as unnecessary distraction. With sparse, image-based content this effect works, but with heavily text-based content it could be counterproductive." **Richard Lamb**

# 3

## TECHNIQUE

### Backdrop animation

In order to begin animating our background halves, we'll need to visit [github.com/julianloyd/scrollReveal.js](https://github.com/julianloyd/scrollReveal.js) and download scrollReveal.min.js. Place it in your root folder. Once in place, implementing the functions is a relatively simple process.

#### 01 Initialise ScrollReveal

Remember to link to the jQuery library before adding the link to scrollReveal.min.js. Add the short script for Scroll Reveal functions so you can investigate the keywords of the element animations.

```
001 <script src="https://ajax.
googleapis.com/ajax/libs/
jquery/1.11.2/jquery.min.js"></
script>
002 <script src="scrollReveal.
min.js"></script>
003 <script>
004 window.sr = new
scrollReveal();
005 </script>
```

#### 02 Declare the animations

Scroll Reveal offers a comprehensive list of keywords that can be entered into a data-sr declaration for each element. These initiate animations once the element is scrolled into and, if you wish, out of view. Check the GitHub link for the full list.

```
001 <div id="one-left" data-
sr="enter top move 500px
reset"></div>
002 <div id="one-right" data-
sr="enter bottom move 500px
reset"></div>
```

#### 03 Breaking it down

'Enter left' declares the direction in which the element should slide into the window. 'Move 500px' tells the element the distance to travel between starting point and end point. 'Reset' makes the animation reverse when elements scroll out of view.

```
001 <div id="three-left" data-
sr="enter left move 500px
reset"></div>
002 <div id="three-right" data-
sr="enter right move 500px
reset"></div>
```

# 2

## TECHNIQUE

### Combine the effects

#### 01 Set the base HTML

The base HTML will consist of three sections, each representing our three 'pages'. Each section should be given a unique ID and a binding class. Within each section we need to create two parent classes of container and background, which will be layered with the CSS. Place your content in the container and set unique left and right divs in the background.

```
001 <section id="one" class="screen">
002 <div class="container">
003 <div class="image-place">
004 <h1>American Rail</h1>
005 
006 </div>
007 </div>
008 <div class="background">
009 <div id="one-left"></div>
010 <div id="one-right" ><div>
011 </div>
012 </section>
```

#### 02 Set the base CSS

You can set whatever width to your container that you want and make it responsive. The final effect will not be altered. The binding class added to each section and screen should be given a relative position and 100% width. Add a minimum height if you wish.

```
001 .container {
002 margin:auto;
003 }
004 .screen {
005 position: relative;
006 display: block;
007 width: 100%;
008 overflow: hidden;
009 min-height: 360px;
010 }
```

#### 03 Background CSS

We need to set a default colour for our background div, and give it an absolute position and a low z-index, so it can sit behind the relatively positioned content to come. Each uniquely named left and right

div should also be given the same position style and their widths and height in percentages as in the code.

#### 04 Choose colours

Now you can set the background colours for each of the left and right divs in each section. The choice is yours, but bear in mind that too striking a contrast in your halves will prove very distracting to the user. Two shades of the same colour is a good idea.

```
001 #one-left {
002 background-color: #7c2323;
003 }
004 #one-right {
005 background-color: #9d4242;
006 }
007 #two-left {
008 background-color: #385f7d;
009 }
010 #two-right {
011 background-color: #5d84a1;
012 }
013 #three-left {
014 background-color: #416e2f;
015 }
016 #three-right {
017 background-color: #5c844c;
018 }
```

#### 05 Prepare the content


Before we can set about arranging the animation, we need to take care of our content. Any padding and alignment will depend on your content, but you do need to ensure that there is a declared position and a z-index which will bring the content in front of the background. If you are working responsively, your styles should reflect this.

```
001 .image-place {
002 padding: 100px 0 130px;
003 position: relative;
004 z-index: 10;
005 max-width: 100%;
006 text-align:center;
007 }
008 .image-place img {
009 width:600px;
010 border:10px solid #eee;
011 }
```

# Create a 2D game using the Pixi engine

Use the WebGL renderer to make simple, browser-friendly, multiplatform games

**tools | tech | trends** Pixijs  
**expert** Mat Groves



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[www.filesilo.co.uk/webdesigner](http://www.filesilo.co.uk/webdesigner)



o you're a JavaScript developer and you want to dip your toe into the world of gaming? Well, this is for you! As a heads up, this tutorial is going to assume a few things. It assumes you know a little about object-oriented programming and that this is not your

first foray into the world of JavaScript!

The game we are going to be making is called Flap Pixie Flap - essentially a *Flappy Bird* clone. As it turns out, *Flappy Bird* is perfect for introducing the basic structure and flow of a game.

We will go through and create three classes: a Player class, a Pipe class and finally a Game class and we will use them to create our little game. We are going to use Pixijs for the rendering, and the WebGL and Canvas 2D renderer can then be used to take care of it. We will also be using pure OOP JavaScript for the rest and focus on the game structure and let Pixi take care of putting graphics on screen.

This tutorial will show you the basics of making a game, but there is plenty of scope for adding little touches that can take things to the next level. Once you've finished, why not develop it some more!

## 01 Create Steve (our pixie player!)

The first thing to be done is we create Steve who will be our main protagonist (yes that's his real name!). This Class extends the Pixi MovieClip Object. We also need to give the class a few new variables that will enable Steve to fly and flap!

```
001 var Steve = function(){
002 var frames = [
003 PIXI.Texture.fromImage('assets/
characterFlying_01.png'),
004 PIXI.Texture.fromImage('assets/
characterFlying_02.png'),
005 PIXI.Texture.fromImage('assets/
characterFlying_03.png')
006 ];
007 PIXI.MovieClip.call(this, frames);
008 this.anchor.set(0.5);
009 this.speed = new PIXI.Point();
010 this.gravity = 0.4;
011 this.maxSpeed = 10;
012 this.position.x = 240;
013 this.spinSpeed = 0;
014 this.play();
015 this.animationSpeed = 0.4;
016 }
017 Steve.prototype = Object.create( PIXI.
MovieClip.prototype );
```

## 02 Make him fly!

Now we give Steve the flap ability. When called, this will give him a nice speed boost of 15 pixels, shooting him up into the air. The update function will apply gravity

so this speed boost will slowly disappear until he actually starts falling again.

```
001 Steve.prototype.flap = function(){
002 this.speed.y -= 15;
003 }
```

## 03 Make him hit

When Steve hits something we are going to want to change his state to hit mode - this will mean he animates in a slightly different manner. In this case we make him spin by setting his spin speed!

```
001 Steve.prototype.hit = function(){
002 this.speed.y -= 15;
003 this.spinSpeed = 0.1;
004 }
005
```

## 04 Create a reset function

Finally we need Steve to be reset. As with all game elements, it's essential to be able to get your object back to its original starting state. In this case we are simply setting Steve's position to 200, resetting his rotation and bringing his speed back to zero.

```
001 Steve.prototype.reset = function(){
002 this.position.y = 200;
003 this.speed.y = 0;
004 this.spinSpeed = 0;
005 this.rotation = 0;
006 }
007
```

## 05 Make sure he updates

Next we create an update function. This will be called on each game frame and will control the movement of Steve. In this case we want his position to be incremented by his speed each frame. We also want to apply gravity to speed so that eventually he will fall. Now cap his speed to keep him playable.

```
001 Steve.prototype.update = function(){
002 this.speed.y += this.gravity;
003 this.speed.y = Math.min(this.speed.y, this.
maxSpeed);
004 this.speed.y = Math.max(this.speed.y,
-this.maxSpeed);
005 this.position.y += this.speed.y;
006 this.rotation += this.spinSpeed;
007 }
```

## 06 Piping hot!

The second important component of our flapping game is to have some pipes that need to be avoided. The Pipe class extends a Pixi container object and we add to that a Pixi sprite to represent the top pipe and another for the bottom one.

```
001 var Pipe = function( entryPoint, maxHeight,
minHeight ){
002 PIXI.DisplayObjectContainer.call(this)
003 this.entryPoint = entryPoint;
004 this.maxHeight = maxHeight;
005 this.minHeight = minHeight;
006 this.gapSize = 300;
007 this.topPipe = PIXI.Sprite.
```





**<Top left>**  
 • Flap Pixie Flap in all its glory! It's a small but fun little game that should provide the perfect entry into the world of HTML5 game programming

**<Top right>**  
 • Adding a trail will give the game a sense of speed. Little touches like this are key to elevating your game above the rest!

**<Bottom left>**  
 • Steve makes use of Pixi.js' MovieClip class and uses three frames of animation to flap his little wings

**<Bottom right>**  
 • This lush jungle background is the perfect setting for Flap Pixie Flap. It makes use of Pixi.js' TilingTexture class

## Pretty as a picture!

Games with good code and good design are greater than the sum of their parts. Developer graphics are 'unique' but stick to what you're good at and get a designer buddy to help out with the art.

```
fromImage('assets/column.png');
008 this.bottomPipe = PIXI.Sprite.
fromImage('assets/column.png');
009 this.addChild(this.topPipe);
010 this.addChild(this.bottomPipe);
011 this.adjustGapPosition();
012 }
```

### 07 Make pipe adjust its position

Here we give the pipe the ability to move its gap. The game would be pretty boring if all the gaps were in the same place! Our code generates a random number between the min and max positions that are based on the positions of the top and bottom pipe accordingly, creating a gap that equals the gapSize property.

```
001 Pipe.prototype.adjustGapPosition =
function(){
002 this.gapPosition = this.minHeight + ( Math.
random() * (this.maxHeight - this.minHeight) );
003 this.topPipe.position.y = this.gapPosition
- this.gapSize/2 - this.topPipe.height;
```

```
004 this.bottomPipe.position.y = this.
gapPosition + this.gapSize/2;
005 }
```

### 08 Make our pipe update

This is the pipe's update function that needs to be called each time the game updates. A pipe basically needs to move across the screen each frame. Once the pipe has left the screen it then needs to reposition itself on the other side of the screen (like a pipe conveyor belt). At that point, we then also tell the pipe to adjust its gap position to make the game interesting!

```
001 Pipe.prototype.update = function( speedX ){
002 this.position.x -= speedX;
003 if(this.position.x < -200){
004 this.position.x += this.entryPoint;
005 this.adjustGapPosition();
006 }
007 }
```

### 09 Time to put the two together

Here we create our game class. This will create and manage the game elements for us. First we set our game variables then initialise all the game objects. We also add a mousedown and a touchstart callback to the stage so we can react when a user clicks or touches the screen. Then reset the game and start the update loop.

```
001 var Game = function(){
002 this.width = 1286;
003 this.height = 640;
004 this.gameSpeed = 5;
```

```
005 this.pipes = [];
006 this.state = 'playing';
007 this.initPixi();
008 this.initPipes();
009 this.stage.mousedown = this.stage.
touchstart = this.onClicked.bind(this);
010 this.steve = new Steve();
011 this.stage.addChild(this.steve);
012 this.reset();
013 requestAnimationFrame(this.update.
bind(this));
014 }
```

### 10 Set up Pixi

Games tend to be more fun when you can see them huh? This function creates a Pixi renderer and adds to the web page. Pixi will automatically decide if it should use a WebGL or Canvas renderer for you (nice!). We then create a nice background and add that to our stage too. Finally we make the stage interactive so we can click it!

```
001 Game.prototype.initPixi = function(){
002 this.stage = new PIXI.Stage(0x66FF99);
003 this.renderer = PIXI.
autoDetectRenderer(this.width, this.height);
004 document.body.appendChild(this.renderer.
view);
005 this.background = new PIXI.
TilingSprite(PIXI.Texture.fromImage('assets/
mainBG.jpg'), this.width, this.height);
006 this.stage.addChild(this.background);
007 this.stage.interactive = true;
008 this.stage.hitArea = new PIXI.Rectangle(0,
```

### Goldilocks gaming



**<Left>**  
• It's all about getting the balance just right! This takes time and effort, but it will always pay off

**<Right>**  
• For most games simple hit testing provides more than enough accuracy, whilst still offering decent performance

### Game engines

Knowing how to make a game from scratch will certainly make you a better developer in the long run. But remember there are lots of HTML5 game engines out there that will give you a head start too!

```
0, this.width, this.height);  
009 }
```

#### 11 Set up the Pipes

Time to set up the Pipes! This function basically creates eight new Pipes and spreads them out with a 200 pixel gap. We also pass the Pipes the information they need to be able to take care of their scrolling. Add them to the game stage and push them into an array so we can access them later.

```
001 Game.prototype.initPipes = function() {  
002 var pipeWidth = 139;  
003 var pipeGap = 200;  
004 var totalPipes = 8;  
005 var size = (pipeWidth + pipeGap) *  
totalPipes;  
006 for (var i = 0; i < totalPipes; i++)  
007 {  
008 var pipe = new Pipe( size, 200, this.height  
- 200 );  
009 this.stage.addChild(pipe);  
010 this.pipes.push(pipe);  
011 };  
012 }
```

#### 12 Call onClicked

This gets called every time the user clicks or taps the screen. First check the game state. If the game is in 'playing' mode then call the flap function on Steve. This will make him fly up a little. Otherwise we know that the state is in game over and our little guy has perished, and in that case we call the reset function.

```
001 Game.prototype.onClicked = function(){  
002 if(this.state === 'playing'){
```

```
003 this.steve.flap();  
004 }  
005 else{  
006 this.reset();  
007 }  
008 }
```

#### 13 Add some hit testing for x

Without hit testing, we don't have a game! This function takes a pipe and then hit tests it against Steve, returning the result. First check if Steve's x position is further than the pipe's x position. In the same line we then check to see if Steve has passed the pipe's x position plus its width. If this line is true then Steve is going through a pipe. The next step is to determine if he is going through the gap or hitting the pipe.

```
001 Game.prototype.hitTestPipe = function( pipe  
) {  
002 var playerHitArea = this.steve;  
003 if( playerHitArea.x + playerHitArea.width/2  
> pipe.position.x &&  
004 playerHitArea.x - playerHitArea.width/2 <  
pipe.position.x + pipe.width){
```

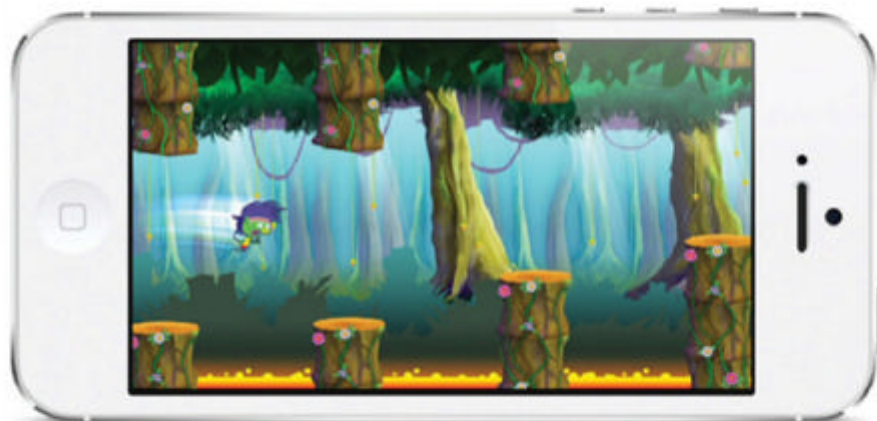
#### 14 Hit test the y

Now look at the y positions. Check if the top of Steve is above the bottom of the top pipe. If true, check if the bottom of him is lower than the top of the bottom pipe. If either of these are true then Steve is touching a pipe. Return a Boolean indicating any collisions.

```
001 if( playerHitArea.y - playerHitArea.  
height/2 < pipe.topPipe.position.y + pipe.  
topPipe.height ||  
002 playerHitArea.y + playerHitArea.height/2 >  
pipe.bottomPipe.position.y){  
003 return true;  
004 }  
005 }  
006 return false;  
007 }  
008 }
```

#### 15 Game over!

It wouldn't be a game without a way to end right? When this function is called we change the game state to 'gameover' and also call hit on Steve so that he can react to colliding with the pipe.



**<Above>**  
• The great thing about Flap Pixi Flap and other HTML5 games is that they immediately run on pretty much all mobile browsers





### Balancing your game, find the fun!

The key aspect of any game is to make it fun. This is done through the process of balancing a game by tweaking all of its various properties until a game feels fun and enjoyable. This process often falls to the game designer, but more often than not there may not be one on your team, so it's down to you. The key to balancing a game is to simply do it! It's a simple process - tweak your game properties, play it, ask 'is it fun yet?' Then rinse and repeat until the game feels right. Patience and persistence are key here. Taking the time to do this properly (and trust me it takes longer than you think!) will make the difference between an okay game and a great game.

```
001 Game.prototype.gameover = function(){
002 this.state = 'gameover';
003 this.steve.hit();
004 }
```

### 16 The reset function

One of the most important functions! A game needs the ability to reset itself so the player can play the game again. In our case we set the game state back to playing, reset Steve and readjust all of the pipes.

```
001 Game.prototype.reset = function(){
002 this.state = 'playing';
003 var pipeWidth = 139;
004 var pipeGap = 200;
005 var totalPipes = this.pipes.length;
006 for (var i = 0; i < totalPipes; i++){
007 var pipe = this.pipes[i];
008 pipe.position.x = ((pipeWidth + pipeGap) *
i) + 800;
009 pipe.adjustGapPosition();
010 };
011 this.steve.reset();
012 }
013 }
```

### 17 Get the game ticking over

Now for the update loop! First check if the game is in a playing state. If it is, update the background and loop through the pipes, update them and hit test against Steve. Check if Steve has dropped below the screen too.

```
001 Game.prototype.update = function()
002 {
```

```
003 if(this.state === 'playing'){
004 this.background.tilePosition.x -= this.
gameSpeed * 0.6;
005 this.steve.alpha = 1;
006 for (var i = 0; i < this.pipes.length; i++)
{
007 var pipe = this.pipes[i];
008 pipe.update( this.gameSpeed );
009 var hit = this.hitTestPipe(pipe);
010 if(hit){
011 this.gameover();
012 break;
013 }
014 };
015 if(this.steve.position.y > this.height){
016 this.gameover();
017 }
018 }
019 }
```

### 18 Update Steve

Next update Steve. We do this regardless of the game state, this way he keeps falling when he has hit something (dramatic!). Finally we render our game using the Pixi renderer and then requestAnimationFrame. This keeps the game update to be called every frame (60fps).

### 19 Load it all up!

So the final part! Let's create a Pixi Asset Loader and pass in an array of image URLs that we are going to load. Next we add and attach an onComplete callback to the loader. This is called when all assets have loaded - the perfect time to create an instance of our game! Finally call the load function to begin the whole process.

## Add a little extra

### 01 Create the Trail class

Here we have created a new class that contains 20 particles. The class extends a Pixi DisplayObjectContainer so it means we can add it to our stage:

```
001 Trail = function(target){
002 PIXI.DisplayObjectContainer.
call( this );
003 this.target = target;
004 this.particles = [];
005 var total = 20;
006 for (var i = 0; i < total;
i++) {
007 var particle = new PIXI.
Sprite.fromImage('assets/
flyingPixie.png');
008 particle.life = (i / total-1) *
100;
010 particle.anchor.set(0.5);
011 particle.blendMode = PIXI.
blendModes.ADD
012 this.particles.push(particle);
013 this.addChild(particle);
014 }; }
015 Trail.prototype = Object.create(
PIXI.DisplayObjectContainer.prototype );
```

### 02 Create an update function.

Here we do some basic particle updating. Each particle has a life property and as this property decays, we modify its Alpha to make it fade out. This creates a cool trailing effect.

```
001 Trail.prototype.update =
function(speedX){
002 for (var i = 0; i < this.
particles.length; i++)
003 {
004 var particle = this.
particles[i];
005 if(particle.life < 0)
006 {
007 particle.life += 100;
008 particle.position.set(this.
target.position.x, this.target.
position.y); }
009 else
010 { particle.life -= 5;
011 particle.alpha = ( particle.
life/100) * 0.75;
012 particle.x -= speedX
013 } }; }
```

### 03 Now plug it in!

Finally we create a new instance of the Trail class in the game constructor, making sure to pass Steve in as our target. Then in the game's update loop we update the trail.



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# GOOGLE ANALYTICS

Google Analytics is the most widely used web analytics service in the world and it's free. Find out the most important parts of the data to study and master key features to get more hits



*“ Google Analytics is the window into your site’s data. Use it to understand who is visiting, what they are looking at, and what you can do to get them to stay longer ”*



# Know your audience

YOUR FIRST PORT OF CALL FOR GETTING INSIGHTS INTO YOUR AUDIENCE AND VISITOR BEHAVIOUR SHOULD BE THE ACQUISITION>ALL TRAFFIC CHANNELS REPORT

**T**he Channels report enables you to see at a glance where your visitors are coming from according to Google's rules. Not all your traffic

will be captured by Google automatically, specific traffic such as Email will not automatically go under the Email channel.

Google uses their Direct channel as a catch-all mechanism for traffic that it just cannot categorise in any of its other channels. So it's important that you familiarise yourself with the UTM tags in order to make sure all campaigns you are running are accounted for.

To understand how Google uses these tags, it's important to get familiar with the concept of source - this could be Google, Bing, Facebook; and the concept of medium

- for example, paid search CPC, organic and so on. Google then uses rules based on these dimensions (not restricted to the ones mentioned) to define their channels.

For example the organic search channel is defined by all traffic that has a 'medium' exactly matching 'organic'.

The default channel grouping Google provides to you would cover most business' needs, but if you think you need a custom channel, Google enables you to create custom groupings based on these specific needs of yours. Just like the default ones, the custom channels are based on rules that you will have already defined in the interface utilising dimensions set out by Google Analytics.

## Understanding key metrics

GET TO GRIPS WITH THE TERMINOLOGY USED IN THE GOOGLE ANALYTICS INTERFACE

### Channels

Google's Default channel grouping splits traffic into eight groups and these are: Direct, Organic, Referral, Paid Search, Other Advertising, Email, Social and Display. You cannot change how these channels are defined but Google may evolve them in future. By using these groupings you will be able to clearly review visitor behaviour from a particular source and determine the channel's effectiveness without being muddled up by another channel.

### UTM tags

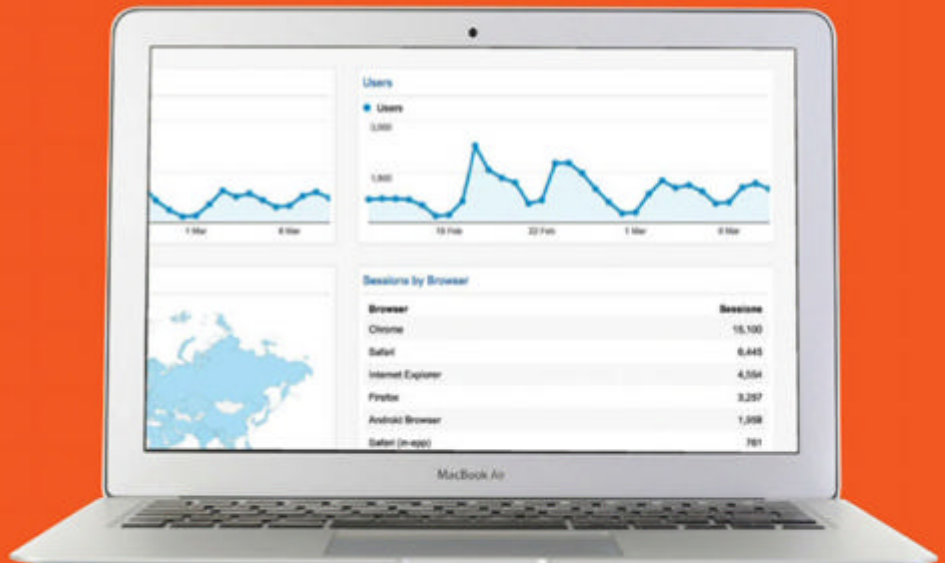
If you're planning some activity that will drive traffic to your site - email or social for example, it's key that you identify this traffic and make sure you can understand and measure the yield of your efforts. Google uses custom campaign parameters called UTM tags to enable you to identify each piece of activity or 'campaign'. For example, these identifiable activities can include the source, the keyword or term used, the content and ads or the specific name of a brand.

By tagging the links to your posts, for example in an email newsletter, you can ensure that this traffic is correctly identified as it comes through. Google has a handy URL builder tool that makes it very easy to identify the most effective URLs.

### Real-time

Once you have tagged your campaign URLs you can test everything is working as it should be by looking at the Real Time analytics report by going to Real Time>Traffic Sources. By clicking through to your site using your newly tagged link, you should see this visit showing the correct medium and source in the report if you've done this right.

You will then be able to monitor spikes and trends as they happen on your website.



### Sessions

The number of periods in which any user interacts with your website. If a user leaves the site and returns after 30 minutes or more, a new session is recorded.

### Users

The number of unique users who have visited your site for at least one session during the selected date range.

### Bounce rate

The proportion of total sessions which consist of only a single pageview being generated before the user leaves your website.

### Pageviews

The total number of page impressions during user sessions within the selected date range.

### Explaining relationship

A session consists of a grouping of one or more pageviews or other interactions which take place on your site. A session ends once a user has been inactive for 30 minutes, or leaves your site and returns via a different channel.

### In-page analytics

Accessed from the Behavior section, In-Page Analytics offers

insight into how users navigate around your site. A live website overlay indicates the proportion of clicks made from any page to each linked page, enabling you to establish the most popular paths taken to explore your content.

### Audience behaviour

The Audience>Behavior report reveals how loyal your visitors are and how often they return to the site. It's possible to compare the behaviour and performance of new versus returning visitors and also see the number of sessions each user generated during the selected date range.

# Best new features

GOOGLE ANALYTICS IS REGULARLY UPDATED WITH NEW FEATURES AND REPORTS, HERE ARE SOME RECENT ADDITIONS THAT YOU NEED TO KNOW ABOUT

## Spreadsheets add-on

This handy Google Analytics add-on for Google Spreadsheets enables easy access to your data via the Analytics API. It's possible to build your own reports that query multiple Analytics views and manipulate the returned data.

With a little setup you can create your own regularly updated custom dashboards merging Analytics data with any other measurements and making use of the Google Spreadsheets charts to visualise the results.

## Cohort analysis

Currently in beta and rolling out across Google Analytics accounts, Cohort Analysis splits your audience into distinct groups. These are based on a particular behaviour or attribute and enables deeper level analysis. There is no such thing as an 'average user' and at present much analysis does not distinguish between differing behaviours, instead bundling all users into a single pot. Each grouping, or cohort, shares common characteristics and new trends may be unearthed.

## Benchmarking

The Audience Benchmarking reports enable your performance to be compared against aggregate data from other sites of a similar size in the industry and country. You'll be able to see how your traffic sources and engagement metrics compare to other sites in the sector and discover areas where you outperform your competitors and those where you underperform. To access benchmarking reports you need to agree to share your data anonymously with Google.

## Audience groups

Google's DoubleClick advertising technology collects anonymous information about web surfers and shares this in Google Analytics. This enables you to discover more about who is actually using your website. It's possible to view an estimated age and gender breakdown of site visitors, user affinities and the products and services users are seeking through In-Market Segments. Your audience can be segmented by these filters to enable you to find your most valuable user types.

## Content Experiments

Content Experiments enables easy webpage split-testing which can help when working towards improving the performance of your website. When setting up a content experiment you must define a goal or conversion metric for which you are looking to enhance. For example, an eCommerce site could monitor revenue or the total number of transactions, whilst a lead generation site could look to increase the number of overall completed form fills.

## Intelligence Events

Intelligence Events are a commonly overlooked feature. Analytics continuously checks for metrics that have seen statistically significant variations over recent days or weeks and highlights these anomalies. Intelligence Events help to surface any unexpected changes which could be indicative of a problem or a success on a particular page. It's also possible to set up automated email or text alerts which are triggered when a particular metric changes outside a defined threshold.

## Plan your content

When it comes to creating content for your audience, making a decision can take up time. Luckily, it doesn't have to be this way.

### Best performing existing content: pageviews

Use the 'All pages report' to check your most popular posts. If one topic outstrips the others in pageviews then see if you can address another aspect of the same topic.

### Most engaging existing content: time on page

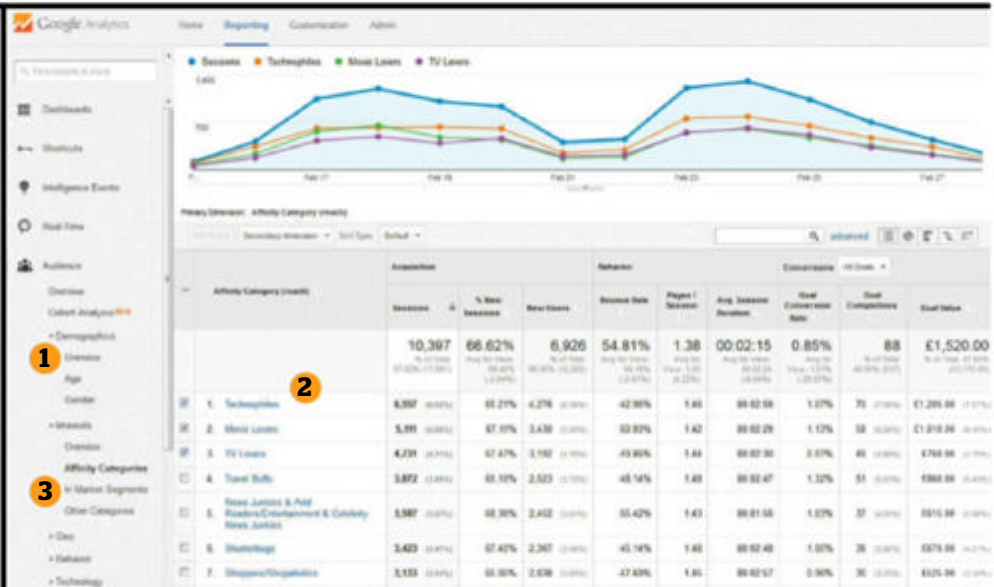
If you find an unusually high time spent on a post then write another with a similar angle, and interlink for the same effect. Use 'All pages report' again to find this out.

### Internal site search

This one is straightforward. Found in the Behavior tab, the site search lets you know what your visitors have been looking for within your website.

### Affinity Categories

The Affinity Categories report can reveal your visitors' strongest interests. Including a post on a related interest and referencing effectively can provide new engagement.

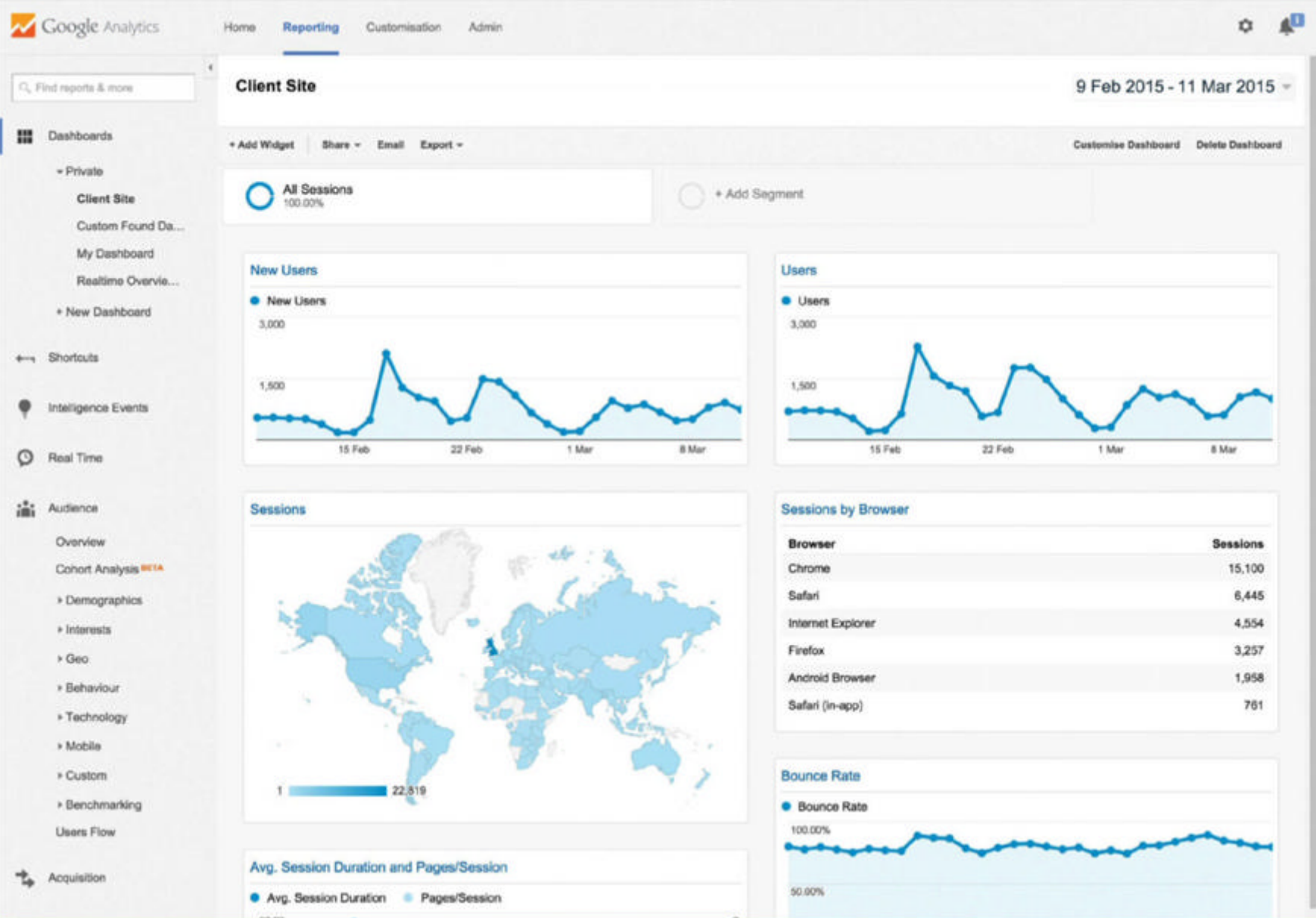


1. Demographic reports can be viewed to reveal your visitors' data, like their gender split and age groupings.

2. User Affinity Categories can give insight into what else your users do online. Affinities reveal a more detailed interest breakdown.

3. The In-Market Segments report highlights areas of commercial intent in which your users have expressed an interest.





# Customise the Google Analytics UI

## Intelligence Events and custom alerts

GA generates automatic web alerts whenever there is a significant change in usage or traffic metrics. It can generate AdWords alerts in the GA interface if your accounts are linked. You can also set up custom alerts to be generated when traffic reaches or decreases to a certain threshold. Google enables you to receive these alerts via email or text message so that you can stay in the know even though you are not checking your GA reports.

There are four reports Google has available in terms of Intelligence Events: Overview, Daily Events, Weekly Events and Monthly events.

There are also some useful alerts you can set up like, if revenue drops by 10 per cent, if a landing page's bounce rate increases by 20 per cent, or if a PPC campaign performance increases revenue by 10 per cent, for example.

## Custom dashboards

The usefulness of GA goes beyond the standard reports they provide - the interface is completely customisable and enables you to create bespoke dashboards and reports to match your needs. While most of the default dashboard provided out of the box may suffice, there are countless widgets you can create to really enhance your data analysis. Along with this, Google provides a great dashboard, report and segment repository called the Solution Gallery - a crowdsourced area where Google Analytics users publish their own dashboards, reports, anything that they have found useful for the benefit of fellow GA fans. This is a great shortcut and a brilliant resource too as the uploaded shortcuts are rated by stars by other users. You can download any of these premade dashboards to your own account and start using them straight away for your own site analysis.

## Custom reports

Just like custom dashboards, GA enables you to create custom reports which are a very powerful tool in drilling down into your site data. Here you will get to choose and select only the dimensions and metrics that you want to display. This is so that you can easily and quickly access the data relevant to you without spending ages clicking around in Google Analytics each and every time you want that kind of specific data.

Google's help section is very useful here as it has a handy list of all the dimensions and metrics that GA uses, and also gives hints on the valid dimensions or metrics combinations as not all of them can be queried together.

As mentioned, the Solutions Gallery has a large repository of well-made, crowdsourced custom reports from other Google Analytics users that you can easily download, utilise and customise for your website's needs.

## Automated emails

It's very easy to set up GA so that it can send you customised reports via email at a frequency that suits. This will then save you from having to go in and generate them each time and ensures that you are comparing like for like each week or month. These emails also act as a handy prompt to go in and have a further dig around in your Google Analytics data so that you're always on top of the latest trends on your website.

Intelligence Events reports can also be set up to alert you with an email when certain criteria are met. If set up correctly these can be utilised as an extremely useful warning system that will alert you to problems with your site or server that may need urgent attention, like if the bounce rate or page load time has increased significantly for example. Alternatively, the reports can be set up to make you aware of large traffic spikes that may warrant further investigation.

## Internal site search

If your site utilises an internal search function to display a filtered selection of products or list of related articles, GA can track and report on this data.

The Site Search report, accessed under the Behavior section, provides details of the most commonly searched for keywords and the pages from which users make such queries.

A quick look through these terms will enable you to identify the content that users are actively seeking on your site. If this content exists, its prominence should be improved, if not you have a list that is all ready to go with suggestions for future content additions.

## Search queries

Connecting your Google Webmaster Tools account to Google Analytics enables Webmaster Tools' off-site data to be combined with the on-site data in GA and unlocks the Search Engine Optimisation series of reports. The most useful of these reports,

Acquisition>Search Engine Optimisation>Queries, lists the different Google search queries for which your site has appeared in results. The data returned shows an estimate of the number of times your site was shown for each query as well as the average ranking position and click-through rate.

With most keyword referral data now reported as not provided, this report can give you visibility on the search terms that are sending traffic.

## Pinpoint the best

As well as identifying pages that are performing below par, it's important to understand and learn from the success of your best performing content.

If you can identify common themes in this content then similar content could be developed to bring in more traffic. The Behavior>Site Content>Landing Pages report reveals details of the sessions which result from a user landing via a certain channel.

Ecommerce and goal conversion data can be particularly insightful here as after landing on a particular page, users may go on to explore your site and convert at a different URL. It's possible that a page with a low average time on page may in fact be extremely valuable, for instance a category page which funnels users to products they then go on to purchase.

# Determine the issues

IDENTIFY YOUR POOR-PERFORMING PAGES VIA PRESENTABLE DATA AND OPTIMISE

## Bounce rate

Pages which have a high bounce rate are usually an indication that the content is not what the user expected to find. On eCommerce websites, product pages frequently have high bounce rates as users may land on them from a search engine when looking for a particular product. It is possible to decrease bounce rate on these kinds of pages by ensuring that all possible related products are interlinked.

A page that records a bounce rate significantly greater than other pages of the same type should be investigated further.

It's also possible to view bounce rate by channel, which may reveal users from social platforms are interested primarily in a single piece of content and less in exploring the rest of your site.

## Time on page

As well as recording average session duration, GA also reports on the average duration of pageviews of each individual URL on your site. Pages can easily be sorted by the average time on page metric, and this can be accessed through Behavior>Site Content>All Pages to reveal the pages where users are leaving quickly. This data suggests that users do not find these pages engaging enough to stay on.

The Content Drilldown report aggregates page-level metrics by a site's URL directory structure, which can quickly highlight particular subfolders such as product categories that are under performing.

## Low converting pages

If you've set up eCommerce or goal-tracking then Google Analytics will be able to report on a true monetary value of a page. Selecting the eCommerce option at the top of Behavior>Site Content>Landing Page will reveal a report on the number of sessions, transactions and revenue that has been generated through visitors who have landed on a particular page that you want to analyse. It's also possible for you to view the average order value, eCommerce conversion rate and per session monetary value for that particular landing page, which can flag up any poor-performing pages for your attention. This will then enable easier fixing later on.

Selecting a Goal Set option at the top of the same report enables conversion rates for different predefined goals to easily be compared.

## Pages with low click-through rates

The Acquisition>Search Engine Optimization>Queries report can highlight pages which rank highly in search results but aren't delivering much traffic. It will identify a troublesome query, for which your site occupies a high average position but has a low click-through rate and this will suggest that your listing is not as enticing as other competing sites at encouraging searchers to go ahead and click through to your website.

You can effortlessly improve upon this by updating webpage title tags and meta descriptions to ensure they contain the related search query and a strong call to action. This is a quick-and-easy optimisation that should increase click-through rate and result in additional traffic.



“If you're not a regular Google Analytics user, spending just half an hour or so looking through the reports could reveal some easy opportunities to boost traffic”

**Philip Gamble**  
Technical SEO manager, Found



“The Users Flow report is an overview of your best and worst performing pages. It's useful for gathering ideas on user journeys needing improvement”

**Dora Moldovan**  
Head of technology, Found



## PPC

If you are running a PPC campaign, it's important that you understand whether the traffic that is being generated is money well spent. By setting up goals in Analytics and assigning a monetary value to those goals, you can quickly establish the ROI on your PPC spend even if you aren't selling something, for example, a

subscription to your mailing list or a form submission can be a goal and assigned a value.

Remember that your PPC traffic should always have clear objectives and be directed at the most relevant landing page on your website. This will also need to be via the keywords that you are already using in order to give it the best chance at converting.



## Social media

Social media traffic is altogether different from PPC. These visitors have generally arrived with far less intent to convert and have followed an interesting article or post that has led them to your site as oppose to an advert or offer. Understanding their behaviour however, is no less important. Do they

go on to read additional content on your site? Does a particular type of post generate more interactions than the others? Do they go on to find other content from your site and share that with their network of friends and followers? This information is invaluable for growing your audience and maximising the effectiveness of what you do for your site on social media and for building your brand.

# Tracking your ROI - conversions

THE BEST WAY TO DETERMINE IF YOUR SITE IS SUCCESSFUL IS BY MEASURING YOUR GOALS

Once you set up the Google Analytics tracking code for your site, it's important to set up some conversion points for your site. Your business goals can vary - from tracking your online transactions to tracking whether someone has filled in your contact form, signed up to a newsletter or clicked to view a video.

Defining your conversions and understanding them in conjunction with your channel is key to your campaign success. For example, you may find that your paid search campaigns might be better at getting users to convert whereas your social media campaigns might be better at creating awareness of your brand and is a better traffic driver. It's important you define conversion points wisely and check your channels so you can understand your website or business' particularities and know where to channel your marketing efforts.

## Types of conversions in GA

GA lets you set up different conversions for different needs. For example, Goals can be used for tracking key actions that occur on the site that usually reach a confirmation page, eg submitting a contact form, whereas Events is used to keep track of interactions that are actions typically tied in with page elements, like

clicking a button. GA provides a powerful API to enable merchants to track their website sales.

## Goals

Google Analytics goals represent completed activities and conversions that measure your business objective success. Having properly defined goals enables GA to provide you with great insights on the effectiveness of your website page design or marketing campaigns. You can define up to 20 goals per reporting view.

GA lets you define your goals in several ways: Destination - where the goal is defined by reaching a specific page; Duration, a session that lasts a set amount of time or longer; Pages/Screens per session, where your goal might be to make sure the users see an x number of pages per session; and Event, where you can set up a goal based on an event, and this is useful if you want that event to be part of an attribution model like video play.

You can also define funnels for your goals and these are specific paths the users take to conversion. This is useful if you want to view where users abandon the funnel and where optimisation efforts should be spent.

## Events

Events are user interactions that can be tracked independently from a page visit or load like video plays,

AJAX content, button clicks and so on. The difference between goals and events is that while goals are counted once per session, events are counted once per interaction. So if someone plays a video five times in a visit, that would register as five events. If they submit a form twice, that would count as a single goal. It is important that this difference is understood and the goals and conversions are implemented accordingly.

Another difference between goals and events is that the events need to be implemented programmatically via JavaScript code on the site, while goals can simply be defined in the GA interface. Using Google Tag manager makes goal implementation easy, so you should make sure that this is a consideration.

## Ecommerce tracking

Based on information like products bought, transactions, and the time it takes for a user to purchase, you can get insights on your best-selling products or brands or categories, which channels are your best performers, your paid search ROI, and how long it takes customers to make a decision to purchase.

You can set up eCommerce tracking programmatically, but many kinds of shopping cart software will include GA eCommerce out of the box or provide easy-to-install extensions.

## Glossary

### Conversion

Any completed action that helps your business measure success. Conversions can be macro conversions or micro conversions depending on their importance. A completed purchase would be a macro conversion whereas something like a Facebook like would be a micro conversion.

### Event

This is a type of user interaction with the page content. Events are utilised to track conversions when the interaction is independent on a page load. Examples of Events can include interactions like AJAX loaded content, link clicks, social buttons interactions, flash elements and so on.

### Goal

A type of user interaction with the website. This is usually measured by the user reaching a specific URL or closely tied to a page load. Examples of this would be a user reaching some form of a 'Thank you' page, a purchase completed or a specified amount of time spent on a specific page.

### Segment

A subset of sessions or users that share common attributes. Segments enable you to isolate and analyse groups of sessions or users for better analysis. You can apply up to four of these at a time and you can use predefined segments or import them from the Analytics Solution Gallery.

### Channel grouping

A roll-up of traffic sources in the Acquisition reports that groups several marketing activities together. Channel groupings let you compare aggregated metrics by channel name, individual traffic source, medium or campaign name.

### Attribution model

An attribution model determines which channels your sales and conversions get assigned to. This is based on contribution and there are many user models, for example a Last Interaction model will assign the credit to the last click before its conversion.



# EASY PHP

## RAPID DEVELOPMENT WITH CAKEPHP

Unleash the power of the CakePHP framework to makes building web applications simpler, faster and require less code



**D**epending on how long you've been involved in PHP development you may have heard about some of the frameworks that are available. Each of these will provide a foundation to help you build anything from small websites to full stack web applications, and everything in between. Among them is CakePHP, a framework for rapid application development (RAD), which has been on the scene now for over ten years. Available for free as open source software under the MIT licence, this mature and very stable project is now releasing version 3.0, marking a major milestone in its history, and bringing with it a significant upgrade and refreshing new features.

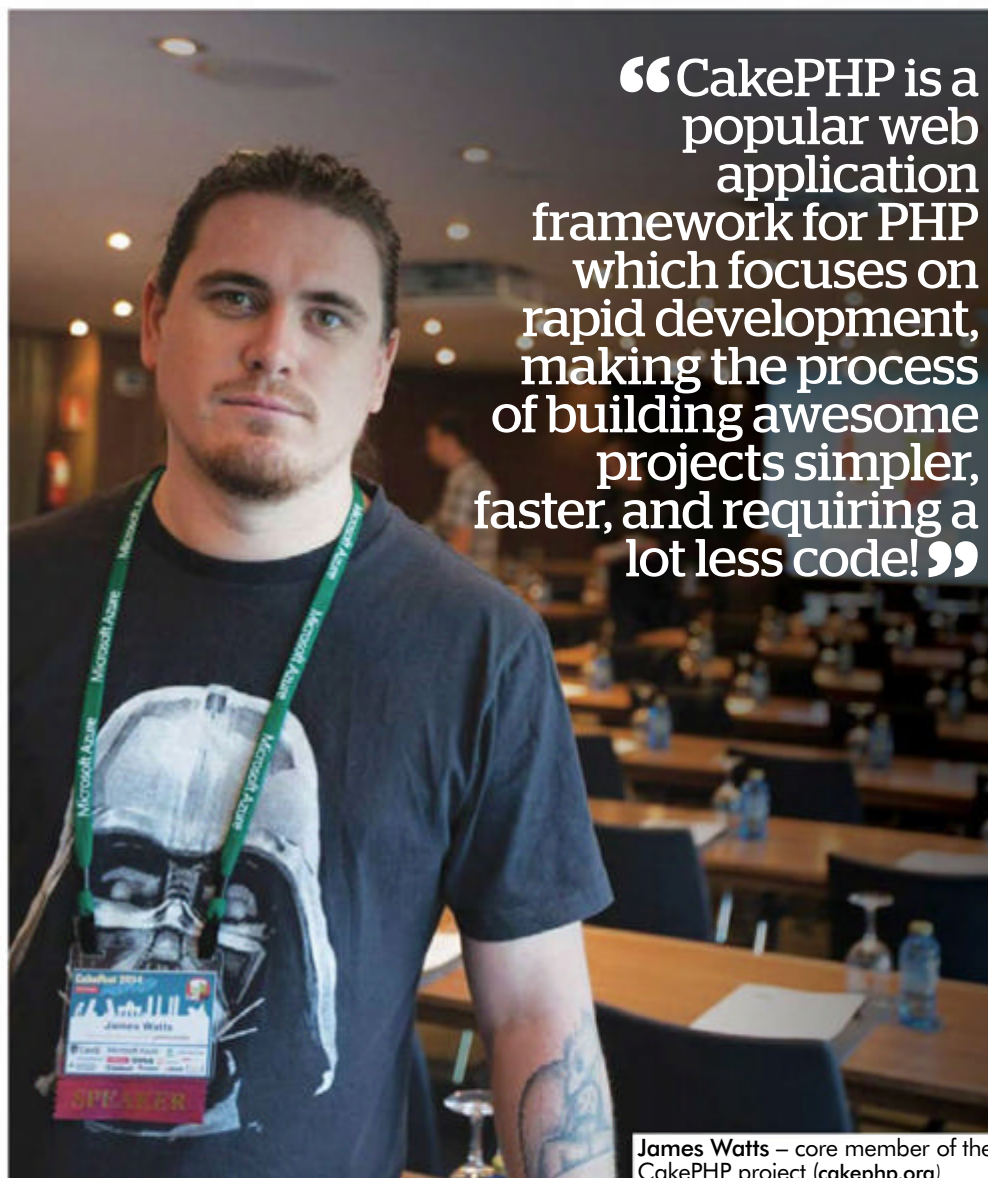
Over the years CakePHP has been built and guided by the open source developer community, taking shape based upon the demands and requirements of PHP developers all around the world - developers who use the framework both for professional projects as well as a hobby. Since its inception, its overwhelming popularity in the community has maintained it as one of the major frameworks in this space, and is still found to this day in the top five most popular PHP frameworks out of some 160,000 projects on GitHub.

## WHAT MAKES CAKEPHP DIFFERENT?

Like many frameworks, CakePHP sports a Model-View-Controller or MVC-based architecture, which divides your application into three tiers. The purpose of this pattern is to separate your concerns for request/response processing, business logic handling, and visual presentation. This helps developers to easily get more done with minimal effort while writing a lot less code, and enables anyone who's unfamiliar with a project to immediately know how the internals of the application are built and organised. There's no need for complicated components, configuring overengineered modules or designing an application architecture - just install and go.

Cake also introduces the concept of convention-over-configuration, which lets you place a file in a certain location, or name a class or function a certain way, and CakePHP does all the work for you, based on your intent. No longer do you have to maintain configuration files or set everything up - follow conventions to define your requirements and you're done!

Another important feature that has attributed to its popularity is extensibility. Through plugins built and shared by the community you can easily extend the framework's core functionality, with anything from payment processing to PDF generation. This means that many tasks you were used to programming manually in your application are now just plugged in, giving you time to focus on making things look great, rather than spending it all on just making things work.



“CakePHP is a popular web application framework for PHP which focuses on rapid development, making the process of building awesome projects simpler, faster, and requiring a lot less code!”

James Watts – core member of the CakePHP project ([cakephp.org](http://cakephp.org))

## WHAT'S NEW IN VERSION 3.0?

Before we get stuck in, some of you already familiar with CakePHP may be asking what can be expected from the new version. Let's take a look at some of the most significant changes and additions to 3.0.

Firstly, one of the major updates in the latest version is that the framework now requires PHP 5.4, which brings a host of new features, such as namespaces, anonymous functions and closures, and short array syntax.

Next, and probably the biggest upgrade by far, is the brand new model layer which now ships with CakePHP. This packs a much more flexible database abstraction layer, as well as a powerful ORM, that not only tackles the issues that developers have had over the years, but adds an array of improvements over its predecessor such as lazy database connections and query execution, a new query object with an expressive fluent interface, query composition and the use of queries within queries, the

ability to specify association strategies for other models, the chaining of custom finders and much more!

Some other great new additions come in the form of view cells and form widgets. Cells let you improve data handling in the view by providing a mini controller to contain and abstract away all of your data processing logic from the markup. The form widgets provide a more powerful interface to defining and configuring form inputs, and how they're rendered in the view.

Other APIs have also had a notable overhaul, such as the validation, the internationalization (i18n) system, as well as the router, which now delivers an important performance increase up to 16 times faster than previous implementations on large-scale applications.

Version 3.0 is packed with a plethora of enhancements and new features, guaranteed to make your mouth water and want a piece of the cake!

## INSTALLATION

For version 3.0 the framework is now leveraging **Composer**, the popular dependency management tool for PHP. This means that installing CakePHP is now a breeze, as it's just as simple as running the following line of code from your command line:

```
php composer.phar create-project --prefer-dist -s dev cakephp/app your_app
```

That's it, you're now ready to bake! If you don't have Composer you can easily install it simply by following the helpful instructions on the Composer website over at [getcomposer.org/download](http://getcomposer.org/download).

Additionally, if you want to get your application up and running in your web browser right away, simply run the following command after installation:

```
/path/to/your_app/bin/cake server
```

This will make your application immediately available at <http://localhost:8765>. Now you're really in the business of rapid development!

Note that the home page displayed by default shows some settings for the framework. It will show that a connection to the database couldn't be established. Don't worry about that though as we'll look at how to set that up next.



# BAKING AN APPLICATION

You're probably tired of all the cake puns by now, but **bake** is actually the name the console interface built into the framework that lets you generate code based upon your database schema. This is a powerful feature of CakePHP and directly contributes to the framework's rapid development workflow. Let's see how.

Assume that we have a simple blog application that we want to start building. Instead of physically creating all the files, defining all the controller and model classes, and writing all the view markup, we'll use **bake** to handle all those tasks for us and give us a head start. Remember, this is rapid development, so less effort and work is better.

To begin, we'll work with the following database schema, which defines our application. Note that you'll need a database server installed and running. Here we're using MySQL, but the framework supports many database vendors, such as PostgreSQL, Microsoft SQL Server and SQLite.

```
CREATE TABLE `authors` (
  `id` INT NOT NULL AUTO_INCREMENT,
  `name` VARCHAR(255) NOT NULL,
  `created` DATETIME NULL,
  `modified` DATETIME NULL,
  PRIMARY KEY (`id`)
);
CREATE TABLE `posts` (
  `id` INT NOT NULL AUTO_INCREMENT,
  `author_id` INT NOT NULL,
  `title` VARCHAR(100) NOT NULL,
  `content` TEXT NOT NULL,
  `created` DATETIME NULL,
  `modified` DATETIME NULL,
  PRIMARY KEY (`id`)
);
CREATE TABLE `comments` (
  `id` INT NOT NULL AUTO_INCREMENT,
  `author_id` INT NOT NULL,
  `post_id` INT NOT NULL,
  `comment` VARCHAR(255) NOT NULL,
```

```
`created` DATETIME NULL,
`modified` DATETIME NULL,
PRIMARY KEY (`id`)
);
```

You'll notice here that we named some fields by another table name, followed by `_id`. This is a first introduction to the framework's conventions. This tells CakePHP that records from another table belong to records in this one. So, for example, our `posts` table has an `author_id`, as a post belongs to an author. The naming of tables in plural is also a convention we're following, as well as the `'created'` and `'modified'` fields, which get updated automatically for us by naming them this way.

It's probably worth mentioning that CakePHP is opinionated about its conventions. However, it also knows that the shoe doesn't always fit, so most of these conventions can be changed or overridden, to adapt to certain situations that don't exactly fit your situation.

Now that the database is ready we can set that up for CakePHP to know how to access it. This is a simple step of simply updating the configuration file with our specific settings. For this we just replace the values for the `'username'`, `'password'` and `'database'` keys in the `Datasources.default` array of the `app.php` file, which can be found in the `config/` directory in the root of your application directory. Here's an example of what that configuration looks like:

```
'Datasources' => [
  'default' => [
    'className' => 'Cake\Database\Connection',
    'driver' => 'Cake\Database\Driver\Mysql',
    'persistent' => false,
    'host' => 'localhost',
    //'port' => 'nonstandard_port_number',
    'username' => 'my_app',
    'password' => 'secret',
    'database' => 'my_app',
```

```
'encoding' => 'utf8',
'timezone' => 'UTC',
'cacheMetadata' => true,
'quoteIdentifiers' => false,
//'init' => ['SET GLOBAL innodb_stats_on_
metadata = 0'],
]
]
```

There are many more options available to tailor the setup to your requirements, but the default values here will suffice in most scenarios.

With the changes to the `app.php` file saved, the home page will now display that a connection to the database was successful. If anything has gone wrong at this point then you can revise the values you entered, or check that your database server is up and running and accessible.

Next, we'll jump into a console and run the **bake** shell from the root directory of our application, using the following `cake` command:

```
$ ./bin/cake bake
Welcome to CakePHP v3.0.0 Console
-----
```

```
App : src
Path: /var/www/your_app/src/
-----
```

The following commands can be used to generate skeleton code for your application.

```
Available bake commands:
all
model
fixture
behavior
controller
project
plugin
shell
helper
component
```



```
cell
view
test
migration
```

By using `'cake bake [name]'` you can invoke a specific bake task.

Here, by simply running the bake shell without any further options, we get an output telling us what's available via this shell. As you can see, bake is an extensive and powerful tool, providing you with the ability to generate anything that you will need to get started building an application.

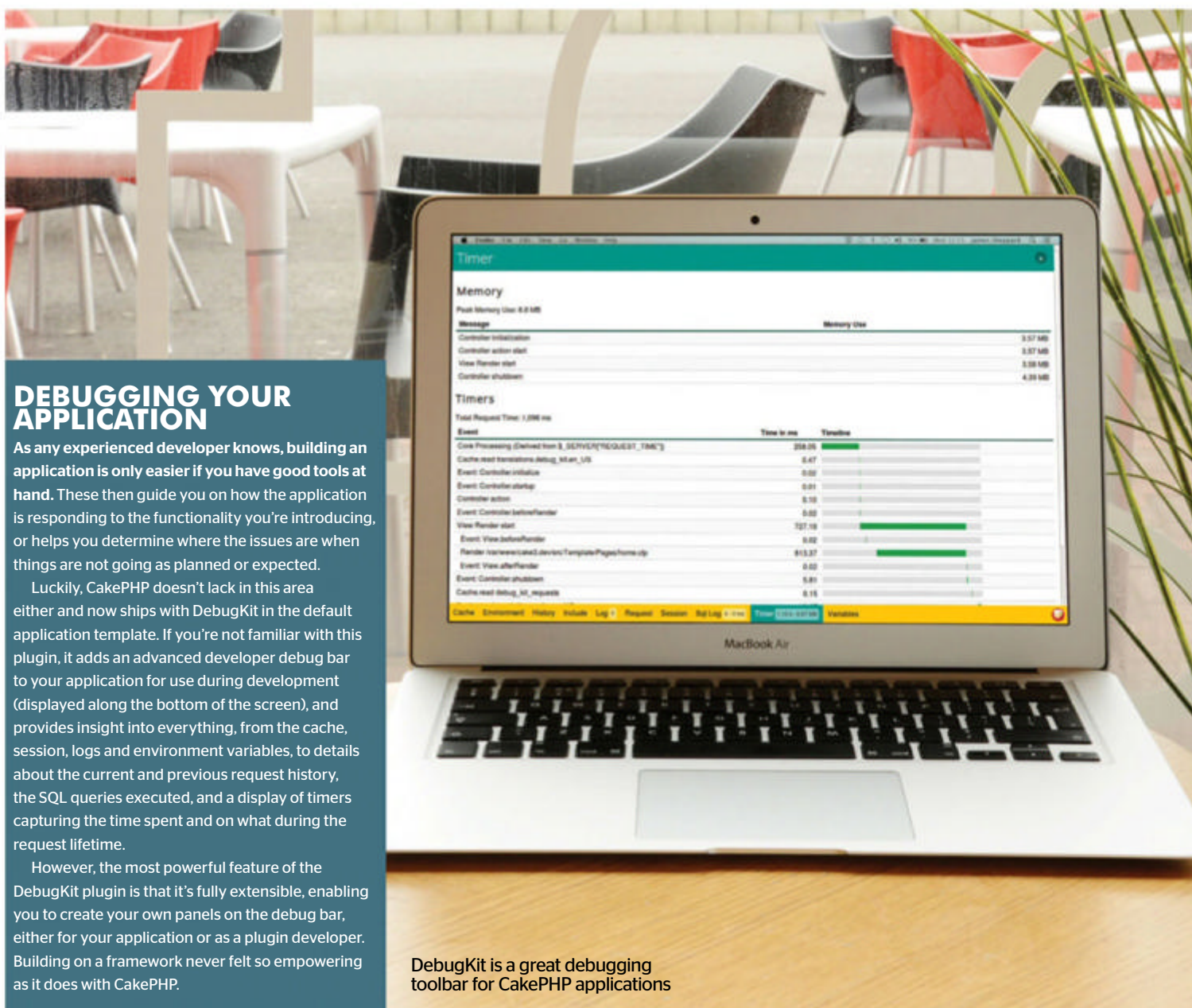
But let's move on to generating the files for our database. For this we'll use the 'bake all' option, to signal

that we'll want to generate all of the related files for each database table. This bake all option will include the Controller class, the Table class, and the relevant views for each of the 'create, read, update and delete (CRUD)' actions that can be performed.

```
$ ./bin/cake bake all authors
Welcome to CakePHP v3.0.0 Console
-----
App : src
Path: /var/www/your_app/src/
-----
Bake All
-----
One moment while associations are detected.
```

Each run will output the status of the process, giving detailed information on what's been generated and where. Once all the tables have been processed, we can then access the generated application by simply navigating to one of the controllers, for example <http://localhost:8765/posts>.

That's it, you have just created an application in literally minutes. Admittedly, this is just a simple example, and the features are far from ready to deploy as a live website, but a significant part of the work has already been done for us now. From here on out, you can begin to tweak and tune the application to your requirements or, if you want to go pro, you could even create your own bake templates, to generate an application with a lot of the expected functionality already baked in! Okay... enough with the cake puns.



## DEBUGGING YOUR APPLICATION

As any experienced developer knows, building an application is only easier if you have good tools at hand. These then guide you on how the application is responding to the functionality you're introducing, or helps you determine where the issues are when things are not going as planned or expected.

Luckily, CakePHP doesn't lack in this area either and now ships with DebugKit in the default application template. If you're not familiar with this plugin, it adds an advanced developer debug bar to your application for use during development (displayed along the bottom of the screen), and provides insight into everything, from the cache, session, logs and environment variables, to details about the current and previous request history, the SQL queries executed, and a display of timers capturing the time spent and on what during the request lifetime.

However, the most powerful feature of the DebugKit plugin is that it's fully extensible, enabling you to create your own panels on the debug bar, either for your application or as a plugin developer. Building on a framework never felt so empowering as it does with CakePHP.

DebugKit is a great debugging toolbar for CakePHP applications

# A CLOSER LOOK AT THE NEW ORM

As we mentioned at the beginning of this article, a major feature in the latest version of CakePHP is its new model layer, and specifically the ORM. Object-relational mapping, or ORM, has seen developers maintaining a love/hate relationship with the legacy model layer over the years. It covers most use cases exceptionally well, but may also prove awkward in those particular situations where more complex operations or associations are required. This isn't really a limitation of the models in 2.x though - it's mostly due to the fact that over the ten years that the framework has been around, the PHP community has grown and become more demanding as the technical expectations of developers has increased.

So, for 3.0 the core team and the community took on the task of addressing those issues and rethinking the model layer from the ground up. The result is the new ORM, which focuses on being fluid, highly expressive, and beautifully designed to make modelling your data a pure delight. Let's visit some of the key features it introduces, and what you get from it out-of-the-box.

## TABLES AND ENTITIES

Previously, models were single classes, which acted as both an abstraction of the database table and the interface to read and write data. This design was without a doubt simple and easy to approach, contributing to the low barrier to entry CakePHP is famous for, but it also introduced many responsibilities for a single class. With the new ORM this model has been separated into two classes, each of which handle their own responsibilities.

The new Table class is probably the closest aspect of the new ORM to the previous design, and acts as the abstraction of the database table and all things related, such as associations with other tables and behaviours, which continue on in 3.0. However, it's been streamlined significantly and takes full advantage of the features available in the later version of PHP, most notably in the custom finders, which now work on the new Query object instead of arrays as in previous versions of the framework.

Entities, on the other hand, are primarily the replacement for the associative arrays as just mentioned, and provide an object-oriented interface to your data which developers have long been asking for. This lets you cleanly define accessors and modifiers on your Entity class, and not as functions on the model or elsewhere, as you would in previous versions of the framework when processing arrays.

# QUERY BUILDER

It's no secret that the use of arrays for model data in previous versions of CakePHP has been a hot topic. This use of arrays also extended to models when defining the criteria for a query. However, in 3.0 we now have a Query object, which exposes a fluent interface to elegantly define the query. For example, if you wanted to select the name of all users which are currently active, you would simply code the following:

```
// get the users table
$users = TableRegistry::get('Users');
// get names of all active users
$users->find('all')->select('name')-
>where(['active' => true]);
```

A direct benefit of using a Query object is that it can be thrown around, and configured progressively by different processes before the actual data is retrieved from the

database. This is exactly how custom finders are used, to make the task of specifying the actual query criteria a more enjoyable experience. For example, we could encapsulate the previous code as an 'active' finder by simply defining a method in the UsersTable class:

```
class UsersTable extends Table
{
    public function findActive(Query $query,
        array $options)
    {
        return $query->where(['active' => true]);
    }
}
```

You would then simply call it like so:

```
$users->find('active')->select('name');
```

Not only that, but you can define as many custom finders as you need, and even chain them together to compose a query on the fly. This expressive syntax is the trademark of the new ORM, and promises to make working with your models and data more satisfying than it's ever been.

# THE CAKEPHP COMMUNITY

It's impossible to talk about the virtues of CakePHP and not mention the amazing community that has built up around the project. The effort itself is driven exclusively by open source contributions, and depends 100 per cent on the input and investment from the developer community. This alone is a powerful demonstration of how much support the project receives to maintain such a strong position after so many years. With more than 300 contributors and now over 130 releases to date, the

pace at which the framework is constantly improving and evolving is phenomenal.

Even CakeDC, the commercial entity, contributes just like everyone else. They provide the official training and certification, as well as professional development and consultancy services, while helping to maintain the many web properties and assets, and organising events such as CakeFest - the annual CakePHP conference. You too can also get involved and you can help by contributing to the project's code base on GitHub (via the link [github.com/cakephp](https://github.com/cakephp)), or simply being proactive in and around the community, and joining in on the baking fun! That's the last cake pun, we promise.



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# Build and share a web app faster with React

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**expert** Tim Stone

Over the last few years we've seen an explosion in the functionality that browsers provide. Gone are the days of simple text documents with a few images, now people expect beautiful, immersive websites while also expecting it to be as fast as those text documents to load.

This has led to a move to 'fat' clients where JavaScript is responsible for rendering much of the page. For modern, capable devices this is great however much of the time we're pandering to an elite (albeit growing) few who can afford such devices. Isomorphic JavaScript apps share code between the client and the server so you only write your application once but it's shared between both platforms. This means that a device that doesn't support JavaScript can still see a JavaScript-generated chart from the server.

To explore this concept we're going to build a chart with D3.js that shows the average summer and winter temperature over 165 years. The chart will be pulled together with Facebook React which runs on Node and in browsers. We'll use Browserify to convert any Node-specific code to JavaScript for the browser.



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## 01 Install dependencies

All of this power doesn't come cheaply, there are quite a few moving parts that we rely on, but first we need to install them all. Our Node app is going to run on Express, and compile and serve our React app. We'll use gulp and Browserify to convert this into code the browser can use. Create a package.json file with these dependencies and '\$ npm install' them.

```
001 "dependencies": {
002   "d3": "^3.5.5",
003   "ejs": "^2.2.4",
004   "express": "^4.11.2",
005   "gulp": "^3.8.11",
006   "gulp-browserify": "^0.5.1",
007   "node-jsx": "^0.12.4",
008   "react": "^0.12.2",
009   "reactify": "^1.0.0",
010 }
011
```

## 02 Express server

Create a file called 'server.js', this'll bootstrap our server. If you've used Express before there shouldn't be any surprises here, we're serving static assets from a folder called 'public' and we're going to use EJS for our view engine. We're declaring our routes in a separate file which we'll create shortly.

```
001 var express = require('express'),
002     path = require('path');
003 var app = express();
004 app.use(express.static(path.join(__dirname, 'public')));
005 app.set('views', path.join(__dirname, 'views'));
006 app.set('view engine', 'ejs');
007 require('./routes.js')(app);
008 app.listen(3000);
```

## 03 Install node-jsx

Next, within server.js also require node-jsx. JSX is an XML-like syntax for describing HTML and it feels more natural than building strings or creating DOM elements. Node-jsx looks for JSX files and compiles them from JSX to regular JS, so requiring is all you have to do, the rest is magic.

```
001 require('node-jsx').install();
```

## 04 Require dependencies

Create a file called 'routes.js'. This is where we will compile our React app and send it to the client. To do this, we will need to require React, the chart app which we are yet to write, and the data that the chart app will use. You can download this JSON file from [bit.ly/1FOR3x9](http://bit.ly/1FOR3x9).

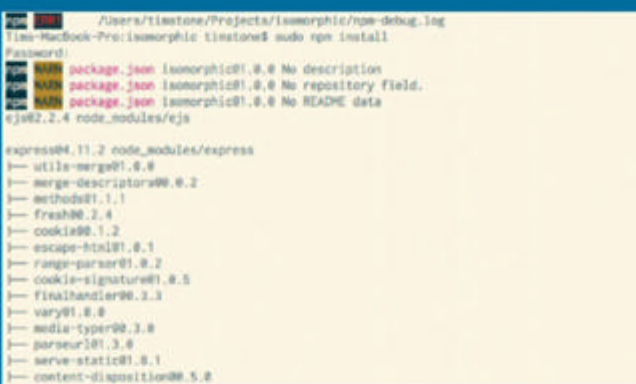
```
001 var React = require('react/addons');
002 var ChartApp = React.createFactory(require('./app/components/
003   ChartApp').ChartApp);
004 var temperature = require('./app/data/temperature.json');
005 module.exports = function(app) {
006   /* next step */
007 };
```

## 05 Render to string

This step is where the magic of server-side rendering happens. React has a handy method called 'renderToString' which'll take all of the compiled JSX and render it to a string, ready for consumption by a browser. In one fell swoop we're instantiating our chart app with the temperature data and then converting it to a string and rendering it into the index file.


```
001 app.get('/', function(req, res){
002   var compiledHTML = React.renderToString(
003     ChartApp({
004     data: temperature
```





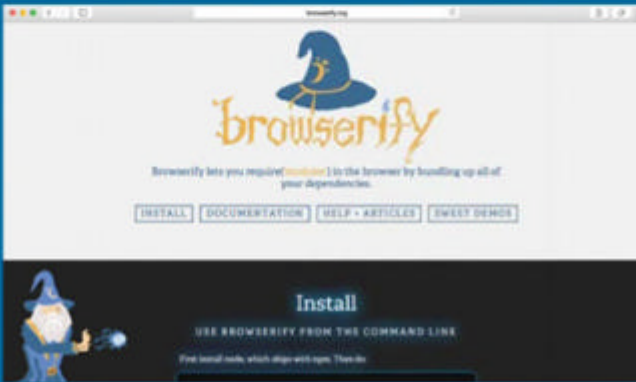
**<Above>**

- You can use '\$ npm init' to create a skeleton package.json file and then add these dependencies before '\$ npm install'



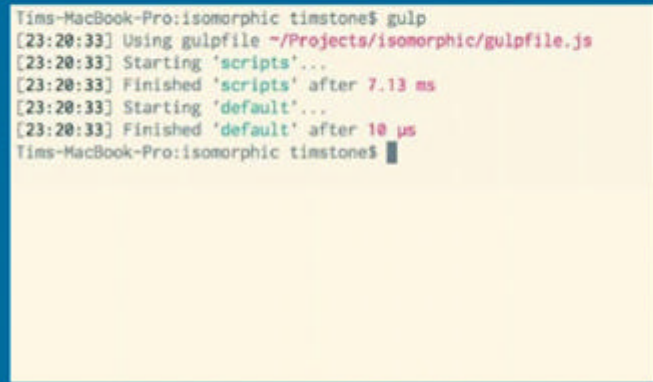
**<Above>**

- Although this is not our final app, this small victory shown here tells us that EJS is rendering the page correctly



**<Above>**

- Using Browserify means that exactly the same code and libraries will be used on the server and client



**<Above>**

- Our small gulp file will pull all of these files together and combine them into a single file for the client

**Run gulp on save**  
 You need to run gulp manually each time you change main.js or ChartApp.js. You could also hook gulp up so that it runs on save to prevent some frustration.

```
005  });
006  };
007  res.render('index.ejs', { chartApp: compiledHTML });
008  });
```

**06 Create index.ejs**  
 We're going to create a basic HTML page under a folder called 'views' and call it 'index.ejs'. The <%- > is a placeholder for the HTML that we compile in the routes.js file and it'll output whatever we pass with a matching name. Note the 'react-main-mount', this is the node that the JS will look for.

```
001 <!DOCTYPE html>
002 <html>
```

```
003 <head>
004 <title>Temperature chart</title>
005 <link href="aestheti.css" rel="stylesheet" type="text/css">
006 </head>
007 <body>
008 <h1>Average summer and winter temperatures from 1845 to
2010</h1>
009 <div id="react-main-mount">
010 <%- chartApp %>
011 </div>
012 <script src="main.js"></script>
013 </body>
014 </html>
```

**07 Build the application structure**  
 Before we go any further let's look at an overview of our app structure and explain how it interacts. So far we've written server.js, routes.js, package.json, and added index.ejs to views, but where's the code that's going to be shared? This will be ChartApp.js, the data, and main.js will glue it together.

```
001 app
002 components
003 ChartApp.js
```



**<Above>**  
 •D3 is the de facto charting library because of the power that it puts right into the hands of the creator

**<Above>**  
 • Here we can see the summer and winter series rendering. Without an axis this is what the server produces

**D3 applications**  
 Use Nodemon ([nodemon.io](http://nodemon.io)) as an easy way to automatically restart Node when you change a file so that you don't have to manually stop and start it.

```
004 data
005 main.js
006 package.json
007 public
008 aestheti.css
009 main.js [generated by gulp]
010 routes.js
011 server.js
012 views
```

**08 Require modules**  
 Main.js is fairly similar to what routes.js does but for the client in that it requires the same files and instantiates a new React app. The crucial difference is that this time, instead of rendering out a string, we're mounting it to a DOM element. React on the client reuses the HTML outputted by the server.

```
001 var React = require('react/addons'),
002     ChartApp = require('./components/ChartApp').ChartApp,
003     ReactApp = React.createFactory(ChartApp),
004     mountNode = document.getElementById('react-main-mount'),
005     temperature = require('./data/temperature.json');
```

**09 Render app**  
 Now create the app in a similar way except instead of rendering to a string we call React.render. Crucially we have access to the viewport's actual width and height so we can use that to set the chart to take up the available space. The second element is the node to attach it to (#react-main-mount).

```
001 React.render(new ReactApp({
002   data: temperature,
```

```
003   height: window.innerHeight,
004   width: window.innerWidth
005 })), mountNode);
```

**10 Create a gulp file**  
 For this client/server magic to happen we need an additional build step. This is in the form of Browserify and Reactify, which we'll run with gulp. Our gulp file will look at main.js, bundle up all of the required files and convert the JSX bits to JS. It then pipes all of this into a file also called main.js, which can be found under the public folder.

```
001 var gulp = require('gulp'),
002     browserify = require('gulp-browserify');
003 gulp.task('scripts', function () {
004   gulp.src(['app/main.js'])
005     .pipe(browserify({
006       debug: false,
007       transform: [ 'reactify' ]
008     }))
009     .pipe(gulp.dest('./public/'));
010 });
011 gulp.task('default', ['scripts']);
```

**11 Run gulp**  
 You can then run this by navigating to the project folder in a CLI (like Terminal.app) and run \$ gulp. You could also run it through uglify which minifies all of the code as well as bundling it all into one file.

```
001 $ gulp
```

**12 React Chart class**  
 All of the code required to render our React app on the server is in place with just one small hitch - there's nothing to render! Create a new file called 'ChartApp.js' under the components folder and we'll start to write our React app. Begin with the Chart, this is the wrapping SVG element.

```
001 var Chart = React.createClass({
002   render: function() {
003     var height = this.props.height + 20 + 30;
004     var width = this.props.width + 50 + 80;
```



```

005   return (
006     <svg width={width} height={height}>
007       <g transform="translate(20, 0)">
008         {this.props.children}
009       </g>
010     </svg>
011   );
012 }
013 });

```

### 13 Use the React Line class

The Line class is fairly low-level and will output individual paths for our chart. We're also using a React method called `getDefaultProps`, this sets default properties if no property value is passed to it. A path in SVG will render a line going to the points specified in the `d` ('path descriptions') attribute.

```

001 var Line = React.createClass({
002   getDefaultProps: function () {
003     return {
004       path: '',
005       color: 'blue',
006       width: 2
007     };
008   },
009   render: function () {
010     return (
011       <path d={this.props.path} stroke={this.props.color}
012       strokeWidth={this.props.width} fill="none" />
013     );
014   });

```

### 14 React DataSeries class

The DataSeries class uses the Line class but we perform some D3 specific computations before setting the path data. The default interpolation we'll be using is 'basis', which smooths out extreme peaks leaving us with a nice-looking graph. If you're going for accuracy then 'linear' may be better.

```

001 var DataSeries = React.createClass({
002   getDefaultProps: function() {
003     return {
004       title: '',
005       data: [],
006       interpolate: 'basis'
007     };
008   }, /* next step */
009 });

```

### 15 React DataSeries continued

The easiest way to communicate between React components with a parent-child relationship is through properties. In this case we're passing the colour of the series from here to the Line itself. We're also using D3 to create a SVG line for us and interpolating it so that each point joins to the next.

```

001 render: function() {
002   var y = this.props.y,
003       x = this.props.x,
004       path = d3.svg.line()
005         .interpolate(this.props.interpolate)
006         .x(function(d) { return x(d.year); })

```

```

007   .y(function(d) { return y(d.temperature); });
008   return (
009     <Line path={path(this.props.data)} color={this.props.color}
010     />
011   );

```

### 16 Y axis class

The axes classes are slightly special cases because they require the DOM for D3 to create the required markup. To cater for this we will create the axis within the `componentDidMount` lifecycle method. This means that once the component has been mounted and has a node then the D3 axis method can be called.

```

001 var YAxis = React.createClass({
002   componentDidMount: function () {
003     var yAxis = d3.svg.axis().orient('left').scale(this.props.y);
004     d3.select(this.getNode()).call(yAxis);
005   }, /* next step */
006 });

```

### 17 Y axis continued

The render function is fairly simple. We have a group element `<g>` and a text element beneath that. We're just applying some presentation properties to it so that it appears beside the y axis. 'text-anchor: end' is kind of similar to 'text-align: right', this'll ensure it appears at the top of the axis.

```

001 render: function() {
002   var textAnchor = {
003     textAnchor: 'end'
004   };
005   return (
006     /* next step */
007     <g className="y axis">
008       <text transform="rotate(-90)" y="6" dy="1em"
009       style={textAnchor}>Temperature (°C)</text>
010     );
011   }

```

### 18 X axis class

The x axis has a very similar setup to the y axis class. The x axis additionally requires to know what the height of the chart is to position itself at the bottom. The `'30'` is to offset the height of its own element and could be done a little more elegantly than hardcoding a magic number.

```

001 var XAxis = React.createClass({
002   componentDidMount: function () {
003     var xAxis = d3.svg.axis().orient('bottom').scale(this.
004     props.x);
005     d3.select(this.getNode()).call(xAxis);
006   },
007   render: function() {
008     var transform = 'translate(0,' + (this.props.height 30) +
009     ')';
010     return (
011       <g className="xaxis" transform={transform} />
012     );

```

**Example**

Example code snippet showing server-side rendering logic and instructions for testing the page source.

**Alternative approaches**

There is no canonical way to handle server-side rendering. Another example is [github.com/mhart/react-server-example](https://github.com/mhart/react-server-example) which toggles the response based on what's being called, a page or a JavaScript file. It uses Browserify within the response to the client so that there isn't a separate build step, the tradeoff is that this is an expensive operation per-request. The best approach is to check out similar projects on GitHub and explore. In the finest examples of server-side rendering the user shouldn't notice the transition. The main difference will generally be that interactions become available. We've made ours quite obvious to demonstrate this but it could also be achieved with CSS.

### 19 LineChart class

The LineChart class contains the majority of the chart logic. We start by setting some default property values. The year comes through as a number but we need to convert this to a date so that D3 can display it properly. We do this with a time-formatting helper from D3 itself.

### 20 Ordinal scale

Our data looks like [{"year": "1845", "Winter": "-2.5", "Summer": "-1"}, ...]. We want to split the winter and the summer temperatures into separate series. We're also using a D3 function which sets the scale to plot the axis and relationship between data points accurately. There are many different options for this but using the built-in scale functions greatly simplifies your code.

```
001 var summer = [];
002 var winter = [];
003 var scale = d3.scale.ordinal();
```

### 21 Create series

To split the raw data into two series we'll loop through it and push the summer values and year to an array called 'summer' and likewise for the winter array. We're also parsing the year as a date if it's necessary, but this only has to be done once per session.

```
001 data.forEach(function (d) {
002   if (typeof d.year === 'string') {
003     d.year = parseDate(d.year);
004   }
005   /* next step */
006 });
007
```

### 22 Combined data

The data comes to us as how much each month deviates from the average of that period across time. While this data could well be of interest it can be a little confusing, so we'll add the average temperature to how much the temperature deviates, eg summer 1920 has a value of -1.2 meaning it was 1.2 degrees cooler than the overall average of 15.2.

```
001 summer.push({
002   year: d.year,
003   temperature: 15.2 + parseFloat(d.Summer)
004 });
005 year: d.year,
006 temperature: 4 + parseFloat(d.Winter)
007 });
```

### 23 X scale

The x axis is a measure of time in years so we create a timescale with D3. Pass the 'domain', that is, the years to cover and the pixel range via the width property. Check out [bit.ly/1GBW4wl](http://bit.ly/1GBW4wl) for an intro to domain and range.

```
001 var x = d3.time.scale()
002   .domain(d3.extent(data, function (d) {
003     return d.year;
004   }))
005   .range([0, this.props.width]);
```

### 24 Y scale

The y axis is a linear scale and we pass the minimum temperature and maximum temperature to set the domain of the y axis. We specify the range in the same way but use the height instead of width as we're working vertically this time. This works on the assumption that winter temperatures will always be lower than summer ones.

```
001 var y = d3.scale.linear()
002   .domain([
003     d3.min(winter, function (c) {
004       return c.temperature;
005     }),
006     d3.max(summer, function (c) {
007       return c.temperature;
008     })
009   ])
010   .range([this.props.height, 0]);
```

### 25 Tie it together

Finally tie it all together with each of our React classes. We're adding the wrapping SVG element, x and y axes, and the series. This will compile each of our React classes into a collection of SVG elements to represent our graph. You can only return one root node at a time otherwise it'll throw an error.

```
001 <Chart width={this.props.width} height={this.props.height}>
002   <XAxis x={x} height={this.props.height} />
003   <YAxis y={y} />
004   <DataSeries data={summer} size={size} x={x} y={y}
005     ref="Summer" color="orange" />
006   <DataSeries data={winter} size={size} x={x} y={y}
007     ref="Winter" color="cornflowerblue" />
008 </Chart>
```

### 26 Export module

We must not forget that this file is also a module. Of all the React classes that we've created the only part of it that we really care about is the overall chart, so we'll export the LineChart class which is used by routes.js and main.js. You could also split each of the classes into separate files.

```
001 module.exports.ChartApp = LineChart;
```



# FOR THE GNU GENERATION

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# Prototype apps with Framer.js and Framer Studio

Make your app's wireframes come alive with animations and interactions using Framer.js

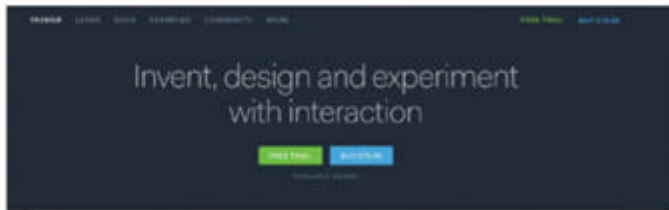
**tools | tech | trends** Framer.js, Framer Studio, Photoshop CC, Mac OS X  
**expert** Sean M. Tracey



**A**pp development is hard, no two ways about it. Wireframing, user experience, user stories, colour palettes – the whole app is designed before a line of code is ever touched! But sometimes, decisions made in the design process don't translate well to development. Take animations, for example, what a designer might imagine is supereffective at communicating an idea to somebody might actually be a terrible design decision – and this might not be discovered until a point in the app development cycle that could make it quite difficult to change. Building a bare-bones app to test out ideas and interactions is still really time-consuming, you need to have a development environment set up, you need to have a device, its simulator or its SDKs. But what if you've never coded before? This is where Framer.js comes in. Framer.js and Framer Studio are pieces of software that use as little code as possible to make as much awesome as you can think of. For this tutorial, we're going to import an app design from Photoshop bind events to certain layers and animate interactions.

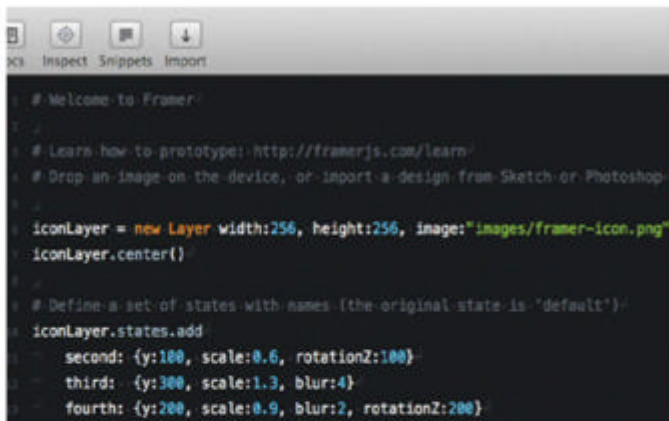
## 01 Get Framer.js

Framer Studio is the software that we'll be using to put our app prototypes together. It costs \$79.99 (£51), but there is a 14-day free trial that gives us access to the full range of tools. Just enter your name and email over at [framerjs.com](http://framerjs.com) and a link will present itself.



## 02 First impressions

When we first run Framer Studio, we're presented with a bare-bones app. In the image below, our CoffeeScript code view that we'll be using to program interactions and animations can be seen.

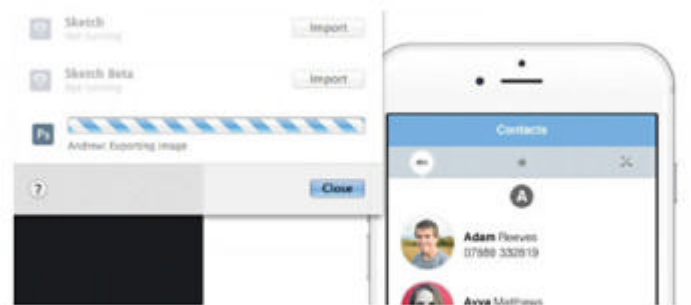
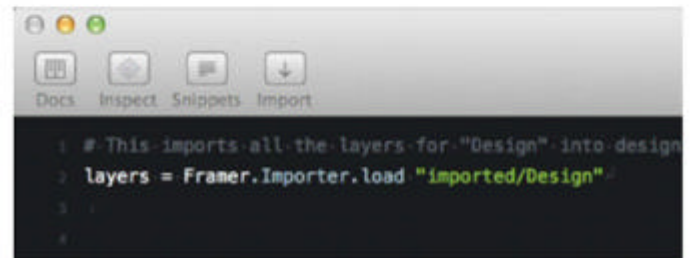


## 03 Create a project space

Before we get started, we need to save a project to our disk so we can conveniently access and import assets as we need them. We'll use the default project that we've been given as a starting point. Go to File>Save and pick a place to save our Framer project and resources.

## 04 Import a PSD

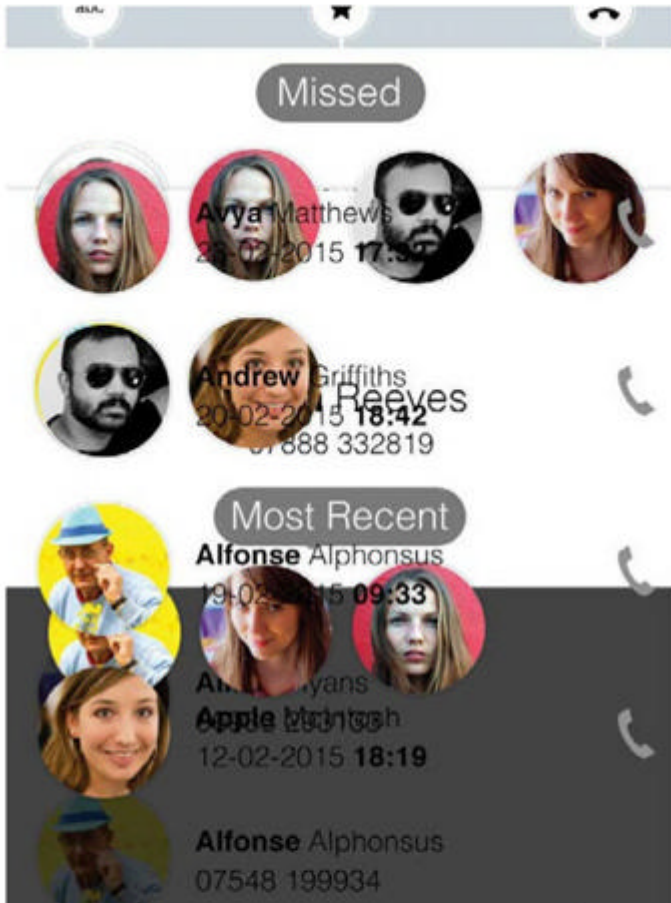
Framer can import both Sketch projects and PSD files. For this tutorial we're going to import and add interactions and animations to a PSD to prototype a simple contacts app. You can grab the design.psd file from this projects assets on FileSilo. Open the PSD in Photoshop CC and click the Import button in the top-right corner of Framer Studio chrome.





## 05 Look at the PSD

When we open our PSD file in Photoshop, we see that it's a bit of a mess. This is because any layers that we hide won't be imported into Framer Studio. In order to get everything we need for our prototype into our Framer project we need it to be visible, then we use some simple code to hide the appropriate layers.



### Label your layers responsibly

We've all suffered it, opening a PSD to be presented with a sea of unlabelled and seemingly unconnected layers from which we have to extract useful things. Label your layers, otherwise you're going to have a bad time with Framer.

## 06 Complete the import

Just like in our PSD file, our Framer project is really messy, with layer upon layer of... layers. At the top of our code view, you'll notice that a line has been added for us.

```
001 <code>
002 layers = Framer.Importer.load "imported/Design"
003 </code>
004
```

This is a JavaScript object that we can use to access all of our layers. How do we know what layers to access? Simple, the group names and layer names that we've used in the PSD are the names that are given to our Framer layers.

## 07 Create variables

To help us tidy up and access layers easily. We're going to create some variables. We can use these to affect properties, like opacity and bind events:

```
001 <code>
002 Framer.Defaults.Animation = {
003   curve: "linear",
004   time : 0
005 }
```

```
tab = layers.Tab
icons = layers.Icons
alpha = layers.alphabetical
favourites = layers.favourites
missed = layers.missed
```

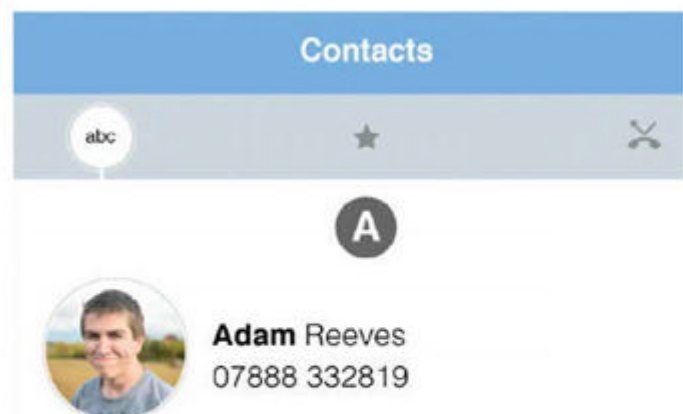
```
006 </code>
007
```

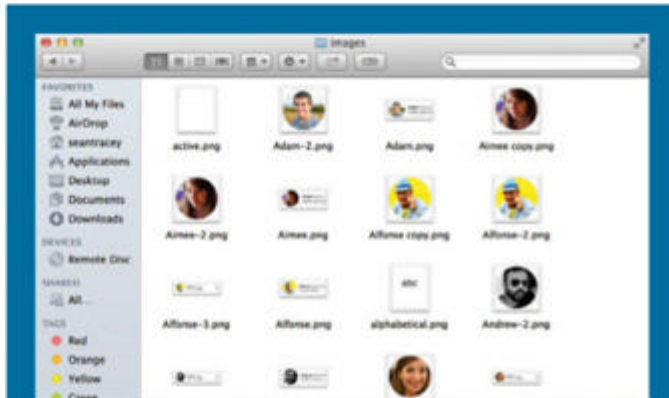
## 08 Hide the layers

Now that we have variables for our main layer groups, we can start hiding the ones we don't want to see when we start our app prototype up. Just after our variable names, add the following code:

```
001 <code>
002 ...
003 favourites.opacity = 0
004 miss.opacity = 0
005 favs.opacity = 0
006 missed.opacity = 0
007 adamDetail.y = 1140
008 ...
009 </code>
010
```

Our app preview window should refresh straight away leaving us only with the alphabetical contacts view.





**Layers and layers**

Layers in Framer are designed to behave like layers in Photoshop and Sketch. When we export our PSD to Framer, what's actually happening is Framer Studio is working through the tree of our Photoshop document and creating objects that represents each individual layer as an asset. This is then saved as a PNG and then stored in the /Imported/Design/images folder within our project folder. Framer ignores everything that's hidden in the Photoshop layers, which is why we leave everything visible as we export it, if a layer is transparent it will be exported at that transparency, tweaking the opacity value of that layer can't make it more opaque, only more transparent.

**Animations**

When animating in Framer, we have a pretty good set of prebuilt animations for moving stuff around on our prototype. The different types of curve (easing) are linear, bezier-curve, spring-rk4, spring-dho and spring. Each has its own characteristics and tweakable properties.

**09 Add states**

To show and animate layers in our project, we can add states. These are simple objects that will describe what properties our layers should have when that state is active. Think of them a little bit like CSS classes that we can toggle on and off.

```
alpha.states.add
  default : {opacity : 1}
  second : {opacity : 0}
}
favourites.states.add
  default : {opacity : 0}
  second : {opacity : 1}
}
missed.states.add
  default : {opacity : 0}
  second : {opacity : 1}
}
```

```
abc.states.add
  default : {opacity : 1}
  second : {opacity : 0}
}
favs.states.add
  default : {opacity : 0}
  second : {opacity : 1}
}
miss.states.add
  default : {opacity : 0}
  second : {opacity : 1}
}
```

**10 Add events**

Now that our layers have states, we can write code to toggle certain states when different layers are clicked or touched. We're going to bind some click events to the tabs at the top of our app, and have them show the view that they correspond to. Go ahead and tap one of the tab buttons, the view should now switch out.

```
alpha.on Events.Click, ->
  alpha.states.switchInstant('default')
  favourites.states.switchInstant("default")
  missed.states.switchInstant("default")

abc.states.switchInstant('default')
favs.states.switchInstant('default')
miss.states.switchInstant("default")
```

```
001 <code>
002 ...
003 favourites.on Events.Click, ->
004 favourites.states.switchInstant('second')
005 alpha.states.switchInstant("second")
006 missed.states.switchInstant("default")
007 abc.states.switchInstant('second')
008 favs.states.switchInstant("second")
009 miss.states.switchInstant("default")
010 missed.on Events.Click, ->
011 alpha.states.switchInstant('second')
012 favourites.states.switchInstant('default')
013 missed.states.switchInstant('second')
014 abc.states.switchInstant('second')
015 favs.states.switchInstant('default')
016 miss.states.switchInstant("second")
017 </code>
018
```



## 11 Understand the events

Even if you're a seasoned JS developer, the syntax in the last step may have looked a little strange. That's because it's CoffeeScript, a language that compiles to JavaScript. All we've done in event handler is set the appropriate states for the tabs buttons and then shown the view corresponding to that tab button whilst hiding all of the others.



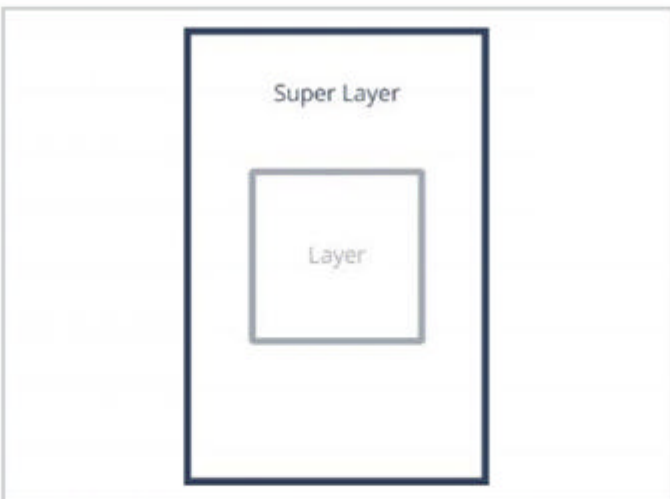
## 12 Add Adam

In addition to importing assets from a PSD or Sketch file, we can also drag and drop files into our project to use them too. In the resources folder of the project on FileSilo, download adam.png and then drag and drop that file into our Framer project. The image will appear in our project and a new line of code will appear at the end of our project.

```
001 <code>
002 imageLayer1 = new Layer
003 x:0, y:0, width:147, height:147, image:"images/adam.png"
004 //Change this to...
005 adamPicture = new Layer
006 x:38, y:88, width:147, height:147, image:"images/adam.png",
007 superLayer : abc
008 </code>
```

## 13 Is it a bird, is it a plane? No, it's a superLayer!

After dropping the Adam file into our project, change the code to alter the images position with the x and y properties and add the superLayer property. Our Framer layers have a hierarchy, using the superLayer property, we've told Framer that our adamPicture layer should exist with the abc layer so that its parent and all movements and actions are relative to abc.



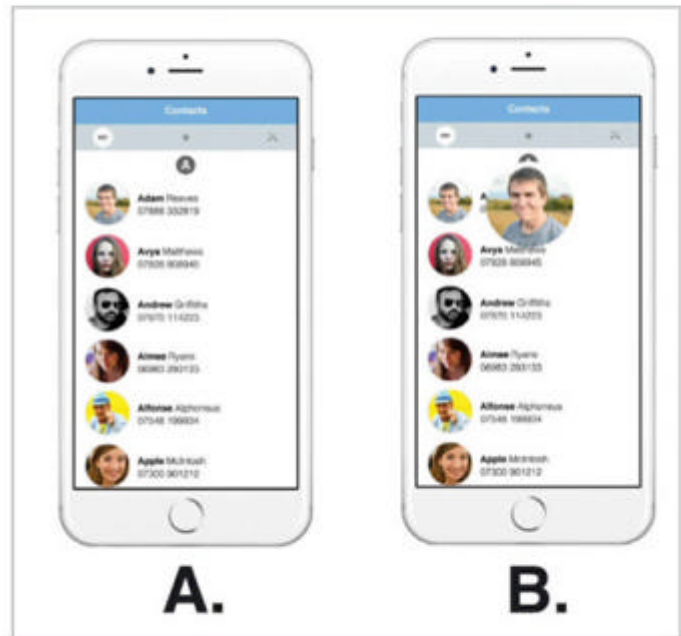
## 14 Animate Adam

So why, have we added Adam as a separate layer when he's already present in the abc layer? Well, because it makes it easier for us to animate him! Just as we did with our tab toggles we're going to add an extra state to our adamPicture object as well as create some animation options.

```
001 <code>
002 ...
003 adamPicture.states.add
004 second: {x : 305, y:100, scale:2}
```

```
adamPicture.states.animationOptions =
  curve: "spring(100,20,5)"
```

```
005 ...
006 </code>
```



## 15 Animation options

Almost any property or layer can be animated in Framer Studio. By passing animation options to each layer, we can customise how that element will animate, over any length of time, in response to any action to we trigger it with. In Step 14, we passed through options that would ease our layer to and from points A to B in its animation.

## 16 Trigger the animation

To trigger our animation we're going to bind an event to our Adam picture exactly the same way we did for our tabs:

```
001 ...
002 adamPicture.on Events.Click, ->
003 adamPicture.bringToFront()
004 adamPicture.states.next()
005 ...
006 </code>
007
```

# Prototype apps with Framer.js and Framer Studio.

Rather than setting the states manually, we're using the next() function to cycle through the available states. Once it comes to the end of available states, our layer will animate back to the first state in our queue. If you click on the picture of Adam, it should now centre and scale up.

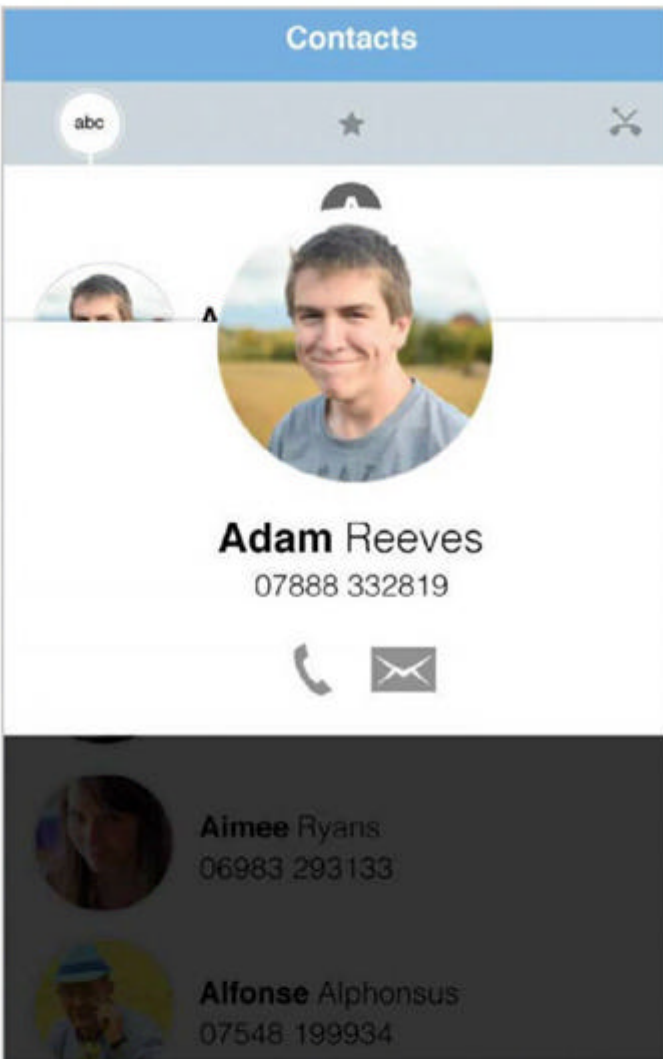
## 17 Transition details

Adam's face now animates, but not to much effect - he just kind of... sits there at present. In our PSD, we have a detail layer so that as Adam animates to and from his desired spot, we'll have the details layer slide up too.

```

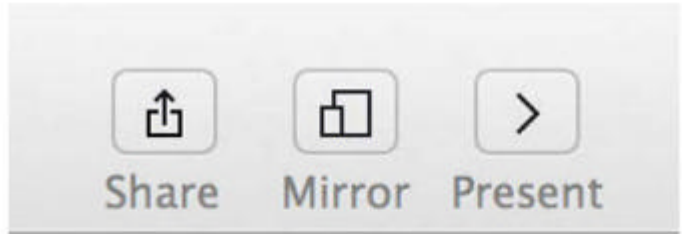
001 <code>
002 ...
003 #Add
004 adamDetail.states.add
005 second: {y : 140}
006 adamDetail.states.animationOptions =
007 curve: "spring(100,20,5)
008 #Edit
009 adamPicture.on Events.Click, ->
010 adamPicture.bringToFront()
011 adamPicture.states.next()
012 adamDetail.states.next()
013 </code>

```



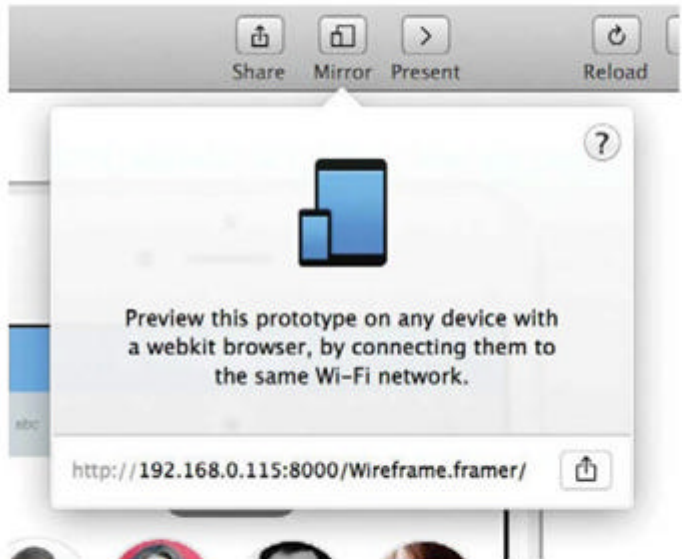
## 18 Show off - Present mode

That's it! We now have a fully functioning, interactive app prototype. So, how do we show this off to people? There are a couple of ways. The most immediate way to demonstrate the prototype is the Present button at the top right of the Framer Studio chrome. Clicking this will launch a fullscreen view presentation mode showing off our app in the current device.



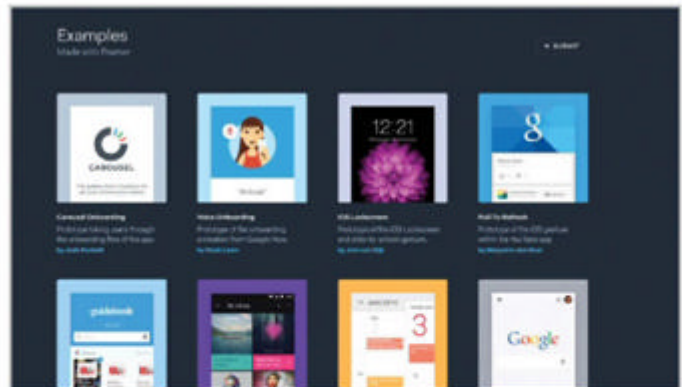
## 19 Show off - Mirror mode

Another way to demonstrate our app with the Mirror mode. This will fire up a simple server that will let us visit and interact with our prototype in any Webkit-based (Chrome and Safari for example) browser.



## 20 Conclusion

That's it. We now have the skills to import a Photoshop-created design, add animation and touch/click events to it for presenting. With all of this, your next project is sure to impress. Check out the examples on the Framer site ([framerjs.com/examples](http://framerjs.com/examples)) for more inspiration.





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Start-up Web Hosting Pack	N/A	£25	5GB	Unlimited	100	✓	✓	Add-on	N/A	✗	✓	✓	✗
Unlimited Web Hosting Pack	N/A	£50	Unlimited	Unlimited	Unlimited	✓	✓	Add-on	N/A	✗	✓	✓	✗
Unlimited Multi-site Web Hosting Pack	N/A	£300	Unlimited	Unlimited	Unlimited	✓	✓	Add-on	N/A	✗	✓	✓	✗

123-reg (www.123-reg.co.uk)	Starter	0845 859 0018	£29.88	1GB	5GB	20	✗	✗	✗	✓	✓	✓	✓
123-reg (www.123-reg.co.uk)	Plus	0845 859 0018	£59.88	5GB	50GB	500	✓	✗	✗	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Pro	0845 859 0018	£107.88	10GB	100GB	750	✓	✗	✗	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Bus Pro	0845 859 0018	£179.88	20GB	Unlimited	1,000	✓	✗	✗	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Plus (MS)	0845 859 0018	£59.88	2GB	25GB	100	✓	✗	✗	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Pro (MS)	0845 859 0018	£107.88	5GB	50GB	500	✓	✗	✗	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Bus Pro (MS)	0845 859 0018	£179.88	10GB	150GB	1,000	✓	✗	✗	✓	✓	✓	✗
2020Media (www.2020media.com)	Light User	0870 321 2020	£45	20MB	1GB	3	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	Everyday	0870 321 2020	£100	200MB	10GB	15	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	Business/Pro	0870 321 2020	£275	500MB	20GB	50	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	JAVA Tomcat	0870 321 2020	£300	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	ASP.Net	0870 321 2020	£275	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✗
4D Hosting (www.4dhosting.com)	Big Web Hosting	0207 183 0602	£60	5GB	Unlimited	20	✓	✓	✓	✓	✓	✓	✓
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.co.uk)	City250	0330 223 0120	£10.99	250MB	5GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City500	0330 223 0120	£14.99	500MB	10GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City2000	0330 223 0120	£29.90	2GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City10000	0330 223 0120	£49.90	10GB	100GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	CityR10	0330 223 0120	£120	10GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	CityR20	0330 223 0120	£180	20GB	100GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	CityR30	0330 223 0120	£240	30GB	150GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City VPS15	0330 223 0120	£180	15GB SSD	400GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City VPS30	0330 223 0120	£300	30GB SSD	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	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	✓	✗	✓	✓	✓	✓	✗



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## 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	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	✓	✓	✓	✓	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	150MG	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	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	LD Pro (Linux)	07891 235858	£41.88	50GB	50GB	20,000	✓	✓	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	✓	✓	✓	✓	✓	✓	✓	✓	✓

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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+	✓	✓	✓	✓	✓	✓	✓	✓
PurplePaw (www.purplepaw.co.uk)	Email	N/A	£25	100MB	1GB	10	✗	✗	✓	✓	✗	✓	✓	✗
PurplePaw (www.purplepaw.co.uk)	Play	N/A	£40	100MB	1GB	10	✗	✗	✓	✓	✗	✓	✓	✗
PurplePaw (www.purplepaw.co.uk)	Plus	N/A	£65	750MB	5GB	25	✓	✓	✓	✓	✗	✓	✓	✗
PurplePaw (www.purplepaw.co.uk)	Power	N/A	£95	2GB	10GB	100	✓	✓	✓	✓	✗	✓	✓	✗
PurplePaw (www.purplepaw.co.uk)	R3 Reseller	N/A	£660	10GB	50GB	Unlimited	✓	✓	✓	✓	✗	✓	✓	✗
Reddex UK (www.reddexuk.com)	Reddex Design Starter	0843 289 4625	£18	1GB	Unlimited	10	✓	✗	✓	✓	✓	✓	✓	✓
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	✓	✓	✓	✓	✓	✗
Streamline.net (www.streamline.net)	Starter	0844 941 1000	£23.88	500MB	Unlimited	20	✓	Option	✓	✓	✓	✓	✓	✗
Swish Hosting (www.swishhosting.co.uk)	Email	08445 67 69 71	£18	-	Unlimited	Unlimited	✗	✗	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	Windows Hosting	08445 67 69 71	£66	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Tidy Web Hosting (www.tidywebhosting.co.uk)	Entry	0844 884 9100	£25	100MB	1GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Tidy Web Hosting (www.tidywebhosting.co.uk)	Home	0844 884 9100	£50	500MB	5GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
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	✗	✓	✓	✓	✓	✓	✓	✓	✗
UK2.NET (www.uk2.net)	Business Hosting	0808 168 2427	£54	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
VARIHOST (www.varihost.net)	WordPress Basic	0208 144 7057	£47.88	2GB	10GB	10	✓	✗	✗	✓	✓	✓	✓	✓
VARIHOST (www.varihost.net)	WordPress Plus	0208 144 7057	£71.88	4GB	100GB	100	✓	✗	✗	✓	✓	✓	✓	✓
VARIHOST (www.varihost.net)	WordPress Extra	0208 144 7057	£119.88	unlimited	Unlimited	Unlimited	✓	✗	✗	✓	✓	✓	✓	✓
WebFusion (www.webfusion.co.uk)	Fusion Professional	0845 130 1602	£107.40	5GB	50GB	1,000	✓	✗	✓	✓	✓	✓	✓	✗
WebFusion (www.webfusion.co.uk)	Fusion Business	0845 130 1602	£179.40	10GB	150GB	1,500	✓	✗	✓	✓	✓	✓	✓	✗
WebFusion (www.webfusion.co.uk)	Fusion Developer	0845 130 1602	£227.40	20GB	300GB	5,000	✓	✗	✓	✓	✓	✓	✓	✗
Z-Host (z-host.co.uk)	Z-100	N/A	£15	100MB	10GB	Unlimited	✓	✓	✓	✓	✗	✓	✓	✓
Z-Host (z-host.co.uk)	Z-200	N/A	£21	100MB	10GB	Unlimited	✓	✓	✓	✓	✗	✓	✓	✓
Z-Host (z-host.co.uk)	Z-500	N/A	£42	500MB	20GB	Unlimited	✓	✓	✓	✓	✗	✓	✓	✓
Z-Host (z-host.co.uk)	Z-1000	N/A	£60	1GB	40GB	Unlimited	✓	✓	✓	✓	✗	✓	✓	✓
Zen Internet (www.zen.co.uk)	Bronze (Linux)	0845 058 9000	£47.88	2GB	10GB	10	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet (www.zen.co.uk)	Silver (Linux)	0845 058 9000	£95.88	5GB	50GB	25	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet (www.zen.co.uk)	Gold (Linux)	0845 058 9000	£143.88	10GB	100GB	50	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet (www.zen.co.uk)	Platinum (Linux)	0845 058 9000	£239.88	50GB	250GB	100	✓	✓	✓	✓	✓	✓	✓	✗
Zen Internet (www.zen.co.uk)	Reseller (Linux)	0845 058 9000	£479.88	150GB	500	250	✓	✓	✓	✓	✓	✓	✓	✗

## 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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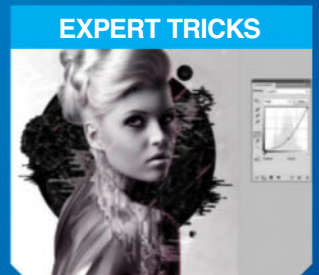


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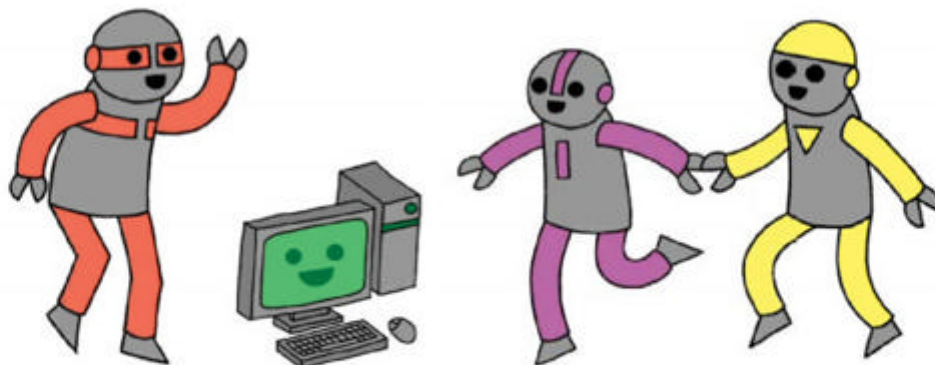
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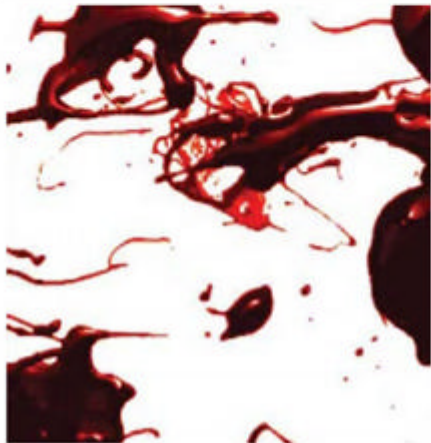
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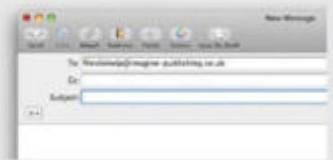


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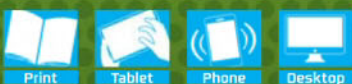


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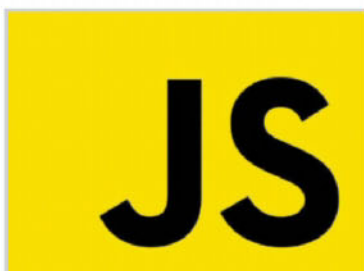


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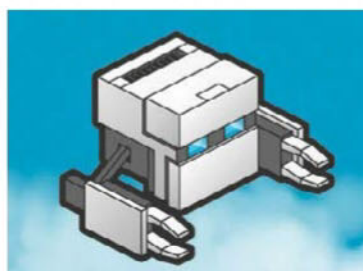
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