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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



Russell Barnes

## Highlight



We were free to innovate in ways that would make other clients uncomfortable

Fantasy Interactive walk us through the process of rebranding the USA Today website to mark the paper's 30th anniversary.

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## WebGL ousts Shockwave in a Flash

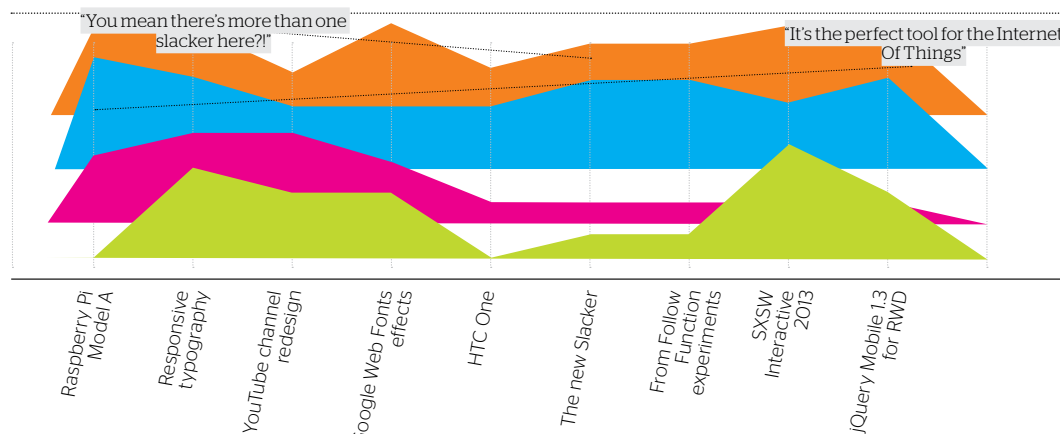
If you're looking to spice up your next web project with impressive 3D graphics and animations you'll find some great options available to you. In the past you would have looked to the likes of Flash or Shockwave to serve your needs, but this required the use of expensive authoring tools and was reliant on obstructive plug-ins to get it up and running. Thanks to the onward march of technology, though, the bandwidth and graphics hardware required to do it natively within the browser is widely available, meaning you can kick Flash into touch and show Shockwave the door. Turn to pages 40-49 to see how

you can create out of this word 3D effects for your web designs using HTML5 Canvas and WebGL - it's easier to get started than you might think.

You might notice we're making a few small changes to the magazine to offer you more tutorials and bigger features. While we hope you like the changes we've made so far, we have a few other tweaks and updates planned over the coming issues so feel free to use it as an opportunity to get your opinion heard. What content do you like? What would you like to see more of in future issues? Let us know by emailing us and we'll add your comments to the pool of ideas we're currently working on. Enjoy the magazine!

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## Excitographic

Plotting the features that got us in a frenzy over the month...

- Steve Jenkins, Features Editor
- Russell Barnes, Editor
- William Shum, Designer
- Ben Martin, Sub Editor

Turn over to the contents to discover what's going to get you excited this issue...

# This issue's panel of experts

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



**Sam Hampton-Smith**

A *Web Designer* stalwart and keen supporter of web standards, Sam has run his own design business for the last twelve years. This issue he takes the reins of web-based 3D graphics and animation, and demonstrates the power of HTML5, CSS, Canvas and WebGL. **Page 40**

Sam takes the reins of web-based 3D graphics and animation



**Mark Shufflebottom**



Mark is the programme leader of BA Hons Digital Media Design at Bournemouth University. This issue he tackles the Bootstrap framework and shows how to style the framework to create a bespoke look. **Page 56**



**Harry Brignull**



Harry is a senior UX designer at Clearleft. He designs user-centred websites which are easy to use. This issue he reveals the persuasive and subtle tricks and techniques, aka dark patterns, that web businesses use to boost their conversion rates. **Page 76**



**Jeffrey Way**



Jeffrey is a developer, evangelist, instructor and author who works for Envato. This issue he takes up the challenge of demystifying REST, with a practical insight into the principles of implementing web APIs. **Page 84**

**Tim Stone**



Tim Stone is a front-end developer who graduated with a first-class degree in Interactive Media Production. This issue he demonstrates how to create your own custom RSS feed from multiple sources using Node.js. **Page 64**

**Adam Smith**



Adam is the resident Photoshop expert. He loves nothing better than to demonstrate how to recreate the latest graphic technique. This issue Adam reveals how to create great-looking infographics to show data on the web. **Page 74**

**Matt Gifford**



Matt Gifford is a lead RIA consultant developer and industry author who specialises in ColdFusion and mobile development. This issue he tackles the art of creating interactive maps for mobile devices using the Leaflet.js library. **Page 94**

**Richard Elliot**



Richard has been working in the industry for the past six years and loves to use the latest technologies. This issue he demonstrates how to integrate an eCommerce solution into your Facebook page with the help of StoreYa. **Page 90**

**David Howell**



David has over 20 years of experience in the industry, and this issue we sent him to interview viral games designers KoKo Digital. He takes a peek behind the scenes, and discovers how they operate and the secret of viral marketing. **Page 30**

**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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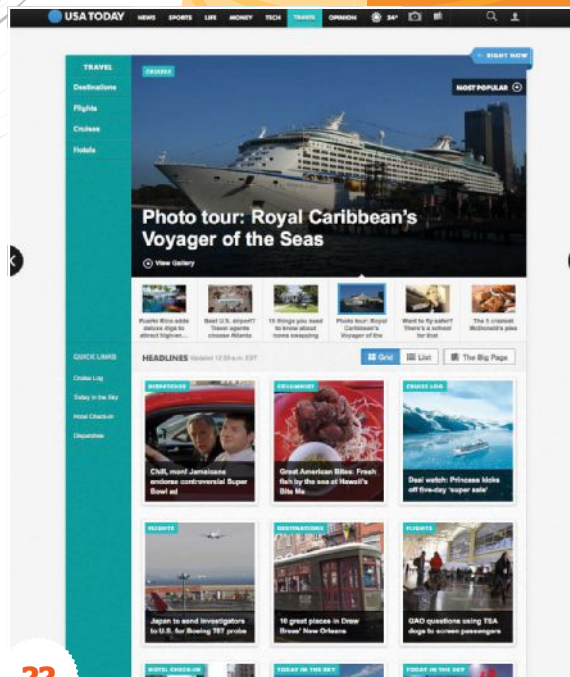
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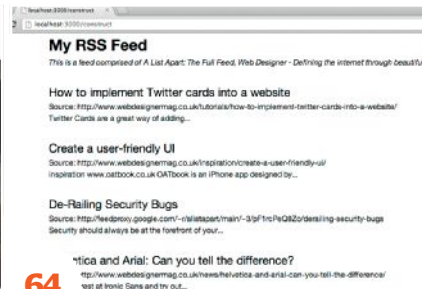
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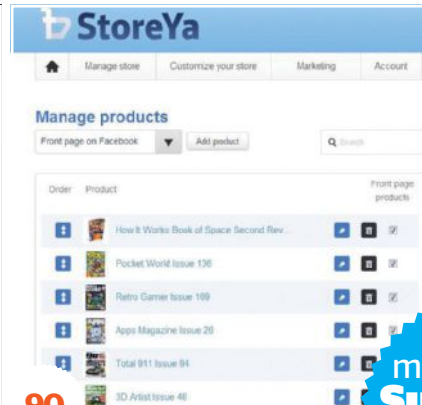
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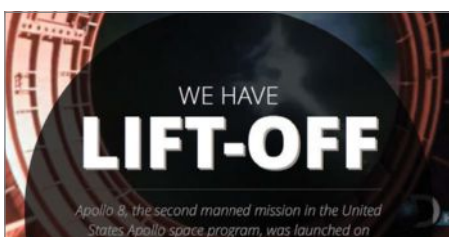
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## Discussing the hottest topics in the web design world

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

[webdesigner@imagine-publishing.co.uk](mailto:webdesigner@imagine-publishing.co.uk) [@WebDesignerMag](https://twitter.com/WebDesignerMag)

# Is it time to let Internet Explorer back into your life?

Microsoft is making a concerted effort to bring designers and developers back to the browser. Are you ready?

**T**he mere mention of Internet Explorer can strike fear into the hearts and minds of many a designer and developer. Whether Microsoft likes it or not, IE has a stinker of a reputation - especially among designers and developers - that precedes the browser. Plus, the legacy of IE6 is still with us, but slowly and surely the abomination is heading to its final resting place.

To speed up the process and give designers and developers a helping hand, Microsoft has released modern.IE. What's this, you are asking? Well, it's a set of free tools and resources that will help users spend less time testing for the various versions of Internet Explorer and more time building what matters. A promising start, but it could be argued that designers and developers shouldn't even have to think about older versions of Internet Explorer. Microsoft should have got it right in the first place and the problems perpetrated by the browser wouldn't

exist. However, this is an aside, and those that still need to bring on board testing procedures for Internet Explorer can start here.

Modern.IE ([www.modern.ie](http://www.modern.ie)) is all about making testing for Internet Explorer just that little bit easier. It has a whole set of tools, from simple instant tools to more complex cross-browser tools. The Scan a webpage feature is as basic as it seems: add a URL and wait to see what common coding problems arise. Any

known issues are not simply displayed and left for the user to solve - help is at hand. In our test, an old version of jQuery was detected, and the site suggested how to fix it and linked to the jQuery site, which was both useful

and helpful. However, the more useful option is the virtual tools. Users can perform cross-browser testing via Browser Stack, though this is only a trial. Sitting conveniently beside the testing tools are 20 tips for 'coding with standards'. Read this with an open mind.

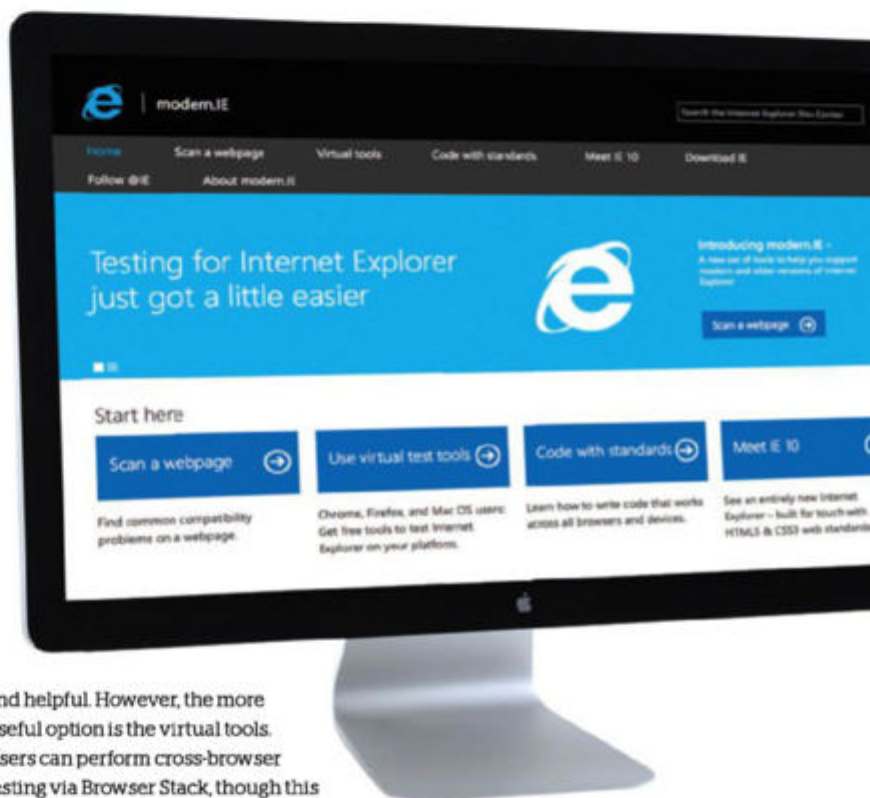
There is no doubt that the modern.IE site is a test bed for the browser, but it is also something of a promotional tool for IE10. Spending time on the site helps ease the negative thoughts on

“Modern.IE is a test bed for the browser, but it is also a promotional tool for IE10”

the browser. Whether or not it is convincing enough to get you to switch is another matter - and we think we already know the answer. On a quick note, Windows Vista users look away, as IE10 is not supported. But, any

designer cannot simply dismiss a browser based on its legacy - even pone this terrible. Try IE10 and make up your own mind, as some users already have.

Commenter 'Almost trustable' had a few words to say on the official IE Blog, including the following, 'Everything was going great with this article until you pointed out that the site was endorsing the addition of IE-only code. This is the exact same sh...! That caused a decade long browser that developers walked out of with a hatred for Internet Explorer! Have you seriously not learned your lesson? As YOU stated on your site developers should strive to make their sites run using STANDARDS based markup that runs/renders in all browsers.' They might not have a positive view on the browser, but what do you think?



## IE6: the final countdown

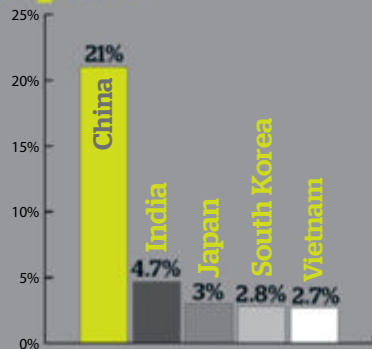
IE6 is a browser that still lingers in the far-flung corners of the globe. Whether designers and developers like it or not the ailing browser is still here.

Designers have the option to implement the necessary workarounds or, as many do, simply ignore that fact that the browser even exists. There are pros and cons for both options, and we know which one we like. However, the obvious option for complete compatibility is to include the necessary workarounds.

Thankfully, the demise of IE 6 is coming ever closer. According to the Internet Explorer 6 Countdown site ([www.ie6countdown.com](http://www.ie6countdown.com)) only 6% of the world was using the old browser in Jan 2013. To put this into perspective, this is nearly 5.5% less than the year before. Plus, a whole host of countries have dropped below the once elusive 1% mark, or the Champions circle as the site likes to call it. The latest additions to the circle include Russia, Spain, Germany, Switzerland, Canada, Netherlands, and the UK, which was at 0.9% at the time of writing.

### The main culprits

IE6 usage is well below 1% in a host of countries, but there are still a few that are propping up the overall figures. Here we list the top 5, by usage share in country, of Internet Explorer 6.



Source: <http://www.ie6countdown.com>

## Who loves Internet Explorer?

Internet Explorer's popularity and market share, is a long way from when it was in its prime and the competition was scarce. Nowadays, the browser sits a long way behind its main competitors Firefox and Chrome, but it still boasts a decent slice of the market.

### Market share for Europe (January 2013)

IE 9 - 15%

IE 8 - 8%

IE 7 - N/A

(January 2012)

IE 9 - 12%

IE 8 - 16%

IE 7 - 3%

Source: [gs.statcounter.com](http://gs.statcounter.com)

IE is still a valid companion for Windows and is still part of the reason that the browser is still relatively popular. And, as the figures show, its popularity is on the rise, if very slowly. One of the reasons is that each new browser is more standards-friendly than the last. It is unlikely that IE will ever get back to the heady heights of its heyday. Not only does it have to contend with other well-established browsers it has to contend with a legacy that it may never shake off.

## Code professionally for the new webscape

Out now: the HTML5 & CSS3 Genius Guide

HTML5 and CSS3 are the new gold standard. Since their gradual implementation over the last year or so, these powerful upgrades to the key coding languages have slimmed down workflows everywhere and empowered designers with an unparalleled level of control over their page elements. For many, it is now an incredibly exciting time to be a programmer. The HTML5 & CSS3 Genius Guide has been written by and for web professionals, with the aim of raising standards everywhere through the delivery of correct and crucial information about the new webscape.

Steve Jenkins, **Web Designer** features editor, said: "The HTML5 & CSS3 Genius guide is the perfect companion for web designers looking to take their skills to a new level. Get up to speed with the latest industry techniques, tools and frameworks. Join the responsive design revolution, build standards-friendly HTML and add stunning CSS3 styling to stay ahead of the game."

Packed with ideas, instruction and inspiration, and a free CD containing tutorial files, video guides and bonus content, this bookazine is all you need to take your skills to the next level. The HTML5 & CSS3 Genius Guide is now on sale February 14 2013 at

[www.imaginebookshop.co.uk](http://www.imaginebookshop.co.uk) and all good retailers for £12.99.



## Readers Tweets

Web Designer posed the question What do you like, and what do you hate about Internet Explorer. Will it ever be your number one browser?

Rishi @DesignSkew

@WebDesignerMag LOL, never!! I like to work on Firefox, because of its laziness and firebug.

Kevin Barnes @helloiamkev

@WebDesignerMag slowness to implement new standards, but still has a good market share. Will never be my no1! #IE

Charles Bannister @CJBannister

@WebDesignerMag Anything's possible but I can't help but bear a grudge thanks to the years of separate, conditional stylesheets. #IE

## <news cloud>

Bite-sized coverage of the month's trending topics

### Twitter adds new metadata for tweets

The micro-blogging king has announced that it will be 'adding new fields to tweet structures returned by the API'. This means developers will be able to target subsets of tweet collections more easily. Included is a new filter level attribute to help display only the most relevant tweets. Find out more via the Twitter blog ([bit.ly/X5YNGX](http://bit.ly/X5YNGX)).

**Twitter API**

The browser vendor pledges its support to WebKit

**Opera**

**Facebook**

**mincss**

Clean up your CSS code with the neat tool

**WordPress**

The publishing platform updates its iOS app with Notifications On the Go

### Facebook introduce error alerts for developers

Testing is a critical part of the development process, and errors will occur. Facebook has introduced a new feature in the shape of Developer Alerts for API errors. Should an app encounter abnormally high error rates a alert is sent with error codes and descriptions.

# Hybrid apps: The way forward for HTML5

As the HTML5 standard heads towards official completion in 2014, building apps with HTML5, CSS and JavaScript is the way forward

**D**ifferent devices and different OSs make building and developing apps for tablets and smartphones an unwanted distraction.

Different languages, lack of support, and lack of compatibility all add to the mix, which makes the process convoluted at least. Vendors look for the best solution for them and this is why we see the same app making an appearance on different dates. iOS apps and Android apps are typically native apps built using their preferred platform. The issue is that neither option works on the opposing device. When building and developing for devices, designers and developers want a solution that has a viable presence on as wide a range of platforms as possible.

The key to large-scale HTML5 adoption could lie with hybrid apps. These are, as the name suggests, the middle ground between HTML5 and native apps. They are written with the popular technologies (HTML5, CSS, JavaScript) and do not rely on native coding languages, specific platform SDKs, and tools.

They offer far more flexibility and eliminate the need for web developers to take up the mantle of alternative coding languages, not to mention the steep learning curve.

The obvious advantage of hybrid apps for web developers is how quickly they will be able to complete a new project. Plus, they are more powerful than standard mobile webapps, which lack the capabilities of hybrid and native apps. How do they work? In technical terms they run inside a native container and render the HTML and process any JavaScript via the device's browser engine. Effectively, this means that the browser on the device is doing all the hard work, which in turn means that an app will pretty much work any device whatever the platform or OS.

So the obvious advantages lie with multiple platform support, use of device capabilities (eg camera) and can be used

offline unlike a webapp. Where it does fall down is in the arena of advanced graphics typically found in native apps. This one point will see many app builders sticking with their current setup until HTML5 matures to complete with natively-built apps. With the official completion date for the HTML5 specification set to be 2014, it would seem that hybrid apps are the way forward. The HTML5 specification is only going to mature, grow and eventually be the choice for all apps.

One quick and easy way to join the hybrid app revolution is to employ the gratis services of PhoneGap. The free open-source framework provides a host of tools and guides to help build apps, and the community is growing faster by the day. To fully appreciate the power of PhoneGap and capabilities of hybrid apps visit the PhoneGap showcase at [phonegap.com/app](http://phonegap.com/app).

Finally, Intel has joined the HTML5 revolution and released its HTML5 App Porter Tool, currently in beta. What is it? It is an application that helps mobile application developers to port native iOS code into HTML5, by automatically translating portions of the original code into HTML5. Check it out at [software.intel.com/en-us/html5](http://software.intel.com/en-us/html5).



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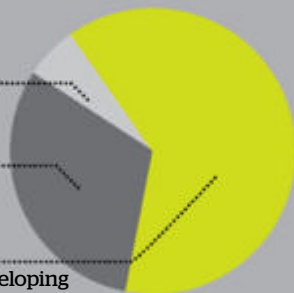
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## HTML5 adoption

Designers and developers are already actively developing with HTML5. The majority of those who are not are looking to in the very near future

6% No plans to use HTML5  
31% Planning to use HTML5  
63% Actively developing with HTML5



There are plenty of designers and developers actively developing with HTML5, but it could be construed this is not enough. The HTML5 specification is due for official completion in 2014, so there is no doubt that there will be better support across platforms. This means that those who do not take up the HTML5 mantle are going to get left behind.

Source: [bit.ly/St8eLf](http://bit.ly/St8eLf)

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# The Flexibility of Freelance

Woody is CEO and lead developer at StormGate, an independent UK development company specialising in rapid webapp development, platform prototyping, and creative digital products



Woody Hayday

## Getting the most out of the client-freelancer relationship

**F**reelancing is hitting new heights. More people than ever are leaving traditional employment in search of self-directed consulting. Whether you freelance or hire, this can have profound effects on the way you do business.

Freelancing can open up new markets, and change prices and costs. Freelancing can develop much more talent, talent which can be easily accessed and verified through growing marketplaces. I've spent time on both ends of the client-freelancer relationship – I still freelance at StormGate for a portion of my time.

Freelancing is now a career choice; lots of people are breaking off and setting up shop, but whether you're a veteran consultant or you're just starting out, if you approach freelance work with a youthful exploration you will uncover fruitful connections. Similar to clients, freelancers can be more than just hires; they are often hard working entrepreneurs and can offer other business value.

As a freelancer you have decided to offer a boutique service. What you are producing may be boring business logic or beautiful branding; whatever it is there is a distinct value beyond its delivery.

Your customers have come to you for an exceptional reason. They like what you've done before. They have chosen you over many other candidates. Winning freelance jobs has become like battling through an interview process, and successful freelancers must win jobs week after week.

In a way, freelancers are employees of multiple companies, but far from in the traditional 9-5 sense. The bond between freelancer and client is tenable, once established it's often as strong as any employment contract. Freelancers can feel an affinity with a company; arguably they represent a new form of stakeholder. As freelancers and as clients we are more connected than we think.

This connection is a two way relationship, which is totally different to the employee-employer relationship. You are a boss and your client is likely a boss and so you should see yourself as a deal maker. Freelancers, you are actively doing business with your clients, not just working for them, so practice business. Make deals.

Ever been part of a joint venture? Ever mentored? Ever been mentored? Got the skills but not the ideas? The ideas but not the

skills? Look to your clients. Clients – think how you can share value with your freelancers so you can both get a better result.

As a freelancer there is a level of professionalism you need to maintain, but so many clients are open for a more leveraged form of trade, friendship, and more.

Let me give you some examples. While freelancing I happened across an interesting situation with one client. Mike has a personal project that he is bootstrapping while working his 9-5. Aspects of his project made for a very sellable WordPress plug-in but based on my quote there was no scope within his budget. I proposed that I develop the plug-in and we release it as a kind of experimental joint venture. That plug-in is called Social Gallery (a 'social lightbox' for WordPress.) Social Gallery has already sold more than 850 copies and generated over \$15,000. By releasing Social Gallery to a wider market, Mike got his plug-in for free, and what's more it's made us both many times the return it would have generated as a traditional piece of client work. Mike has since become a good friend and student and we continue to work together.

Another example shows the value of good service; David found me through a referral, he had seen Social Gallery and liked my development style. David wanted a series of plug-ins developed; he had tried opting for cheap development options offshore but was realising long lead times. David is also a veteran marketer (an area I'm still mastering). By focusing on a fantastic turnaround I was able to secure useful sessions of advice and marketing mentorship that I doubt I could have found or afforded elsewhere, a fair trade and a great example of win-win business.

I continue to meet situations such as these with new clients and hires. Had I pursued only financial outcomes I would never have had any of these experiences. I'd have made less, learnt far less towards any mastery and I have no doubt I'd be less happy.

As clients, self-starting freelancers are invaluable, and what's more they could become employees, partners or students.

As freelancers, we can be flexible where big companies can't, we can care more about progress than profit, we can invest in ourselves and we can freelance for happiness. There is flexibility in freelance.

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# Adaptive marketing - future of the web

Norm Johnston is global digital leader at Mindshare, a media agency network with 113 offices in 82 countries from North America, Latin America, Europe, Middle East, to Asia Pacific, dedicated to competitive marketing advantages for businesses



**Norm Johnston**

## How to use 'big data' to identify and adapt to a customer's online behaviour

**T**he term big data has become overused in recent months, in the same way cloud computing and green IT have been referenced in every other sentence of newspapers and trade titles over the past few years. But what does big data actually mean for marketers? And more importantly, how can big data be used in web development to enhance the visitor experience and deliver on digital objectives such as driving up conversion rates and increasing average basket values?

On a simple level it is about marketers using any data at their disposal – sales, loyalty, media, social or third-party – to identify how best to reach a target audience, whether offering sophisticated promotions or other calls to action that take advantage of predicted behaviours. There are many examples of where this is working already – such as seasonal trends like brands responding to very hot or cold weather with tailored pricing or promotions.

At Mindshare we call this adaptive marketing, and I firmly believe that it will soon be commonplace, providing consumers with more ways to benefit based on big data. This growing opportunity will also allow web designers further chances to prove their worth when creating personalised online experiences. Imagine a world in which a website is different based on who is viewing it – you may already argue that this is the case with personalised feeds on Facebook and other social networks, but imagine if that personalised relevance was transferred to every site you visit – offering you a completely tailored shopping experience on an online supermarket site or a one-to-one online clothes shopping experience. Exciting, isn't it?

Cynics may claim that adaption for brands just creates the excuse to sell more products, and that priced based adaptation such as the hot and cold weather example I gave above means charging customers more for a product when demand is high, but that is not always the case. For instance, in June 2012, temperature-sensitive

vending machines with integrated thermometers for Coca-Cola's Limon & Nada lemonade drinks brand were installed across Spain. The temperature was shown on a large display and cans were priced at €2 when the temperature was below 25°C; at €1.40 for temperatures of 26-29°C and €1 when it was over 30°C. Proof that being 'adaptive' benefits everyone in the chain – the consumer gets cheaper drinks, the brand sells more product.

I expect more and more companies to use dynamic pricing to sell their products and not be out-done by their competitors as the use of consumer data becomes an essential element of marketing.

So what impact does this have on web design? Simple; Online is where all the data is coming from, so online is the place that stands to benefit the most. On average we input 3,254 pieces of personal information into databases every week! This is a great opportunity for web designers to begin taking the personalised experience to the next level with websites that use adaptive marketing techniques. This can range from changing the products or prices displayed for individual visitors based on a range of data points to developing an entirely different journey for a consumer based on their digital profiles. Different consumers react to different pricing, positions and creative messages and in the future, web designers will be able to provide them with experiences as individual as the consumers themselves. The era of the one-size-fits-all website is over and adaptive marketing is the future.



**<Left>**  
The Limon & Nada drink is a perfect example of adaptive marketing. As the temperature went up the price went down

“The era of the one-size-fits-all website is over”

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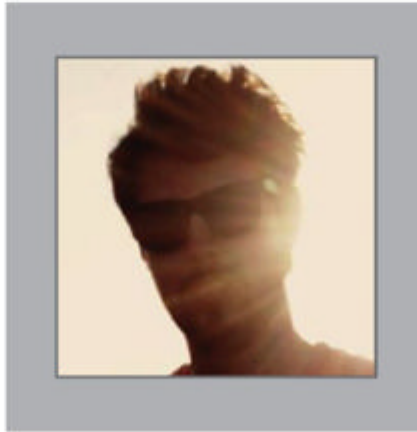
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## The Good Man

thegoodman.cc

**Development technologies** CSS3, HTML5, Solarized colour palette created by Ethan Schoonover, IcoMoon webapp



Designer **Pedro Ivo Hudson**  
podrivo.com

The Good Man experiment is an astonishingly competent achievement that reveals how powerful HTML5 can be when combined with CSS3



Animations using CSS have come and gone, but few have impressed as much as this graduation piece. The level of technical prowess on show is inspiring. Using a synced soundtrack, Hudson has distilled the facets of the narrative into a set of icon-based images that perfectly complement the monologue.

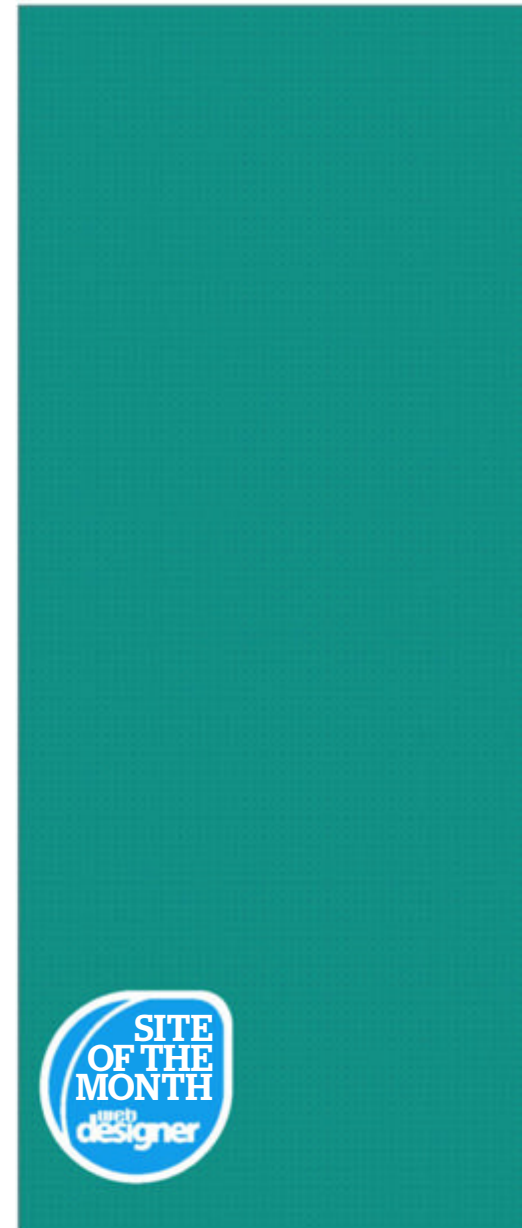
What could have been a sparse and uninteresting piece is transformed into an engaging experience, which

illustrates a level of maturity with today's digital tools that many other designers will aspire to.

As Pedro explains: "The Good Man is about visual transcription of a narrative that doesn't use traditional images, just web fonts and shapes. It's intended to run smoothly in modern web browsers and to be as scalable as possible."

Detailed images and graphics are not needed here, as the designer has cut to the essence of what audiovisual storytelling means online. Using typography and a universal shape set enables the site to communicate its message to anyone.

**Detailed images and graphics are not needed here, as the designer has cut to the essence of what audiovisual storytelling means online**



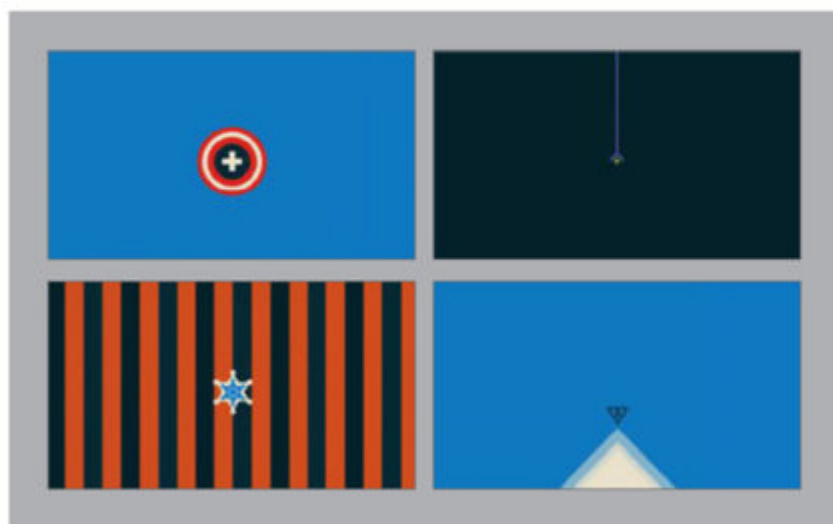
### <Above>

- As each animation reveals itself, the bold colour choices are emotive and appealing

### <Below>

- Using just a simple set of icons, the highly personal monologue is transformed into an engaging visual narrative





**<Top left, clockwise>**

- The opening screen sets the scene for an absolute masterclass in iconographic design
- This is a really good example of how the animation perfectly illustrates the audio
- Each screen animation is smooth and perfectly synced with the accompanying soundtrack
- The concluding screen perfectly rounds off what is an impressive technical and creative achievement



abcABC 1234567890

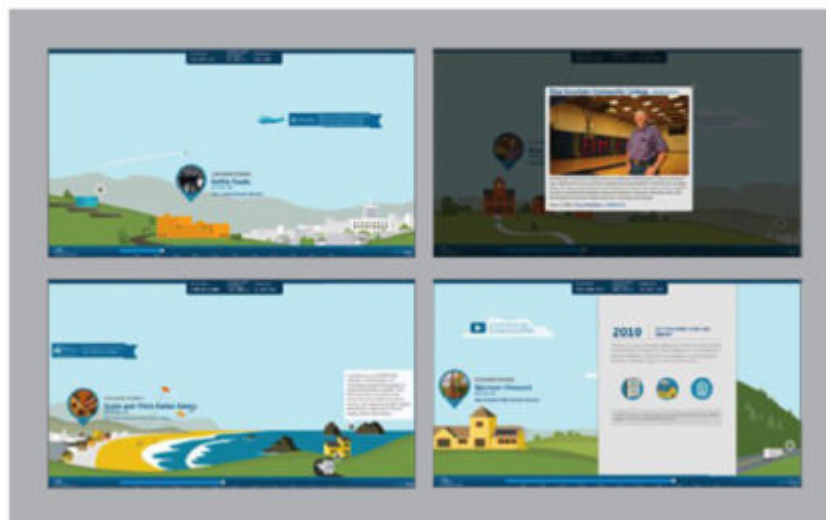
**<Above>**

- The Good Man uses the Nimbus Light font family developed by URW++ in Hamburg, Germany. The font is available from MyFonts



## <Above>

- The parallax scrolling design is the perfect user interface to impart how The Energy Trust has evolved as a company



## <Top left, clockwise>

- Pollinate worked with an illustrator to create the background scenery representing the regions that The Energy Trust serves
- Each year includes insights into how The Energy Trust has helped its customers via a large, pop-open lightbox
- Many of the landscapes also contain localised energy information. This adds depth to the educational value of the interface
- Every year begins with an overview of achievements made. Rollover icons update the captions

# The Energy Trust 10-Year Anniversary

energytrust.org/timeline

**Development technologies** SVG illustrations, CSS3, JavaScript namespacing, jQuery, Modernizr, SugarJS



Designer **Pollinate**  
pollinate.com

An interactive timeline showcases the work of the Energy Trust of Oregon using a host of fun graphics and animation



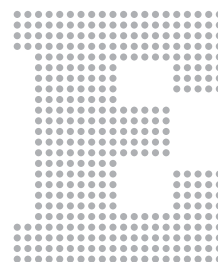
#### <Above>

- The overall styling of the site is a perfect fit with the client brief to bring their business to life online

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abcABC 1234567890

#### <Above>

- Developed by Tobias Frere-Jones, Interstate based on the signage alphabets of the US Federal Highway Administration, available from WebType
- Droid Sans Pro was designed by Steve Matteson and is available from MyFonts



Energy Trust of Oregon is an independent nonprofit organisation dedicated to helping utility customers benefit from saving energy and generating renewable sources. As part of its ten-year anniversary in 2012, it asked Pollinate to create an interactive timeline to highlight the milestones and customer success stories, including the development of programmes and services that help utility customers make energy-efficient and renewable energy investments in their homes and businesses.

Using the now familiar scroll technique, the design of this site uses subtle illustration that showcases the achievements of the Energy Trust in a context that is engaging and fun to

interact with. As Pollinate explains: "We wanted to keep the site fun and inviting, and to encourage users to explore and learn about the many services that the Energy Trust offers to its customers across Oregon and north-west Washington."

"Using a horizontally scrolling, parallax design lent itself well to the different landscapes that we wanted to highlight, as well as to the timeline of events that Energy Trust has been a part of. In short, the interactive timeline turns ten years of history into a [decade-long] roadtrip."

As each year scrolls by, the viewer gains an insight into how the Energy Trust has evolved as a company. More engaging and certainly more interesting than a traditional annual report, more businesses should strive to create online content that is as accomplished and accessible as this.

Parallax design lent itself well to the different landscapes that we wanted to highlight as well as to the timeline

# Maki-san

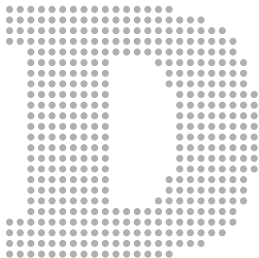
[www.rollwithmakisan.com](http://www.rollwithmakisan.com)

**Development technologies** HTML5 Boilerplate framework, jQuery, GreenSock animation library, SoundManager 2, CreateJS, History.js, CSS3



Design **Esther Goh, Jack Tan**  
 Programming **Noel Chan, Bagus Kuncoro**  
 Writing **Eugene Tan**  
[kinetic.com.sg](http://kinetic.com.sg)

The first DIY sushi restaurant in Singapore is paralleled with this make-your-own-video site



Dynamic can be an overused word in web design, but it fits perfectly with Kinetic's approach. The idea of this website is based on a food concept,

where users can choose from different Maki-san emoticons, animations and music to create a custom animation.

Kinetic outlines its approach: "We wanted a website that doesn't just provide the five Ws and one H. We changed the game by creating a food and beverage website that doesn't use real food shots to promote the food. Instead, we engaged the user on the

same premise of customisation. So while the store allows you to customise maki with different ingredients, the website allows the user to customise the animation video with different elements/ingredients."

Relating the restaurant concept to a similar customisation approach online makes a strong connection between the restaurant's online and offline presence. In addition, the handcrafted feel of the website, the concept of wabi-sabi (a Japanese aesthetic centred on transience and imperfection) is applied to the identity, web interface and illustrations.

Few campaigns truly capture the essence of a business' branding. Kinetic is an agency that has technical ability in abundance, a strong client understanding and a sense of fun - all of which are reflected in this site.

**Kinetic is an agency that has technical ability in abundance, a strong client understanding and a sense of fun**



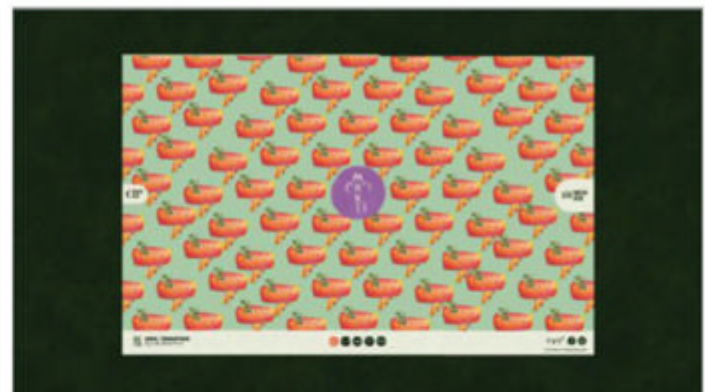
#### <Above>

• From the first screen, this site is a feast for the eyes that only continues to whet the appetite



#### <Above>

• Colour and movement dominate this site design. However, through all the visual and audio noise, it doesn't lose sight of its core purpose



#### <Above>

• The completed movie can be previewed and modified as much as you like before posting



#### <Above>

• Audio and video segments come together to give visitors complete control over the animation they are creating



abcABC 1234567890

#### <Above>

• VAG Rounded was developed for the Volkswagen AG in 1979. VAG Rounded is a variation on 19th-century grotesque sans-serif designs, with interesting rounded terminals. The font is available from MyFonts

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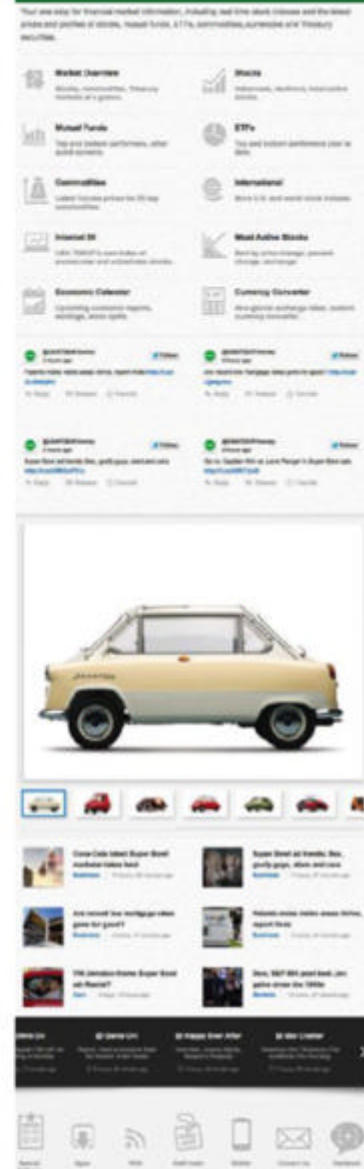
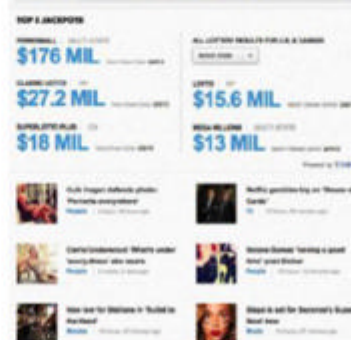
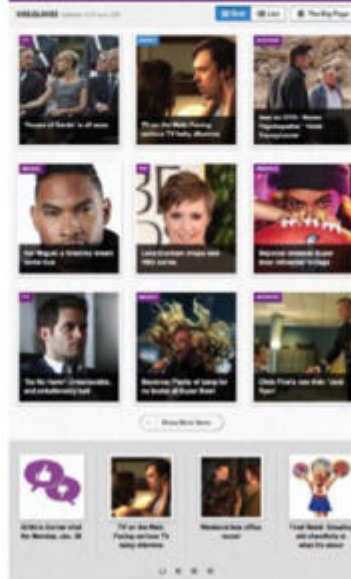
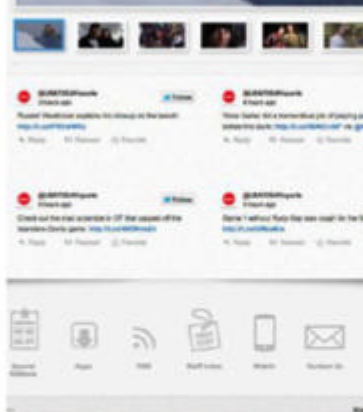
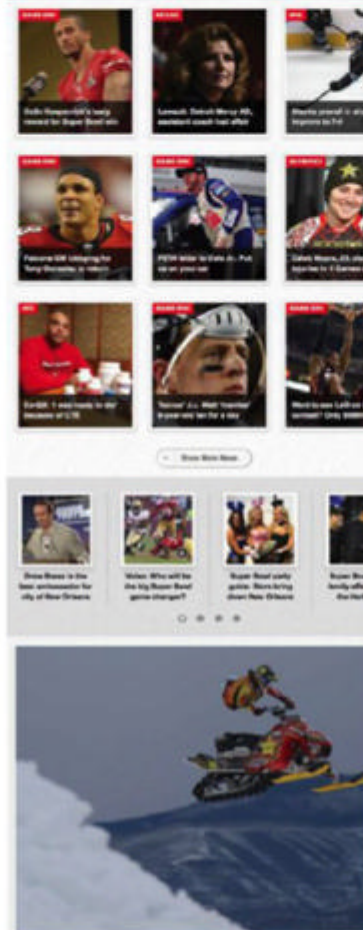
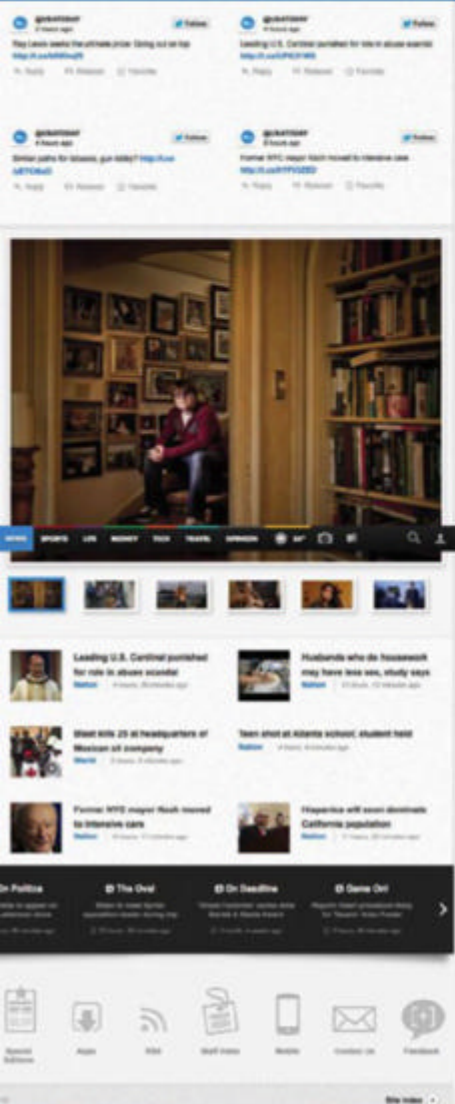
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# USA TODAY

## A new frontier in digital publishing

The million-selling newspaper decided its 30th anniversary was the perfect platform to reveal its online ambition. Fi was called in to innovate and architect the rebrand

Project	<b>USA Today</b>
Web	<b><a href="http://www.usatoday.com">www.usatoday.com</a></b>
Agency	<b>Fantasy Interactive (Fi)</b>
	<b><a href="http://www.f-i.com">www.f-i.com</a></b>
Web	
Duration	<b>One year</b>
People involved	<b>18-22</b>
Total Man Hours	<b>A dedicated team of UX, design, development QA and production management for a 12 month engagement</b>
Project Budget	<b>N/A</b>

**T**he masses across the globe have always had a vociferous appetite towards the consumption of news and information. Getting

the daily dose of the latest stories has long been the domain of print, with national and local broadsheets taking it to the people. A newcomer by print news standards, USA Today made its debut back in September 1982. From humble beginnings in the Baltimore/Washington area, it took only three years to reach the number two spot, and jumped into the digital age in 1995 when the internet was still in its infancy.

Its desire to forge ahead and absorb and engage current technology set the scene for the biggest redesign that the USA Today site has ever seen. It was decided that the 30th

anniversary would provide the perfect platform to give the web an online newspaper experience that would lead the way for others to follow. This was to be no tweak or minor update, this was to be a new site that would innovate and impress.

The Gannett Company, owner of USA Today, went looking for a digital agency that would match its ambition and settled on Fi, aka Fantasy Interactive. Working out of its New York office, Fi was very excited to be working with such a prestigious publisher. Fi's global director of UX and strategy, Irene Pereyra, reveals Fi's first perceptions of the project.

"The inception of the project was timed to USA Today's biggest rebrand in its 30 year history. The goal was to completely redesign and re-architect the entire digital USA Today experience including its traditional ad model. So USA Today approached us in their 29th year and informed us of their plan to reposition their brand and redo all of their



<Above>  
The pages are reminiscent of a newspaper, but with all the multimedia functionality the web offers

digital channels. Up until then, we had developed content-rich sites before but nothing remotely close to the amount of information found on USA Today. But we were determined to be just as innovative and disruptive with our final design as we usually are with all of our other work. In October 2011, the project team met in Washington DC with the client for the kick-off meeting. We began the discovery phase and explored the process of news gathering and how journalists work. The research alone for this redesign took a huge five months."

The first phase of a project is where ideas are formulated, and USA Today took some serious thinking as Pereyra explains, "We

basically wanted to do something that stood head and shoulders above all other news sites. Something completely new and innovative, something that had never been done before.

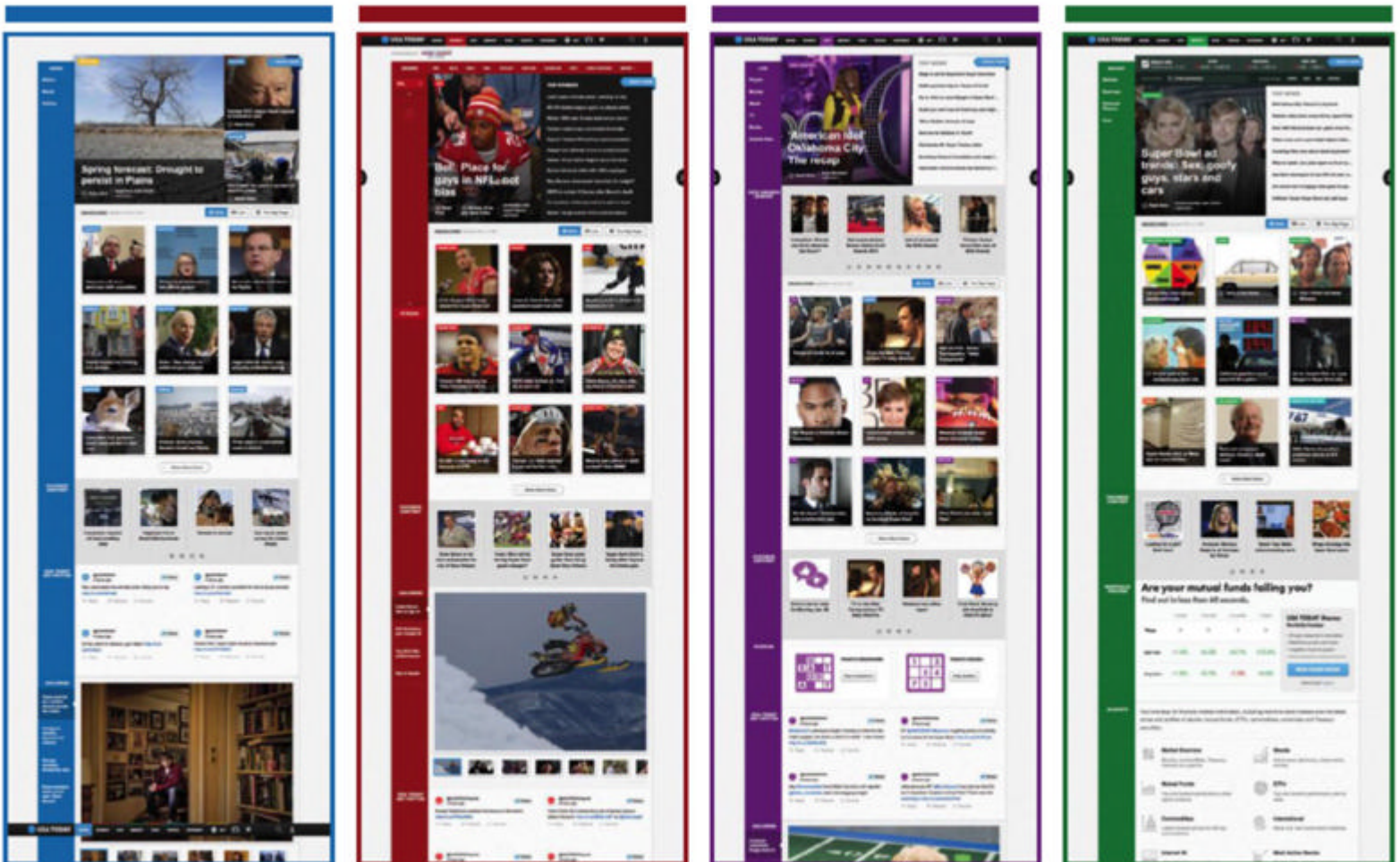
"There were really two main things that inspired us. One, from a digital perspective, we wanted to bring the best of the tablet to the desktop. We were very much inspired by the iPad design and knew we wanted to create a horizontal, app-like experience. When we launched, users commented that they felt like the best of the iPad was brought to the web.

"Two, from a user perspective, we wanted to digitise the tactical feeling of actually holding a newspaper and reading the section that people were most interested in. People tend to

“ We were very much inspired by the iPad design and knew we wanted to create a horizontal, app-like experience ”

# COLOUR-CODED CATEGORIES

USA Today brings together a mass of information across a host of well thought out categories. How do they separate the content into instantly recognisable sections? With colour-coding



naturally divide the newspaper in the morning. 'You take the sports section. I'll take News.' So we designed an architecture that supported this natural habit."

With such a massive project, both USA Today's parent company Gannett and Fi needed to collaborate and communicate on a regular basis to keep it on track.

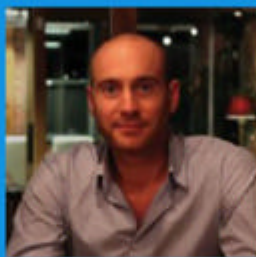
Pereyra: "The collaboration between Fi and Gannett was incredibly close. Gannett is the parent company to USA Today. We did many workshops down in McLean, Virginia and they came up to New York City very often to discuss the latest requirements and look at all the work in progress. It's not often that we feel a hundred per cent philosophically aligned with a client, so we felt extremely lucky that we were both striving for the same goal, and we were free to really innovate in ways that sometimes would make other clients uncomfortable. It was a true collaboration from start to finish.

"What was really nice was that neither the client nor we were overly concerned with what other publishers were digitally doing. A lot of clients have FOMO - fear of missing out - so they ask agencies to imitate what's



**Name** Irene Pereyra  
**Title** Global director of UX and strategy

It's been humbling to watch the team at Gannett really try to push the boundaries and set the bar, and I'm incredibly proud, that we at Fi, as a relatively small agency, have been part of a redesign that was so impactful for so many users. We are all incredibly proud of the work. It was challenging, but the result was worth it.



**Name** Stephen Carpi  
**Title** COO - Fi

It was great to work with such brave client partners. Gannett had a simple yet provocative vision to change the way users read the news, and that's all we needed for us to start pushing forward. It was rewarding to see the fruits of our labour come to life. It takes humans nine months to create life. We took 12, and we couldn't be prouder.

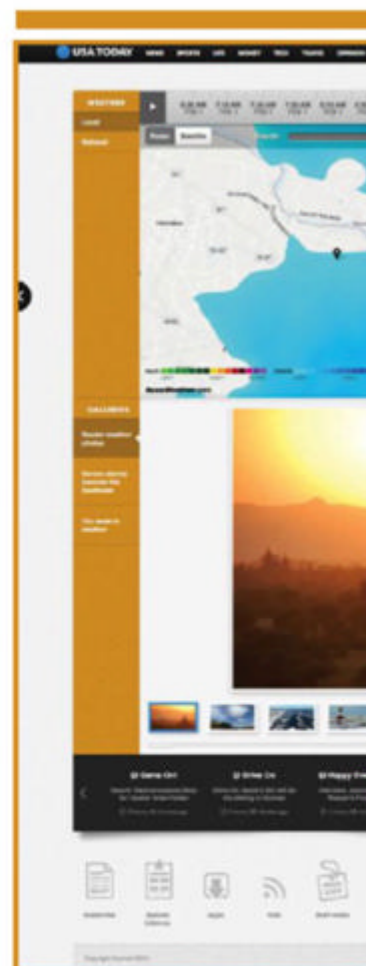


**Name** Anton Repponen  
**Title** Global Creative Director - Fi



**Name** Erik Kallevig  
**Title** Global director of UX and strategy - Gannett

“It's not often that we feel a hundred per cent philosophically aligned... so we felt extremely lucky that we were both striving for the same goal, and we were free to innovate in ways that would make other clients uncomfortable”





## DESIGN CHALLENGES

One of the biggest challenges at the front-end was how to present thousands of stories in a visually stimulating and aesthetically pleasing layout. Fi's global creative director Anton Repponen offers an insight.

"Design-wise, there were a lot of challenges. We're talking about a website where the publisher posts over 300 updates an hour. Dealing with this much information while displaying it beautifully was a huge challenge. Working with a lot of text and media and visualising it in the best way possible isn't an easy task. We knew we didn't want the website to look like an actual newspaper - that's something we felt would just be a Band-Aid solution. It was really an experience in and of itself. We abandoned old practices in terms of reading the news and yet at the same time, the human behaviour of looking at the news top-down remains. We managed to modify the user interaction from the way users typically read the news."

already out there. In this instance, both parties never got distracted with such things and focused on creating the best experience."

The design and front-end duties for USA Today were an undoubted challenge, and behind the scenes was no different. The sheer scale of content being delivered meant that serious considerations had to be given to the delivery. Erik Kallevig, senior manager of UX development at Gannett Digital, was part of the team to ensure a smooth experience.

"Moving towards the native app experience on the web introduces several challenges rarely worried about with the traditional approach. When pages used to load from scratch, browser memory from the last page was freed up and re-assigned to the new page, which limited the impact of front-end memory leaks. With the single-page app, we suddenly had to free up memory ourselves to prevent the app from slowing down over time.

"Transitions between pages had also now become the domain of front-end code by replacing the browser's former responsibility of tracking history and redrawing the screen. This shift posed serious challenges in

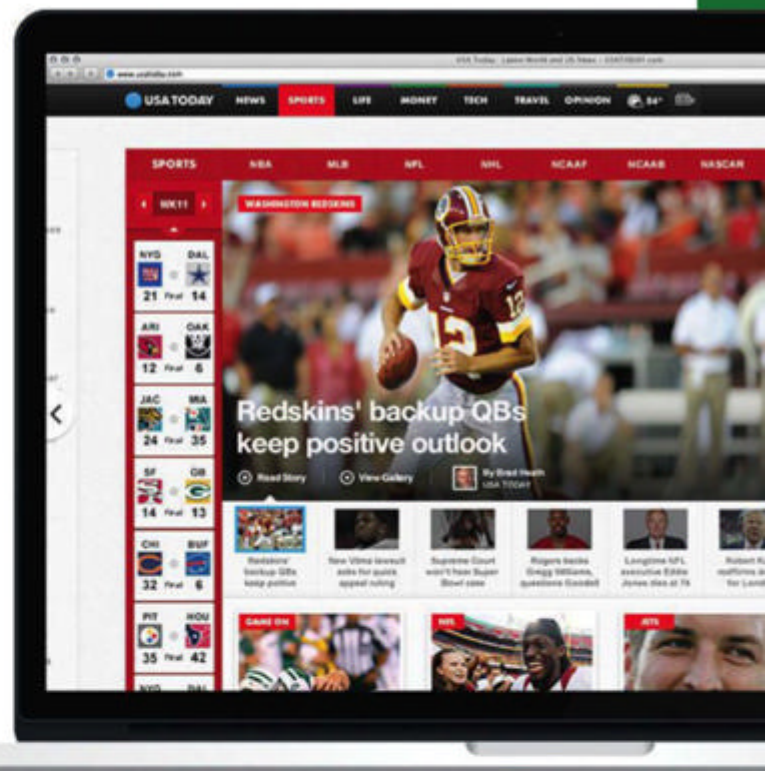
efficiently moving around big chunks of the DOM and required tapping hardware acceleration among other techniques."

Overcoming the technical and design challenges of a project is crucial to its success. But, a completed project of the scale of USA Today does not finish on the launch date. The COO of Fi, Stephen Carpi, explains how Gannett and Fi stayed together to make sure that the project was completed as intended.

"Fi developers were embedded within the Gannett technical team to assist in the development and launch of the site. Our producers worked closely with Gannett's technical manager and lead producer on a daily basis. Some of the activities that made up the process included daily scrums, weekly status meetings, and prioritisation and tasking of the development backlog. Additionally, our developers remained on the project, post-launch, for a number of weeks to assist with intermittent bugs and/or refinements that required additional support."

<Right>

Main image splashes are utilised on homepages to highlight top stories



## LAUNCH SYNCHRONICITY

The new USA Today site had to go live on its 30th anniversary. Irene Pereyra reveals there was no room for manoeuvre. "USA Today approached us in their 29th year and informed us of their biggest rebrand plans ever, timed to their 30th anniversary. They

engaged us to handle the digital work and Wolff Olins with the branding work. While this was an extremely interesting project, we were up against an immovable deadline. You can't celebrate your birthday a week late. The redesign has been marked as quite a paradigm shift to say the least, and the positive response from both users and the media has been overwhelming. With that being said, USA Today was extremely smart in evolving every single channel in

perfect synchronicity timed to their 30th anniversary. The orchestration created a lot of buzz. They took a lot of risks and made some very bold decisions that most large organisations would be afraid to take. It's quite incredible to see it pay off in such a big way and for us at Fi to have been a part of it, together with Wolff Olins, is something we are all incredibly proud of. It was a challenging year-long project, but the result was worth every single late night at the office."

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\*Federation of Small Businesses, referenced by Jeremy Hunt, Media keynote speech, 8 June 2010. \*\*Getting up to speed: making superfast broadband a reality, NESTA policy briefing, January 2009. The speed to upload 30 photos is based on each photo being 2MB (60MB total file size). 8 times faster is based on BT Infinity for business Option 2 maximum speed and UK average broadband speed from Ofcom report, August 2012. Broadband speed can be affected by a number of things: how far your business is from the fibre cabinet as well as the wiring in your building. Not all lines in an Infinity-enabled area can support the service. BT Infinity for business may require a BT line or similar and a fibre compatible router such as the BT Business Hub provided with Infinity. Terms and conditions apply. The speeds provided by BT Infinity for business are more consistent than standard broadband, giving you prioritised traffic with 16Mb assured throughput at 90% of the internet busy period. You'll need to be in range of a BT Wi-fi hotspot, have a wireless device and register for BT Wi-fi. Our Fair Use Policy and terms and conditions apply. £1.15 a day is based on BT Infinity for business Option 2 for £35 a month on a 24 month contract.

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# A passion for design

**Web Designer** visited leading viral game developer Koko Digital to gain an insight into how viral marketing has evolved to mobile platforms, and how a chance meeting of minds resulted in an industry-leading agency



## oko is a multi-award winning digital agency.

Started by three Staffordshire University graduates in January 2007, Karl Bloor, Stuart Howarth and Chris Steele all graduated with first-class honours in multimedia graphics. All three of them left

university with a desire to build a design studio where creativity was at the forefront of everything it produced.

As founding director Karl Bloor explains: "I have known Chris for a long time - we actually went to college together where we studied general art and design. After this I went to study product design at Hertfordshire University with Chris doing a degree in multimedia graphics.

"At the time I was passionate about product design, but when I came back home and saw what Chris was doing I became more interested in that side of design. In fact I got so interested in what Chris was doing I actually left my product design course after two years and moved to Staffordshire University where I studied multimedia graphics; and that's where I met Stuart.

"We all had the thought in our minds that we wanted to leave university with first class honours and an idea that we wanted to start an agency. What we didn't do was go straight from university to start an agency. After graduation we all went our separate ways and got some individual agency experience.

"Of course as we had all done the same course at university, we left with basically the same skillset. Getting jobs in other agencies allowed us to pick up not only practical experience, but also new skills. So we did that for about three years before we actually started Koko Digital. One of the agencies that I worked with was doing a lot of viral marketing, which at the time was really cutting edge. I could see that viral was going to be big, but I couldn't see many agencies producing this work, which gave us the idea that perhaps now was the time to think about starting an agency that could produce viral games."

Although Koko Digital began working on small websites at first, its passion always lay in the games industry. This was always the direction in which the founders wanted to eventually take the company. The use of games to promote a brand was a relatively new market when the company was first started, but with all the newfound expertise, it had a real chance to shine.

The name Koko stood out from the very beginning. The founders could try and justify their choice, but the reality is that it was just a name that they liked because it was short, snappy and they believed it would be memorable. It didn't hold any profound importance or have any hidden meaning; it was just cool.

It was clear from the outset that large brands would only work with an agency that could provide solid examples of their creative and technical skills. Koko's innovative idea was to approach a big charity. "We had the idea to approach a charity to create a game for them at no cost," Bloor outlined.

"We approached the Make A Wish Foundation and explained that we could create a viral game to promote their work. We thought this would be a great way of getting some high profile work into our portfolio. All agencies that start out are always asked for examples of their work when they pitch new clients. The games for the charity gave us that valuable portfolio material.

"Shortly after the game for the Make A Wish Foundation began to get traffic, we were approached by a large trade event organiser, who had been let down by their viral game creators. The game we created gave us a huge platform, where the agency really took off."

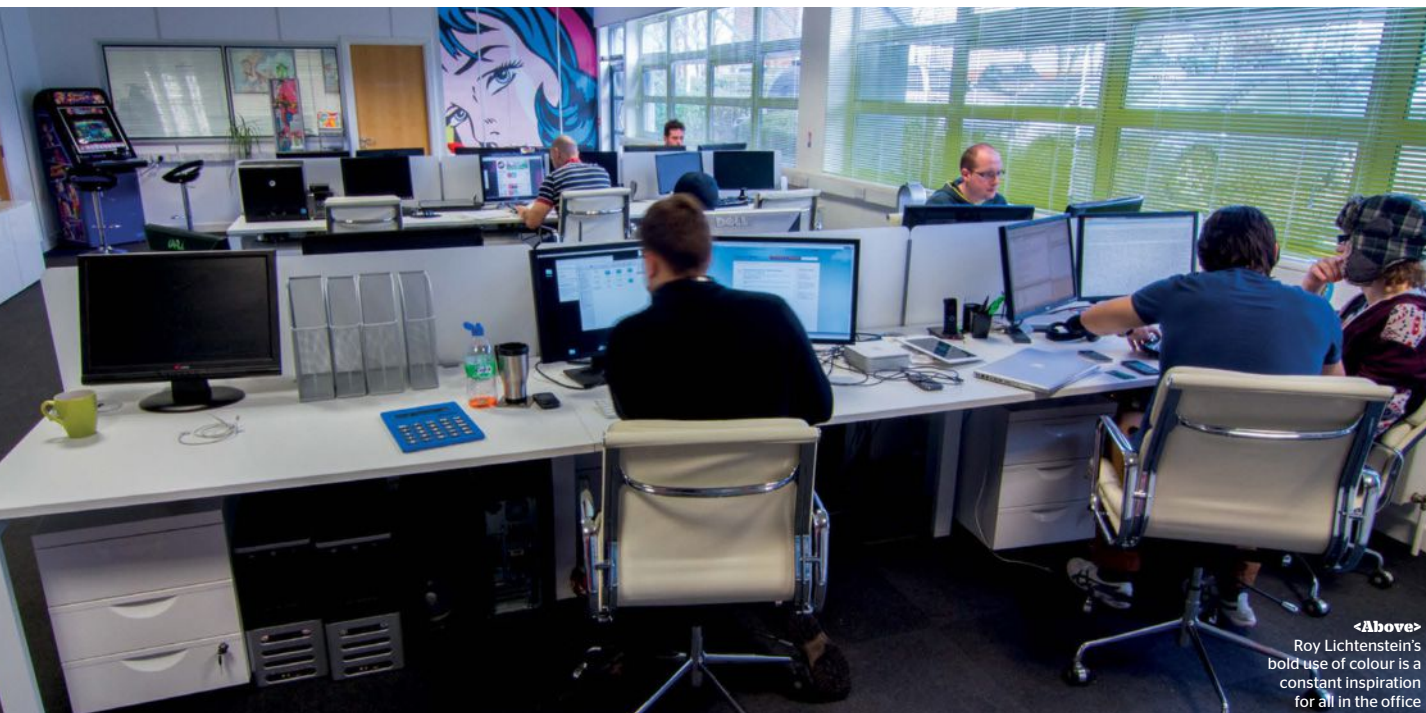
All of the partners in the business also knew that their website would be a critical component of their branding. Their initial site was developed with easy maintenance and to have their portfolio at its heart.

"When we originally developed the site, we had limited periods of time on which to work on it and were also under pressure (albeit from ourselves) to get something live as soon as possible. As a result of this, the site was developed without much concern for maintenance or expansion. It was purposely designed to be very simple with regards to the content and our main focus at the time was to build a solid portfolio of work as soon as possible.

**who** Koko Digital  
**what** Browser, social, and mobile gaming specialists, passionate designs, developers with world-class technical expertise  
**where** IC2, Keele Science & Business Park, Keele, Staffordshire, ST5 5NH  
**web** kokodigital.co.uk

## Key clients

Dorling Kindersley (DK),  
Confused.com, Phones 4u,  
McDonalds, Sony Pictures



**<Right>**  
The Adobe suite is an essential part of the designer's toolkit

**<Above>**  
Roy Lichtenstein's bold use of colour is a constant inspiration for all in the office

## Koko Digital timeline

Established 2007  
Founders Karl Bloor, Stuart Howarth and Chris Steele



Red Bull's Pit Boss game is launched to run alongside the 2008 Formula 1 Season.

Number of employees

5

Tombs of Anubis game for tech shop Currys goes live to coincide with their Click10 Photography Initiative.



Number of employees

8

2007

Number of employees

0

Koko website launches and Lamb Chop Drop game for the Make-A-Wish Foundation goes live.

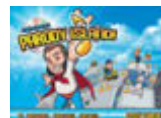


Number of employees

3

2009

Koko partner with Sony Music to create the award winning game Parody Island featuring Chris Moyles.



Number of employees

7

2010

2011

Koko launch Zombies Ate My Phone on Facebook with Phones 4u.



## First impressions count

Karl Bloor, Director and co-founder



“We always understood that our website was crucial, acting as a sales tool for Koko as it allowed potential clients to gain an insight into us as a business, both on a commercial and personal level”

“We always understood that our website was crucial, acting as a permanent sales tool for Koko as it allowed potential clients to gain an insight into us as a business, both on a commercial and personal level. Essentially it's our portfolio of work, and keeping it updated with most recent projects and advancements here at Koko was always highly important to us.

“Over time the current site has of course been updated and amended slightly, but there was only so much we could do with it in its current form. Navigating the site has become problematic, as is the task of updating it, especially as our product offering has grown so much. The technology we adopted for the site is also dated so we are currently re-designing our site from the ground up. As our brand grows, the website needs to grow with us.”

Koko has been fortunate since the agency began to have had a steady stream of high-profile clients that come to the agency for their creative talents and their understanding of how the online and mobile gaming market operates today. We realised several years ago that viral marketing was going to

be big, and today, the gaming market has moved increasingly to smartphones and tablet PCs.

A business in the digital space will often be hired based on the personality that the agency displays. Does Koko have an ethos? “Koko has always been driven to develop content that is aesthetically beautiful for the end user, and although previous games have featured the likes of James Bond, zombies and Formula 1 cars, a game that we created for a company called Shakespeare Country would probably be one of the best to choose from,” said co-founder Chris Steele.

“The game, called Romeo, was a platform game in the same vein as Mario, and the premise of the game was to guide Romeo safely through Shakespeare Country in order to rescue Juliet. As well as developing the entire platform game engine from scratch, the attention to detail in the beautifully rendered scenes and depth within the gameplay itself is something we are very proud of in the office.”

And the fact that it has gone on to receive over 65,000,000 hits since launch and increased web traffic to the client's site by over 500% also suggests



## Shaken and stirred

In association with Spinnaker, Koko Digital was asked to create a rich-media banner ad game to promote *Skyfall*

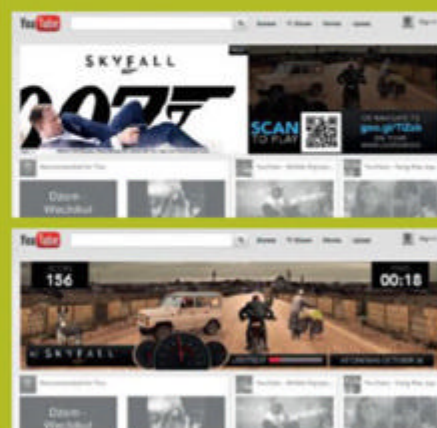
Running a week before the film release, the game attracted a massive 16,569,045 views. The game was designed to appeal to YouTube users, as Sony Pictures wanted to use the latest mobile gaming technology to connect with the younger audience that recent Bond movies had been attracting.

Koko was hired to develop an innovative rich-media ad. This innovation presented quite a few technical challenges, as the game was designed to be played within a YouTube masthead, with players using their smart phones as the controller. This had rarely been done before, so Koko was entering new territory. The use of QR codes to create a connection between the ad and the phone meant that testing took a lot longer between each build.

The game was a huge success, with Google's Creative Sandbox stating: "55,210 click outs at a 0.33% Click Through Rate - far exceeding the YouTube benchmark of 0.1%. 2,418 new game starts and 1,252 game replays (156 of which replayed between 3-5 times). A fantastic 15.98% interaction rate - 11x higher than YouTube's benchmark."

The game also had to retain the highly polished look and feel you would expect from a James Bond game, but fit within a 2.5MB file size. This meant carefully re-using assets where possible, and optimising the quality of graphics and sounds independently, depending on how frequently they appear and their impact on the overall look and feel.

The ad placement had been booked to be displayed on the homepage of YouTube on the weekend the film was released, which meant that Koko had to get the game developed and successfully pass the required QA in little over three weeks. It was certainly a challenge they enjoyed.



<Above>  
Youthful ideas promoting Bond's aging spook

A YouTube masthead game launches to promote the 23rd Bond film, *Skyfall*.

2012

Number of employees

9



Number of employees

10

Android version of the DK Quiz prepares for its launch.



that the end users appreciated the time and effort that was put into the campaign and were also engaged with the brand."

On the essential task of gaining new clients, Koko uses a number of approaches: "Koko attracts new clients using a variety of methods, and fortunately we have managed to build a solid reputation in our industry which means that a lot of our clients get in touch with us directly, particularly when their requirements involve games or game related content, online or mobile" commented co-founder, Stuart Howarth.

"We are firm believers in the power of building relationships with people and it is this belief that has allowed us to acquire a growing list of clients with whom we have worked on multiple occasions over a period of many years. As well as having a number of clients that we work with on an ongoing basis, we are often invited to pitch to new clients, and this is something that we are very keen to get involved with - although it does offer an opportunity to be a little more selective. Another factor that helps us to attract new clients is the success of our previous

viral and mobile games. Our campaigns have collectively received well over 350,000,000 hits worldwide, and this acts as a huge driver towards procuring more project wins.

"There are a lot of agencies out there that have similar skills to us. What differentiates us is that we understand how the gaming mechanic can be successfully applied to a client's brief. We pitch against a lot of big advertising agencies. The ad agency might pitch some very creative ideas, but sometimes, feedback from the client suggests that they may not fully understand how the gaming component of the brief will fit with their needs. That's our strength because we specialise in this kind of game development."

With such a diverse customer base, Koko is kept busy with new projects. It's vital to ensure that each new account is understood in detail to ensure that the client brief and expectations are met within the budget that is set.

Bloor explained how a typical project is approached: "Large-scale projects take between two to three months to develop and would usually involve up to six members of the team during its production. While it depends on the type of work, we always want to get as many members of the team as possible to participate in the brainstorming process in order to use their expertise and generate as many ideas as we can.

"This process generally highlights a number of concepts that we are happy with internally, and if the brief is open with regards to the direction of the concept, clients are usually given a couple of these ideas in their most basic format. Once they have chosen a preferred concept, we will then begin to

**KEY PROJECT****DK Quiz****bit.ly/YZHJB7**

Koko has developed a strong relationship with DK and has worked with the brand on numerous web and mobile projects. To complement the hugely popular online version of the DK Quiz, Koko were asked to develop an iOS version operational on both the iPhone and iPad, offering users a mobile platform on which to engage with DK's award-winning content.

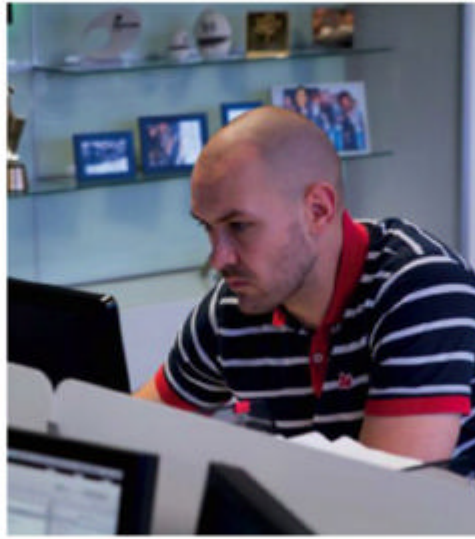
The strategy team worked extensively with DK to plan out key functionality, developing effective tactics to ensure a consistent user experience in line with the online version. The creative team then explored various opportunities to introduce key elements that are unique to the mobile platform, going above and beyond the expectations set out in the original brief.

Key additions included the introduction of a social turn-based multiplayer model, allowing users to send challenges back and forth to friends from the palm of their hand. Other elements included various options for monetisation through the use of in-game power ups and unlockable content.

The end result was a rich and engaging mobile quiz with an abundance of diverse content. Although the app has only been live for a short period of time, the response from users has so far been fantastic.

To date, the app has been downloaded over 250,000 times with over 6,500,000 quizzes played. It has since been a top five fixture on the educational games chart, and has already been featured on the iTunes homepage in six countries, as well as being in the What's Hot section in 35.

As a result of its continuing success on the App Store, DK have since asked Koko to expand the reach of the app by creating an Android version, which will be on Google Play later this year.



plan the idea out in a much more detailed manner. Although the development aspect usually accounts for the largest portion of time for large-scale projects, the planning can also take a substantial amount of time and effort to make sure that the idea we have presented can meet our client's expectations and objectives.

"Once a project becomes a live account, it is immediately assigned a project lead and because we are a relatively small team, this is usually one of the directors who all have very 'hands on' roles within the company. As well as being the project lead, they would usually assume the role of creative director/art director, working alongside designers, illustrators/animators and developers."



What is clear is that as Koko has developed as an agency, it has had to keep pace with the rapid change in the technologies they use to deliver projects to their expanding client portfolio. How has Koko seen the viral games market change over the last few years? Stuart explains:

"What we have found is that viral games have definitely become more social. Initially games were designed to raise brand awareness and drive traffic to a website. Many of our clients still want this kind of content, but as mobile and tablet PCs have arrived, we have had to move with that, and now a huge portion of the work that we do is on the mobile platform. Today, we have had to support multiple formats so brands can reach their customers.

🎮 We still develop with Flash because of the ease with which we can distribute our games. There are thousands of Flash game portals 🎮



**<Above>**  
The game's design utilises the screen real estate of the iPad

**<Left>**  
Social features add a competitive edge to the DK Quiz app

**<Above>**  
Graphics tablets are a key component for creating in-game art



<Above>  
A wall of 8-bit art  
references the era  
of classic games

"We still develop with Flash simply because of the ease with which we can distribute our games. There are literally thousands of Flash game portals, so our games can generate a lot of traffic relatively cheaply for our clients. With HTML5 you gain the advantage of being able to distribute to mobile devices, but you can't distribute that game as freely as you can with existing formats."

Steele also comments: "The experience we have gained in the viral market enables us to use that as a tool when we build social and mobile games for our clients. Many of the games we now build will take advantage of Facebook for instance, which offers the social perspective where players can invite their friends who are then integrated into the game. And of course many of our clients want to use the game we are designing to push consumers towards their Facebook pages."

"Aside from the power and flexibility of the Flash platform, it has endurance in the marketplace, and the fact that it has been adopted the world over has many benefits. As a result of the Flash platform

being around for what seems like an eternity now, vast portals and communities exist all over the internet where people can share and enjoy Flash content. These communities are absolutely crucial to Koko and in particular, the exposure they offer our viral advergames."

And with the burgeoning use of HTML5, how has this impacted on Koko's approach to their client briefs? "At the moment we show clients what the capabilities of HTML5 versus Flash are," says Bloor. "Clients that come to us talking about HTML5 need to understand that this may mean that a project requires additional marketing budget, mainly due to the distribution infrastructure not being in place as it is with Flash. Many of our clients are also asking for native apps, or multiplatform apps. We also use tools like Unity ([unity3d.com/unity/multiplatform](http://unity3d.com/unity/multiplatform)) for instance because the Unity platform allows us to create campaigns that can benefit from multiplatform deployment. We're also working with other platforms like with Adobe Air for a similar reason, but Flash is still appropriate for a lot of our clients, particularly for browser based games."

"HTML5 has come quickly to the marketplace, but from our perspective it's just one of the tools we use to deliver our client's brief. The games we create are always tied to the client's budget and their stated return on investment. This influences how we will approach any given game. It would be ideal to have a set of universal tools, but these are unlikely to appear in the near future."

This ease with which the agency has adapted to the changing demands of their clients has meant the Koko is a key agency in this field. A good example is the work the agency has completed for DK. "The DK quiz has been a phenomenal success. When they approached us they initially wanted us to look at developing their existing online quiz into a mobile version. We took a good look at the existing quiz and could see how the quiz could be improved on mobile devices."

## Creating strong ties

Stuart Howarth, director and co-founder



"We are firm believers in power of building relationships with people and it is this belief that has allowed us to acquire a growing list of clients with whom we have worked on multiple occasions over a period of many years"

"We took a long time with the client talking about this and the game we produced complements the online version extremely well, while offering users new functionality on the mobile platform. We were able to use our experience of developing games on mobile devices, and offered the client ideas that they followed. The success of that app has lead to two new projects for them this year. We are able to pick apart a client's brief and understand what they want to achieve."

"We have been lucky in that we have been able to build a strong reputation in the gaming field - particularly with online games - but our reputation in mobile is growing too. What this has mean for us is that a number of our clients initially came to us for gaming content, but now we provide them with

## Zombies ate my phone

To develop brand awareness and engage with potential clients, zombie hoards were enlisted by Phones 4u

In *Zombies ate my Phone*, players control a central character, helping them fight off hoards of incoming undead. The game had to feel fluid and be able to handle a lot of sprites on the screen at one time, which meant this campaign had two main challenges.

The first was creating the raw game engine that controlled and handled the sprites. The enemies had to react to the player's

movements so they would follow. This meant coding a complex collision detection between the player, AI, and bullets.

Instead of building an engine from the ground up, Koko modified a popular physics engine called Box2D. They removed the physical effects of gravity and utilised its quick collision detection algorithms, which meant they could

concentrate on developing the AI so the hoards were fluid and responsive within the game.

The second challenge was rendering this raw data into visual game sprites. Koko developed their own bitmap-rendering engine that utilised bitmap textures to draw the game to the screen. By using bitmaps instead of vectors, they could display hundreds of zombies at any one time while maintaining the performance of the game and keeping the user experience fast-paced and exciting.





other types of content as well including websites and apps. These relationships have now been ongoing for a number of years."

Website design is still a core service that Koko provides. Responsive design now forms an increasing part of the client briefs that Koko turn into engaging web content. "Responsive Web Design is a method that we have used for a number of projects, and it is certainly something that we explore with clients if the project in question is applicable. RWD aims to give users the best experience possible on their chosen device but inevitably, changing the way that the information on a site is provided to the end user means that their experience will differ across each platform.

"It's important that we look at the purpose of the site to determine what approach we take, because offering the user a different experience can sometimes have negative connotations, particularly when it is a site they are familiar with. It's very easy for an agency to assume that everyone who uses the internet has the same knowledge and is aware of the latest technologies or practices, particularly when they might seem so simple, obvious, or beneficial to some.

"It's fair to say that many factors need to be considered when looking at RWD, not least the preferences or requirements of the client. Ultimately, offering the user a choice to view the site in a more familiar format if they wish means that each individual can experience the web on their own terms, keeping their experience positive."

If you have ambitions to work for an agency like Koko what's the best approach? Stuart explains: "When we advertise for new people we do get quite a lot of interest. What we see is that the range of skills is vast. For us, we are looking for people like us that are driven and passionate. This comes through in a strong portfolio. And of course we look for people that will fit within our agency.

"Our first employee was a games artist that could do animation and character design. We knew that between the three of us, we had the foundation skills to win accounts, but what we needed was to make our games look better, and we knew that they could.

"What I would say is that we have hired people on the strength of their portfolio even if we were actually not hiring at the time. We could see that if we didn't hire them we would miss a great opportunity to expand our talented team. I would say that we don't like cold calls from prospective employees. We are busy, so we would rather see a portfolio, which should really speak for itself.

"Choose the pieces carefully. If you have something that is half-baked, don't put it in. We're looking for quality. We always look at every portfolio we are sent, and if it's interesting it will be kept on file. We do have a pool of freelancers that we use occasionally so it's always good to get your work in front of an agency.

## industry insight

Chris Steele, director and co-founder



"The game, called Romeo, was a platform game in the same vein as Mario. As well as developing the entire platform game engine from scratch, the attention to detail in the beautifully rendered scenes and depth within the gameplay itself is something we are very proud of in the office"



📱 Apple iOS may dominate at the moment, but we are also focusing on the alternative platforms [Android] as well 📱

As a forward-focused agency, Koko always keeps an eye on the myriad technical developments that are occurring in the ever evolving marketplace.

"Without doubt more mobile - and especially tablets - are a focus for our business as this is simply how consumers are using the web and engaging with content," Bloor concluded. "Apple iOS may dominate at the moment, but we are also focusing on the alternative platforms as well. Android is massive and will continue to expand with more and more devices using that platform.

"The technology we have available is always evolving. Last year we created a dual-screen game for the James Bond movie *Skyfall* that used the mobile phone as the controller. Our experience of games development allowed us to develop a small game that still had excellent gameplay.

"What's next? Augmented reality could take off if the new digital glasses that are being developed by Google and others become popular. The idea of walking down the street while you're playing a game using these glasses is fascinating to us. It would be possible to interact with real people in real-time, so who knows where this will take us? The future of gaming is certainly very exciting."



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FOUNDERS..... Karl Bloor, Stuart Howarth  
..... and Chris Steele  
YEAR FOUNDED..... 2007  
CURRENT EMPLOYEES..... 10  
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# CREATE OUT OF THIS WORLD EFFECTS WITH HTML5

IN

3D

YOUR WEB BROWSER IS NOW A RICH ENVIRONMENT  
FOR CREATING AND RENDERING HIGH QUALITY  
3D GRAPHICS, USING THE POWER OF HTML5  
AND CSS, CANVAS AND WebGL!



Our 3D scene is rendered entirely within a simple `<canvas>` element on our HTML page, using WebGL to render the graphics within the canvas. WebGL allows us to take advantage of hardware acceleration.

The scene is animated using `requestAnimationFrame()` which offers better performance than `setInterval()` and also conserves battery life when the page is not visible in the browser window.

The globe is created using a primitive sphere - one of the built-in shapes available through the `three.js` library. As a result, we only need just a few lines of code to generate the earth.

We've used a simple graphical texture to make our sphere look like the earth. With additional lighting in our scene we could have had the planet appear to be lit by the sun too!

The star field in the background of our scene is procedurally generated using a simple random particle system that's nothing more than a JavaScript array and a series of flat circles drawn into our scene.

# 3D

graphics and animation has long been possible on the web with the likes of Shockwave or Flash - there's always been the opportunity to deliver high-quality 3D renders within the browser. But until recently, creating a compelling 3D experience took expensive authoring tools, as well as obtrusive browser plug-ins for rendering. But why? It's partly because of the bandwidth demands associated with the amount of data required to render high-quality textures, intricate models and shapes, but also the need for powerful graphics, hardware and fast processors. Until now, these requirements were confined to a small percentage of desktop machines, but in the past couple of years that's all changed: browser-based native 3D has officially arrived!

There are actually several different complementary technologies that can be used to

create 3D objects and scenes within your webpages - some you'll already be familiar with, while others are a little more like dabbling with the dark arts if you haven't encountered them before. The principle options are Canvas and WebGL, with the option to use CSS3 to create 3D effects.

WebGL itself isn't actually a 3D system, rather it provides a method to talk to the graphics card of the host computer directly. This means that graphics produced and rendered using WebGL can be enormously impressive, but at the same time the raw code (normally using JavaScript) can be very challenging to pick up. In this feature we're taking a look at the different options for getting started with 3D in your webpages, and to simplify the development process we'll use one of the most popular libraries available to abstract WebGL and make it user-friendly to generate simple scenes without having to understand every aspect of the underlying WebGL code.

# CREATE OUT OF THIS WORLD EFFECTS WITH HTML5

**T**he primary driver behind the new 3D capabilities of your web browser is the adoption of the

WebGL API by browser vendors. WebGL (Web Graphics Library) is an interface that allows JavaScript to talk directly to the GPU (Graphic

Processing Unit) of the device running the web browser, and this allows both 2D and 3D graphics to be rendered inside a <canvas> element on the page, utilising physics models and image processing effects. WebGL is based on the OpenGL ES 2.0 standard maintained by the Khronos Group, and is now supported by all bar one of the main browser vendors.

WebGL content can be created entirely without the need for programming using 3D modelling software such as Autodesk's Maya, or the free-to-download Blender application. Scenes are exported to WebGL either natively, or using a plug-in in the case of some commercial 3D suites.

Using 3D in the browser requires several things to be provided either using code or the output from a 3D application. At its simplest, each 3D

world requires at minimum a scene to place objects within, a renderer to draw the objects, a camera to act as the viewer, and one or more objects (each with one or more materials). For developers already familiar with 3D modelling, this will all come as second nature, but if you're new to 3D you may find it a bit overwhelming at first.

Thankfully there are a number of different JavaScript libraries that abstract some of the more complicated aspects of procedurally generating graphics and models in WebGL, so you don't need to understand all these elements to get started. Most of these libraries default to using WebGL as the renderer for 3D scenes, but some also allow you to use the standard <canvas> drawing API instead. Canvas is more widely integrated and adopted by browser vendors, but it doesn't benefit from hardware-accelerated graphics.

A word of warning: the standard WebGL API isn't friendly in the way that, say, jQuery is. It's more akin to a C programming library than most modern web-focussed systems, making it feel inaccessible when you start out. It's also quite a

common mistake to think of WebGL as being a 3D engine in itself - it's not actually 3D at all. What WebGL does is make it possible for you to develop 3D applications within the browser, acting more like a drawing API that gives you direct access to hardware-accelerated graphics rendering.

WebGL uses something called a shader to determine how things are drawn on screen. A shader comprises two different elements: the fragment shader, and the vertices. A vertex helps define the shapes of the items drawn, while the fragment shader deals with filling in the pixels that make up the face of these shapes. The manner in which these shapes are rendered is determined by the camera position, which determines how the shapes appear in space, the material, which assigns different colours and textures to the surface of each shape, and the lighting within the scene. Lights are optional with WebGL in that without them, the entire scene will be rendered flat - without any shading at all. This is perfect for a cartoon-like look, but does nothing to help describe the 3D nature of your scene.

## "WHAT WEBGL DOES IS TO MAKE IT POSSIBLE FOR YOU TO DEVELOP 3D APPLICATIONS WITHIN THE BROWSER"

## WebGL tools

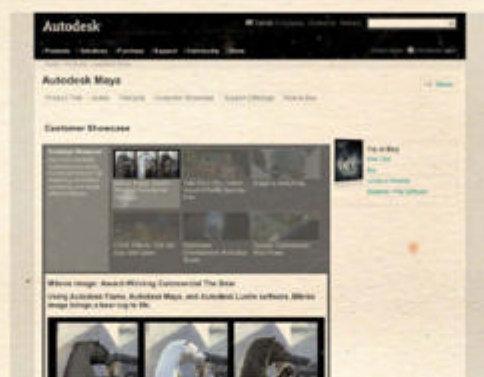
There are a number of tools you can use to help you generate and render 3D scenes using WebGL. At its most basic, all you need is a browser capable of rendering WebGL and a text editor, but with these tools it's a little easier to get started



### Blender

[www.blender.org](http://www.blender.org)

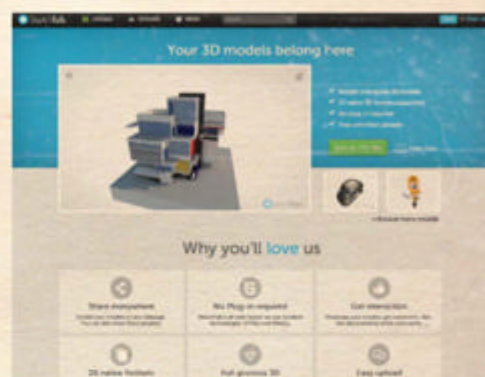
Blender is a 3D modelling tool that's free to download and use. It works across Windows, Mac OS X and Linux, and has a wide range of books and online resources available to help you get started. There's also an extremely active community offering plug-ins and support, making Blender an excellent way to get started with 3D in general, and WebGL specifically.



### Maya 2013

[usa.autodesk.com/maya](http://usa.autodesk.com/maya)

Maya is a commercial animation and 3D modelling tool that's widely used in the game and film business to create high-quality 3D scenes and assets. It supports WebGL through a plug-in, which offers native output to WebGL-compatible code, making it simple to set up your scene and render it using the API. Users can download a free trial of the latest version to try out the software.



### Sketchfab

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

Sketchfab is a web service that uses WebGL to render and publish 3D interactive content in the browser. It acts as a free repository for 3D models, which can be authored in most of the popular formats including Blender, 3DS and KMZ. The output can be embedded on your site using a YouTube-style player, making it a great way to get started with using WebGL on your website.

## HOW WE MADE THE EARTH WITH WEBGL

# CREATE A 3D EARTH SCENE

Getting started with WebGL and three.js is pretty straightforward; a few lines of code can generate impressive results!

**W**e created our animated globe within a procedural starfield using nothing but WebGL and the three.js library. First, we used the sample code from the three.js GitHub project to create a scene, camera, and renderer. This allowed us to choose WebGL as the rendering system, rather than relying on the Canvas API. Once we'd set up our scene, we drew a sphere using the built-in simple primitives available with the three.js library. With the sphere set up, we applied a texture to it using an image we found on the web to create the earth texture you're familiar with.

Three.js makes it easy to add animation to the project by simply calling the `requestAnimationFrame` method and passing in the name of our animation function. We opted for a straightforward rotation of the sphere, giving the impression of the earth spinning on its axis. Luckily, three.js also includes a shim for `requestAnimationFrame`, dealing with the browser differences in implementation.

Finally, we created a simple particle system using some basic random numbers and a lot of simple spheres rendered at a small size to represent stars. We've set each of our stars to use the same Z position. This is a bit of a cheat, but relative to the earth the stars shouldn't alter their position, so we can get away with it as long as we're not animating our camera and expecting to see a parallax effect in the stars.

The final result is a simple but effective 3D view featuring a basic textured primitive shape and simple animation. Because we've used the three.js library, we didn't have to get too technical with generating materials and shaders - instead focussing on our scene's design.

**W**hile WebGL itself is pretty inaccessible for novice users, by using a specialist library that abstracts a lot of the complexity it's possible to very quickly generate a 3D scene that's rendered by WebGL! In this tutorial we're going to create a pseudo space scene. We'll use a bit of smoke and mirrors to generate the final piece, but the final result will be an impressive animation that features the earth rotating about its axis and a randomly generated star field. Once you've completed working through the steps below, you'll have a good sense of how to create your own 3D scene and populate it with objects, apply textures, and create simple animations.



### 01 Download three.js

To make it much easier to get started with WebGL, we're going to use the excellent three.js library. This abstracts a lot of the complexity associated with the WebGL API, and makes a light and simple task out of assigning renderers, shaders, cameras and objects to our 3D world. Download the library from [github.com/mrdoob/three.js](https://github.com/mrdoob/three.js)

### 02 Create a simple page

We only need the most basic of HTML pages to test our effect, so create that now. You'll want to include the three.js library you downloaded in step one, and a smattering of CSS to define the size of your canvas element.

```
001<!DOCTYPE html>
002<html lang="en">
003  <head>
004    <meta charset="UTF-8" />
005    <title>Create a 3D scene with WebGL
006    and Three.js</title>
007    <script type="text/javascript"
008    src="scripts/jquery.js"></script>
009    <script type="text/javascript"
010    src="scripts/three.min.js"></script>
011    <style type="text/css">
012      body {
013        background-color: #000000;
014        margin: 0px;
015        overflow: hidden;
016      }
017    </style>
018  </head>
019  <body>
020    <div>
021      <div>
022        <div>
023          <div>
024            <div>
025              <div>
026                <div>
027                  <div>
028                    <div>
029                      <div>
030                        <div>
031                          <div>
032                        </div>
033                      </div>
034                    </div>
035                  </div>
036                </div>
037              </div>
038            </div>
039          </div>
040        </div>
041      </div>
042    </div>
043  </body>
044</html>
```

# CREATE OUT OF THIS WORLD EFFECTS WITH HTML5

```
014
015 #scene {
016   width:      100%;
017   height:     100%;
018   position:   relative;
019   margin:     auto;
020 }
021 </style>
022 <script>
023
024</script>
025 </head>
026 <body>
027   <div id="scene">
028
029   </div>
030 </body>
031</html>
```

## 03 The basics

To create a 3D scene using WebGL you need at minimum a scene, a camera and something to put in the scene - an item of some sort. We'll start by defining our basic properties and objects to be used in our scene. Add the code shown below to generate the basic scene dimensions variables.

```
001// set the scene size
002var sWIDTH = 800,
003    sHEIGHT = 600;
```

## 04 Camera properties

As well as a scene, we're going to need a camera through which we can view

the scene. A camera has a number of properties that we need to set - including a field of view (how much of a scene the camera can see), the focal distance, and the aspect ratio (such as 16:9, 4:3 etc). Add the code below to set variables up for these properties:

```
001var cVIEW_ANGLE = 45,
002    cASPECT = sWIDTH / sHEIGHT,
003    cNEAR = 0.1,
004    cFAR = 10000;
```

## 05 Create the renderer

As we've already discussed, to create a 3D scene we need a renderer to draw the scene onto the screen. Let's set that up now. Three.js supports multiple different renderers including the standard Canvas API, but we're going to use WebGL to draw our scene. Add the code below to create the renderer:

```
001var renderer = new THREE.WebGLRenderer();
```

## 06 Create the camera

Now we've got our renderer set up using the three.js library, let's set up the camera ready to view our scene! We've already set up all the properties earlier on, so all we need to do is add in a call to the perspectiveCamera method to generate our camera:

```
001var camera =
002    new THREE.PerspectiveCamera(
003        cVIEW_ANGLE,
004        cASPECT,
```

```
005        cNEAR,
006        cFAR);
```

## 07 Make a scene!

Now we've got both a renderer and a camera, we're ready to generate a scene that will hold our elements and appear on our page! In vanilla WebGL this is a bit of an undertaking, but with three.js it's as simple as writing a single line of code:

```
001var scene = new THREE.Scene();
```

## 08 Set it running!

We're now ready to set our scene rendering out to screen. We start by setting the camera position, then the width and height of the renderer, and finally appending the resulting element to our page DOM using jQuery, before using the renderer to draw the scene. Make sure you've grabbed the jQuery library from [jquery.com](http://jquery.com) before testing the following code in your browser!

```
001// set the default position for the camera
002camera.position.z = 300;
003
004// start the renderer
005renderer.setSize(sWIDTH, sHEIGHT);
006
007// attach the render-supplied DOM element to
the page
008$("#scene").append(renderer.domElement);
009renderer.render(scene, camera);
```

## Four of the best resources for WebGL

There are some great resources on the web to help you get started with WebGL and make the most out of the possibilities. Some are useful for inspiration, while others give you the API methods and properties you'll need to generate interactive 3D scenes. Check out four of the best below!



**WebGL Specification**  
[www.khronos.org/registry/webgl/specs/1.0](http://www.khronos.org/registry/webgl/specs/1.0)



**Learning WebGL**  
[learningwebgl.com/blog/?page\\_id=1217](http://learningwebgl.com/blog/?page_id=1217)



**WebGL Playground**  
[webglplayground.net](http://webglplayground.net)



**Three.js**  
[mrdoob.github.com/three.js](http://mrdoob.github.com/three.js)

## 09 Test nothing

If you test your page at this stage, you'll see that although there aren't any errors thrown up, there's also nothing displayed. This is because while we've successfully created a scene and camera, we haven't actually placed anything inside our scene yet - so there's nothing to draw! We'll fix that next...

## 10 Add a primitive

In three.js there are a series of primitive shapes you can add to your scene as basic building blocks for your items. We're going to use the sphere primitive to create the earth, but we need to start off by defining how big we'd like the sphere to be. As everything in 3D is split into flat segments, we'll also define how many segments to break our sphere into.

```
001 var earthRadius = 50,
002     earthSegments = 16,
003     earthRings = 16;
```

## 11 Generate the mesh

Now we've got our variables defined we can create the shape using the Mesh() method within three.js. A Mesh is a way of describing simple geometry. Add the code below to generate your mesh sphere, passing in the variables we just defined as arguments to define the properties of the sphere.

```
001 var earth = new THREE.Mesh(
002     new THREE.SphereGeometry(
003         earthRadius,
004         earthSegments,
005         earthRings),
006     earthMaterial);
```

## 12 Add a material

You'll have noticed we added a final argument to the Mesh object call that referenced a variable we haven't set up yet - earthMaterial. This will define the texture that we wrap around our sphere to make it look like the planet earth rather than a ball. We'll define the material now by applying an image we downloaded from the web as a texture:

```
001 var texture = THREE.ImageUtils.loadTexture(
    "images/earth_clouds.jpg" );
002 var earthMaterial =
003     new THREE.MeshBasicMaterial( {
004         map: texture } );
005
006 scene.add(earth);
```

"To create a 3D scene using WebGL you need a scene, a camera and something to put in it"

## Code library CREATE YOUR SCENE

Setting up a WebGL scene is made significantly easier through the use of the three.js library and its built-in objects and methods

```
001 // set the scene size
002 var sWIDTH = window.innerWidth,
003     sHEIGHT = window.innerHeight;
004
005 var cVIEW_ANGLE = 45,
006     cASPECT = sWIDTH / sHEIGHT,
007     cNEAR = 0.1,
008     cFAR = 10000;
009
010 renderer = new THREE.WebGLRenderer();
011
012 scene = new THREE.Scene();
013
014 camera = new THREE.PerspectiveCamera(
015     cVIEW_ANGLE,
016     cASPECT,
017     cNEAR,
018     cFAR);
019
020 // set the default position for the camera
021 camera.position.y = 0;
022 camera.position.z = 300;
023
024 // add lighting
025 var light = new THREE.
    DirectionalLight(0xFFFFFF);
026 light.position.x = 150;
027 light.position.y = 250;
028 light.position.z = 150;
029 scene.add(light);
030
031 // start the renderer
032 renderer.setSize(sWIDTH, sHEIGHT);
033
034 // attach the render-supplied DOM element to the page
035 $("#scene").append(renderer.domElement);
```

There are handy built-in methods for generating objects within three.js including cameras, lights and renderers. These make it simple to create all the elements needed for a 3D scene.

The light is set to use a white colour and be positioned off-centre, so that it creates shadows. This is readily noticeable on the stars that are generated in our scene as they have a texture that supports lighting.

# CREATE OUT OF THIS WORLD EFFECTS WITH HTML5



## 13 Add light to your scene

To help our scene render we need to illuminate it with a light - otherwise we'll be looking in the dark! Lights work much like cameras in that they take a set of co-ordinates, but they also have a colour setting. We're going to set ours to give off white light:

```
001 // add lighting
002 var light = new THREE.
DirectionalLight(0xFFFFFF);
003 light.position.x = 150;
004 light.position.y = 250;
005 light.position.z = 150;
006 scene.add(light);
```

## 14 Create an animation

So far our earth is looking pretty good but it's sitting in our scene without any movement. To get the earth moving, we need to set it up to rotate about the Y axis. We'll create a simple animation function that rotates the earth a small amount each time the function is called:

```
001function animate() {
002earth.rotation.y += -0.0025;
003   renderer.render(scene, camera);
004 }
```

## 15 Call the animation

We could use the time-honoured setInterval method to call our animation function every X milliseconds, but that continues to use computer resources even when the tab isn't active in the browser, leading to unnecessary processor and battery use. Instead we'll use the requestAnimationFrame method which doesn't suffer the same issues. Add the code below inside the animate() function:

```
001requestAnimationFrame(animate);
```

## 16 Start it off

The final missing piece is to kick-start our animation by calling the animate() function from the main scene setup code. Once it's

## Code library CREATE THE EARTH — AND ANIMATE IT!

Once we've created the environment, we can simply and easily add objects to our scene using the built in primitives - in this case the sphere shape

We create a big sphere for the earth (naturally), applying a special texture that's based on a photo-realistic image of the earth's oceans, land and clouds. The earth is positioned in the centre of our scene by default.

The stars are created in a similar way, but we use a simple coloured material instead of an image, and set the size to be small. We're also spreading them around the scene by randomly generating an X and Y co-ordinate for each one.

```
001 var earthRadius = 50,
002     earthSegments = 16,
003     earthRings = 16;
004
005 var texture = THREE.ImageUtils.loadTexture( "images/
earth_clouds.jpg" );
006 var earthMaterial = new THREE. MeshBasicMaterial( {
map:texture } );
007
008 earth = new THREE.Mesh(
009     new THREE.SphereGeometry(
010         earthRadius,
011         earthSegments,
012         earthRings),
013     earthMaterial);
014
015 scene.add(earth);
016
017 // Add a simple particle system
018
019 for (var i=0;i<500;i++){
020     var star = new THREE.Mesh(new THREE.
SphereGeometry(1,1,1),new THREE.MeshLambertMaterial({color:
0xFFFFFF}));
021     star.position.x = (Math.random()*SWIDTH-(SWIDTH/2));
022     star.position.y = (Math.random()*SHEIGHT-
(SHEIGHT/2));
023     star.position.z = 0;
024     scene.add( star );
025 }
026
027
028 animate();
029 });
030
031 function animate() {
032     requestAnimationFrame(animate);
033     earth.rotation.y += -0.0025;
034     renderer.render(scene, camera);
035 }
```

"To help our scene render we need to illuminate it with a light"

## Using CSS3 for 3D effects

If you don't need fancy lighting and textures, CSS is also becoming capable of rendering content in 3D space and can offer an easier solution to generating simple 3D effects in the browser

### CSS 3D Transforms

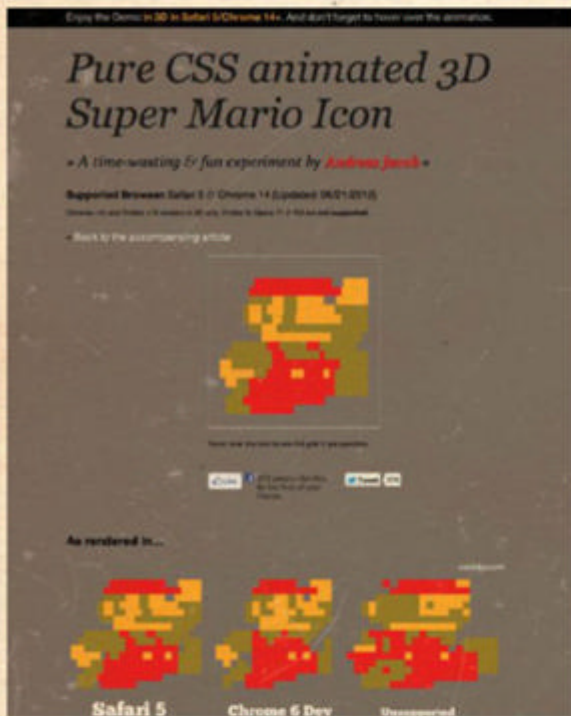
■ For simple 3D effects rendered as part of your website user interface, there's no need to go to the trouble to use WebGL to render your content. Instead, you can take advantage of one of the newer CSS specifications and use 3D transformations and transitions to pull or push your content around in 3D space. The premise

is simple: a series of properties are defined for an element defining its translation in 3D space using the transform property to affect the item. When combined with the transition property, elements can be animated in response to user interaction, resulting in index cards that flip over in 3D space to reveal additional information behind, or simple spinning 3D cubes.

The 3D transformation module of CSS3 is already well-supported by the most common browsers including (amazingly) Internet Explorer 10, Firefox 10+, Chrome 12+ and Safari 4+. Crucially, it's also supported by many mobile handsets including iOS devices running Safari, Blackberry browser, Android, and Firefox for Android, but not Chrome.

## Five great CSS 3D examples

The web is full of creative examples of CSS-generated 3D effects. We've picked five of our favourites below that help to showcase what's possible using 3D transforms inside the browser



[cordobo.com/wp-content/uploads/pure-css-animated-3d-super-mario](http://cordobo.com/wp-content/uploads/pure-css-animated-3d-super-mario)

■ This experiment recreates the famous Nintendo character in 3D, while retaining the blocky nature of the original 8-bit artwork!



[developer.apple.com/safaridemos/showcase/transitions](http://developer.apple.com/safaridemos/showcase/transitions)

■ Apple's Safari demos show that simple 3D transition effects can create a highly sophisticated feeling in your user interface.



[www.paulhayes.com/experiments/pyramid](http://www.paulhayes.com/experiments/pyramid)

■ Paul Hayes has created a series of excellent CSS3D demonstrations that demonstrate how 3D rendered in the browser can be both clean and efficient in code, but effective on screen.



[tympanus.net/Development/FullscreenImage3DEffect](http://tympanus.net/Development/FullscreenImage3DEffect)

■ This is just one in a series of excellent 3D technical demonstrations that can be found on the [tympanus.net](http://tympanus.net) website.



# CREATE OUT OF THIS WORLD EFFECTS WITH HTML5

been called once, the animate function will continue to be called as a result of the code we added in the previous step. Add a simple call to the function beneath all the existing code:

```
001animate();
```

## 17 Reach for the stars!

Our earth is now rotating beautifully about its axis, but we can do more to make our scene look like space - let's add some stars! We'll start off by creating a simple particle system that will contain all of our stars' co-ordinates. Add the code below to generate a random set of co-ordinates for 500 stars:

```
001for (var i=0;i<500;i++){
002 var star = new...; // Create mesh object
003 star.position.x = (Math.random()*sWIDTH-
(sWIDTH/2));
004 star.position.y = (Math.random()*sHEIGHT-
(sHEIGHT/2));
005}
```

## 18 Add the stars

Now we've got our co-ordinates, we need to create them and add each to the scene. This is simply a case of copying our earlier code, and making sure we call the appropriate three.js object in each case to generate the star for each instance. We're also positioning each in Z space so that it sits behind the earth:

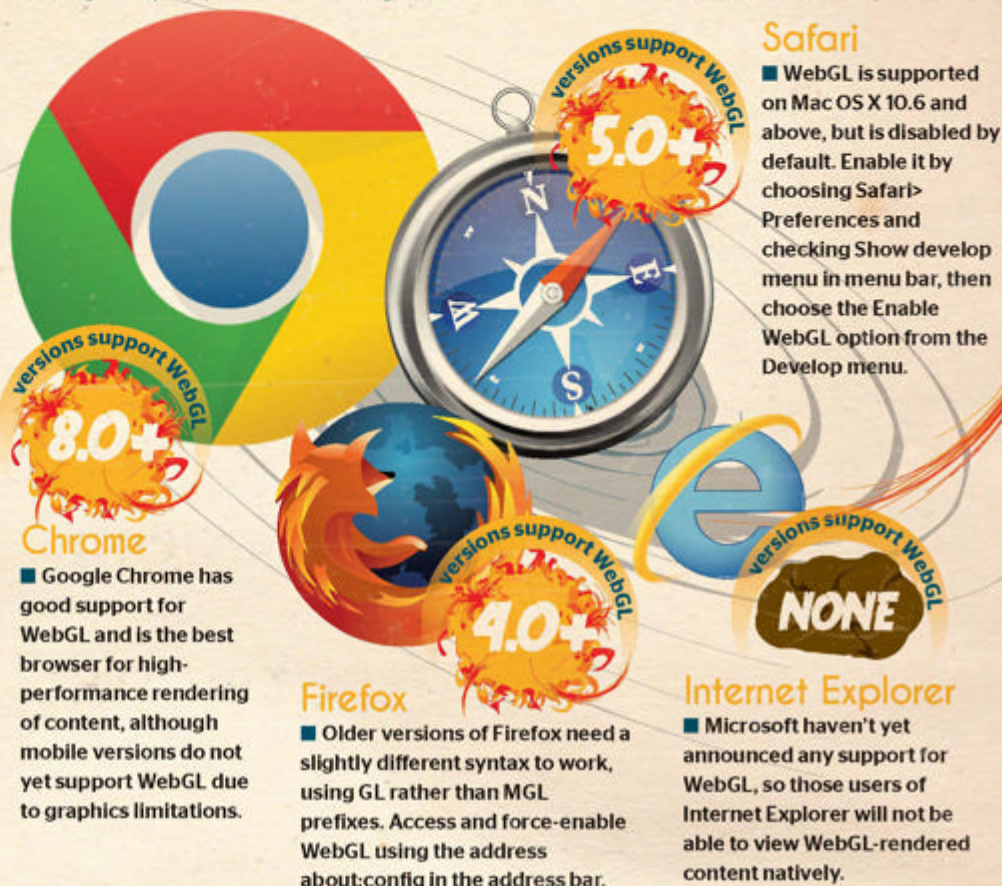
```
001for (var i=0;i<500;i++){
002 var star = new THREE.Mesh(new THREE.
SphereGeometry(1,1,1),new THREE.
MeshLambertMaterial({color: 0xFFFFFF}));
003 star.position.x = (Math.random()*sWIDTH-
(sWIDTH/2));
004 star.position.y = (Math.random()*sHEIGHT-
(sHEIGHT/2));
005 star.position.z = 0;
006 scene.add( star );
007}
```

## 19 Test and review

Our code is now complete, so fire up your browser for one final test and make sure everything is working as it should. You should see a random pattern of stars spread over the canvas, and these will change each time you refresh the page!

## Browser support for WebGL

Browser support is growing for WebGL, but there are a few restrictions to be aware of when deciding to deploy your content using WebGL as the renderer. Check out our round-up below



■ The current state of support for the WebGL system is in flux. Desktop browser WebGL implementations are growing, with only Microsoft Internet Explorer not yet offering any kind of support. Both Firefox and Chrome have supported the API for the past ten generations, with the most mature and complete implementation provided by Google Chrome on the desktop.

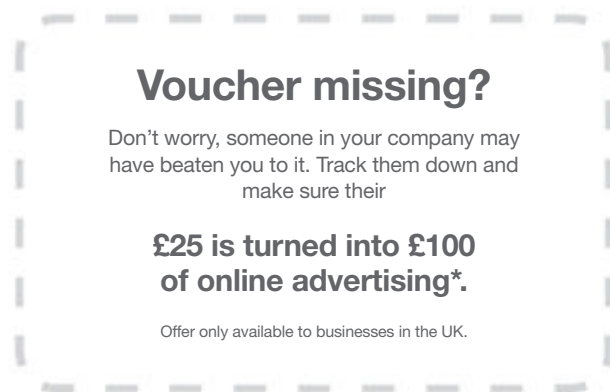
Mobile is a different story, however. The default browsers on both iOS and Android do not yet support WebGL natively. Firefox for Android has a good implementation, as does the upcoming Blackberry browser, while Opera Mobile has also started implementing support in version 12.0+.

The net result of this growing support is that content generated today will be viewable on an expanding range of devices in the future, but for mission-critical content you should consider rendering using canvas instead to ensure visibility across different browsers.



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<sup>†</sup>Calls to 0800 numbers are free from BT landlines but charges may apply if you use another phone company, call from your mobile phone or call from abroad. Support is available in English only.  
Offer subject to website and business qualification.

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INSPIRING  
BETTER  
BUSINESS



# “Red tape inspired me.”

— ‘This is my story’ —

*“I started programming when I was 10 years old. My dream was to work for the biggest technology companies in the world.*

*Years later having successfully worked for many of them, I started to get fed up with the amount of internal politics and red tape I dealt with day after day. It's a cliché, but I really felt like a small cog in a big machine.*

*I craved to be part of a company where my ideas and passion meant something and above all made a difference in driving the business forward.*

*FISCAL Technologies gave me that opportunity to make it happen, and over the past four years I'm working harder than ever, but loving every minute of it.*

*Building relationships with trusted suppliers is essential to business growth. Our long partnership with Fasthosts has always delivered reliability, security and flexibility when we needed it the most.*

**Howard Durdle CTO**  
FISCAL Technologies



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# web workshop

## Tiled mosaic layouts with Oscar Charlie

inspiration [www.oscar-charlie.com](http://www.oscar-charlie.com)



One of the more recent trends in web design has been filling the web browser width with content. An extremely good way of doing this is with masonry layouts, which have been covered in **Web Designer** on previous occasions (see

issue 195 for masonry layouts with Google Ventures). Oscar Charlie takes a variation of the masonry layout and applies a grid structure to a mosaic image layout.

The whole of this layout is one long, endlessly sliding carousel. This provides a great interface by which customers can move through a lot of content in both a graphic and visual way. The site has been designed this way to link to an employee mobile app, which allows for real-time status and photo uploads. This provides a simple and intuitive way for customers and other interested parties to experience these uploads.

### All one page

A recent trend is to have content load via Ajax, so there is only one page. This gives the impression of changing pages when links are clicked, but the URL doesn't change.

These techniques have been brought across from Flash developers who did similar.

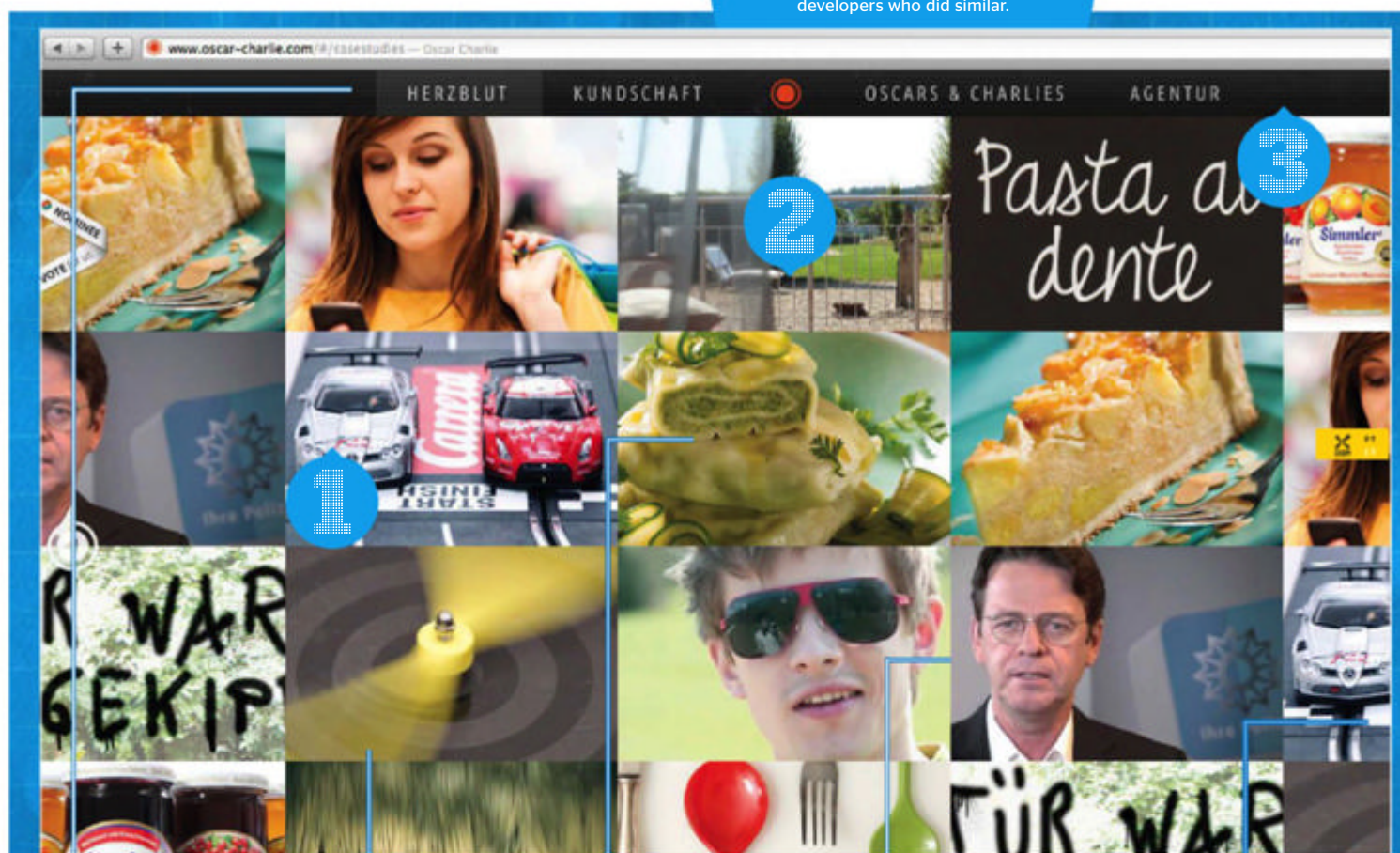
1

## INSPIRATION

### Bringing real-time information to all

The web is the place you connect to your audience. However, if the messages you are sending are uninteresting, then you won't connect with anyone. Oscar Charlie manages to make the browsing experience fun and interesting in a way that is novel to the end user. If you are going to mess with browsing conventions then you have to ensure the experience presented is clearly better. Taking

inspiration from mobile app content, which slides in and out, it has connected its real-time information to the web using the same sliding in and out experience.



### Content

The site's content is easily accessible via a menu bar across the top of the page in the browser. The page is formatted specifically for the width and height of the browser.

### Mosaic grid

This page of the site uses a mosaic grid to display the content. This is displayed as a continuously scrolling view pane.

### Sideways

Clicking on one of the tiles in this display causes the page to slide sideways with the new content sliding in from the right. This provides a pleasing way to slide back and forth between the new content, and is influenced by mobile navigation.

### Fade

Hovering the mouse over one of the tiles causes the others to fade slightly. The hovered tile displays information about the image over the top, while a background tint makes the text easier to read.

### Scroll

More information about this page is available farther down, which can be scrolled to. This is a slight drawback of the design as in this view it isn't immediately obvious that there is more content.



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

## Grid systems

Laying out any information neatly on a grid is the key to all good design. This is done in traditional graphic design and is emulated in online grid systems such as 960.gs, Bootstrap, foundation, etc. Laying out a montage of images in a grid works well because it presents a lot of information in a clear way.

**Mark Shufflebottom**

3

## TECHNIQUE Re-create the header section

The Oscar Charlie website has a very minimal header, but if you look very closely there is some fine detail of ruled lines. Here we show you how to make an image tile to achieve the same effect.

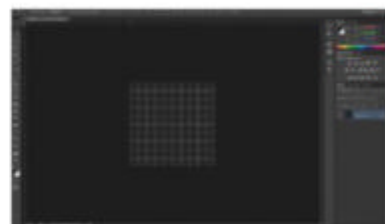
### 01 Open Photoshop

Open Photoshop and create a new document. As you can see we have made this quite small, so it will load quickly and will easily tile. Make your image 10 x 10px and click OK to create. Once created, zoom in, as it will be small on the screen.



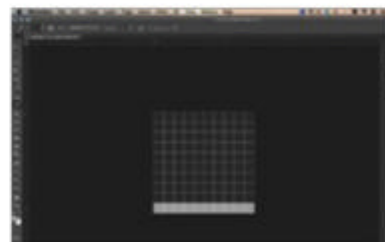
### 02 Fill the background

Choose a dark grey like #333 as your foreground colour and use the Paint Bucket to fill the background. In the image, the grid is shown only because the image is zoomed in. Now choose a lighter grey as the foreground colour, like #aaa.



### 03 Draw the line

Switch to the Pencil tool and draw a line across the bottom row of the grid, which will lend a ruled line to the image. Save this as a GIF and use CSS to conjure up the background, and then simply repeat the image in the background to ensure you get the subtle lined effect.



2

## TECHNIQUE Develop a montage layout

### 01 Get the library

Like most projects, we can kick start ours by using jQuery and the Automatic Image Montage plug-in, so download this from [tympanus.net/codrops/2011/08/30/automatic-image-montage](http://tympanus.net/codrops/2011/08/30/automatic-image-montage). Create a new HTML document in this folder, and in the head section we'll link to the stylesheet that will style the images. You could add a border to each image, or make them flush against each other here.

```
001 <link rel="stylesheet" type="text/css" href="css/style.css" />
```

### 02 Add page content

Move into the body section and we'll create a container div tag to hold everything. Inside here we'll add another div tag to hold the montage. Finally we add the images. Feel free to add as many as you like here - the image folder has 73 images named numerically. The code for this step is on the resource disc.

### 03 Link to the library

After the closing div tag of the container div, we can add our links to the appropriate JavaScript libraries. The first line of code links to the CDN jQuery library online. The second links to the minified version of the montage library that will power our layout here. The code for this step is also on the CD.

### 04 Count the images

Here our container for the montage is recorded together with the number of images within the montage, and each one is hidden from the display. Then each of the images is looped through with a load function to see if they have loaded into the browser.

```
001 $(function() {
002   var $container = $('#montage'),
003       $imgs = $container.find('img')
004         .hide(),
005       totalImgs = $imgs.length,
006       cnt = 0;
```

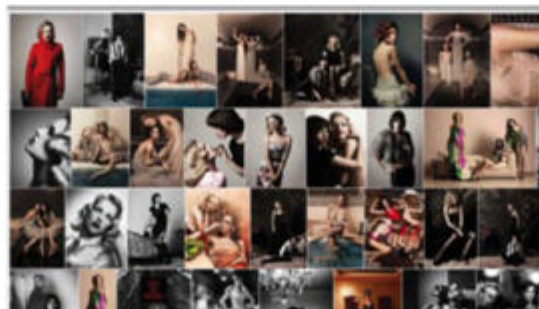
```
007 var $img = $(this);
008 $('<img/>').load(function() {
```

### 05 Display the montage

Once all images have loaded, they are made visible again and arranged within the display to fill the browser. Save the page and test in the browser to see the images load in a style very similar to the website.

```
001 ++cnt;
002 if( cnt === totalImgs ) {
003     $imgs.show();
004     $container.montage({
005         fillLastRow : true,
006         alternateHeight : true,
007         alternateHeightRange :
008             {min:180, max:240}
009     });
010 }).attr('src',$img.attr('src'));
011 });
012 });
013 </script>
```

The Automatic Image Montage plug-in for jQuery is very easy to use and can fill a webpage with images. The plug-in contains a number of different attributes that allow the layout to be customised.



# web workshop



## Create a fullscreen video background

inspiration [barrelny.com/recap/2012](http://barrelny.com/recap/2012)



Barrel is a digital agency from New York, and like many agencies it enjoys showing off its design and development skills. The 2012 Recap element of the site, chosen here, uses a full screen video background.

The selected video clip shows an everyday scene at the agency to help emphasis who and what they are. The short clip runs on a loop simply repeating at the end of the clip. The

length of the clip is around 30 seconds, but it is the size that is a more important consideration. The bigger a clip the longer it will take to load, so keeping it short/small will help to ensure a more enjoyable user experience.

There are various options for creating a video background. There is the more bespoke option of using Video.js or BigVideo.js for one thing. Alternatively, for those who do not have the video they want, a video from YouTube can be implemented.

1

### TECHNOLOGY

#### HTML5 video player

Implementing video backgrounds raises the issue of compatibility. Obviously, Flash is no longer an option for the vast majority of mobile browsers. Instead, HTML5 video is the present and future, and Video.js ([videojs.com](http://videojs.com)) is a great option for implementing HTML5 video. Video.js is a JavaScript and CSS library that makes it easier to work with and build on HTML5 video. It provides a common controls skin, fixes cross-browser inconsistencies, and adds fullscreen functionality.

Another useful tool built on top of Video.js, is BigVideo.js ([dfcb.github.com/BigVideo.js](https://github.com/dcfb/BigVideo.js)). This is a jQuery plug-in for creating big background videos and images. This can play a single video, a series of videos, or place a fullscreen fit to fill as a moving background image.



<comment>  
What our  
experts think  
of the site

## VIDEO VISUAL

Adding a fullscreen video background and updating at regular intervals keeps a visitor's attention long enough to stay and check what else is on offer. The Barrel Recap page has short simple videos, but these are engaging enough to keep the viewer hooked.

**Steve Jenkins, features editor**



## INSPIRATION

### Text and typography

The front page is a simple, clean, and uncluttered experience that uses the video background to add some unique visual interest. The video is black and white, which makes it easier to overlay text while still retaining readability.

The Barrel site uses a single transparent PNG graphic to create the header with two different fonts. A third font is used for the body text, which incorporates a text shadow, again to make it more readable. The font combination works well, thanks to the different weights, shadow, and the arc added to the title.



## TECHNIQUE Create a YouTube video background

### 01 Big div

The first step is to create a div to contain the video. This will have a height of 100% and a width of 100%. Add a new div tag, `<div id="bigvid"></div>`, to the body and name it accordingly. Add a comment to the closing tag for future reference.

```
001 <div id="bigvid">
text will go in here
002 </div> <!-- //
#bigvid -->
```

### 02 Video container CSS

The video container will need its width and height set to 100%. In the head of the page add a set of style tags. Inside, add the selector name and then add the height and width properties. Include the background colour black, this will help blend the video into the background when it is not at full width.

```
001 #bigvid {
002 background-color: #F30;
003 height: 100%;
004 width: 100%;
005 }
```

### 03 Add video

Head to YouTube, select a video to use click Share>Embed tab and copy the iframe code and paste in the div tag created in Step 1. Now set the width and height to 100%. To hide YouTube elements, eg the title bar, add parameters

after the video URL as shown. See [bit.ly/znAzhT](http://bit.ly/znAzhT) for a full parameters list.

```
001 <div id="bigvid">
002 <iframe width="100%"
height="100%"
003 src="http://www.youtube.
com/embed/MXh3YRtTiGg?a
utoplay=1;controls=0;sh
owin fo=0" frameborder="0"
allowfullscreen>
004 </iframe>
005 </div><!-- // #bigvid -->
```

### 04 Go fullscreen

Save the page and preview in your preferred browser. The video will currently have a space around it - set the body tag to 0 padding and margins. Even though the video is set to 100% on both height and width, only the width is currently observing the width value. Add `position:absolute` to the video container CSS to resolve.

```
001 #bigvid {
002 position: absolute;
003 background-color: #000;
004 height: 100%;
005 width: 100%;
006 }<!-- // #bigvid -->
```

### 05 Add an overlay

To overlay a div tag over the video the div needs to be positioned using the absolute value. Add a new div tag and name appropriately. Now set the width and height to 400px and set position to

absolute. Add a background colour, but make sure that it is one that complements the background video.

```
001 #start
002 {
003 position: absolute;
004 width: 400px;
005 height: 400px;
006 z-index: 1;
007 background-color: #000;
008 }
```

### 06 Styling and centring

To make the div created in the previous step a circle, the `border-radius` property is to be used. Add `border-radius` and set to the width of the div tag to 400px. To position the circle, first add `top: 30%`. To centre the circle add `left: 50%`, and `margin-left` to half the width with a minus value, `-200px`. Finally add some padding and text.

```
001 #start
002 {
003 position: absolute;
004 width: 400px;
005 height: 400px;
006 z-index: 1;
007 background-color: #000;
008 border-radius: 400px;
009 top: 30%;
010 left: 50%;
011 margin-left: -200px;
012 }
```

#### Tech tip

#### Text shadow

CSS3 allows users to add a host of effects to text, including `text-shadow`. The tag has widespread browser support, making it a viable alternative to a graphic. Plus, if a browser does not support `text-shadow`, the text will still be legible.

`Text-shadow` comprises of four elements: the vertical shadow, horizontal shadow, blur and colour. The first two are required, and in practicality so is the colour - though it's not essential.

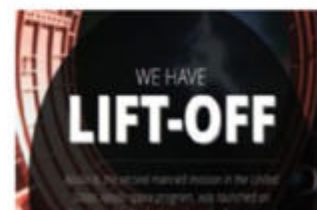
The vertical and horizontal data determine its position. Typically, both elements will have the same dimension for uniformity. These are commonly set to a small size, say 2px, to recreate the 'Photoshop' shadow. The colour is determined by the hexadecimal code, but will often be a grey, eg #999999. The final element is blur, which is determined by pixel size. Users can leave this out or set to 0px to have a sharp, blur-free shadow. The alternative is to select a subtle blur, say 2px again, or a more creative blur at 10-20px.

To add a `text-shadow` it's just a matter of adding the vertical, horizontal and blur dimensions (in this order) followed by the hexadecimal code for the colour:

```
h1 {text-shadow: 2px 2px
0px #999999;}
```

Use minus values to push the shadow to the left and above the text.

```
h1 {text-shadow: -2px -2px
0px #999999;}
```



# Customising the Bootstrap framework

There are a tonne of sites using Bootstrap at the moment, make sure your site stands out from the rest by moving away from the default look

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



**he rise of Bootstrap, or as it was formerly known, Twitter Bootstrap, has been phenomenal.**

In case you are not aware, Bootstrap is a responsive framework created by two Twitter employees so that they didn't have to start from scratch when starting web projects. The problem is, there are many people using it while not really having the

understanding that it is a starting point for projects, so we have many sites with a Bootstrap look!

Bootstrap is built on LESS, so it can be customised using that, but there are plenty of people who just want to get on to using it and not bother with LESS or having to compile via Node and command line. There is a customise page on the Bootstrap site that enables a unique look to be created, but if you change all the colours, there's no way to save that style – so if you want to download a newer version of Bootstrap at some point in the future, you will lose that unique look you have crafted. The acceptable way to create a unique look is to download the base version of Bootstrap, and then modify the features in a new CSS file, which is what we'll be doing.

## 01 Setting up

Copy the start folder from the resource disc onto your desktop and open 'index.html' in a code editor such as Dreamweaver. In the head section add the following links that provide the CSS for Bootstrap, link to a custom font and our own style sheet that will give us the unique look we want.

```
001 <link href="css/Bootstrap.min.css"
    rel="stylesheet"
>
002 <link href="css/Bootstrap-responsive.min.
    css" rel="stylesheet">
003 <link href='http://fonts.googleapis.com/
    css?family=Quando' rel='stylesheet' type='text/
    css'>
004 <link href='css/mystyle.css'
    rel='stylesheet' type='text/css'>
```

## 02 Link to the JavaScript

The next part is to link up the JavaScript. Scroll to the bottom of the document and there will be some code inside <script> tags that power the Carousel. Just above those lines add the code shown below that links to the jQuery library and the Bootstrap library.

```
001 <script src="https://ajax.googleapis.com/
    ajax/libs/jquery/1.8.3/jquery.min.js"></script>
002 <script src="js/Bootstrap.min.js"></script>
```

## 03 Open the CSS document

Now we are ready to start adding our content, so open the file 'mystyle.css' – there is already some code in there, but add the new code at the top. We will

change the font and background colour slightly, which we will do in the body. Next we change the typeface for the branding and h1 and h2 of the site to our custom font from Google Web Fonts.

```
001 body {
002   color: #5a5a5a;
003   background-color: #fff;
004 }
005 .brand, h1, h2 {
006   font-family: 'Quando', serif;
007 }
```

## 04 Branding image problems

One of the major problems with the site design is that the branding image is too large for the header and navigation section. In the code below we reduce the size of this. We also start to give our navigation a unique highlight colour to move away from the traditional Bootstrap look.

```
001 .myImg{
002   width: 35px;
003   height: auto;
004 }
005 a {color: #f5850c;}
006 a:hover {color: #960;}>
```

## 05 Unique navigation

Nothing says Bootstrap quite like the navigation bar, so let's start giving this a completely new look. This piece of code will give the drop menu an orange background when it is selected. Add the following code

to the section of the stylesheet that is commented with Customise the navbar.

```
001 .navbar .nav li.dropdown.open > .dropdown-
    toggle,
002 .navbar .nav li.dropdown.active >
    .dropdown-toggle,
003 .navbar .nav li.dropdown.open.active >
    .dropdown-toggle {
004   color: #fff;
005   background-color: #f5850c;
006 }
```

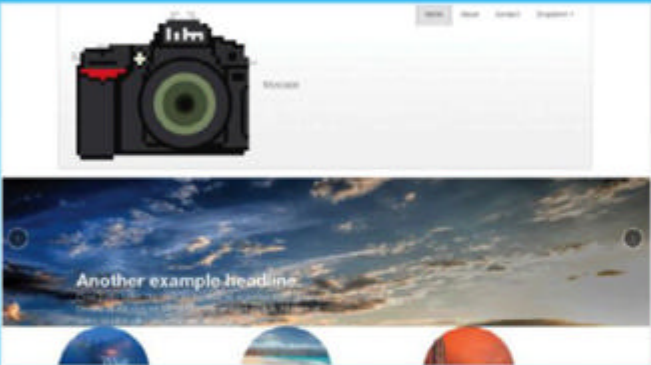
## 06 Drop down highlights

If you move your mouse over the drop menu you will see that the background here is still the default blue, so we'll change that by adding the next section of the CSS that changes the highlight colour to orange. We do this by overwriting the gradients of the original.

```
001 .dropdown-menu li > a:hover,
002 .dropdown-menu li > a:focus, .dropdown-
    submenu:hover > a {
003   color: #ffffff;
004   text-decoration: none;
005   background-color: #f5850c;
006   background-image: none;
```

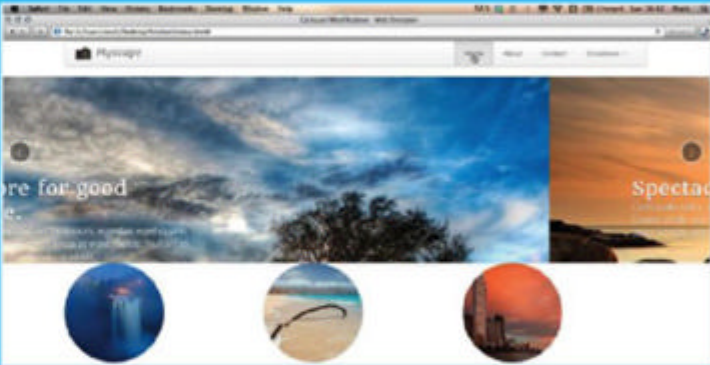
## 07 Finish the drop down

The remaining code that we add here ensures that we cover every browser for the gradient background images. Because the original CSS file from Bootstrap has the background-image listed for each



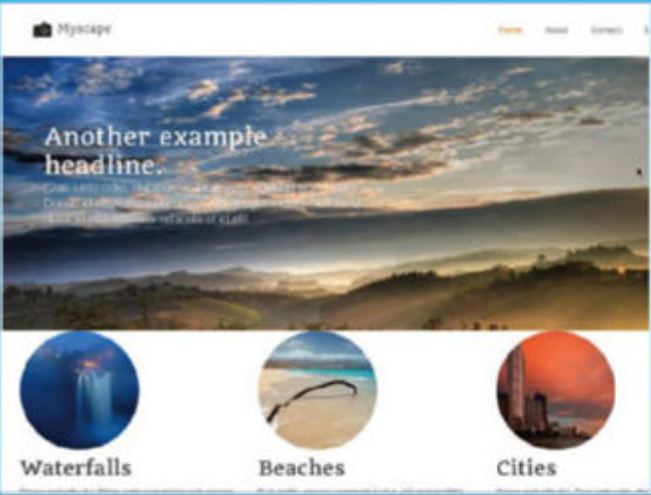
**<Above>**

- As we start the project there are a number of visual issues that need to be styled, and we have the task of making the site look different from Bootstrap's base theme



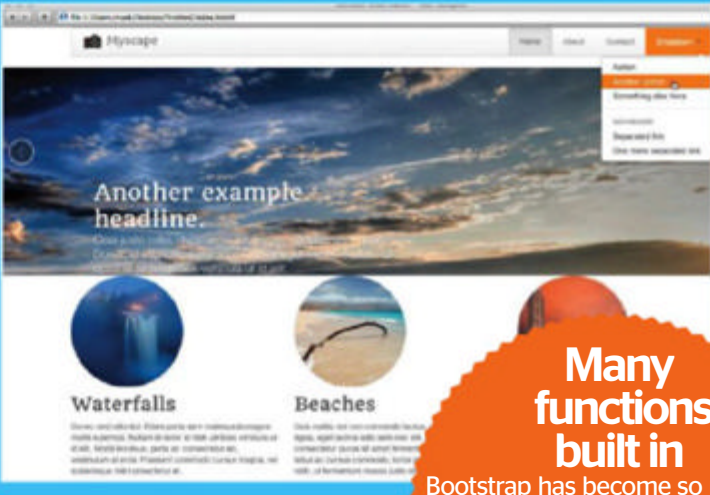
**<Above>**

- The logo is much smaller now, but the navigation bar still has the default look that tells users this is a Bootstrap template



**<Above>**

- The Carousel is made larger so the space given to it fits better. The buttons that control the direction also have to be dropped down



**<Above>**

- The drop menu is fully styled, with the background of the selected item having the correct colour orange background

**Many functions built in**

Bootstrap has become so popular because it has elements such as Carousels built in. If these are not required, the download can be customised to include only the features necessary.

one, we have to set it back to none. Hopefully, one day, we might be able to get rid of the multiple prefixes.

```
001 background-image: none;
002 background-image: none;
003 background-image: none;
004 background-image: none;
005 background-repeat: no-repeat;
006 filter: none;
```

## 08 Move the navigation down

We want the navigation bar moving down and sitting in the white space at the top of the document a little better than it currently does. The next section of code moves this down, but the bar still has the default gradient that makes it look so obviously like a Bootstrap-based document. We will sort the gradient out in the next step.

```
001 .navbar-wrapper {
002 position: absolute;
003 top: 0;
004 left: 0;
005 right: 0;
006 z-index: 10;
007 padding-top: 20px;
008 margin-bottom: -90px;
009 background-color: #FFF;
010 }
```

## 09 Remove the gradients

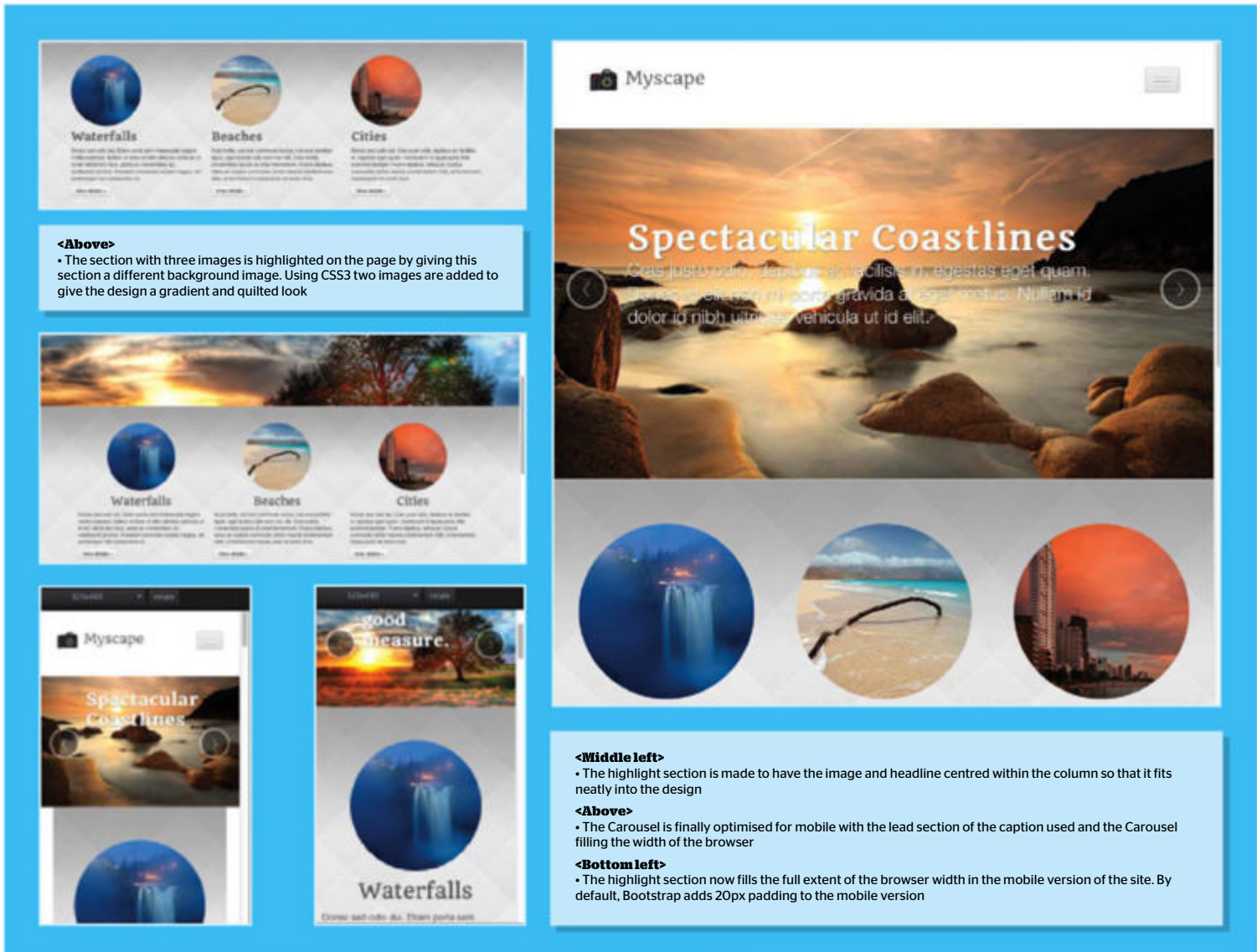
Now we'll overwrite the gradient in the navigation bar, so we'll do that by overwriting the default values of the nav bar with just white as the background colour. As stated earlier, the only reason this code is so large is because there are so many different browser prefixes required for this to work.

```
001 .navbar .navbar-inner {
002 border: 0;
003 background-image: none;
004 background-image: none;
005 background-image: none;
006 background-image: none;
007 background-image: none;
```

## 10 Finish the nav bar

We also remove the drop shadow that is a very default look of the Bootstrap theme. It's probably worth checking out at this stage how the changes look. Save the file and load the page in your web browser. A few simple modifications of the base Bootstrap theme are already beginning to give us a unique look.

```
001 background-image: none;
002 -moz-box-shadow: none;
```



```
003 box-shadow: none;
004 filter: none;
005 }
```

## 11 Focus colour change

The current page still has the highlight style that has the default grey background. We'll change that by removing the inner shadow and changing the hover and focus colour to the orange that we have used elsewhere in the design of our navigation. Save the page now and we are really moving away from the default look of the standard theme.

```
001 .navbar .nav > .active > a,
002 .navbar .nav > .active > a:hover,
003 .navbar .nav > .active > a:focus {
004 color: #f5850c;
005 text-decoration: none;
006 background-color: #ffffff;
007 -webkit-box-shadow: none;
```

## Previewing responsive designs

Firefox has a preview built in for web developers to view different-sized displays when emulating mobile and tablet screen sizes.

```
008 -moz-box-shadow: none;
009 box-shadow: none;
```

## 12 Starting the Carousel

One of the main problems you will notice as you look at the page is that the Carousel isn't quite big enough to deal with our images or the content inside of each of the slides. Add the code below to the CSS after

the comment Carousel base class. Save this and give your browser a refresh to see the changes made.

```
001 .Carousel .item {
002 height: 550px;
```

## 13 Controlling the Carousel

Because we've made the Carousel larger the controls need to be moved down to a more central position because they are too close to the top at present. We add the following CSS rule to keep everything the same but just move the controls down by 60px to sort out the problem.

```
001 timeline.timeline.date.push(tweet); }
002 deferred.resolve();
```

## 14 Highlighting the three images

The three images immediately below the Carousel are going to be given greater emphasis now.

We will do this by adding two background images, which is a CSS3 feature. The first will give us a pattern while the second will be a gradient. This will help to define this section.

```
001 .hilite-wrapper{
002 background-image: url(../img/drop.png),
003 url(../img/diamond Upholstery.png);
004 background-position: left top, left top;
005 background-repeat: repeat-x, repeat;
006 padding: 50px 10px 80px 10px;
007 border-top-width: 1px;
008 border-top-style: solid;
009 border-top-color: #ccc;
```

## 15 Centre the heading and image

The section is nicely highlighted with the background, but we also want to centre both the image and heading in each column. We could always just centre everything in the column, but centred body text is slightly harder to read for users' eyes owing to the ragged edge on the left. This code will just centre the heading and image.

```
001 .hilite h2 {
002 font-weight: normal;
003 text-align: centre;
004 }
005 .hilite img{
006 display: block;
007 margin: 0 auto;
008 }
```

## 16 Responsive Carousel

If we change the view of our design so that we are at a tablet-sized display, you will see that the Carousel has a large section of white underneath it. To fix this, we'll change the height slightly and some of the positioning. Add the following code inside the @media (max-width: 979px) { section of code.

```
001 .Carousel .item {
002 height: 500px;
003 }
004 .Carousel img {
005 top: 100px;
006 width: auto;
007 }
008 .Carousel-caption {
009 padding: 0 70px;
010 }
```

## 17 Phone-sized fixes

We just need to add some other fixes now to the design when we are at the phone size. Change your web browser viewport to a phone-sized display and you will see there are a few problems. Add the following code inside the @media (max-width: 767px) { section of code. This fixes the margins of the Carousel.

```
001 .Carousel {
002 margin-left: -20px;
003 margin-right: -20px;
004 }
```

## 18 Phone Carousel

Despite the extra width to the Carousel there are still some problems. Let's reduce the size of the Carousel height and then set the width to be automatically sized for the image. Add the following code immediately under the last. This helps the image appear much better. Next, to sort out the text.

```
001 .Carousel .item {
002 height: 300px;
003 }
004 .Carousel img {
005 width: auto;
006 }
```

## 19 Change the caption

With the addition of the following code we can see much more of the caption as we've reduced our width and moved the text up slightly. Despite these changes for the better the text is just too large and there is far too much of it, so let's consider how we can clear that up.

```
001 .Carousel-caption {
002 width: 65%;
003 margin-top: 120px;
004 }
```

## 20 Caption fixes

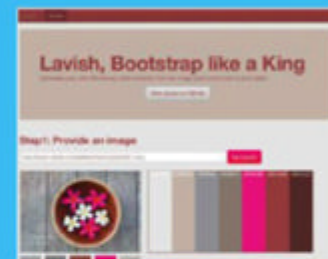
We'll reduce the size of the caption text and remove the lead text that is immediately under the caption heading. Save this and check out the changes in the document. Now you should be able to read the heading much more clearly, especially without the clutter of the other text.

```
001 .Carousel-caption h1 {
002 font-size: 25px;
003 }
004 .Carousel-caption .lead {
005 display: none;
006 }
```

## 21 Extend to the edges

The highlight wrapper code is used to highlight the three images in the footer section of the site. We'll widen those sections to take advantage of the full width of the display in the smaller device by extending the margins, as the base class for Bootstrap brings the margins in by 20px.

```
001 .hilite-wrapper{
002 margin-left: -20px;
003 margin-right: -20px;
004 }
```



## Tools to help theme Bootstrap

There are some great online tools to help you to create your theme for Bootstrap in a simpler way. Style Bootstrap ([stylebootstrap.info](http://stylebootstrap.info)) is slightly better than the customise Bootstrap main page, because it allows the individual elements to be previewed live. Unfortunately there is no way to save what you create and it is currently running a version behind the main Bootstrap site.

Lavish ([www.lavishbootstrap.com](http://www.lavishbootstrap.com)) is an unusual tool in that you link to an image and Lavish will magically extract key colours from the image and make your theme CSS out of those colours. Unfortunately, it doesn't allow for the theme to be saved.

Bootstrap ThemeRoller ([www.Bootstrapthemeroller.com](http://www.Bootstrapthemeroller.com)) allows the user to theme up most individual parts of the framework, and unlike other tools that are available, it allows the theme to be shared and saved, so when Bootstrap updates you can also recall your previously styled theme and download again. Sadly, it is not quite possible to customise all aspects of the framework, so it still requires manual tweaking.

## 22 Final fix

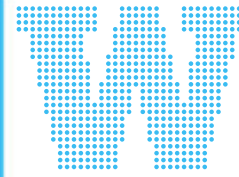
For the last part, we will add a little more space to each entry in the highlight section and reduce the size of the typography further down the page. With this in place, save your file and you should see a fully responsive Bootstrap site that starts to move away from the default look and feel of the template.

```
001 .hilite .span4 + .span4 {
002 margin-top: 40px;
003 }
004 .featurette-heading {
005 font-size: 25px;
006 }
```

# Rapid app development with Sammy.js

Get sassy with Sammy.js and create a fully-fledged JavaScript application that's compact but featureful

**tools | tech | trends** Dreamweaver (or web editor of choice)  
**expert** jQuery, Sammy.js, HTML5



When it comes to JavaScript frameworks, the battlefield is cluttered. But if you're looking for something simpler, then look no further than Sammy.js.

Sammy is inspired by the Sinatra framework and is stylistically similar.

It describes itself as 'a small web framework with class', and is a slim 5.2kb compressed. Part of the secret to its size is plug-ins, so only the parts you use are active, enabling the core to stay incredibly light.

Sammy uses HTML5's History API so you can link to specific routes in your application like `http://localhost/#/web-designer`. Routes contain behaviour in a callback function that can render a template, manipulate data, or do anything else you'd want to do. In the example above, the route would be `#/web-designer`, which could display a list of tutorials.

We're going to build a small JavaScript app that will display information from **openbeerdatabase.com** on various ales and breweries, with images pulled in through Flickr. We shall christen it 'Beerhub'.

## 01 Include Sammy

The latest version of Sammy is 0.7.2, and you can either grab it from the site itself ([sammyjs.org/download](http://sammyjs.org/download)) or through a package management system (we're using Bower through Yeoman). Sammy is dependent on jQuery, so include that before Sammy, and make an app file for our own logic to reside.

```
001 <script src="components/jquery/jquery.js"></script>
002 <script src="components/sammy/lib/min/sammy-0.7.2.min.js"></script>
003 <script src="scripts/app/app.js"></script>
```

## 02 Make a route

Now that our own dependencies are in place we'll initialise a new Sammy app, it's possible to have more than one Sammy app run at once, if you so desire. In one fell swoop we can define a route and, within the callback, tell it what to display. This is done with templates; we'll be using Handlebars.js.

```
001 var app = new Sammy('#main', function() {
002   this.get('#/', function(ctx) {
003   });
004   app.run('#/');
005 })(jQuery);
```

## 03 Integrate Handlebars

We mentioned that Sammy uses plug-ins, and templating is one of the scenarios where you'll have to include a plug-in, which makes sense given that you're unlikely to use multiple template engines within a single

application. `this.use()` goes within new Sammy. The second parameter we pass is the file extension, so we'll reference `<x>.hb`, for example.

```
001 //app.js
002 this.use('Handlebars', 'hb');
003 //index.html
004 <script src="components/handlebars/handlebars.js"></script>
005 <script src="components/sammy/lib/plugins/sammy.handlebars.js"></script>
```

## 04 Make API request

Before we can display anything in the template, we'll need our data. Make a JSON request with jQuery. We're actually requesting JSONP so need to specify a callback function, which is what the last GET variable is for. `ctx` is an abbreviation of render context - this context tells the template what data to use when fleshing out the template.

```
001 this.send($.getJSON, 'http://api.openbeerdatabase.com/v1/beers.json?callback=?')
002 .then(function(response) {
003   ctx.beers = response.beers;
004   ctx.render('beers.hb', ctx.beers).swap();
005 });
```

## 05 Handlebars template

Before this will work we'll have to write `beers.hb`. With Handlebars we can quickly iterate over each object returned (`{{#beers}}` would also iterate but `#each` is more expressive) and embed them with HTML. We'll

add a link in each beer to its own page identified by its unique id; Beerhub will now list all the beverages.

```
001 {{#each beers}}
002 <article class="beer" data-id="{{id}}">
003   <h3 class="beer-name"><a href="#/beer/{{id}}">{{name}}</a></h3>
004   <a href="#/beer/{{id}}"><img class="beer-image"></a>
005 </article>
006 {{/each}}.
```

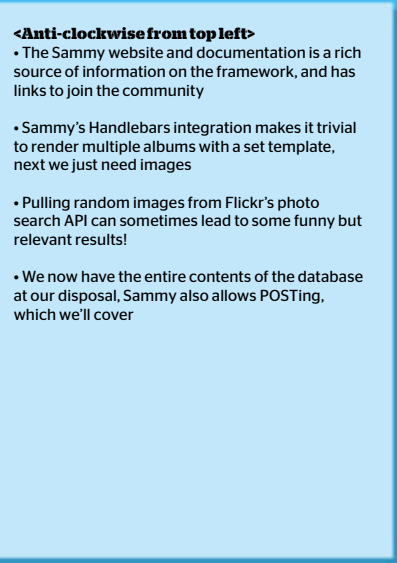
## 06 Second call

With relatively little effort we can now display dynamic data in a very versatile way. The initial API request only listed the first 50 items; to get the remaining we'll have to make another request and hope that we can easily reuse the template and append the content. We're using Sammy's `send()` method, which maintains this as the render context.

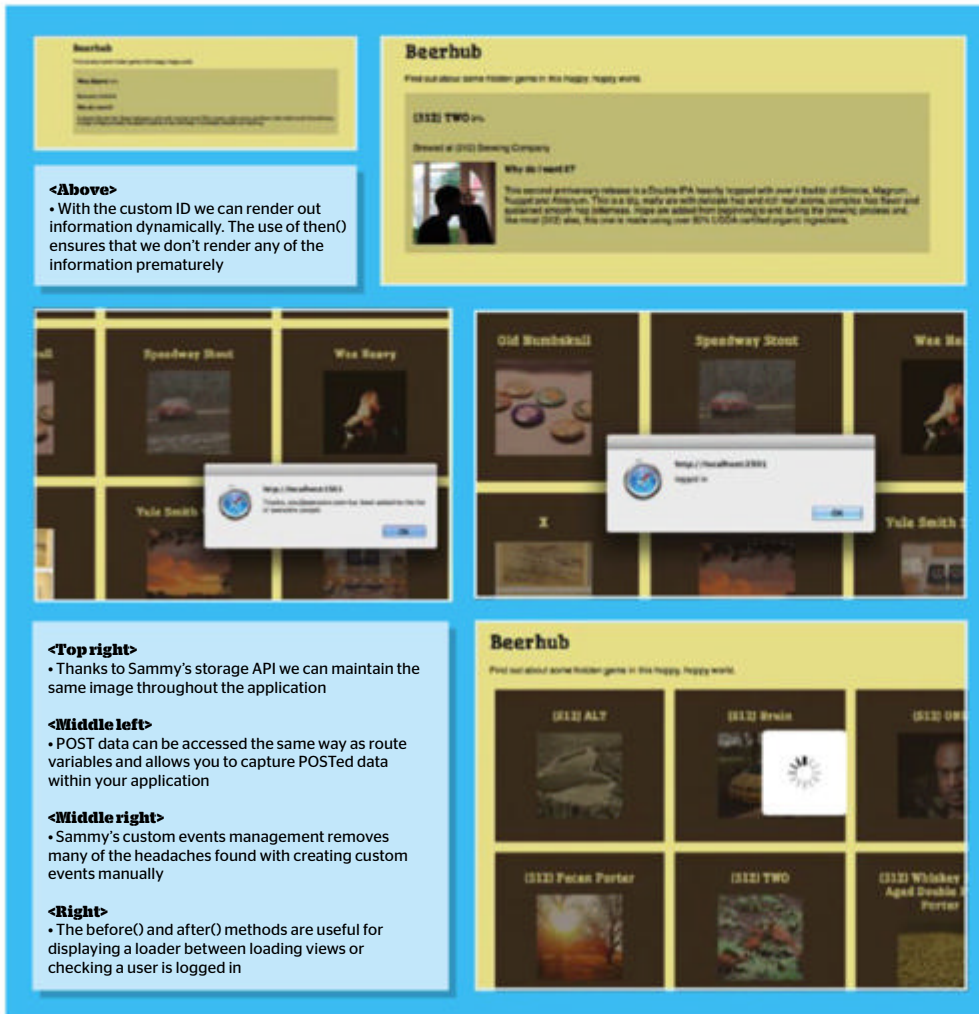
```
001 if (response.pages > response.page) {
002   var page = response.page + 1;
003   this.send($.getJSON, 'http://api.openbeerdatabase.com/v1/beers.json?page='+page+'&callback=?').then(function(data) {
004   });
005 }
```

## 07 Storage API

Sammy also offers a helpful storage API, which binds storage to HTML elements; when the element disappears, so does the store. You define which type of



Moving forwards, routes aren't constrained to simply being static. Using a colon you can denote that the value is a variable and access it through `this.params`. Now the browser can go to `http://localhost/#/beer/4` and have a result returned. Routes can also accept a regular expression, making them very flexible.



```
001 this.get('#/beer/:id', function() {
002   var id = this.params.id;
003   var ctx = this; });
```

### 13 Another API call

With the beer's id we can make another API request to fetch its description and render the new template, swapping the contents of #main. It's worth noting that \$element returns the element that the application's bound to, so you can easily reference it. We also get the Flickr URL to display alongside the description for some visual consistency.

```
001 $.getJSON('http://api.openbeerdatabase.com/v1/beers/' + id + '.json?callback=?', function(res) {
002   ctx.beer = res;
003   ctx.image = beerImages.get(res.id);
004   ctx.render('beer.hb', ctx.beer).swap();
005 });
```

### 14 Handlebars template

Again, we'll have to write the beer.hb template before this works, otherwise it'll 404! This is simpler in

some respects than the first one, as we're not iterating, just inserting the object's properties where we want them. If you wanted to not escape HTML you can use {{{property}}} (aka the triple-stash) and {{.}} is the equivalent of this.

```
001 <div class="beer-single">
002   <h3 class="beer-name">{{name}}</h3> <p
class="beer-abv">{{abv}}%</p>
003   <div class="meta">
004     <p>Brewed at <a href="#/breweries/
{{brewery.id}}">{{brewery.name}}</a></p>
005   </div>
006   
007   <h4>Why do I want it?</h4>
008   <p class="beer-
description">{{description}}</p>
009 </div>
```

### 15 Render breweries

We're quickly going to do a similar thing for breweries so that we can list all the products from a single brewery. The biggest change here is that we're not storing the results and the URL is slightly different.

```
001 this.get('#/breweries', function(ctx) {
002   $.getJSON('http://api.openbeerdatabase.com/v1/breweries.json?callback=?', function(r) {
003     ctx.breweries = r.breweries;
004     ctx.render('breweries.hb', ctx.breweries).
swap();
005   });
006 });
```

### 16 Multiple ways

This time we'll use parseInt() on the parameter id so that we can use it when filtering the results. You may have noticed in previous examples we passed ctx as the argument for the callback, but an equivalent way is to set ctx as this.

```
001 this.get('#/breweries/:id', function() {
002   var id = parseInt(this.params.id, 10);
003   var ctx = this;
004 });
```

### 17 Filter results

For a smooth finish we'll filter the store of beers we have and identify which have matching ids to the brewery we're viewing. The filter method makes a new array from items that return true for a certain condition. We then render and swap #main's contents (we're getting good at this!)

```
001 $.getJSON('http://api.openbeerdatabase.com/v1/breweries/' + id + '.json?callback=?',
function(r) {
002   var filteredBeer = beerStore.
get('beers').filter(function(beer) {
003     return (beer.brewery.id === id);
004   });
005   ctx.beers = filteredBeer;
006   ctx.breweries = r.breweries;
007   ctx.render('brewery.hb', ctx.breweries).
swap();
008 });
```

### 18 Simpler templates

That's all the routes finished for our simple application, but let's push Sammy a bit more. Sammy supports four HTTP request types (GET, POST, PUT, and DELETE). This means that we can POST data from a form straight into our Sammy application for use elsewhere. Make a template called footer.hb with the following content.

```
001 <footer class="page-footer">
002   <form action="#/newsletter"
method="post">
003     <label>E-mail Address</label><br>
004     <input type="email" name="email"
placeholder="web@imagine.com" required>
005     <input type="submit" value="Submit">
006   </form>
007 </footer>
```

**19 POSTing data**

Just like we've done with `this.get()` we can specify post to only pick up when it is POSTed to, and have a separate get on `#/newsletter`, too. In this case we're just going to alert the user a notification of thanks. A gotcha that we found was that forms must be a child of the element the app's bound to in order for post to work.

```
001 this.post('#/newsletter', function(ctx)
{
002   var email = ctx.params.email;
003   alert('Thanks, '+email+' has been
added.');
```

**20 Event handling**

Sammy also has built-in event handling. The two main methods are: `bind`, to set an event, in this case to the application itself, and `trigger`, to fire it. For example, say you wanted to log someone in once they submitted their email address. In the post callback above we could add `app.trigger('logged-in', {email: email});`

```
001 this.bind('logged-in', function(e, data) {
002   alert('logged in');
003   console.log(e, data);
004 });
```

**21 Before and After**

There are three other special functions that Sammy has, that we haven't used in this app but are worth knowing about. They are `before()`, `after()`, and `around()`. If there is a common function that all of your routes follow then you can use `before()`. Passing it an argument, you can even exclude certain routes.

```
001 this.before(function(ctx) {
002   $('#loader').show();
003 });
004 this.after(function(ctx) {
005   $('#loader').hide();
006 });
```

**22 Around the route**

The `around` method puts the entire route inside a callback, so you can check if that route should be executed or if action needs to be taken beforehand in order to render properly. It's well worth checking out the documentation ([sammyjs.org/docs/api/0.7.2/all](http://sammyjs.org/docs/api/0.7.2/all)) and at least scanning the available methods.

```
001 function checkStatus(callback) {
002   if (!loggedIn) {
003     //login then callback
004   } else
005   {
006     callback();
007   }
008 }
009 this.around(checkStatus);
```

## Code library

**Examine a Skeleton Sammy.js App**

You can achieve a lot in few lines, if you're outputting JSON code from your server, it's a perfect accompaniment to your toolkit

Sammy has a universal storage API making storing of data bound to a specific element a cinch.

`Send()` is similar to jQuery's `when()` and allows you to make arbitrary Ajax calls while ensuring order.

Access route variables with ease - this very simple technique is the key to allowing dynamic information to be displayed.

The argument passed to `run()` will be the first route that's displayed - especially useful if you have multiple instances.

```
001 (function($) {
002   var app = new Sammy('#main', function() {
003     this.use('Handlebars', 'hb');
004     var beerImages = new Sammy.Store({
005       name: 'images',
006       element: '#main',
007       type: 'session'
008     });
009     this.get('/', function(ctx) {
010       this.send($.getJSON, 'http://api.
openbeerdatabase.com/v1/beers.json?callback=?')
011       .then(function(response) {
012         this.beers = response.beers;
013         beerStore.set('beers', this.beers);
014         this.render('beers.hb', this.beers).swap();
015         this.render('footer.hb').
appendTo(app.$element());
016       });
017     });
018     this.get('#/beer/:id', function(ctx) {
019       var id = this.params.id;
020       this.send($.getJSON, 'http://api.
openbeerdatabase.com/v1/beers/' + id + '.json?callback=?')
021       .then(function(response) {
022         ctx.beer = response;
023         ctx.image = beerImages.get(response.id);
024         ctx.render('beer.hb', ctx.beer).swap();
025       });
026     });
027     this.post('#/newsletter', function(ctx) {
028       var email = this.params.email;
029       alert('Thanks, ' + email + ' has been added to
the list of awesome people');
030       app.trigger('logged-in', {email: email});
031     });
032     this.bind('logged-in', function(e, data) {
033       alert('logged in');
034     });
035   });
036   app.run('#/');
037 })(jQuery);
```

**Template choices**

Handlebars isn't your only template engine available when using Sammy: mustache, EJS, Hogan, Meld, and Pure are also supported, so chances are there'll be something you're familiar with.

# Create a web-based RSS aggregator with Node.js

Learn how to build a Node app that fetches RSS feeds and compiles them into a single source

**tools | tech | trends** Node.js, JavaScript  
**expert** Tim Stone



SS is a popular standard for updating posts when people are subscribed to a site's RSS feed. If your site uses WordPress then it has support built-in, meaning that visitors are notified of updated content immediately, but

there's more to RSS than this. RSS allows content to be transported from the shackles of its original markup and delivered in a purer, more uniform way that allows others to repurpose that content.

Using Node.js we're going to create an aggregator of RSS feeds that takes in multiple RSS sources and combines them into a single feed. By the end of this tutorial you'll be able to generate an RSS feed that's personalised with the feeds that you want to read, the option to include a description, and the option to include an image; all through an easy-to-use web interface.

RSS is based on XML, a format that's designed to be both human and machine-readable. To aid this we'll add a touch of pizzazz to our generated feed by including a choice of styles. Most browsers see an RSS feed and don't just style it, they parse the RSS and deliver HTML – we will simply be serving the RSS feed itself and styling that, without going to the trouble of delivering HTML.

## 01 Set up app

Before we do anything at all, we need to scaffold our Node.js app. We can do this by making a new file called `package.json` and populating it with some basic metadata about our project. The most important part is specifying the dependencies that we'll use, as it'll fetch all the libraries for us. Then we'll run `$ npm install` in a Terminal emulator.

```
001{  "name": "rss-creator",
002  "description": "Build RSS feeds from
multiple sources",
003  "version": "0.0.1",
004  "private": true,
005  "dependencies": {
006    "express": "3.x",
007    "libxmljs": "0.6.x",
008    "jade": "0.28.x",
009    "feedparser": "0.11"
010  }
011 }
```

## 02 Require dependencies

Create a file called `app.js`. In this we're going to require the libraries that we've listed as dependencies and initialise a new app with `express()`. We're going to be using Jade as our templating engine; tell our app where to look for files to serve to the client (`public/`); and use `bodyParser()` to allow us to access POST data.

```
001 index.html
002 |-- js
003 +-- timeline.json
```

```
004 +-- app.js
005 |-- timeline
006 |-- css
007 |-- js
008 |-- lib
```

## 03 Render index

We need to serve an index file, which will show a form for the user to input which feeds they want. Node automatically knows to look in the `views` folder so when we tell it to 'render index' it knows that it's looking in the `views` folder for a file called `index.jade`.

```
001 var express = require('express'),
002     libxmljs = require('libxmljs'),
003     feedparser = require('feedparser'),
004     app = express();
005 app.set('view engine', 'jade');
006 app.use(express.static('public'));
007 app.use(express.bodyParser());
008 app.listen(3000);
```

## 04 Jade template

Create a folder called `views` and within it, a new file called `index.jade`. The Jade syntax is very simple: the triple exclamation mark tells the document which DocType to use, and any HTML attributes can be added within parentheses. In my `style.css` I've included Twitter Bootstrap for some default styles.

```
001 !!! 5
002 html
003 head
```

```
004 title RSS Amalgamator
005 link(rel='stylesheet', href='/styles
style.css')
006 body
```

## 05 Create form

Under the `body` tag we'll create the form using the same principles as above. You can run your Node app by running `$ node app`, you can then open up a browser and view your rendered template at `http://localhost:3000/`. We'll be adding more to the form later on.

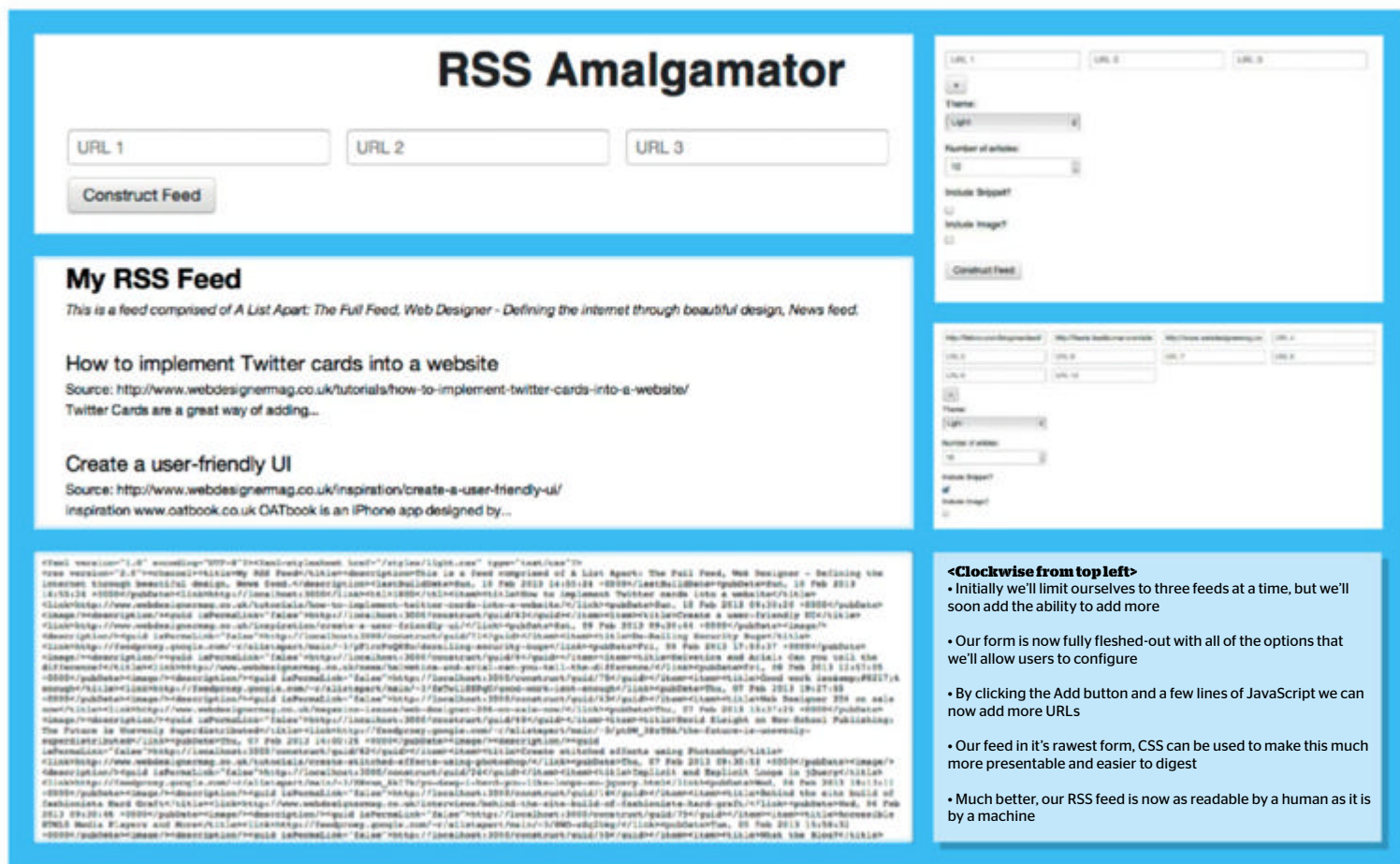
```
001 form(action='/construct', method='post')
002 fieldset
003 input(type='url', placeholder='URL 1',
name='url1', id='url1')
004 input(type='url', placeholder='URL 2',
name='url2', id='url2')
005 button.btn(type='submit') Construct Feed
```

## 06 Set up POST route

We've told our form to POST the data to `/construct`. We can fetch this data by setting up a new route, but unlike the index where we wrote `app.get()` we'll use `app.post()`. I've set up some variables that will be used to help work out what's been done. `feedsProcessed` will tell us how many feeds have been analysed and `numFeeds` will let the application know how many feeds there are to do.

```
001 app.post('/construct', function(req, res) {
002   var amalgamatedFeeds = {
```

# Create a web-based RSS aggregator with Node.js



## <Clockwise from top left>

Initially we'll limit ourselves to three feeds at a time, but we'll soon add the ability to add more

Our form is now fully fleshed-out with all of the options that we'll allow users to configure

By clicking the Add button and a few lines of JavaScript we can now add more URLs

Our feed in it's rawest form, CSS can be used to make this much more presentable and easier to digest

Much better, our RSS feed is now as readable by a human as it is by a machine

```
003 articles: [],
004 sources: []
005 },
006 feedsProcessed = 0,
007 numFeeds = 0;
008 });
```

## 07 Parse URLs

Within our construct callback we're going to iterate through the number of URLs the client has sent us, req.body allows us access to the POST data as an object. We're using a Node library called feedparser which fetches an RSS (or Atom) feed and then tells it to run the analyse function once it's completed parsing the whole feed.

```
001 for (var url in req.body) {
002   if (url.match(/url/) && req.body[url]) {
003     numFeeds += 1;
004     feedparser.parseUrl(req.body[url]).on('complete', analyse);
005   }
006 }
```

## 08 Build article object

The analyse function will push all the articles to the amalgamatedFeeds.articles array. This trims the

article down to just the data that we need. At the end of processing the feed we emit an event that tells our program another feed has been fully processed.

```
001 function analyse(meta, articles)
002 {
003   for (var i = 0; i < req.body.number; i++) {
004     if (articles[i]) {
005       var headline = articles[i].title;
006       var article = {
007         date: articles[i].date,
008         title: headline,
009         link: articles[i].link
010       };
011     }
012     amalgamatedFeeds.articles.push(article);
013   }
014   app.emit('feed-processed');
```

## 09 Arrange by date

This event increments the number of feeds processed, and when this number is the same as the number of feeds we're expecting to have been passed we sort all the articles by date so the newest ones are first and oldest at the bottom (to reverse this, switch the greater-than and less-than comparison operators).

```
001 app.on('feed-processed', function() {
002   feedsProcessed += 1;
003   if (feedsProcessed === numFeeds) {
004     amalgamatedFeeds.articles.sort(function(a, b) {
005       a = new Date(a.date); b = new Date(b.date);
006       return a > b ? -1 : a < b ? 1 : 0;
007     });
008   }
009 });
```

## 10 Expand form

We're going to expand our form and add a touch of JavaScript functionality. As well as a set number of URLs, we'll add an Add button, which will add more URL fields. We'll also allow users to select a light or dark theme and allow them to control the number of articles to fetch per source.

```
001 a.btn#add +
002 fieldset
003 label(for='theme') Theme:
004 select(name='theme')
005   option(value='light') Light
006   option(value='dark') Dark
007 fieldset
```

# Create a web-based RSS aggregator with Node.js

```
008 label(for='number') Number of articles:
009 input(type='number', value='10',
name='number', min='0')
010 label(for='snippet') Include Snippet?
011 input(type='checkbox', name='snippet',
id='snippet')
012 label(for='image') Include Image?
013 input(type='checkbox', name='image',
id='image')
014 button.btn(type='submit') Construct Feed
015 script(src='/js/app.js')
```

## 11 Click handler

The client-side JavaScript is very simple, it adds a click event listener to the Add button, and creates a new input element and adds it to the end of the URL inputs. The trickiest part is working out the index so we can give it a unique number, we use `document.querySelector` to perform a CSS selector query and increase that number by 1.

```
001 document.getElementById('add').
addEventListener('click', function() {
002   var input = document.
createElement('input');
003   var index = document.querySelectorAll('i
nput[type="url"]').length + 1;
004   input.setAttribute('name', 'url' +
index);
005   input.setAttribute('placeholder', 'URL '
+ index);
006   input.setAttribute('type', 'url');
007   document.getElementsByTagName('fieldset')
[0].appendChild(input);
008 });
```

## 12 Add description snippet

Now that the user can select to add a snippet of the article we need to be able to deal with malformed and unexpected HTML entities, as XML is a very strict language. The snippet will be the first ten words of the article, so we check what the tenth word is, get its index, split it, then trim it.

```
001 if (req.body.snippet && articles[i].
description) {
002   var description = articles[i].
description;
003   description = description.replace(/
004   (<[>]+>)/ig, '').replace(/&[^\s]/ig,
005   '').replace(/&/g, '&amp;').replace(/</g, '&lt;');
006   .replace(/>/g, '&gt;').replace(/-/g, '');
007   var nth = description.split(/\s+/)[10 - 1];
008   var to = description.indexOf(nth);
009   article.snippet = description.substr(0,
to).trim() + '...'; }
```

## 13 Add image

The image is simpler than setting the description. If there's an image attached to the article,

add the URL to our article object. Not all articles will have images attached to them (even if there are images in the article). Also we can't display these images as RSS is simply descriptive, not presentational. We can only say where they are.

```
001 if (req.body.image)
002 {
003   if (articles[i].image)
004 {
005   article.image = articles[i].image.url;
006 }
007 }
```

## 14 Build the feed

Now we come to the matter of actually building a new RSS feed from all of those sources; we're using `libxmljs`, which is a wrapper for `LibXML`. We create a new XML document and new nodes that describe what the document is and what it contains.

```
001 function buildFeed(feeds) {
002   var doc = new libxmljs.Document();
003   doc.node('rss').attr({version: '2.0'})
004   .node('channel')
005   .node('title', 'My RSS Feed').parent()
006   .node('description', 'This is a feed
007   comprised of ' + feeds.sources.join(', ') +
008   '.').parent()
009   .node('lastBuildDate', Date().
toString()).parent()
010   .node('pubDate', Date().toString()).
parent()
011   .node('ttl', '1800').parent();
012 }
```

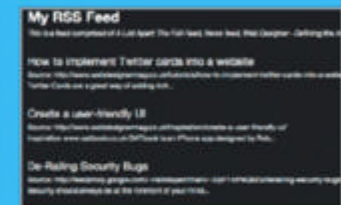
## 15 Build articles

We then loop through each article, adding it as an item node. Going back to `parent()` means that the nodes underneath it will not be children.

```
001 for (var i = 0; i < feeds.articles.length;
i++)
002 {
003   doc.root().get('channel').node('item')
004   .node('title', feeds.articles[i].title).
parent()
005   .node('link', feeds.articles[i].link).
parent()
006   .node('pubDate', feeds.articles[i].date).
parent()
007   .node('image', feeds.articles[i].image).
parent()
008   .node('description', feeds.articles[i].
snippet).parent();
009 }
```

## Correct Content Type

`application/rss+xml` is correct, but it can cause some browsers to create an HTML page. A workaround is to serve it as `application/xml`.



## Prettify your RSS feeds without losing intent

Although RSS is usually only read by an RSS reader, it doesn't hurt to give it a bit of styling for people viewing the feed raw. Just like HTML, RSS can be styled with CSS. Unlike HTML though, browsers don't have any default styles for them (unless they repurpose the feed completely into an HTML page like Firefox, Opera, and Safari). This means you have to declare which elements to display at block-level, but also gives you much flexibility with no need for resets. A full example is contained on the resource disc called `structure.css`.

An example of styling RSS with CSS:

```
001 rss {
002   max-width: 960px;
003   margin: 0 auto;
004   font: 1em/1.5 'Helvetica
005   Neue', sans-serif;
006 }
007 channel > title {
008   font-size: 2em;
009   display: block;
010 }
```

## 16 Send it!

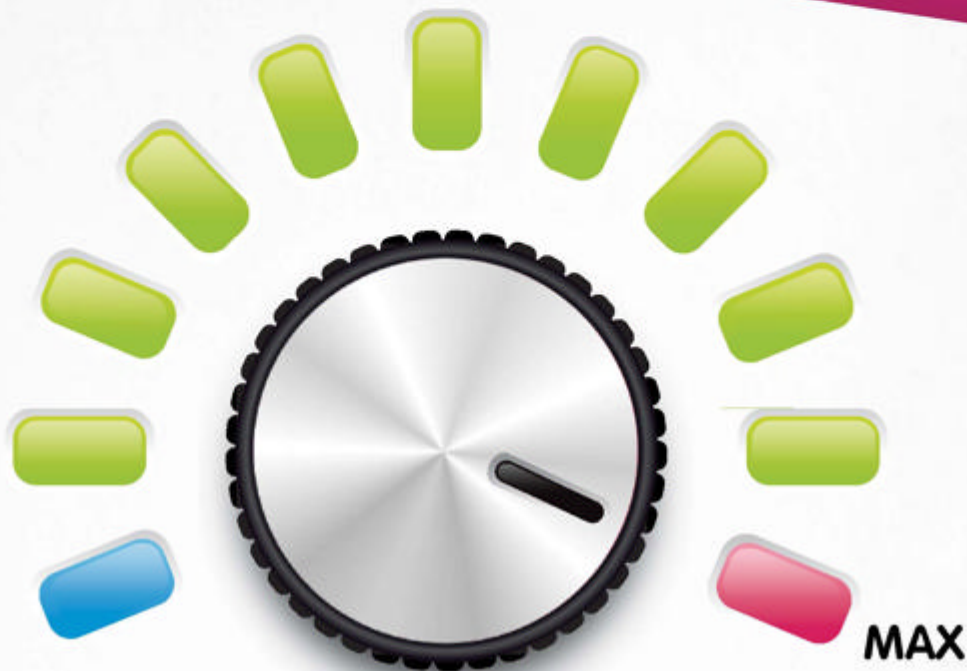
The final part of the exercise is to set the response header as XML, convert the `libxmljs` document to a readable format by calling `toString()`, and adding a stylesheet. Unfortunately, `libxmljs` doesn't allow the creation of new processing instruction nodes (ones that start with `<?`) so this is done after it's converted to a string using `replace()`.

```
001 res.header('Content-Type', 'application/
002   rss+xml');
003 var stylesheet = '<?xml version="1.0"
004   encoding="UTF-8"?><?xml-stylesheet href="/
005   styles/' + req.body.theme + '.css" type="text/
006   css"?>';
007 var rss = doc.toString();
008 rss = rss.replace('<?xml version="1.0"
009   encoding="UTF-8"?>', stylesheet);
010 res.send(rss);
```

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# Create CSS3 badges with the Arctext.js plug-in

CSS3 makes it possible to achieve a lot of effects that previously would have required an image editor

**tools | tech | trends** Dreamweaver, Photoshop  
**expert** Sam Hampton-Smith



One of the most gratifying aspects of CSS3 and the advent of jQuery, is the manner in which it has unleashed the web designer's creativity to come up with novel approaches and solutions to design problems. CSS3 alone

isn't enough to transform the web as we experience it today, but when boundaries are pushed and new ideas are developed, the result can become mainstream with large-scale adoption (as with CSS-only image galleries for example).

In this tutorial we're creating a badge using CSS and a jQuery plug-in to wrap the words along a curved path. This isn't going to become a common technique in itself by any means, but the concepts may get you thinking of fresh ideas and solutions to user interface challenges, developing approaches that could become mainstream tomorrow!

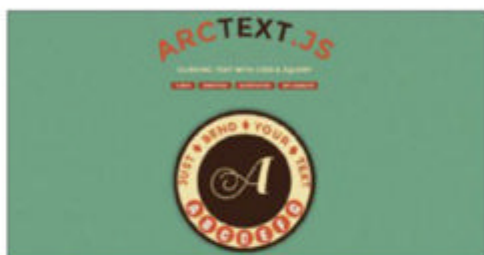
## 01 Create the HTML

Our final badge is going to incorporate CSS, jQuery and some Photoshop work. First we need some simple HTML elements to work with, so start off by creating a badge container `<div>`, and within it place a separate `<div>` for the badge top and the badge bottom, with a final `<div>` for the centre of the badge. You can find our starting HTML on the resource disc.

```
001 <body>
002   <div id="container">
003     <header>
004       <h1 id="headline">Arctext.js</h1>
005       <h2>Curving text with CSS3 & jQuery</h2>
006     </header>
007     <section class="sub" id="sub2">
008       <div id="badge">
009         <h3 id="badgetop">Experience the
010         • power</h3>
011         <h3 id="badgebottom">Of • curved •
012         CSS3 • text</h3>
013         <div id="badgeinner">POLICE</div>
014       </div>
015       <div class="clr"></div>
016     </section>
017   </div>
018 </body>
```

## 02 Download Arctext

To achieve simple text along a path, we're using the Arctext plug-in for jQuery. This works by splitting words in to individual letters and rotating each about a central point, allowing the word to appear to curve around that point. Download the plug-in from [tympanus.net/Development/Arctext](http://tympanus.net/Development/Arctext).



## 03 Make the badge

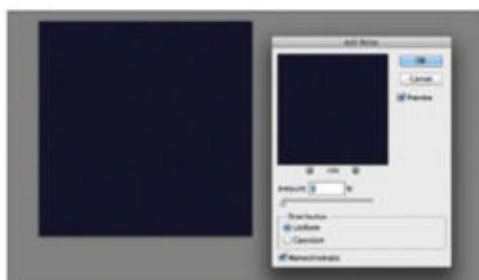
We'll need some basic styles for our page – to help define how the badge will look (although this is also handled by the script for the curve of the text), as well as



the design around the badge. The first thing to do, however, is create your badge graphics, so open Photoshop and create a document that's 400px square.

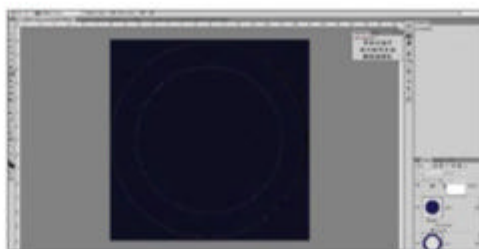
## 04 Circular selections

Fill your canvas with a dark blue colour (we used #1A1A33 but you can find a shade you prefer if you wish), and apply the noise filter by choosing **Filters>Noise>Add Noise**. This will form the basis of the background to the badge, but we need to create the outer ring of the badge, leaving space for the text to slot in. Use the marquee tool to create a circular selection that fills the canvas as close as you can get to the edge.



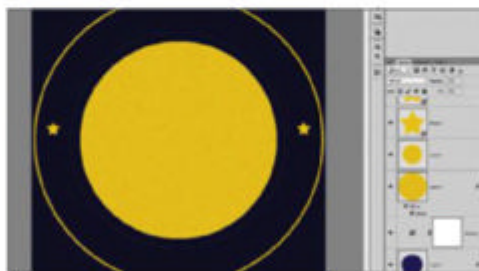
## 05 Layer Styles

With your selection active, create a new layer and fill the selection with any colour. Set the fill value of this layer to 0% in the layers panel, then add a stroke layer style by choosing **Layer>Layer Styles>Stroke**. Set the stroke to be 1px, inside, and white.



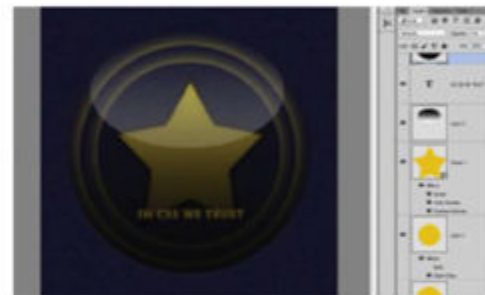
## 06 Add stars

Repeat the process to create a smaller ring inside the first, and then use the shape tool to draw a star in a gold colour. Position the star so that it will appear between the two text phrases. Duplicate it and position the copy on the other side of the canvas.



## 07 The inner badge

Now repeat the same process as in the previous steps, this time creating the inner section of the badge.

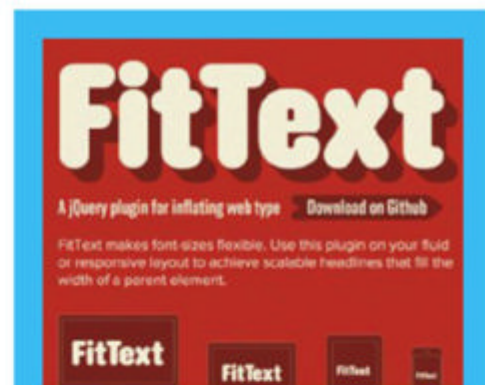


The document should be 260px square instead of 400px, and you can add some ornamentation to suit your own design – we added a gloss effect and a large central star.

## 08 Create basic styles

Now that we've got our graphics ready, it's time to create the basic CSS styles that will position them accordingly. Start with the overall badge by setting it to be 400px in width and height. Add a border-radius value of 200px to force it into a circular shape, and apply the main badge graphic as a background.

```
001 #badge {
002   position: relative;
003   width: 400px;
```



## Use FitText to squeeze words in

Arctext.js has been designed to work with FitText – an open-source project that resizes your text to fit it to a container's width automatically. If you render standard text using Arctext, the radius can't be less than half the word or phrase width when rendered – which may lead to frustration and the styling failing to render as you intended when words are added, or the user resizes the base font size in their browser. You can avoid this by using the optional FitText support to apply automatic text sizing, and this will also have the fringe benefit of ensuring your text makes a perfect 180 degree arc.

Get more information, samples and demonstrations at the FitText project homepage, which can be found at [fittextjs.com](http://fittextjs.com), and view the samples for Arctext to see how it integrates.

## Create CSS3 badges with the Arctext.js plug-in

```
004 height: 400px;
005 background: #1a1a66 url(badgebg.jpg)
no-repeat top left;
006 border-radius: 200px;
007 color: #fff;
008 text-align: center;
009 }
```

**09 Create the inner badge**

Using a similar approach, position and set the inner badge area using a width and height of 260px and a border-radius of half that - 130px - to achieve a circular object. Apply the badge centre graphic as a background, and use absolute positioning with margins to ensure the centre appears in the exact middle of the main badge.

```
001 #badgeinner {
002 position: absolute;
003 top: 50%;
004 left: 50%;
005 margin-left: -130px;
006 margin-top: -130px;
007 background: #1a1a33 url(badgeinner.jpg)
no-repeat center center;
008 border-radius: 130px;
009 width: 260px;
010 height: 260px;
011 }
```

**10 Get jQuery ready**

We're ready to try curving our text! Start off by downloading and including the jQuery library and the Arctext plug-in in the <head> section of your page, then create a set of <script> tags and the standard \$(document).ready() function ready for our calls to the Arctext plug-in methods. Note that jQuery 1.9 and above no longer supports IE versions older than v9.

```
001 <script type="text/JavaScript"
src="scripts/jquery.js"></script>
002 <script type="text/JavaScript"
src="scripts/jquery.ArcText.js"></script>
003 <script type="text/JavaScript">
004
005 $(document).ready(function(){
006 });
007 </script>
```

**11 Make it curve!**

ArcText works by calling the ArcText method on a jQuery selection, and passing in a radius you'd like to curve around. Additionally, you can specify the type of curve you'd like to apply: 1 for a curve up, and -1 for a curve down. Add the code shown to curve the top and bottom badge text.

```
001 <script type="text/JavaScript"
src="scripts/jquery.js"></script>
002 <script type="text/JavaScript"
src="scripts/jquery.ArcText.js"></script>
```

```
003 <script type="text/JavaScript">
004
005 $(document).ready(function(){
006 $("#badgetop").ArcText({radius: 170,
dir: 1});
007 $("#badgebottom").ArcText({radius:
170, dir: -1});
008 });
009 </script>
```

**12 Position with CSS**

If you test your page you'll notice that the curves don't line up with the badge very well. That's no problem though, we can fix this using CSS to position the top and bottom text independently of each other. Add the code shown below to your stylesheet to put this in place, and then run a test again to see the text in the correct place on your badge.

```
001 #badgetop {
002 width: 440px;
003 position: absolute;
004 top: -10px;
005 left: -20px;
006 text-align: center;
007 color: #dec705;
008 }
009
010 #badgebottom {
011 width: 440px;
012 position: absolute;
013 bottom: -10px;
014 left: -20px;
015 text-align: center;
016 color: #c4a704;
017 }
```

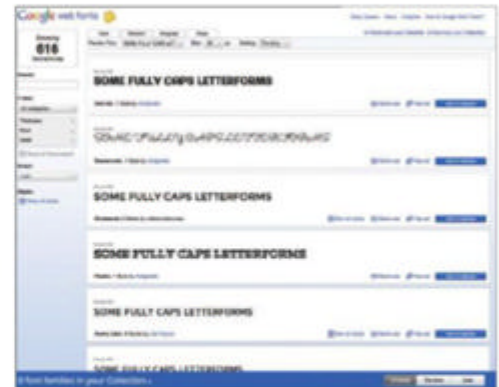
**13 Animated centre**

We can also apply animations using ArcText. Start by applying the same call to ArcText as in the previous step, then use the set method to add an animation to the text. We'll do this to the centre of our badge by adding the code shown below immediately beneath our existing calls to the ArcText() method.

```
001 $("#badgeinner").ArcText({radius:-
1,dir:1});
002 $("#badgeinner").ArcText('set',{
003 radius: 200,
004 dir: 1,
005 animation: {
006 speed: 5000
007 }
008 });
```

**14 Grab a web font**

Our text is looking good, but it would look better if we used a more appropriate font to suit our subject matter. We can grab a suitable font from the Google Web Fonts service - [www.google.com/webfonts](http://www.google.com/webfonts).



Choose one you like the look of and follow the instructions to install it on your page.

**15 Animate the badge**

Although we've already got an animation, it would be nice to make more of the curved text. We'll create a CSS animation and apply it to our badge to maximize the effect! Start by adding the code shown to create two different animations (our code is shown for WebKit browsers, but you can also create Mozilla, IE and Opera versions to suit).

```
001 @-webkit-keyframes rotatecw {
002 0% {
003 -webkit-transform: rotate(0deg);
004 }
005 100% {
006 -webkit-transform: rotate(359deg);
007 }
008 }
009
010 @-webkit-keyframes rotateccw {
011 0% {
012 -webkit-transform: rotate(0deg);
013 }
014 100% {
015 -webkit-transform: rotate(-359deg);
016 }
017 }
```

**16 Apply the animation**

Now we've got the animations set up, we can apply them to our badge with a simple line of CSS. We've added a rotation to the badge overall, and then the second animation to the inner badge. The two rotate in opposite directions to give the impression that only the outer ring of the badge is animated.

```
001 #badge {
002 font-size: 1.5em;
003 position: relative;
004 width: 360px;
005 height: 360px;
006 padding: 20px;
007 background: #1a1a66 url(badgebg.jpg)
no-repeat top left;
008 border-radius: 200px;
```

```

009 color: #fff;
010 text-align: center;
011 margin: 50px;
012 border: 4px solid #1a1a33;
013 box-shadow: 0px 0px 10px #000;
014 text-transform: uppercase;
015 -webkit-animation: rotatecw 10s linear;
016 }
017
018 #badgeinner {
019 position: absolute;
020 top: 50%;
021 left: 50%;
022 margin-left: -130px;
023 margin-top: -130px;
024 background: #1a1a33 url(badgeinner.jpg)
no-repeat center center;
025 box-shadow: 0px 0px 10px #000;
026 border-radius: 130px;
027 width: 260px;
028 height: 260px;
029 line-height: 120px;
030 font-size: 2em;
031 -webkit-animation: rotateccw 10s linear;
032 text-shadow: 0px 0px 10px #000;
033 }

```

17

### Add a final polish

We can complete our design by creating a page background in Photoshop and adding some additional styling to our text to make it appear all upper-case. Add the final styles shown, and then test in your browser to make sure the completed design works as it should. Tweak animation timings to suit your own preferences.

```

001 h1, h2 {
002 text-align: center;
003 text-transform: uppercase;
004 font-weight: normal;
005 margin: 0;
006 padding: 0;
007 }
008
009 h1 {
010 font-size: 4.5em;
011 color: #f4d006;
012 text-shadow: 0px 0px 10px #000;
013 }
014
015
016 #container {
017 position: relative;
018 width: 500px;
019 margin: auto;
020 font-size: 1.4em;
021 }
022
023 #badge h3 {
024 font-weight: normal;
025 }

```

## Code library Style your badge

Our badge uses a combination of CSS, jQuery and Photoshop-generated PNG files to create a final effect that works on the page

We set up the outer bounds of the badge by using a border-radius value of exactly half the badge width and height. This results in a circular shape instead of a square.

The inner elements are positioned absolutely - the words across the top to the top of the container, the bottom at the bottom, and the central text is in the middle!

We use CSS animations to rotate the badge entirely, but at the same time we rotate the centre of the badge in a counter-direction to make it appear that only the outer ring is rotating.

```

001 <style>
002 #badge {
003 font-size: 1.5em;
004 position: relative;
005 width: 360px;
006 height: 360px;
007 padding: 20px;
008 background: #1a1a66 url(badgebg.jpg)
no-repeat top left;
009 border-radius: 200px;
010 color: #fff;
011 text-align: center;
012 margin: 50px;
013 border: 4px solid #1a1a33;
014 box-shadow: 0px 0px 10px #000;
015 text-transform: uppercase;
016 -webkit-animation: rotatecw 10s linear;
017 }
018
019 #badgeinner {
020 position: absolute;
021 top: 50%;
022 left: 50%;
023 margin-left: -130px;
024 margin-top: -130px;
025 background: #1a1a33 url(badgeinner.jpg)
no-repeat center center;
026 box-shadow: 0px 0px 10px #000;
027 border-radius: 130px;
028 width: 260px;
029 height: 260px;
030 line-height: 120px;
031 font-size: 2em;
032 -webkit-animation: rotateccw 10s linear;
033 text-shadow: 0px 0px 10px #000;
034 }
035
036 @-webkit-keyframes rotatecw {
037 0% {
038 -webkit-transform: rotate(0deg);
039 }
040 100% {
041 -webkit-transform: rotate(359deg);
042 }
043 }
044 @-webkit-keyframes rotateccw {
045 0% {
046 -webkit-transform: rotate(0deg);
047 }
048 100% {
049 -webkit-transform: rotate(-359deg);
050 }
051 }
052 }
053 </style>

```

## Google Web Fonts

This effect works particularly well if you combine it with Web Fonts, but be aware of the slight time lag that fonts need to render as they have to download first!

# web workshop

## Build a side-scrolling page with navigation

inspiration [www.booreiland.nl](http://www.booreiland.nl)



### horizontal and vertical scrolling pages are a very popular concept.

Users can embrace all the content with a host of links to get to further pages. On a base level there are pages that simply go vertically or horizontally, but these simple versions are instigated by the user. To ease interaction a page can automatically move to the next element at a

predetermined interval. Alternatively, a navigation system can be introduced to allow the user to take greater control of the site. The added bonus of introducing a menu is that users do not need to wait for a page to automatically move. The user can interact with the menu and make the decision on where they want to go instead of the decision being made for them.

### Rollover effects

Rollover effects are used in abundance on [Booreiland.nl](http://Booreiland.nl).

There are plenty of background colour changes (see technique), but it is the addition of neat touches that make the effect interesting. Subtle borders, font colour changes and image resizing take the hover effects beyond the average.

1

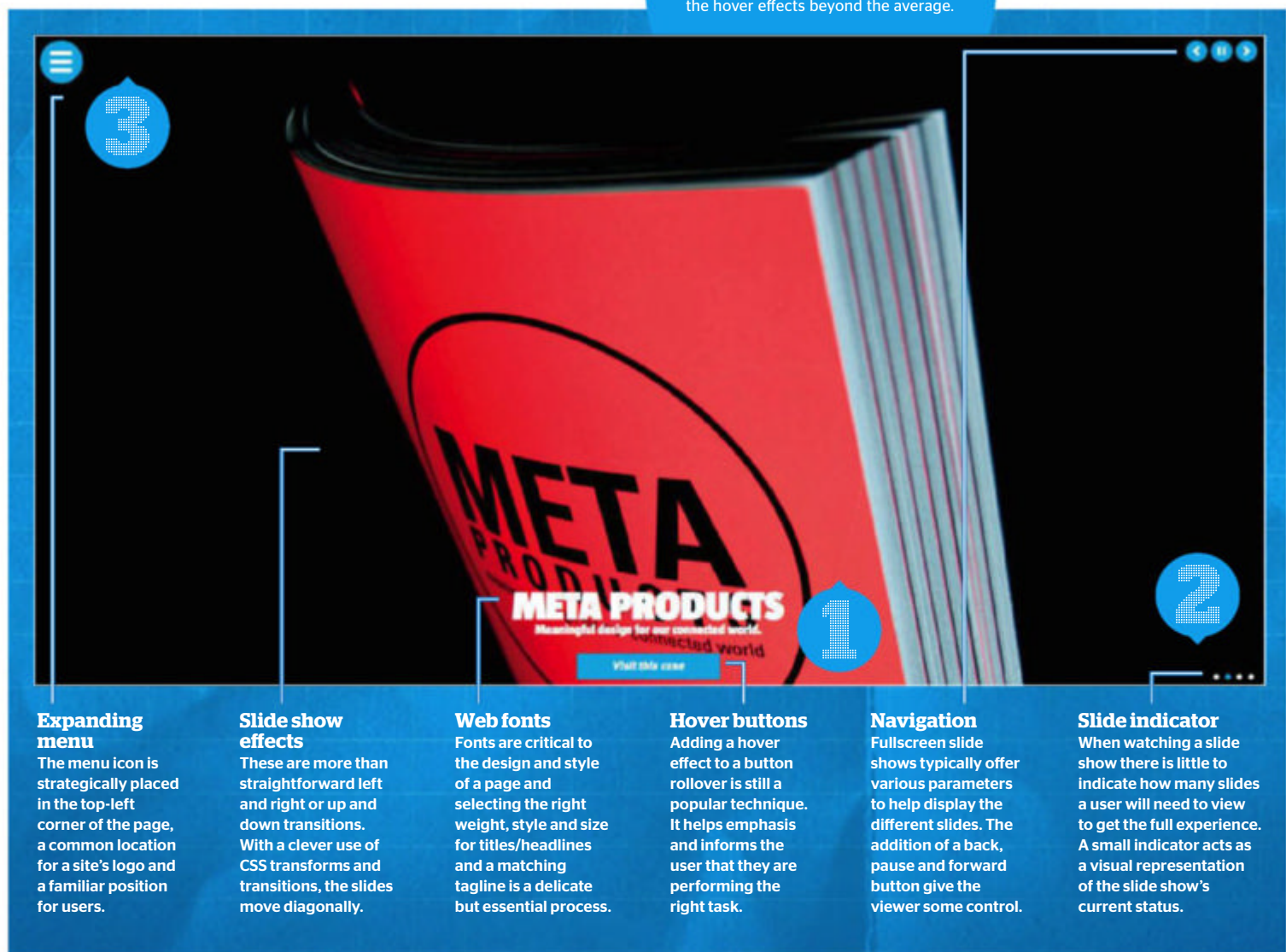
## INSPIRATION

### Chunky text

An extended font family gives a designer far greater scope to work with. The more weights and styles on offer, the more creative a designer can be with a single font. Sans-serif fonts are currently very popular, as they look good and are legible on all screens. Adding a little weight to a font gives it more presence and body and can add more impact to a headline.

Modifying the letter-spacing and word-spacing can further add to the individuality of a font and make it more unique than its standard counterparts. However,

designers need to be very careful not to overdo the letter-spacing and cause readability issues.



### Expanding menu

The menu icon is strategically placed in the top-left corner of the page, a common location for a site's logo and a familiar position for users.

### Slide show effects

These are more than straightforward left and right or up and down transitions. With a clever use of CSS transforms and transitions, the slides move diagonally.

### Web fonts

Fonts are critical to the design and style of a page and selecting the right weight, style and size for titles/headlines and a matching tagline is a delicate but essential process.

### Hover buttons

Adding a hover effect to a button rollover is still a popular technique. It helps emphasis and informs the user that they are performing the right task.

### Navigation

Fullscreen slide shows typically offer various parameters to help display the different slides. The addition of a back, pause and forward button give the viewer some control.

### Slide indicator

When watching a slide show there is little to indicate how many slides a user will need to view to get the full experience. A small indicator acts as a visual representation of the slide show's current status.



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

## The definition of high-resolution

"For our new Booreiland site we decided to really focus on the content. By putting the complete menu behind the actual site, we basically had a full canvas at our disposal. It almost feels like we have created an app, and we made sure it works fluently on iPads – what's more it looks super crisp on Retina display and high-definition screens."

**Wimer Hazenberg, creative director at Booreiland**

2

## TECHNIQUE Create a side-scrolling site

### 01 Get code

Vertical or horizontal scrolling sites are currently very popular. To create the effect they involve a touch of jQuery. To save on development time, there is a great example that can be found at [bit.ly/bD57s4](http://bit.ly/bD57s4). Download the source code and add it to your desktop. Open the index file in the editor of choice (we are using Dreamweaver, but you can use whatever you choose).

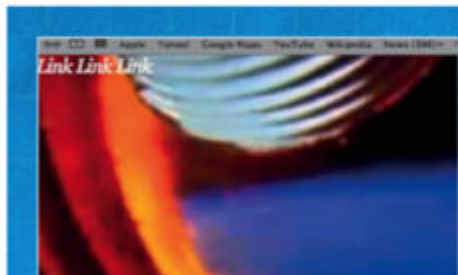
### 02 Sort sections

To customise the code to suit, the first thing to do is strip out the reference code in the first div tag. The code is broken down into main sections, but more can be added. Each section is styled via a class and is assigned an id to make each section unique. In our example we are going to create to same size sections to hold big images. Leave in the link list.

```
001 <div class="section" id="section1">
002 <ul class="nav">
003 XXXXXXXXXXXXXXXXXXXX
004 <li>Link</li>
005 <li><a href="#section2">Link</a></li>
006 <li><a href="#section3">Link</a></li>
007 </ul>
008 </div>
```

### 03 Add sections

The basis of the site is the sections, so simply copy and paste the code in the previous step and add as many times as required, eg three sections, repeat three times. Remember each section needs a unique id



#### Fixed links

The navigation links appear in each section. As an alternative the links can be added to a new div tag and placed in a fixed position. This could be at the top-left or top-right of the page.

so do not forget to change. Also, each section needs the links amended. Eg, section 2 will leave its link blank, while the other links go to the right section.

```
001 <div class="section" id="section2">
002 <ul class="nav">
003 <li><a href="#section1">Link</a></li>
004 <li>Link</li>
005 <li><a href="#section3">Link</a></li>
006 </ul>
007 </div>
```

### 04 Resize to suit

Now open style.css. By default, the body width is set to 12,000px, and each section is 4,000px. This is a third of the body width. If four equal sections are required, divide by four (ie 3,000px). The dimensions are open to interpretation. Change the body width and section sizes to suit. Just make sure that section sizes add up to the overall body width.

```
001 .section{
002 margin:0px;
003 bottom:0px;
004 width:4000px;
005 float:left;
006 height:100%;
007 }
```

### 05 Get creative

With the section size now determined, it is time for us to populate each section. Add an image directly after the opening div; class="section" will push the links to the bottom of the page. Alternatively, the image can be placed at the bottom to put the links at the top. Restyle the links to fit in with the style of the page via the stylesheet.

```
001 <div class="section" id="section1">
002 <ul class="nav">
003 <li>Link</li>
004 <li><a href="#section2">Link</a></li>
005 <li><a href="#section3">Link</a></li>
006 </ul>
007 
008 </div>
```

3

## TECHNIQUE

### Add a hover effect

Hover effects are typically found on buttons or similar elements to help emphasise a link. The same principle can be added to standard div tags so that the whole element will change colour when the hover state is called into action.



```
001 <div class="productbox">
002 HTML GOES HERE
003 </div>
004 <!-- //productbox-->
```

### 01 Add a div tag

The first step is to create a div tag that will contain the necessary information. Typically, this will be a repeated element so ensure you make it a class. Add the following HTML to create the div tag

```
001 .productbox {
002 float: left;
003 height: 150px;
004 width: 500px;
005 background-color: #006699;
006 }
```

### 02 Style div tag

In the head of the page, or style sheet, add the properties and values, ie height, width, to style the element in the previous step. Make sure to add a background colour - background-color: #006699;

```
001 .productbox:hover
002 {
003 background-color: #9C3;
004 }
```

### Hover effect

To create the hover effect a new class needs to be created. This will adopt the name of the div tag, ie productbox with the hover element added on the end. To complete the hover effect, add the alternative background colour.

# web workshop

## Infographic web styles

inspiration [sfheat.com/latest](http://sfheat.com/latest)

**I**n case you aren't familiar with this subject, an infographic is a visual representation of data that simplifies complex information quickly and clearly. 'But how can that help me with my web design?' you ask.

Well, for one thing you can entertain your viewers by presenting interesting facts and statistics about your business. You can also use your infographic to demonstrate the depth of your industry knowledge to prospective clients. Many people prefer reading a webpage while being visually stimulated – it's hard to look away without studying an infographic more closely.

One-page and scrolling website formats are the most compelling ways to present your designs. You'll be able to create a more enjoyable viewing experience, as readers of your site digest a lot of information from a relatively compact space. Recent technologies also determine the styles associated with infographics – responsive design certainly, and portable device technology (namely Apple iOS) most likely, which impedes the use of animation and rollovers, enforcing coherent point and click (or tap) 2D design.

In most cases bold becomes best. Designers will apply discernible shapes and structured layouts to enhance the clarity of the illustrated info. This means the use of plush icons, dials and charts, complemented with the application of vivid colour combinations – no more than four or five at a time. Gradients further enhance the luscious looks of these illustrated elements. In this Web Workshop we show you how Photoshop tool and option sets can help you build these infographic assets.



<comment>  
What our experts think of the site

### Animated assets

"Simple animations can improve your infographic design further, spinning dials or pop-up elements, for example. Of course, iOS prohibits the use of rollovers. Nevertheless the web finds a way. Making GIF animation is one way; find out more at [www.alterplay.com](http://www.alterplay.com), or you can also use the latest Adobe Edge software ([html.adobe.com/edge/animate](http://html.adobe.com/edge/animate))"

Adam Smith

### Sourcing your stats

Infographics are fuelled by data, which can be hard to come by. A useful hint would be not to rely solely on user-generated content websites, such as Wikipedia. These are, however, a great jump-off point. Social media sites are a ho bed for discussion and opinion. A Facebook poll can easily help populate data for more topical examples.

### Font size and weight

Negative space is allowed to sit, with varying font sizes and weights adding to visual diversity without distracting from the content.

### Colour combination

A five colour combination is applied in this infographic to create visual harmony through a systematic style.

### Colour spectrums

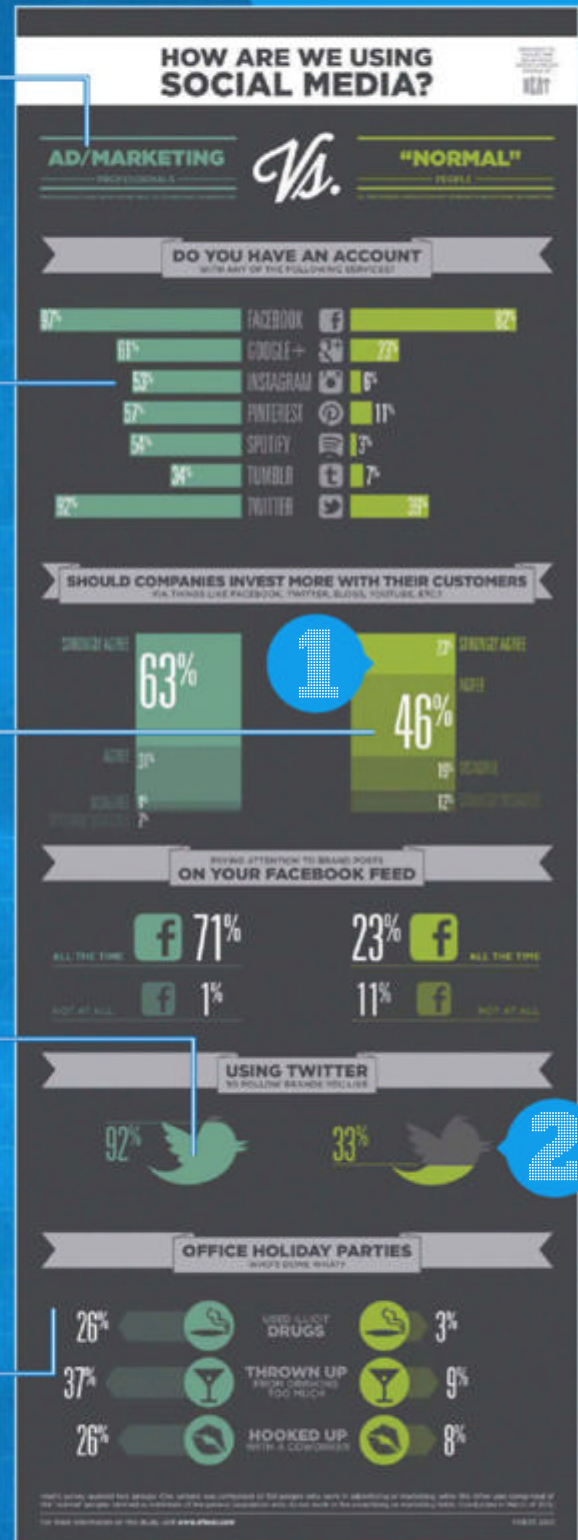
The colour spectrum effect is used vertically and is a great way to visually represent percentages in a cognitive fashion.

### Plush icons

Icons and logos may only be two-dimensional, but use conspicuous shapes to create combined with vivid colours to capture interest.

### Scroll page

This site prompts you to scroll vertically, in turn indicating this as a means to discover more information, thus creating a more interactive response.

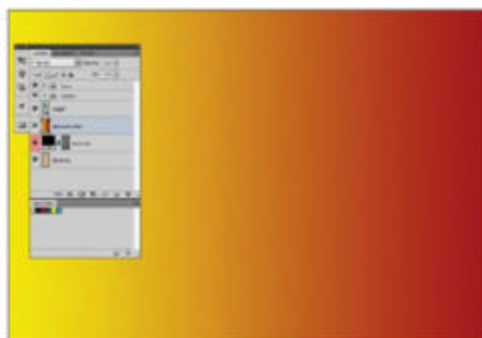


1

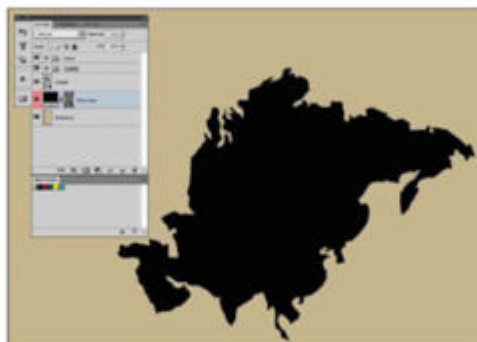
**TECHNIQUE****Create a spectrum coloured graph**

A luxuriant set of coloured charts and illustrations deliver connections to your viewers in a much better way than decidedly dry tables and figures can – it makes sense that visual appeal can aid the transition of information. Visitors will spend time looking back and forth over an infographic full of these elements.

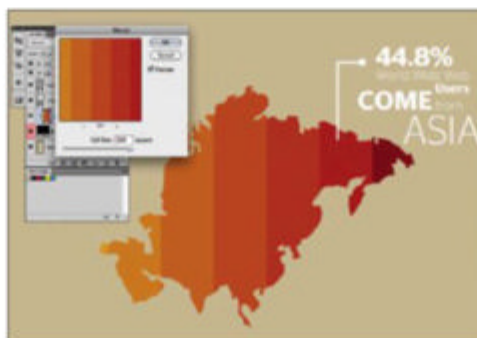
Those of you who use Photoshop can further enhance some luscious transitional imagery by applying a gradient. Use this to create a cold to hot (or vice versa) colour spectrum, then combine it with some simple filters to create a correlative looking chart. This can be achieved in three quick and easy steps.

**02 Horizontal gradient**

Create a hot to cold/light to dark gradient style, select the Gradient tool, and make sure this is set to Linear Gradient style. Create a new layer, hold Shift and apply your gradient horizontally.

**01 Draw your element**

We begin by selecting a continent map relating to our data, which we have drawn using the Pen shape tool. This means that your shape can be resized easily at any time later on.

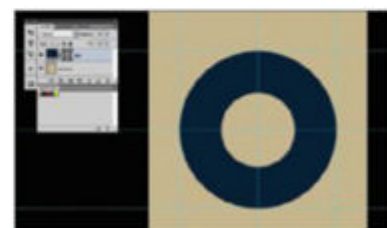
**03 Mosaic filter**

Apply a Clipping Mask to your gradient layer and make it more chart-like by applying Filter>Pixelate>Mosaic. Set Cell Size to a size between 100 and 200 squares. Move your clipped gradient layer to reposition.

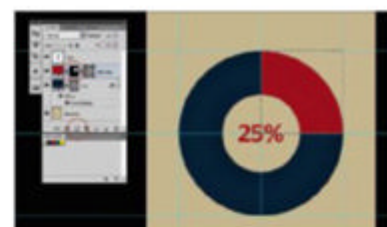
3

**TECHNIQUE****Illustrate a dial chart**

It is easier to create illustrated dial charts with CS6's vector shape functionality and integrated Stroke settings, but here we show you how to do it using CS5's Shape tool options and Guides.

**01 Base dial element**

Select the Ellipse tool, hold Shift and create a perfect circle in the centre. Place guides to mark the centre. Click the attached Vector mask thumbnail and activate Exclude overlapping shape areas. Hold Shift+Alt and drag from the centre of your shape.

**02 Represent percentages**

Visualise your percentage using a coloured section. Create this by duplicating your original shape and selecting an area according to your percentage amount, using the Polygonal Lasso tool. Add a Layer Mask.

**03 Couple with icons**

Repeat to create new sections and represent multiple percentage values. Create an illustrated key graph with plush icons to support data and enhance interest with the Pen Shape tool and Path area options.

2

**INSPIRATION****Popular infographic elements**

So, what visual ingredients make up the best infographics? Specific themes will always have a bearing on the look of your elements, but a few formulas do stand out from the bunch.


The circular diagram is one. It's great at presenting percentages in a far more visually stimulating way. Bar charts are also common, normally coupled with colour spectrums to represent value amounts. Pictorial elements feature regularly, allowing readers to readily identify with themes. Sans-serif styles lead the race as the most popular.





# DARK PATTERNS

Dark Patterns are questionable user-interface techniques that some web designers employ to nudge or subtly trick users into doing things. They're known to boost conversion rates, but where does the slippery slope end? Harry Brignull investigates...



**B**ack in the Seventies, cognitive psychologists started to realise that all humans tend to make the same categories of mistakes, which they named cognitive biases. They had effectively found a set of mental Achilles heels that we're all prone to.

It became obvious that this discovery could be applied in different ways. We could use this knowledge for the benefit of mankind, to help avoid things like industrial accidents and catastrophic errors in judgement – or we could use it as a weapon of deception, to get one-up on our fellow humans.

In about 2005, cognitive biases became a hot topic in web design. What's interesting is the way we as an industry reacted to this knowledge. Sadly, we didn't turn the lens of analysis on ourselves – we didn't say 'hey, what does this mean about the way we make design decisions?' or 'How can we prevent these biases from tripping up our users?'. A lot of web designers decided to go for the dark side and asked 'how can we exploit these biases? How can we use them to really push our conversion rates up?'

Like casino architects who install bright lighting and hide clocks, or advertising executives who sell products on half-truths, a number of us have decided to apply our new-found understanding of psychology to create subtly deceptive user interfaces that nudge or trick users into doing things – using techniques now known as dark patterns. Whether it's low cost airlines that sneak travel insurance into your basket, or eCommerce

sites that sign you up for a monthly membership through hidden small-print, these tricks have started to become increasingly common. As an industry, we desperately need to take a stance – which of these patterns are acceptable, which are borderline and which should be outright banned?

## HOW DO DARK PATTERNS WORK?

The interesting thing about dark patterns is that they are designed from the exact same corpus of knowledge that we use to enhance usability. This means that if you're a good web designer capable of creating great user experiences, you probably already have the know-how to create some very sinister dark patterns. All you need to do is take the usability principles you know and then invert them, as shown in the table below.



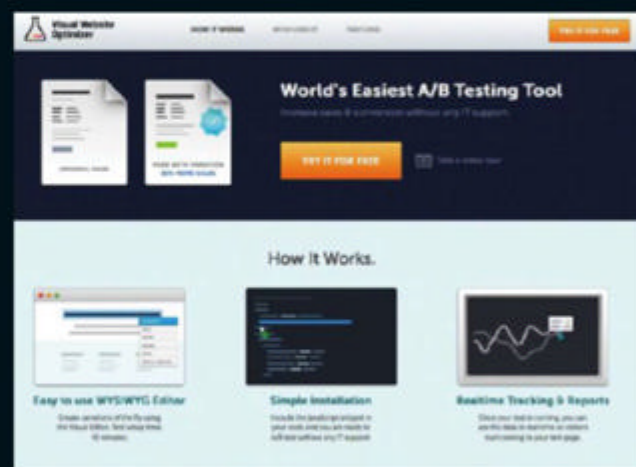
A Journey Map will reveal the exact points where 'dark patterns' will be integrated into a site

## WHY DO BUSINESSES USE DARK PATTERNS?

Dark patterns typically boil down to a judgement about ethics. There is always going to be a tension between what customers want – low prices and outstanding service – and what businesses want – namely maximizing profit. It's no surprise that businesses want to experiment with what's possible. After all, they often find combinations that customers find acceptable. For example, it's slightly manipulative that supermarkets put bread and milk at the back of the store to tempt people to walk past the rest of their stock but people don't tend to mind. IKEA takes this principle even further, and turns the entire store into a maze – customers might moan a little, but they keep flocking back. Similarly, nightclubs often allow the queues outside to run around the block even when they're not yet busy inside, just to attract more passers-by. People seem to accept that it is something they need to do to stay in business, and it's just the cost of being a customer with them.

The real allure to online businesses is that dark patterns push conversion rates up. They tend to win in A/B tests and, as far as the analytics data goes, they appear to be a good thing. In reality though, there are many things that analytics data doesn't capture. Whenever a customer notices that they've been caught out by a dark pattern, they'll develop a negative opinion about the personality of the brand. If that brand continues to try to take advantage of the customer, they'll begin to hate them and they'll spread that opinion among their friends. Even if the company has no ethical qualms and doesn't mind being perceived as a bit low end, there's still a very real risk that customers will migrate to a less frustrating competitor. After all, this is the web – competitors are only one click away.

	RESPECTFUL	EXPLOITATIVE
<b>MATCH BETWEEN SYSTEM AND THE REAL WORLD</b>	The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.	Instead of showing key status information, hide it out of sight. Do this with unclear labels, obtuse navigation and untimely messages.
<b>VISIBILITY OF SYSTEM STATUS</b>	The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms.	Instead of 'speaking the user's language' the system should use wording that appears to say one thing while really saying another.
<b>USER CONTROL AND FREEDOM</b>	Users often choose system functions by mistake and will need a clearly marked 'emergency exit' to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.	Take advantage of your users' natural capacity to make mistakes to have them accidentally complete actions that are beneficial to your business objectives, like agreeing to hand over information unawares.



A/B testing compares two similar pages' tools to gauge a user's reaction. Sites with dark patterns typically score well but don't take into account negative human reaction

## TRICK QUESTIONS

Trick questions are one of the most common types of

dark pattern, often seen in the marketing communication options of registration forms.

Trick questions rely on the fact that people usually scan web pages rather than reading them word-for-word like a novel. For example, since checkboxes are usually taken to have a positive sentiment, some sites use double negatives to flummox users and make them believe they are opting out when they are actually opting in to.

A tick usually means yes – except when combined with a negative statement, tripping up many users.

Another similar deceptive trick is to show a series of marketing options but to alternate the sentiment, so that ticking the checkbox causes an opt-in on one line, and causes an opt-out on another. Users have to really keep on their toes to avoid being duped. Here users are likely to be confused by the way the sentiment is switched on different lines.

Trick questions are known to boost conversions, so they look impressive on your analytics dashboard, but they lower the quality of the lists generated. What's more, they can end up really irritating users, defining the personality of your brand in their minds as one that's quite annoying. Arguably, if you don't mind being perceived as a seedy 'price-'em cheap, stack-'em high' type of business then this is just about okay, but on the other hand, users only have a limited amount of patience and your competitor isn't far away.



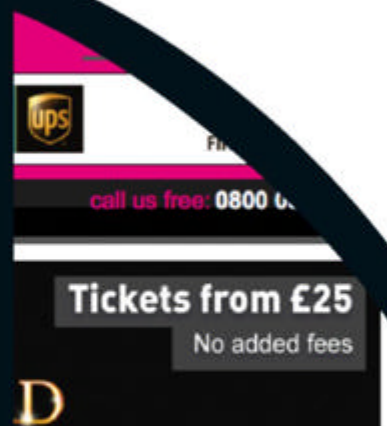
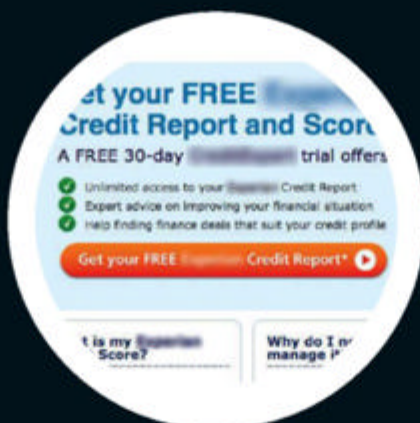
## FORCED CONTINUITY

This is a particularly devious trick that involves getting users to sign up to a paid monthly membership when they think they are only buying a one-off product.

One large fashion retailer in the USA has recently had a class action lawsuit raised against them for using this pattern. Their implementation of the trick involved sticking a clause in their terms and conditions which stated that buying a single item would automatically enrol customers into their VIP membership program.

On its own that sounds benign enough, until the customer checks their credit card to find a repeating monthly charge of a certain amount – a sum small enough to go unnoticed for quite some time. Very cheeky indeed, and most likely illegal in the UK.

Small print can be used to hide all sorts of tricky clauses, but surely this is going too far?



## BAIT AND SWITCH

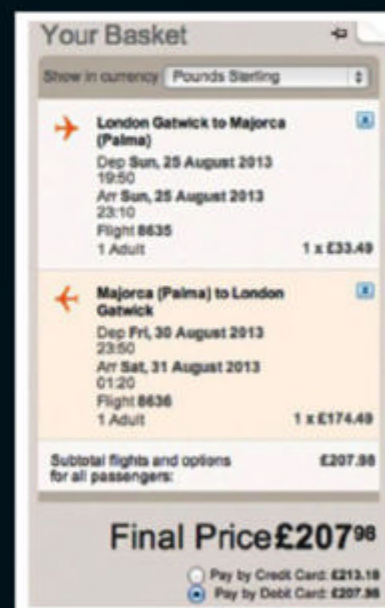
This involves enticing users in with an attractive sales pitch, only to reveal a far less desirable outcome. Bait and switch is one of the oldest tricks in the book, and it even features in fairy tales like Rumpelstiltskin. In spite of this familiarity, it's still an effective trick on the web. One popular implementation used on travel sites is to hook the user in on a low price, cleverly labelled with the prefix 'From...' then showing a high price when they select their specific dates and configuration at a later stage. An even more worrying variant of this is allegedly being tested by some unscrupulous online retailers (a type of 'dynamic pricing') whereby the cost of tickets or other time-sensitive items are automatically increased if a user returns to a product detail page after viewing it a few days previously – not because of increased scarcity, but simply because of the user's behaviour pattern.

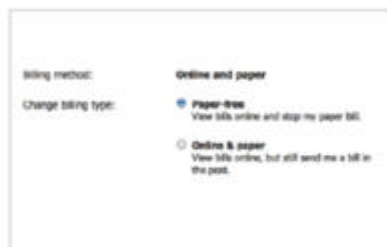
## SNEAK INTO BASKET

This pattern was popularised by low-cost airlines who have a habit of sneaking insurance into users' baskets when they're trying to buy flights online.

Most eCommerce websites show an upsell page prior in their checkout flow, serving the purpose of enticing you into buying extras and add-ons. For airlines, travel insurance has one of the best profit margins among the upsells, so some sites subtly preselect this option, requiring the user to take action to opt out, rather than to opt in. This additional 'cognitive friction' is enough to push sales, and many users don't even realise they've bought insurance until it's too late. Often when they do realise, the price point is so low (usually around £10) that they feel it's barely worth the effort to call up and jump through a load of hoops to cancel it.

If a user doesn't stop to read the details here, they'll end up buying the insurance upsell without even realising.



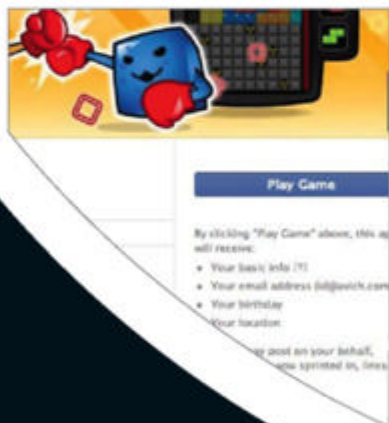


## FARAWAY BILL

If an organisation hides a user's bills, then it's easy for them to overspend. This is a grey area, and it's not clear if it is a dark pattern in all cases. Under the premise of green initiatives, many organisations have switched to eBilling, where they need to log in, navigate to the appropriate area, and click through a number of menu items. This is unlike the days of paper bills where all you had to do was open an envelope. Since many billing systems run on legacy software that is hard to update, some might argue that this is just bad design rather than actively nefarious. Either way, more effort needs to be made to communicate with end users.

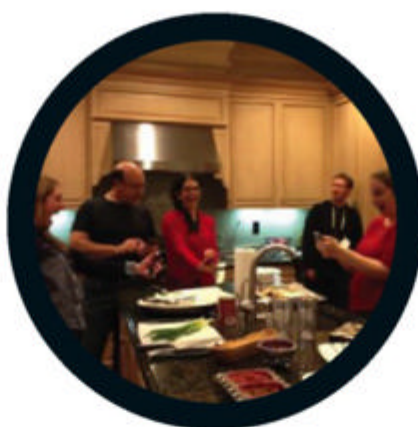
## FRIEND SPAM

Apps and games ask for permission to access to your account. Some exploit this and secretly publish content as if it was written by you. One person gives an app access to their account, it then publishes an endorsement that appears to be written by the user. Following this, a few of their friends see the post, trust it as a reliable source, they all register, and the app publishes more endorsements. This permissions dialogue is asking a user to allow a game to post endorsements. But how can a user endorse something they've yet to see?



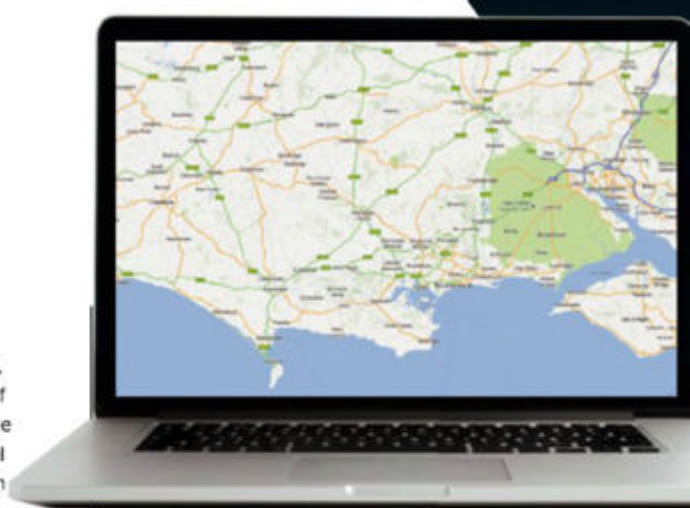
## PRIVACY ZUCKERING

When social networks first appeared, many consumers didn't realise that 'if you're not paying for the product, you are the product'. It's in a social network's commercial interests to collect your personal information and expose it in ways that are commercially beneficial, such as behavioural ad targeting, using your face to endorse products, or encouraging you to post about brands. However, they need your legal permission to do this, so how do they get around it? Funnily enough, they don't have a large button that says 'sell my personal details to advertisers' - they'd go out of business. Instead they obfuscate their user interface in such a way that hides your settings and makes it hard work for you to get the exact level of privacy that you want. Of course there's nothing wrong with a business model that relies on targeted advertising, but it needs to be to be transparent and honest if it's going to earn the trust and respect of their user-base.



## ROACH MOTEL

This is when a site has fantastic usability in registration, but is difficult to leave. Most websites have a lot of attention focused on perfecting their sign-up process, because this is where membership revenue comes from. However, churn is always a problem: a business needs to keep the inflow higher than the outflow or it will die. The best solution is to provide a good service, tempting users to stay of their own accord. However, the dark pattern approach is to try to trap them, to generate more revenue from recurring membership fees. For example, instead of having a Cancel Account button, the business could require the user to ring a call centre. This is more effort, so the user might delay, generating more revenue. When they do finally call, the call centre operative can try to convince them to stay, offering a last-ditch discount or freebie.



Mac users in affluent areas have been targeted by eCommerce companies, displaying higher prices for products

## USER PROFILE PRICE DISCRIMINATION

It's easy for a server to find a user's location and platform, but is it ethical for an eCommerce site to alter prices if they think you're rich? A recent Wall Street Journal article ([on.wsj.com/Tj1W2V](https://on.wsj.com/Tj1W2V)) found that a number of different US eCommerce companies were detecting users' locations and serving up higher prices to people in richer areas. The companies argued that this was done simply to match the prices in their local bricks-and-mortar stores. Users were understandably upset when they found out, because the price changes seemed arbitrary and punitive - it's not as if it was costing the company any more to serve each different location. It's interesting to consider that price discrimination is a very grey area. For example, people don't mind the fact that tickets go up in price nearer the date. In the UK we're used to paying more for electronic goods than the USA. But it seems that profiling users without their knowledge is an act that mixes privacy concerns with unfair discrimination, and many people find this too bitter a pill to swallow.

## CONCLUSION

Back in the fifth century, Greek physicians realised the power that came with their newfound knowledge, so they wrote the Hippocratic oath. Should we do the same in web design? It's clear that the combination of applied psychology and user interface design can be very powerful. Heavy-handed regulation rarely ends well - we all know how the cookie law panned out - so isn't it time we take matters into our own hands and agree upon a set of rules to work by? One thing's for sure: if we continue to ignore it, this problem is only going to get worse.

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# Demystifying REST

An in-depth and practical insight into the principles behind implementing web APIs

**N**o, this is not an article that encourages you to sleep more! However, if that was your first inclination, then the following text was tailor-made for you. It's an unfortunate truth that the principles of REST are decidedly complex.

Entire books have been written on the subject, so we won't be so presumptuous as to assume that we can

give a full and complete roundup of such an intricate topic into a few thousand words.

That said, REST, like some other technologies, such as Git and CSS, is one in which a bit of understanding will take you a long way. To move as quickly as possible, this article will focus less on the history and philosophy behind REST (as well as how it differs from other technologies), and more on the practical aspects. How can you implement the REST architecture today?

## WHAT IS REST?

Hold on there, partner. Before we can jump into some code examples, we should first discuss what REST, or Representational State Transfer, refers to.

REST, defined over a decade ago by Roy Fielding in his doctoral dissertation, provides a simple way to organise interactions between systems, most frequently through HTTP and the web browser. In hindsight, this cohesion makes perfect sense: Roy is also one of the principle authors of HTTP!

Let's discuss URIs for a moment. A URI is essentially an identifier for a resource. Consider the following:

```
001 GET /friends
```

We could call this a resource. When this route is triggered, following the REST pattern, all friends should be fetched, presumably from a database, and presented.

But, how might we specify a request for just one friend? How about:

```
001 GET /friends/joe
```

Very readable, isn't it? That's one of the key components to a RESTful architecture. It allows for URI

structures, which are equally readable by both humans and machines.

> Think of a resource as a plural noun. Contacts, statuses, users, photos – all of these would be perfect choices.

So far, we have hooks to identify a collection, as well as a single element within that collection:

```
001 /friends
002 /friends/joe
```

In fact, you'll find that these two segments are all that you should ever need! We can then leverage the power of HTTP to designate how the server should respond to these URIs. Let us explain:

Every HTTP request specifies a method, or verb, within the headers. You're more than likely to be familiar with a couple of them, such as GET and POST. Perhaps an example is in order.

Open Google Chrome, and browse to [net.tutsplus.com](http://net.tutsplus.com). Next, open Chrome Developer Tools (via a Ctrl/right-click), and view the Network tab. You may potentially need to refresh the page to view the various assets that have been fetched. Select the first item in the list, and view the headers.

Wait a minute; even though we didn't specify it, the request method, GET, was automatically set! From this, we can deduce (dear Watson) that GET is the default verb when viewing webpages.

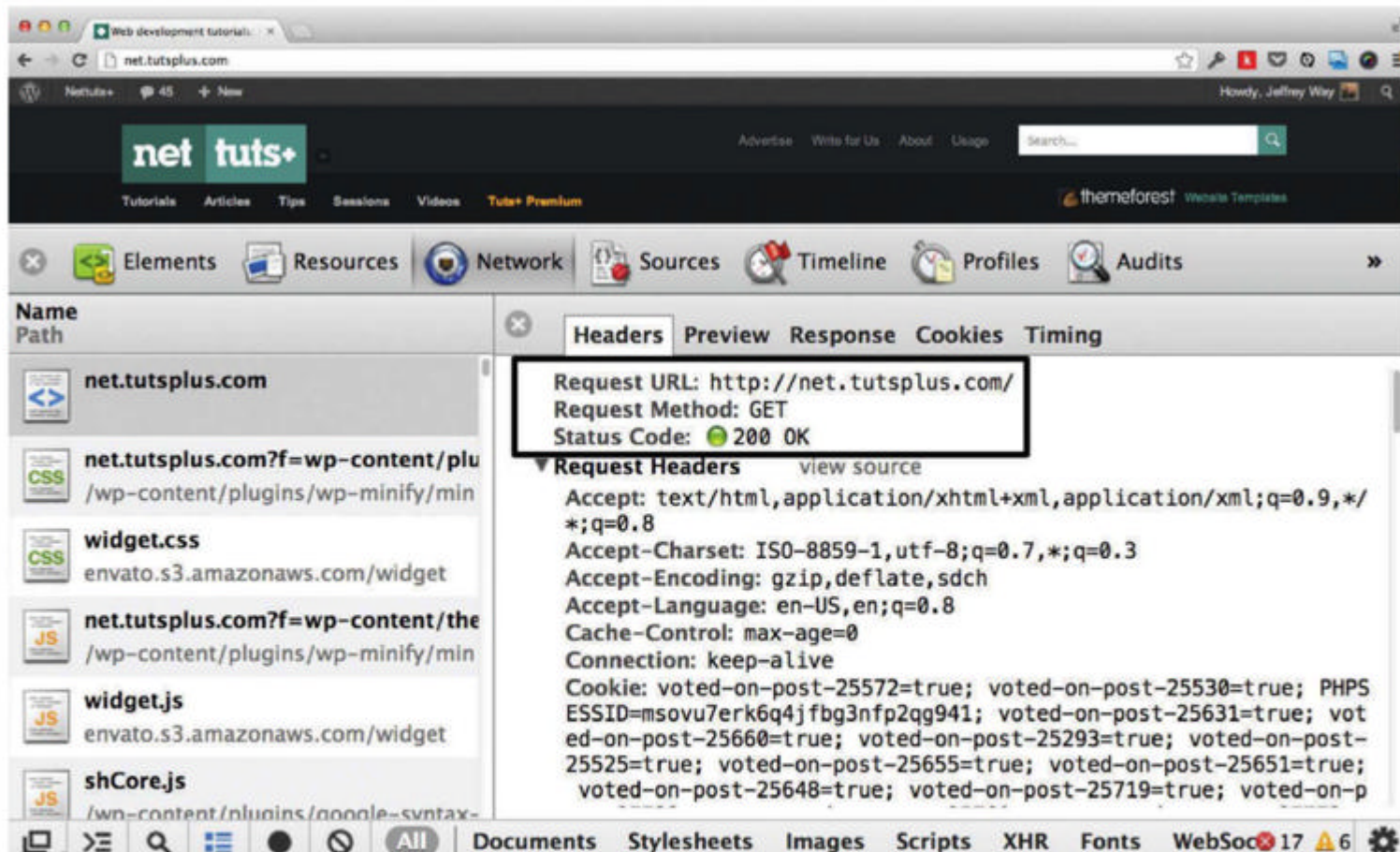
For any given URI, we may reference four different request methods: GET, POST, PUT, and DELETE.

```
001 GET /friends
002 POST /friends
003 PUT /friends
004 DELETE /friends
```

Essentially, these HTTP verbs instruct the server what to do with the data identified by the URI. Still confused? You should be! An easy way to decipher these verbs is to compare them to the common CRUD acronym, or Create-Read-Update-Delete.

```
001 GET => READ
002 POST => CREATE
003 PUT => UPDATE
004 DELETE => DELETE
```

We've established that GET is the default request method, but you're certainly familiar with POST as well. Have you ever created an HTML form that, when submitted, POSTs the data to your server? Well, when



Google Chrome's developer tools can be used to, among other things, inspect the headers for a given request

that form submits, the request method being used is POST, not GET. As such, to add a new status to a tweets table within your database, the form should POST to /tweets, rather than something along the lines of /tweets/addNewTweet.php.

In actual fact, a great way to search for a non-RESTful application is to search for verbs in the URI. The HTTP request method should define how the server should interact with the URI, not a mass of meaningless PHP files.

All of the following represent non-RESTful (and poorly designed) URIs.

```
001 /tweets/addNewTweet.php
002 /friends/deleteFriendByName.php
003 /contacts/updateContact.php
```

To channel my younger self, yuck! Don't do this. However, this does raise the question: what would be the correct URI to present a form to a user, for the purposes of adding or editing a resource be?

In these situations, it makes a lot of sense to add two more URIs.

```
001 GET /friends/new
002 GET /friends/joe/edit
```

The first path, /friends/new, should present a form to the user to add a new friend. Upon the form's submission, a POST request should be used, as we are adding a new friend.

For the second, /friends/joe/edit, this form should be used to edit an existing record within our database. When updating a resource, a PUT request is appropriate.

> Wondering how to make PUT requests from an HTML form? Stay tuned.

## VERBS

Before we move forward with some concrete code examples, let's further solidify what each of these verbs actually represent.

## GET

As noted previously, GET is the HTTP request method that we're all most familiar with: the default verb. One caveat, or best practice when it comes to GET requests, is that they should always be treated as safe and idempotent. In other words, a GET request should be read-only.

It's important to note that, as the engineer, you're free to do whatever you want, when these routes are triggered. Nothing prohibits you from modifying data on the server, when a GET request is triggered. It's merely a best practice to refrain from doing so.

> A safe method refers to one that will never modify a resource. The term, idempotent, refers to a method

that'll achieve the same result, regardless of how many times it is requested. GET, PUT, and DELETE request types are idempotent - if you're following the rules.

## POST

The second request method that you're likely familiar with is POST. These days, this type is most often used to designate when new data should be added to a resource. For example, when adding a new friend, a POST method would be the correct choice.

```
001 POST /friends
```

## PUT

Traditionally, a PUT request should be used when you need to either create or update a resource. However, perhaps as a result of Ruby on Rails conventions, in most modern web applications, PUT is used exclusively for updating a resource.

Let's imagine that we need to update the age of our friend, Joe. Upon updating his information, via a form, the correct request method would be, PUT.

## DELETE

As you might have guessed, DELETE should be used when you need to delete the resource identified by a particular URI. If we're no longer friends with Susan, following the principles of REST, she can be destroyed, via a DELETE request.

```
001 DELETE /friends/susan
```

Once executed, all data associated with Susan should be removed from the database.

## IMPLEMENTATION

All of this theory is great, but it's ultimately useless if we don't understand how to apply this architecture to our projects. Well, there are a few ways. In the following section, we'll use the popular Slim PHP framework to organise the necessary routing. However, you'll surely find that most frameworks these days include some form of RESTful integration, including Ruby on Rails and Laravel.

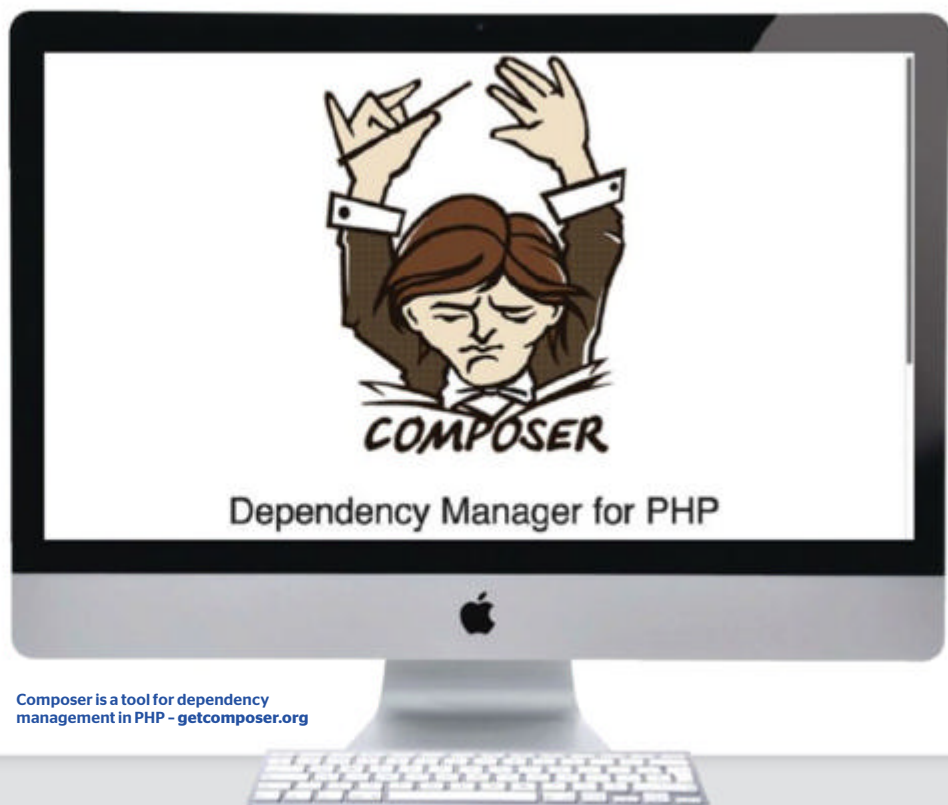
To make use of Slim, the first step is to install it through Composer. Wait, you're not familiar with Composer? Stop what you're doing right this second and research it. Composer allows us to leverage the PHP community, by specifying and installing packages that an application requires. No more having to reinvent the wheel!

Installing Composer globally is a piece of cake - it only requires two quick commands.

```
001 $ curl -s https://getcomposer.org/
    installer | php
002 $ sudo mv composer.phar /usr/local/bin/
    composer
```

That's it! You now have access to the composer command. The next step is to specify Slim as a required package for your app. This can be accomplished, via a composer.json file within the root of your project.

```
001 {
002     "require": {
003         "slim/slim": "2.*"
004     }
005 }
```



Composer is a tool for dependency management in PHP - [getcomposer.org](https://getcomposer.org)

With this requirement set, we only need to run composer install to download the necessary dependencies. Easy!

Thanks to a few lines of code – and the PHP community – we now have an elegant way to register routes. Here's a simple example, which you can place within index.php.

```
001 <?php
002
003 require 'vendor/autoload.php';
004
005 $app = new \Slim\Slim();
006
007 $app->get('/friends', function() {
008     echo 'Fetching all friends';
009 });
010
011 $app->run();
```

Remember, all this functionality comes free of charge!



Slim is a PHP micro framework that helps you quickly write simple yet powerful web applications and APIs - [slimframework.com](http://slimframework.com)

Let's now set up the necessary resourceful routes. We'll opt for simple echo statements to describe what sort of action should be executed in a real-world application.

```
001 <?php
002
003 // Use Composer's built-in autoloader
004 require 'vendor/autoload.php';
005
006 $app = new \Slim\Slim();
007
008 $app->get('/friends', function() {
009     echo 'Fetch all friends';
010 });
011
012 $app->get('/friends/new', function() {
013     echo 'Show form to add a new friend';
014     // Form should post to /friends
015 });
016
017 $app->get('/friends/:friend',
018 function($friend) {
019     echo 'Show single friend: ' . $friend;
```

```
015 });
016
017 $app->get('/friends/:friend/edit',
018 function($friend) {
019     echo 'Show form to edit friend'
020     // Form should put to /friends/$friend
021 });
022
023 $app->post('/friends', function() {
024     echo 'Add a new friend';
025 });
026
027 $app->put('/friends/:friend',
028 function($friend) {
029     echo 'Update friend';
030 });
031
032 $app->delete('/friends/:friend',
033 function($friend) {
034     echo 'Delete friend';
035 });
036
037 $app->run();
```

When using Slim, we can specify the request method that we wish to respond to, using \$app->VERB. As such, to delete the friend, Joe, we'd listen for a DELETE request to /friends/joe, like so:

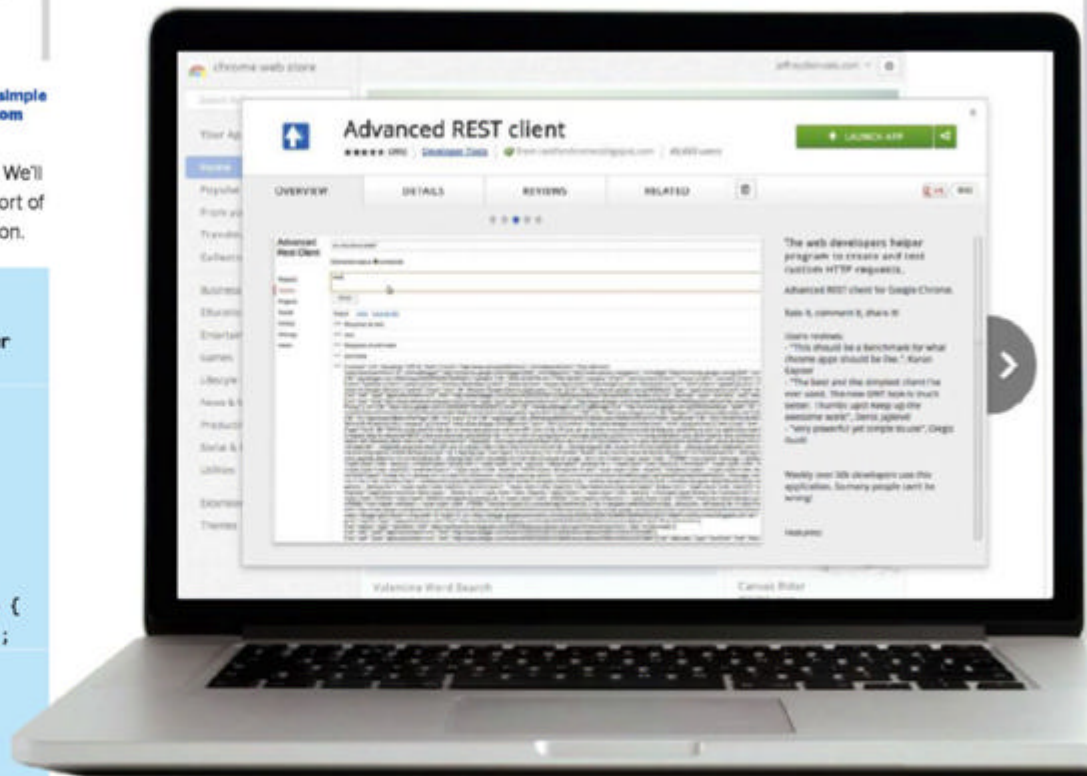
```
001 $app->delete('/friends/:friend',
002 function($friend) {
003     echo 'Destroy friend';
004 });
```

## TESTING ROUTES

If you're like me, your next thought might relate to how you're supposed to test PUT and DELETE methods. As you might know, most browsers only natively provide support for GET and POST. Making use of the other two request methods requires a bit of trickery, which we'll review shortly.

Until then, the most user-friendly way to make custom requests is through a Google Chrome extension called Advanced Rest Client, available from the Chrome Web Store here – [bit.ly/WwwUVu](http://bit.ly/WwwUVu). Once installed, you can easily specify both a URI, as well as the desired request method.

## The most user-friendly way to make custom requests is through a Chrome extension called Advanced Rest Client



The Advanced REST Client extensions provides an easy mechanism to test URIs - [bit.ly/WwwUVu](http://bit.ly/WwwUVu)

## CURL

If you're somewhat comfortable in the command line, it's recommended that you instead leverage the power of cURL to test these routes.

```
001 curl localhost:8888/friends -X GET
```

The X flag allows you to specify the request method that should be used. Please note that, in the previous snippet, we're being explicit; the X flag is not necessary for GET requests, as they are the default.

Here's an example for testing a few routes. Keep in mind that we're using simple 'echo' statements to describe the action that should take place.

```
001 $ curl localhost:8888/friends -X GET
002     Getting all friends
003
004 $ curl localhost:8888/friends -X POST -d
    'name=Jane&age=30'
005     Add a new friend
006
007 $ curl localhost:8888/friends/jane -X
    PUT -d 'name=Jane&age=28'
008     Update friend, Jane
009
010 $ curl localhost:8888/friends/jane -X
    DELETE
011     See ya, Jane
```

Modifying data on the server will surely require the new data (likely obtained from a form). When using cURL, key-value pairs may be specified using the -d flag:

```
001 $ curl localhost:8888/friends -X POST -d
    'name=Jane&age=30'
```

This command can be divided into three pieces:

1. What's the URI?
2. What request method should be used?
3. What data should be passed to the server?

Using your server-side language of choice (in our case, PHP), you can then fetch this POST data in the same way that you normally would:

```
001 $app->post('/friends', function() {
002     $name = $_POST['name']; // Jane
003     $age = (int) $_POST['age']; // 30
004
005     // Now, update the database
006 });
```

## BROWSER SUPPORT

Okay, we understand how to specify a request method from the command line, but how might we do the same thing from an HTML form? Unfortunately, we can't rely on:

```
001 <form method="put">
```

Our current crop of browsers do not provide native support for these types of requests. The most common solution is to apply a bit of trickery, via hidden inputs. Using the Slim framework, here's how we might go about updating a friend.

```
001 <!-- /friends/susan/edit -->
002 <form action="/friends/susan"
    method="post">
003     ... other form fields here...
004     <input type="hidden" name="_METHOD"
        value="PUT">
005     <input type="submit" value="Update
        Susan">
006 </form>
```

Notice that, technically, the request method is still set to POST. However, behind the scenes, Slim will read the hidden input's value, and proceed accordingly, dependent upon which verb is specified.

```
001 <input type="hidden" name="_METHOD"
    value="PUT">
```

You'll certainly find that most frameworks follow a similar pattern for specifying request types.

In this section, we reviewed but one framework's implementation of resourceful routing. As you'll find, though, the same is possible in most frameworks these days. For example, if you're a Laravel artisan, then you might use the following syntax (as of version 4):

```
001 Route::resource('friends',
    'FriendsController');
```

This convenient resource method specifies that we wish to generate the necessary routes for a friends resource, and make FriendsController responsible for handling the logic for each of these routes.

## MANUAL IMPLEMENTATION

Should you wish to opt out of a framework, you can still implement this functionality on your own. Unfortunately, writing the necessary routing system

from scratch is beyond the scope of this tutorial.

However, here's a few tips to get you started.

First, the most important question: how do we determine what the associated verb for a particular request is? If working along, create a new PHP file, and add the following:

```
001 <?php
002
003     echo $_SERVER['REQUEST_METHOD'];
```

If you run this page in the browser, the output should be GET. Excellent! Now, we have the necessary means to detect the request method, and proceed, as needed.

The following snippet is decidedly elementary, and will require better structure for your projects, but it can be used as a starting point.

```
001 # What request method?
002 $verb = $_SERVER['REQUEST_METHOD']; //
    GET
003
004 # What's the URI?
005 $uri = substr($_SERVER['REQUEST_URI'],
    1); // friends/joe
006
007 # Create an array of the segments
008 $segments = explode('/', $uri); //
    ['friends', 'joe']
009
010 # Determine the controller name
011 $controller = $segments[0]; // friends
012
013 // Proceed as needed, based upon request
    type
014 switch ($verb) {
015     case 'GET':
016     case 'POST':
017     case 'PUT':
018     case 'DELETE':
019 }
```

## TESTING

There are a variety of packages that make the process of writing integration tests as simple as possible. However, let's keep it simple today and use PHP's built-in cURL library (libcurl) to put some of these routes to the test.

The first step would be to initialize cURL, and specify the desired URI. In our case, we'll continue testing the friends resource.

```
001 # Init curl, and specify the URI
002 $ch = curl_init('localhost:8888/
    friends');
```

Next, unless we're testing the default GET request method, we'll need to specify the request type.

There are a variety of packages that make the process of writing integration tests as simple as possible

```
001 # Specify HTTP verb (We'll ignore the data
for now)

002 curl_setopt($ch, CURLOPT_CUSTOMREQUEST,
'POST');
```

By default, this output will immediately be echoed. To instead return the output to a variable, rather than displaying it directly, we can make use of the CURLOPT\_RETURNTRANSFER setting.

```
001 // Return the output instead of
displaying it directly

002 curl_setopt($ch, CURLOPT_RETURNTRANSFER,
true);
```

That should do it! We only need to execute the request, and fetch the results.

```
001 $response = curl_exec($ch); // Add a new
friend

002 $statusCode = curl_getinfo($ch)['http_
code']; // 200
```

## PHPUNIT

Let's add this to a PHPUnit test – again keeping it relatively simple for readability's sake. We'll simply ensure that each route returns the proper 200 status code, signifying that the request has completed successfully. To dry things up, we'll abstract the cURL functionality away to its own method, request().

```
001 <?php // friendsTest.php
002
003 class FriendsTest extends PHPUnit_
Framework_TestCase {
004     protected $baseUrl =
'localhost:8888/';
005
006     public function
testFriendsCollection()
007     {
008         $request = $this->request('friends',
'GET');
009         $this->assertEquals('200', $request-
>statusCode);
010     }
011
012     public function testUpdateFriend()
013     {
014         $request = $this->request('friends/
frank', 'PUT');
015         $this->assertEquals('200', $request-
>statusCode);
016     }
017
018     protected function request($url, $verb
```

```
= 'GET')
019     {
020         $ch = curl_init($this->baseUrl .
$url);
021         curl_setopt($ch, CURLOPT_
CUSTOMREQUEST, $verb);
022         curl_setopt($ch, CURLOPT_
RETURNTRANSFER, true);
023
024         $response = new stdClass;
025         $response->data = curl_exec($ch);
026         $response->statusCode = curl_
getinfo($ch)['http_code'];
027
028         return $response;
029     }
030 }
```

Assuming that you have PHPUnit installed, run phpunit friendsTest.php. If successful, you should see green! Feel free to engage in a private victory dance.

To take things just one step further, it makes sense to abstract that request method out to a base class that your tests can then extend. Or even better, let a highly tested (and functional) third-party tool handle the legwork. You might want to consider Goutte ([github.com/fabpot/Goutte](https://github.com/fabpot/Goutte)), which can be installed through Composer.

```
001 {
002     "require":
003     {
004         "slim/slim": "2.*",
005         "fabpot/goutte": "1.0.*@dev"
006     }
007 }
```

Once installed (composer install), we can ignore the manual cURL implementation from earlier, and instead make excellent use of Goutte's cleaner API, as is demonstrated below:

```
001 <?php // friendsTest.php
002
003 require 'vendor/autoload.php';
004
005 use Goutte\Client;
006
007 class FriendsTest extends PHPUnit_
Framework_TestCase {
008     public function setUp()
009     {
010         $this->client = new Client;
011     }
012
013     public function
testFriendsCollection()
014     {
015 }
```

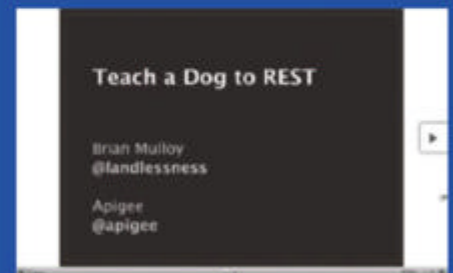
```
016         $this->client->request('GET',
'http://localhost:8888/friends');
017
018         $response = $this->client-
>getResponse();
019
020         $this->assertEquals('200',
$response->getStatus());
021     }
022
023     public function testAddFriend()
024     {
025         $this->client->request('POST',
'http://localhost:8888/friends', []);
026
027         $response = $this->client-
>getResponse();
028
029         $this->assertEquals(200, $response-
>getStatus());
030     }
031 }
```

You wouldn't be the first person to consider such tests to be superfluous; however, I assure you that, as soon as one of these tests failing saves you from a silly blunder, you'll instantly recognise their usefulness.

If you worked along with this article, it's time for a break. Go take a nap!

## Further learning

To continue your education, the best guide for learning REST comes courtesy of the folks at Apigee. Their presentation, *Teach a Dog to Rest* ([blog.apigee.com/detail/restful\\_api\\_design](https://blog.apigee.com/detail/restful_api_design)), compiles a mass of knowledge into a mere twenty minutes. This is required viewing for all beginners.



Apigee offers one of the most user-friendly introductions to REST on the web

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# Integrate your eCommerce store with Facebook

Increase your business's reach by connecting to the world's largest social network

**tools | tech | trends** Magento, Facebook  
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**F**acebook is a platform that serves many eCommerce purposes. From large global corporations to small family-run businesses, they are all using Facebook to reach their customers, promote their brands and build their customer base. The ability for the public to write their own Facebook applications has once again seen the many uses for Facebook grow even bigger.

StoreYa is a Facebook app that helps you integrate your online store to your Facebook page, allowing you to display your entire catalogue of products. Once installed, you can sort, re-order and categorise your products with the simple-to-use interface on the StoreYa website. Your new Facebook store will include many useful features – worth a mention are the Like and Share buttons for each product. These buttons allow your customers to promote specific products on their own Facebook page. StoreYa boasts that you can integrate your eCommerce store with your Facebook page using their application in 30 seconds. We'll be putting that to the test using a Magento platform.

## 01 Get a Facebook account

If you're not part of the 1 billion people with a Facebook account, go to [www.facebook.com](http://www.facebook.com) and create one. It's really simple to do and should only take a few minutes. Make sure to follow the three main steps carefully and add as many people as you can. Remember – the more friends you have, the number of potential sales you could get is increased.

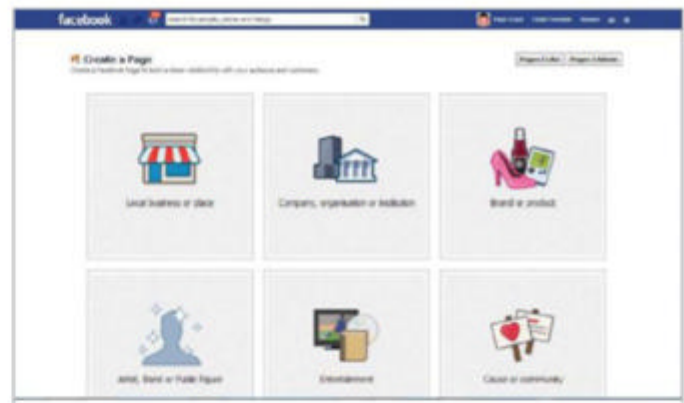


## 02 Create a fan page

If you already have a Facebook account (or have just created one) you now have to set up a fan page. A fan page is slightly different from your normal Facebook page and is primarily used to build a closer relationship with your customers. Go to [www.facebook.com/pages](http://www.facebook.com/pages) and click on the green Create a Page button on the right of the screen.

## 03 Pick your page category

The first step towards creating your new Facebook fan page is selecting the category that suits your needs, and is the most relevant to the service and/or product you are selling. If you are a business that wants to promote your products or services, then typically you would select the Local Business or Place category. The other categories to choose from include: Company, Organization or Institution, Brand or product, Artist, Band or Public Figure, Entertainment, and Cause or community.



## 04 Describe your business

Choose suitable profile and header images for your page. It's probably a good idea to use your company logo for the profile image and if you have the Photoshop skills then create a collage of your most interesting products for the header. A great example of this can be seen at [www.facebook.com/imagineshopuk](http://www.facebook.com/imagineshopuk). Next add a description and website URL to improve the ranking of your page in the search results.



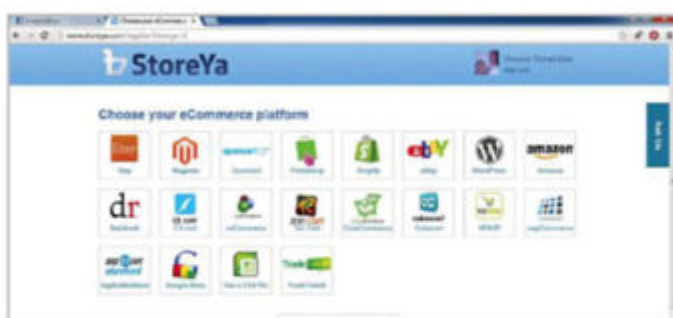


## 05 Develop your fan page

Now that the basics are in place it gives you a good foundation to build on. Try sharing something, or perhaps promote a special offer you are currently running. The more people your page is connected to on Facebook, the more active and engaging it will be. Set an achievable goal of getting your first 50 Page Likes. Get started by inviting your friends.

## 06 Register with StoreYa

Now that your Facebook page is up and running, it's time to set up the StoreYa application. Head over to [www.storeya.com](http://www.storeya.com) and click on the Connect with Facebook button. Logging in to StoreYa is done by connecting with Facebook using your personal profile.



## 07 Create your Facebook store

First you need to select which eCommerce platform you are using. For this example we will use Magento but the StoreYa application supports a wide range of platforms including: Shopify, Amazon and WordPress to name but a few. If your platform does not appear in the list then you can still upload your products using the CSV export option.

## 08 Setting up the API

In order for the StoreYa application to sync with your Magento store, you first need to create an API User; this is done by creating an API role. Log in to the Magento admin panel and navigate to System>Web Services>Roles. This page lists the current API roles, and it is here that you will need to create a new role.



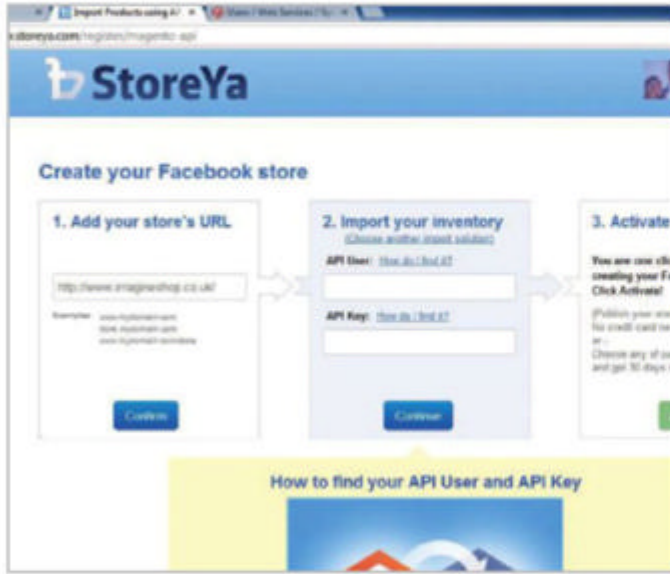
## 09 Creating a new API role

Click Add New Role and give it a name of your choosing. It can be anything, but a descriptive name such as 'StoreYa API' would be ideal. Next, click on Role Resources, which is on the left-hand side, then select the All option which appears in the drop-down list. Finally, click Save Role and the new API role will be saved.

## 10 Create a new API User

Now that the role is created you need to create a user that will be associated with this role. Click: System>Web Services>Users and you will be presented with a form. Fill out all the fields on the form and bear in mind that the API Username and API Key will be the username and password you will use later, so make sure they are secure. Click Save User and then select the role you created earlier.





## 11 Using the API User and Key

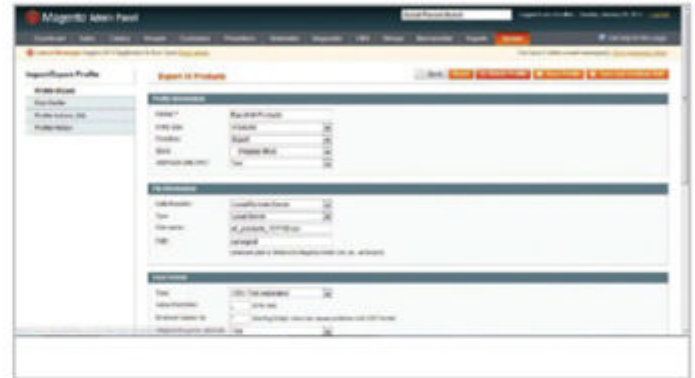
If the process was successful then you should see a green tick with a confirmation message presented at the top-left of the screen. You can now use the API User and API Key in the next step of the import process. Write them in the fields provided and hit Continue.

## 12 Alternative syncing methods

If you are using an older version of Magento then the API method may not work. If you experienced any problems following the steps above then you may want to consider using a Google base feed or manually exporting your products to a CSV file that you can then upload manually.

## 13 Exporting the CSV file

Go to the admin control panel and click System>Import/Export>Profiles. Next you have to add a profile so click on the Add Profile button. Fill out the form ensuring that the Entity Type drop down has the Product option selected and the Profile Direction field displays Export. Hit the Save Profile button.

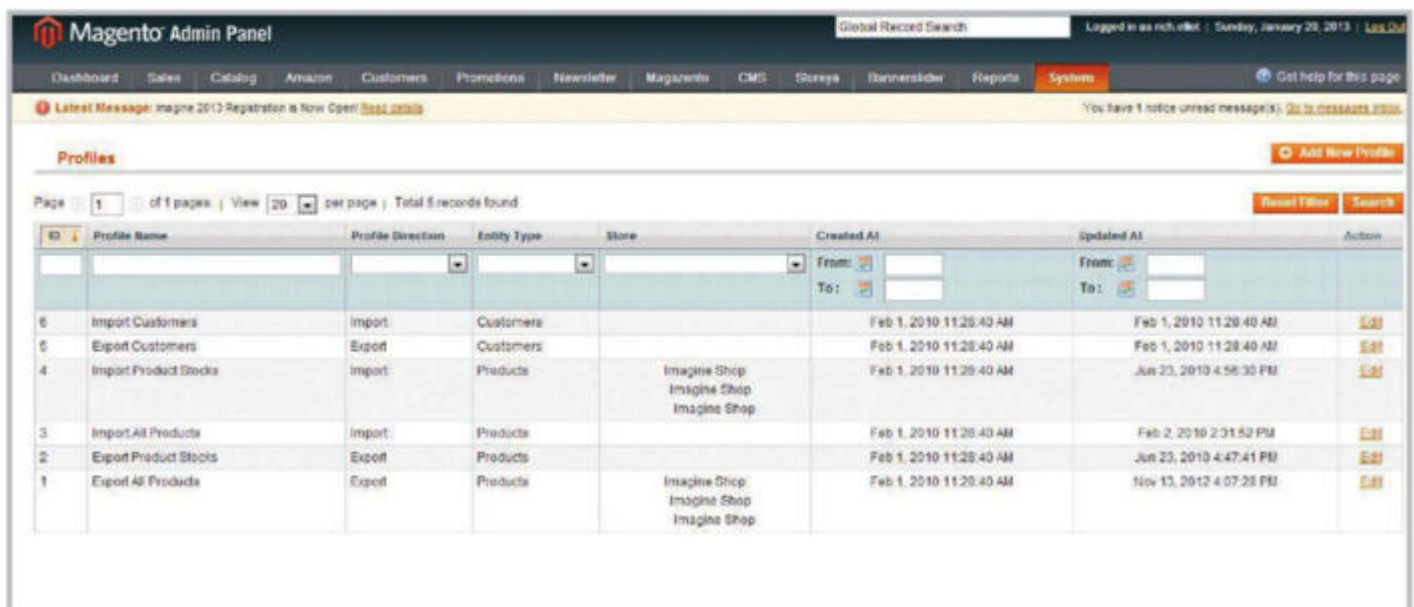


## 14 Run the export command

The profile you created should now be shown in the profile list. When you click on it you will be presented with a form filled with options. Choose a file name for the CSV file and select where you want to export the file to. Be aware that you cannot export this file to your local desktop; you can only export it to the server on which the Magento store is hosted. Fill in the rest of the fields, and hit Run Profile, which is in the left-hand navigation bar.

## 15 Upload the CSV

FTP to your server and navigate to the directory you told Magento to export the CSV file to. Copy it to your local machine and in your browser go to [www.storeya.com/register/magento-csv](http://www.storeya.com/register/magento-csv). Enter your store URL and upload the CSV. A progress bar should appear, and once it has been uploaded hit the Activate button. Your Facebook store should now be up and running!





## Don't suffer in silence!

If you run into any difficulty while configuring your store, Emma Harper at StoreYa headquarters is only an email away. Use the online contact form to ask any questions.

### 16 Check out your store

Log in to Facebook and navigate to your fan page - you should see a Shop now button. Click on the button and it will take you to your new store. You will see that the categories are listed along the top for easy navigation. There is also a search bar that allows your Facebook users to search your catalogue of products. The order in which the categories and products are presented along with other customising options can all be managed by using the admin section of the StoreYa website. Simply log in and start configuring!

### 17 Managing your store

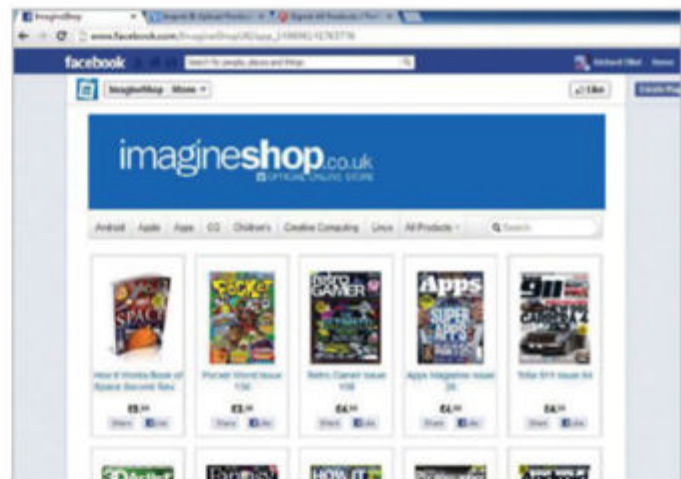
When you get logged in you will be presented with a graph showing the number of visitors you have had. When a few weeks/months have passed this page will become increasingly useful as more data will be generated, allowing you to see which of your products and categories are most popular.

### 18 Change the appearance

Next we will want to give our store some style and individuality. Click Customize your store>Customization. From here you will be able to add a header image, change colours, select the number of products per page, and change the currency to that of your choosing. The easy-to-use interface makes this process a breeze, and it also allows you to see what your changes look like without having to navigate away to your Facebook page.

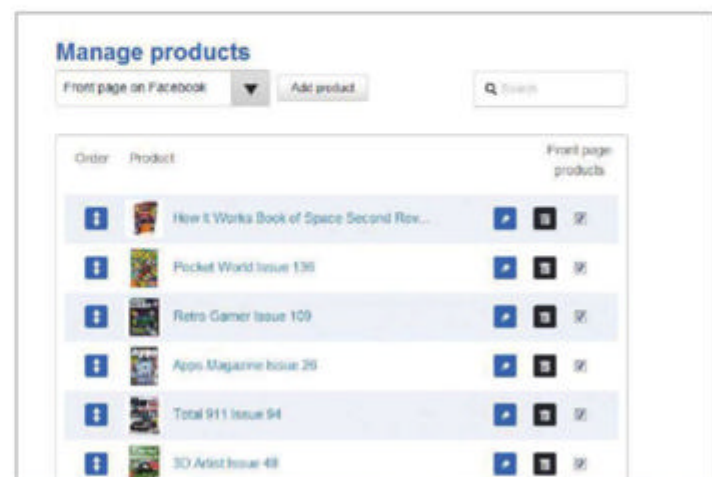
### 19 Customising your store

You may want to change the order of the products on the landing page of your store. To do this you can use the intuitive drag and drop system. Click Manage store>Manage products. From this page you can perform a variety of tasks such as editing product data, removing a product from your store, and changing the order in which it appears.



### 20 Watch your sales increase

Reaching out to a Facebook audience is a great way to raise your brand/product awareness with an online community that may never have seen or heard about what your business is selling. Having a direct link from your Facebook page to your products removes the process of a potential customer having to track down your eCommerce store and view your product information the conventional way. Hopefully, over time you will see your sales increase, as well as raised awareness of your products.



# Build stylish, scalable maps using Leaflet.js

Develop stunning mapping interfaces using open-source geographic data and Leaflet.js

**tools | tech | trends** Code editor  
**expert** Matt Gifford



**M**aps and geographic location data are a big part of our online presence and applications. More often than not, maps tend to look similar, as a single provider generates them. This means your map looks just like everyone else's.

Let's take a step back from the existing mapping libraries available and investigate the small but powerful Leaflet.js library. Used by a number of recognisable organisations including Flickr, Meetup and foursquare, Leaflet.js works wonderfully on desktop and mobile devices, and makes use of modern HTML5 and CSS3 techniques, yet it's still accessible on older browsers.

In this tutorial we will create a data-driven mapping application to plot the location of London train stations. We will see how we can build up the various layers of the map, including the zoom and scale controls, and we'll obtain our geographic tiles for display from a third-party client. We'll also incorporate some simple functions to update the style of the generated tiles directly from our map interface.

## 01 Import Project

Create a new project or folder in your chosen code editor and import the code from the starting\_project directory on the resource disc. This contains the default HTML page, stylesheets, and jQuery library. Alternatively, you can create your own layout and transfer all of the required asset files to incorporate your own design.

## 02 Include Leaflet.js

To begin creating our map, we first need to reference the relevant JavaScript files to include the Leaflet.js functionality. You can download the files if you want to run them locally (available here: [monkeh.me/8resh](http://monkeh.me/8resh)), but we will take advantage of the hosted libraries and call them via the CDN. Place these within the head of your document.

```
001 <link rel="stylesheet" href="http://cdn.leafletjs.com/
leaflet-0.4/leaflet.css" />
002 <!--[if lte IE 8]>
003   <link rel="stylesheet" href="http://cdn.leafletjs.com/
leaflet-0.4/leaflet.ie.css" /> <![endif]-->
004 <script src="http://cdn.leafletjs.com/leaflet-0.4/leaflet.
js"></script>
```

## 03 Map container

Create a div element as the container for the map. Any specific ID attribute value can be used for any number of elements - this means that you can include multiple maps on one page, should you so wish. We'll keep it simple and call our container 'map\_holder' so it's easy to recognise and remember. Place this within the main div element.

```
001 <div id="main">
002   <div id="map_holder"></div>
003 </div>
```

## 04 CloudMade Account

The Leaflet.js mapping tool needs access to tiles - the square images that are pieced together to make the map. There are many tile providers out there, and you can host your own server if you wish. For this tutorial, we will use CloudMade. Head over to [cloudmade.com](http://cloudmade.com), sign up for a free developer account, and obtain your API key.

## 05 Global values

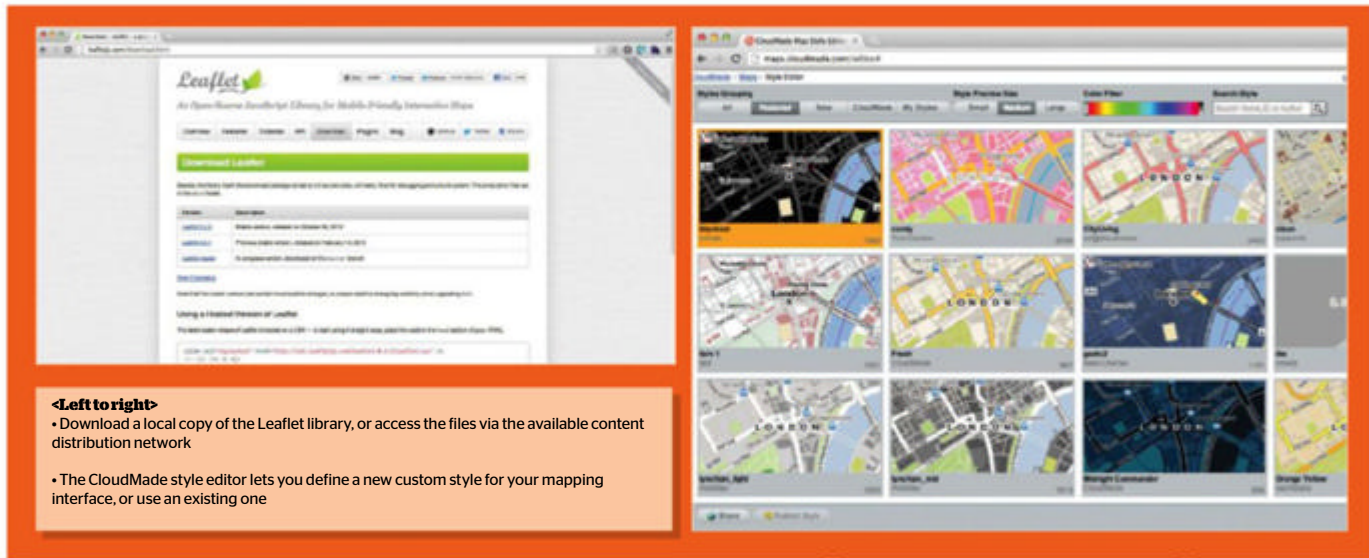
Create a new script tag block, into which we'll place two global variables. The first is the CloudMade API key, and the second is the default style of map you would like to use - in this instance, we're going for the Fresh theme. We'll then add in the jQuery ready() method, inside of which we'll place the rest of our code.

```
001 <script type="text/javascript">
002
003 var apiKey = 'Your CloudMade API key',
004     styleID = '997';
005
006 $(document).ready(function() {
007
008 });
009 </script>
```

## 06 Define boundaries

Our map data will focus on central London, so we have no specific requirements for the user to be able to view outside of a certain area. We can generate two pairs of co-ordinates and set those as the defining boundary box for our application, which will create a specific rectangular area on the map, between the boundaries of which people can view.

```
001 var southWest = new L.LatLng(50.233152, -6.635742),
002     northEast = new L.LatLng(53.644638, 2.109375),
003     bounds = new L.LatLngBounds(southWest, northEast);
```



## 07 Initialize Map

To display our map on the page, we now need to initialize it and assign it to the map container element. To do so, we'll create a new map and set the default view using a LatLon pair defaulting to central London. We'll also set the maxBounds using our bounds value, defined earlier.

```
001 var latlng = new L.LatLng(51.5171, 0.1062);
002 var map = new L.Map('map_holder',
003     {
004         center: latlng,
005         zoom: 1,
006         maxBounds: bounds,
007         zoomControl: false
008     });
```

## 08 generateTileURL

Before we add any tiles to the map, create a function called generateTileURL that will accept the API key and style ID variables. This will generate the required string URL for inclusion in the map, and we can reuse this method a little later on to change the style of the map tiles from a select box element.

```
001 function generateTileURL(apiKey, styleID) {
002     return 'http://{s}.tile.cloudmade.com/' + apiKey + '/' +
003     styleID + '/256/{z}/{x}/{y}.png';
004 }
```

## 09 Add tiles

Using the generateTileURL function with default values, we'll also create the text for the map attribution layer and set up the default values for our map tiles, including the maximum zoom level. Here, we also detect if the device has a high-definition display. If so, it will use four tiles of half the size to utilise the higher resolution.

```
001 var cloudmadeUrl = generateTileURL(apiKey, styleID),
002     attribution = 'Map data &copy; OpenStreetMap
003     contributors.',
004     tileLayer = new L.TileLayer(
```

**Open-source maps**  
Not only is Leaflet itself an open-source project, the tiles it uses are more often than not generated using OpenStreetMap data. The OSM initiative provides geographic data for free, which you can download and serve yourself if you wish, or contribute to and update. Find out more here: [monkeh.me/s7h1n](http://monkeh.me/s7h1n).

```
004         cloudmadeUrl,
005         {
006             maxZoom: 18,
007             attribution:
008                 attribution,
009             detectRetina: true
010         });
011 tileLayer.addTo(map);
```

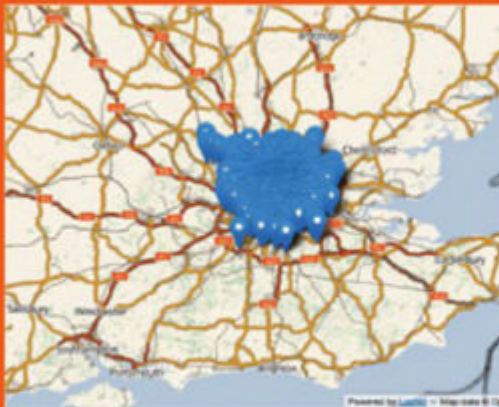
## 10 Custom zoom

We added zoomControl false to our map initialization method. By default a control is added to the top-left. We can override this to suit our layout by creating a new zoom control object and specifying the required position from a list of predefined options. We then need to add this to our map object like so.

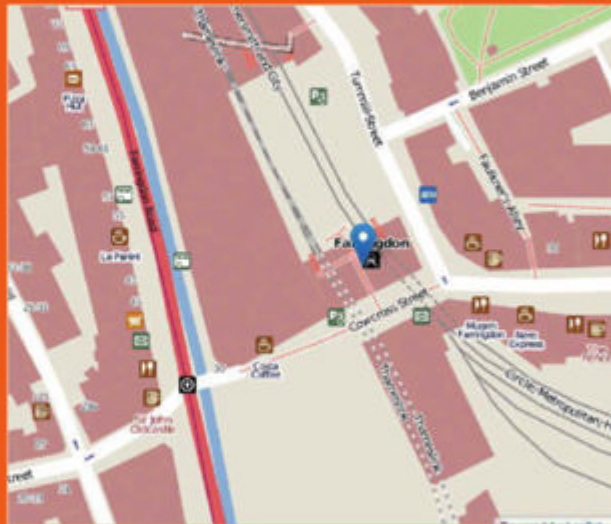
```
001 var zoomControl = new L.Control.Zoom({ position: 'topright' });
002 zoomControl.addTo(map);
```

## 11 Display scale

We can also create a new scale control object to accurately display the scale of the map. Our attribution layer is positioned down on the bottom-right of the map object, so we'll position our scale control over on the bottom-left and add this to the map using the same method as we have with the zoom control.

**<Above>**

• After adding the markers to our map, we can see the condensed location of all the stations from our data

**<Above>**

• Selecting a station from the drop-down list will force our map to zoom into and centre on that location

```
001 var scaleControl = new L.Control.Scale({ position: 'bottomleft'
});
002 scaleControl.addTo(map);
```

**12 Style selection**

Create a new select box form element before the map container, setting the id attribute to styleSelector. This will hold the name and ID values of the styles we would like to select from. This contains the default CloudMade styles, but could also contain any custom styles you may have created especially for your application.

```
001 <select id="styleSelector">
002   <option value="">--- Select Style ---</option>
003   <option value="2">Fine Line</option>
004   <option value="997">Fresh</option>
005   <option value="999">Midnight Commander</option>
006   <option value="3">No Names</option>
007   <option value="998">Pale Dawn</option>
008   <option value="8">Red Alert</option>
009   <option value="1">The Original</option>
010   <option value="7">Tourist</option>
011 </select>
```

**13 Change style**

Add an onchange handler within the jQuery script block. When a new style is selected, this will set the ID value of the chosen style to the styleID global variable, which we'll pass through to our tile generation function to update the URL. We then call the setUrl() method to update this value and regenerate the tiles for display.

```
001 $("#styleSelector").bind("change", function()
002 {
003   if ($("#styleSelector").val() !== "") {
004     styleID = ($("#styleSelector").val());
005     var revisedURL = generateTileURL(apiKey, styleID);
006     tileLayer.setUrl(revisedURL);
007   }
008 });
```

**14 Track validation**

Jumping back to the playTracks function, we have the returned track array which we can now loop over. We first need to run a basic validation against the track to make sure that we can play it, as it may be a local MP3 file or not available within our specific geographic location.

```
001 tracks.each_with_index do |track, i|
002   if track.available?
003     # more code to go here
004   else
005     puts "#{track.name.gsub("'", "
006     "\\")} by #{track.artist.name.gsub("'", "
007     "\\")} not
    available to
    play. Skipping...\n"
```

**15 Generate markers**

Create a new function call addMarkers. This will accept the map object and the stationData in JSON format. Looping over the data, we will create a new Marker object for each station, setting the latitude, longitude and title, as well as binding a Popup window to also display the title string, complete with any HTML markup that may be included.

```
001 function addMarkers(map, stationData) {
002   for (var i = 0; i < stationData.length; i++) {
003     var a = stationData[i];
004     var popupDetail = a[2];
005     var title = popupDetail.replace(/<([^\>]+)>/ig, "");
006     var marker = new L.Marker(new L.LatLng(a[0], a[1]), {
    title: title });
007     marker.bindPopup(popupDetail);
008     map.addLayer(marker); }
009 }
```

**16 Add markers**

Place a reference to the addMarkers function within the main mapping code, after the zoom and scale controls, sending through the required parameters. This will generate the markers and add each one onto the map.

```
001 addMarkers(map, stationData);
```

## 17 Station selector

Create a new select form element next to the style selector. Set the id attribute for this to stationSelector and provide a default value for display. We'll use this to select a station, which in turn will prompt the map to pan, zoom and centre itself upon the selected marker.

```
001 <select id="stationSelector"><option>--- Select Station ---</option></select>
```

## 18 Populate list

Within the jQuery block, let's once again loop over the data available from the stationData JSON. We'll create a new option tag block with every loop, setting the custom data attributes with the station's geographic co-ordinates, and the name of the station for visual reference. Finally, we'll append this string to the select element to display the data.

```
001 var stationOptions = "";
002
003 for (var i = 0; i < stationData.length; i++) {
004   stationOptions += '<option data-latitude="' + stationData[i]
005   [0] + " data-longitude="' + stationData[i][1] + ">' +
006   stationData[i][2] + '</option>';
007 }
008
009 $("#stationSelector").append(stationOptions);
```

## 19 Set view

Add a new onchange function that will obtain the latitude and longitude from the data attributes for the selected station. This function will then call the setView() method directly on the map, passing in the co-ordinates and setting the zoom level from the maxZoom value we added when instantiating the tile layer.

```
001 $("#stationSelector").bind("change", function()
002 {
003   var selectedStation = $("#stationSelector :selected");
004   if (selectedStation.attr("data-latitude") !== undefined
005   && selectedStation.attr("data-longitude") !== undefined) {
006     var thisLat = selectedStation.attr("data-latitude");
007     var thisLon = selectedStation.attr("data-longitude");
008     map.setView([thisLat, thisLon], map.getMaxZoom());
009   } else {
010     map.setView(latlng, 1);
011   }
012 });
```

## 20 Using plug-ins

There are many open-source plug-ins for integration with the Leaflet mapping library, available from the plug-in list: [leafletjs.com/plugins.html](http://leafletjs.com/plugins.html). We'll use the marker cluster plug-in to provide a much nicer, simplified view of our generated markers on the map. Download the plug-in code and export the contents of the dist folder into your project. The full code for this step can be found on the resource disc.

## 21 Revise Markers

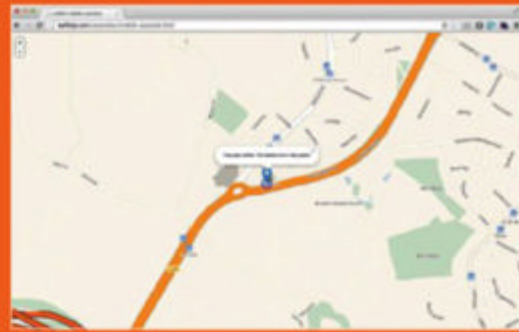
With the cluster plug-in added to our page, we must make some small changes to the addMarkers function. Firstly, we'll create a new MarkerClusterGroup object into which our markers will be placed. Finally we'll

add the populated markers object as a layer onto the map, instead of the individual station markers.

```
001 function addMarkers(map, stationData)
002 {
003   var markers = new L.MarkerClusterGroup();
004   for (var i = 0; i < stationData.length; i++) {
005     var a = stationData[i];
006     var popupDetail = a[2];
007     var title = popupDetail.replace(/(<[^>+)>)/ig, "");
008     var marker = new L.Marker(new L.LatLng(a[0], a[1]), {
009       title: title });
010     marker.bindPopup(popupDetail);
011     markers.addLayer(marker);
012   }
013   map.addLayer(markers);
014 }
```

## 22 Improved visuals

With the addition of the marker cluster group, the mapping interface has been improved. The markers are now grouped in clusters based on the generated polylines from each marker's geographic location, and the clusters will update and animate whenever we zoom in or out of the map.



### Mobile mapping

In this tutorial we have developed a simple application to plot markers using our imported data structure. This could be taken to the next level by incorporating generated directions or routing information, accessing the user's current geographic location, and plotting the route to a selected marker on the map.

Leaflet.js is perfectly suited for integration into mobile applications - certainly when using HTML packaged apps built using services like Adobe PhoneGap. Not only is it a very small library to include in your project (approximately 28KB gzipped), it also provides some nice features to assist you in user location discovery.

The API contains a locate() method, which can be applied directly onto the map object, and can be used to determine the geographic position of the current user and zoom directly in on their position if required. A working example of this method, complete with custom callback handlers, can be seen on the Leaflet.js site, here: [monkeh.me/ufylh](http://monkeh.me/ufylh).

The API with this library is incredibly detailed. For a full list of features, grab the documentation: [monkeh.me/iurck](http://monkeh.me/iurck).

# Jennifer Farley

web [www.laughing-lion-design.com](http://www.laughing-lion-design.com)



**Current role** Illustrator and design instructor  
**Education** Master's degree in digital media  
**Expertise** Photoshop, Illustrator, InDesign, Muse, Illustration, graphic design, web design  
**Clients** Automattic, Natural History Museum Dublin, Department of Education Ireland, Irish Web Awards, Kovet  
**Twitter** @Laughing\_Lion

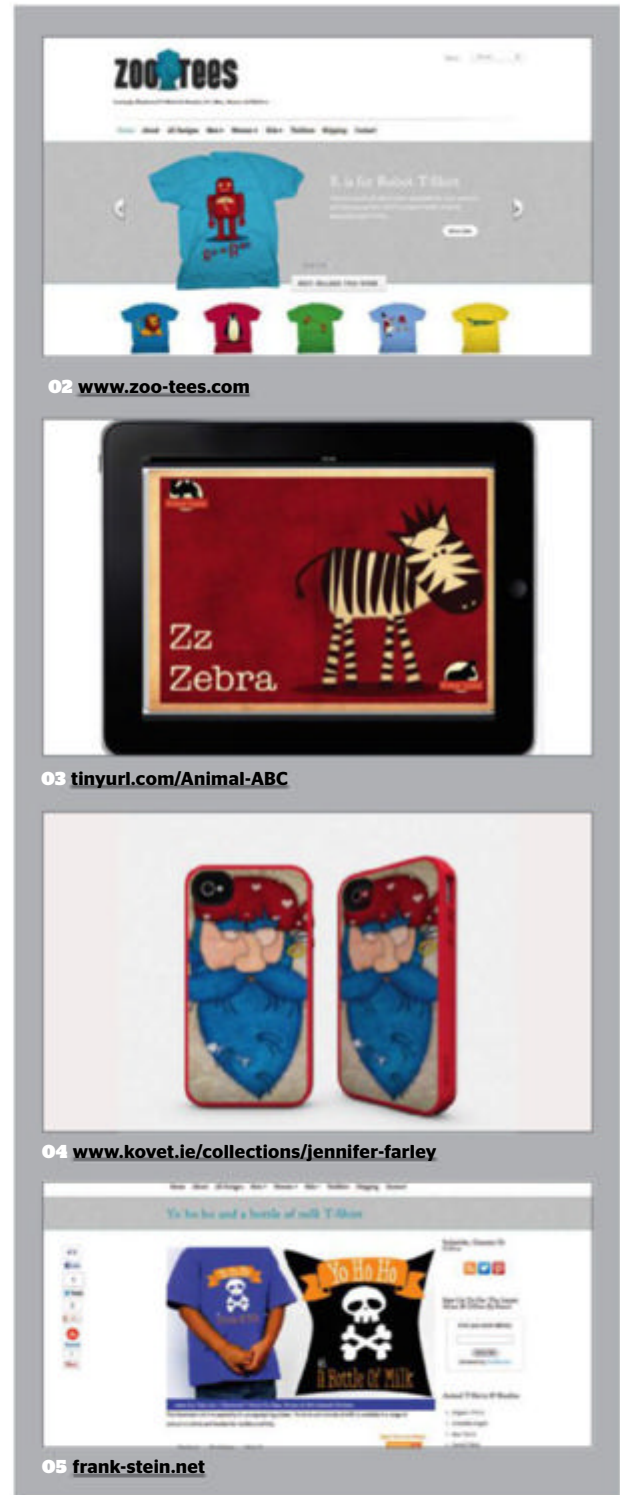
Jennifer is an illustrator from Dublin, and has been working in the web and graphic design field for over twelve years. She is a member of Illustrators Ireland and is focusing on her illustration career, which includes illustration for children, exhibitions and websites.

Jennifer is a big WordPress fan, and her website and blog, which has been in existence since late 2005, is built on the platform. The site is home to her portfolio, blog posts on design and illustration inspiration, and well over 100 Photoshop and Illustrator tutorials.

Her love of WordPress has seen her work with Automattic, completing a number of illustrations and a design layout for a new premium WordPress theme.

Sources of inspiration for Jennifer are books, cinema and the outdoors. She is teetering on the edge of a Pinterest addiction ([pinterest.com/laughinglion1](http://pinterest.com/laughinglion1)) but has just barely enough willpower to turn it off and get some real-world inspiration through photography and being outside. In addition to keeping up with her own blog, she founded a website called Zoo Tees in November 2011. This site is home to her illustrated T-shirts, with everything from cute animals to ray guns.

Jennifer currently teaches on a web and graphic design course in Dublin - instructing in Photoshop, Illustrator and design theory. Last year she wrote a book on Adobe Muse via Packt Publishing.



01 [www.laughing-lion-design.com](http://www.laughing-lion-design.com)

02 [www.zoo-tees.com](http://www.zoo-tees.com)

03 [tinyurl.com/Animal-ABC](http://tinyurl.com/Animal-ABC)

04 [www.kovet.ie/collections/jennifer-farley](http://www.kovet.ie/collections/jennifer-farley)

05 [frank-stein.net](http://frank-stein.net)

## 01

The Laughing Lion website is built on the WordPress platform, and displays the illustration work of the author along with Photoshop tips and tutorials

## 02

Zoo Tees, created in November 2011, is an eCommerce platform where visitors can browse and buy from a collection of Jennifer's illustrated T-shirts.

## 03

Animal ABC iBook is a multi-touch picture book for little ones on iOS devices, with colourful illustrations and sounds of each animal.

## 04

A selection of Jennifer's illustrative work has been made into a set of iPhone cases. There are four to choose from and offer her signature illustrative style.

## 05

The illustrative style of Jennifer's T-shirt range uses a bolder approach to appeal to a different audience, though her recognisable style shines through.

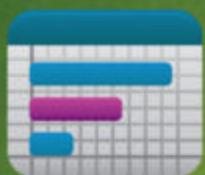
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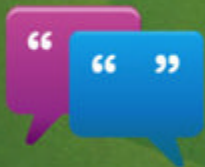
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# David Zuker

web [www.davidzucker.com](http://www.davidzucker.com)



**Current role** Freelance web designer, Flash animator and graphic designer

**Education** Degrees in graphic design and multimedia design, Madrid, Spain

**Expertise** Flash design and animation, Photoshop, Illustrator, digital tablet drawing

**Clients** Bourjois Paris, Adidas, Paramount Pictures, Dolce & Gabbana, Diesel, Max Factor, Sony

David got into web design around 2002 and at the time was trying to become a graphic designer or an illustrator.

He says, "There is something I love about web design. The web is an unlimited live canvas with possibilities that no other surface or medium can give you; the challenge is to use those possibilities with imagination."

Early on in his web design career he discovered Flash, and fell in love with the tool. Flash gave him the opportunity to express his creativity beyond a static canvas, and he found new ways for creating that he could never have imagined before.

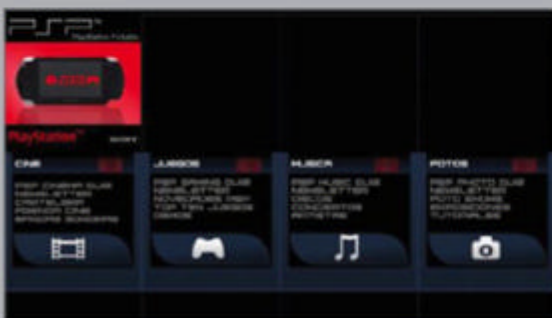
David believes that "Flash has had a major role in web design evolution through the last decade, even though there have always been

certain people that have negative opinions about it." He also believes that though we are living the mobile devices' age, with Flash playing a different role - web design history cannot be explained without Flash.

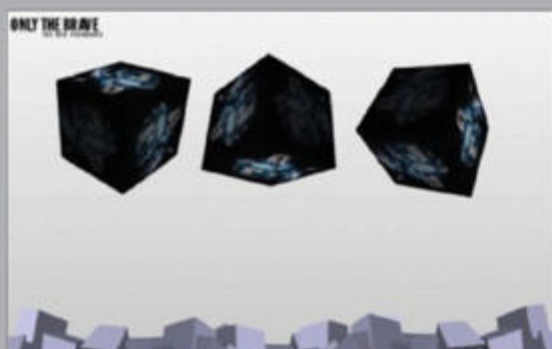
Sticking with the Flash theme, David says that "Flash has inspired and encouraged me for the last few years to create imaginative interactive experiences for the web. Now it's time for HTML5 to take its place." With the multi-device era already here and hard to ignore, he says he has to 'move towards it'. However, David also believes his experience using his 'Flash philosophy' for creating websites with imaginative and unconventional navigation and interaction will be valuable in the next phase of his design career.



01 Microsite



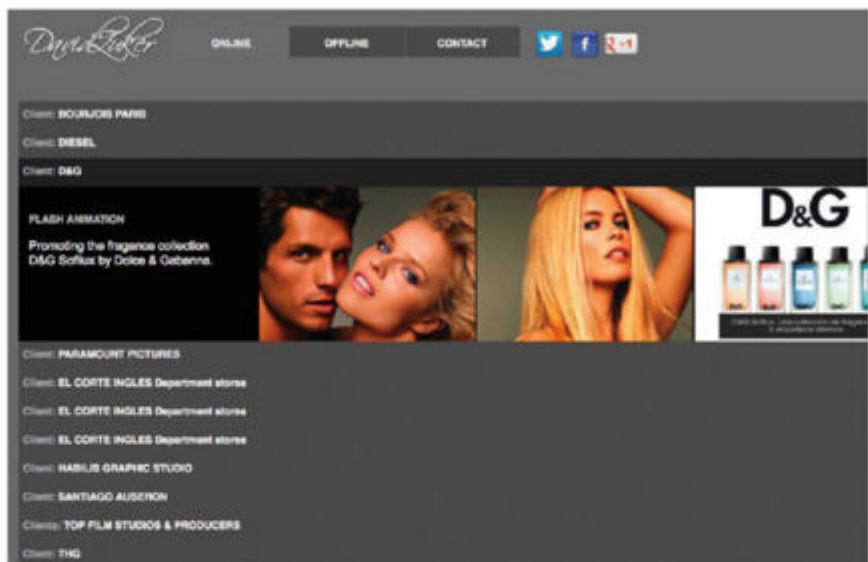
02 [davidzucker.com/web/PSPtiles/index\\_en.html](http://davidzucker.com/web/PSPtiles/index_en.html)



03 Microsite



04 [english.davidzucker.com](http://english.davidzucker.com)



05 [english.davidzucker.com](http://english.davidzucker.com)

## 01

Flash Microsite for Bourjois Paris. The intro was designed with a positive but innocent style in mind. Bird sounds were used to reinforce that vibe to the viewer.

## 02

A proposal for the PSP Spanish site for PlayStation. The proposal needed to demonstrate how the content would be displayed and interact with the navigation.

## 03

Flash Microsite for Diesel. The intro and navigation of the site made use of 3D vector elements produced with Swift 3D and re-edited within Flash.

## 04

This version of the portfolio site is built using Flash, and uses rollover effects, pop-out images and fade in/out effects to showcase his work in a tidy way.

## 05

The HTML version of the portfolio site uses a different approach to displaying the content. Each piece of work is displayed as a title and expands when clicked.

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## Subject Responsive design, where do I start?

From Kieran Smith



I have a couple of sites that are currently fixed in their size. They do not shrink for mobile. I am looking to make them more mobile-friendly. Is there an easy way to get them ready for smartphones or will I need to start from the beginning and build them all over again so that they work on iPhones and iPads?

The simple answer is to introduce the viewport meta tag. Add the following piece of code into the head of the page.

```
001 <meta name="viewport"
content="width=device-width;">
```

This will immediately shrink a site to fit on a screen. The next option is to adjust your current CSS and add a few media queries to different size screens (see Issue 204) The alternative is to start from the ground up. Try the following frameworks and themes: Twitter Bootstrap, 320 and Up and ThemeForest ([www.themeforest.net](http://www.themeforest.net)).



## Web Kit

Discover the kit needed to help create inspirational and interactive web pages



**Yeoman: A modern workflow for today's web designers**  
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**Build a web server with Node.js**  
[bit.ly/XRXklu](http://bit.ly/XRXklu)



**Create contemporary web ribbons with Photoshop**  
[bit.ly/WivduQ](http://bit.ly/WivduQ)

## Subject jQuery, JavaScript or other

From Simon Wylie



I am pretty new to web design and Web Designer, and I am looking to develop with jQuery and other popular development. I really like your developer section in the mag, but I am not sure which language I should be concentrating on. Or, do I need to learn more than one? Whatever, keep up the good work and I will get back to you in the future with some of my designs.

If you are a newcomer to the world of web design and development we would suggest that you first tackle HTML5 and jQuery. These are both key elements in the design and development process. Start with basics of HTML5 such as tags, before exploring its more inventive side such as local storage, geolocation, web forms, Canvas, audio, and video. These will be extremely useful. In addition to this, learning jQuery is a good

stepping stone for designers and developers alike. Web Designer is currently running a series of HTML5 and jQuery videos on its resource disc.

## Subject Tablet - saviour or scrooge?

From Luke Quigley



With the Nexus 7, Kindle Fire, Nook, and others all being affordable it is inevitable that 2013 will see a far larger percentage of consumers accessing the web via their favoured mobile device. What I want to know is how will this affect my current website. Do they all use different browsers and how will my site look on the different devices. What should I do?

The introduction of different devices to the market brings back memories of the problems that used to infiltrate the desktop. The host of different devices will introduce a host of different resolutions. This means that your site will need

to cater for a host of resolutions. There are two paths to take here - go responsive or go custom. The responsive route will typically provide a quicker solution and cater for more devices.

However, if you have something specific in mind for desktop, but something different for mobile, then choosing a custom option may prove to be a better solution in the long run.

## Subject Disc destruction

From @QLutfi



@WebDesignerMag please print a blank paper inside the magazine and stick the CD over it so when I remove it will not destroy the mag!

The disc is an issue that we are aware of. We appreciate that it can tear the page. However, adding a blank page is not an option we have considered. The issue will be looked in to. Watch this space, and the back of the print edition.

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Keep an eye on the latest packages and deals with our comprehensive list of service providers

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
<b>1 &amp; 1 Internet Ltd</b> <a href="http://www.1and1.co.uk">www.1and1.co.uk</a>	1&1 Starter (Linux)	0844 335 12 11	£29.88	5GB	Unlimited	1,000	✓	✗	✓	✓	✓	✓	✓	✗
	1&1 Standard (Linux)	0844 335 12 11	£59.88	50GB	Unlimited	3,000	✓	✓	✓	✓	✓	✓	✓	✗
	1&1 Standard (Windows)	0844 335 12 11	£71.88	50GB	Unlimited	3,000	✓	✗	✓	✓	✓	✓	✓	✗
	1&1 Unlimited (Linux)	0844 335 12 11	£83.88	Unlimited	Unlimited	5,000	✓	✓	✓	✓	✓	✓	✓	✗
	1&1 Unlimited (Windows)	0844 335 12 11	£107.88	Unlimited	Unlimited	5,000	✓	✗	✓	✓	✓	✓	✓	✗
	1&1 Business (Linux)	0844 335 12 11	£119.88	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
	1&1 Business (Windows)	0844 335 12 11	£155.88	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	✓	✓	✓	✗
<b>111WebHost.com</b> <a href="http://111webhost.com">111webhost.com</a>	Unlimited Web Hosting Pack	N/A	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✗	✓	✓	✗
	Starter Web Hosting Pack	N/A	£30	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	Budget Web Hosting Pack	N/A	£12	1GB	1GB	5	✓	✗	✓	✓	✗	✓	✓	✗
	WordPress Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	Drupal Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	Joomla! Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	osCommerce Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	ZenCart Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
	PrestaShop Web Hosting Pack	N/A	£24	5GB	2GB	100	✓	✓	✓	✓	✗	✓	✓	✗
123-reg ( <a href="http://www.123-reg.co.uk">www.123-reg.co.uk</a> )	Starter	0845 859 0018	£29.88	1GB	5GB	20	✗	✗	✗	✓	✓	✓	✓	✗
123-reg ( <a href="http://www.123-reg.co.uk">www.123-reg.co.uk</a> )	Plus	0845 859 0018	£59.88	5GB	50GB	500	✓	✗	✗	✓	✓	✓	✓	✗
123-reg ( <a href="http://www.123-reg.co.uk">www.123-reg.co.uk</a> )	Pro	0845 859 0018	£107.88	10GB	100GB	750	✓	✗	✗	✓	✓	✓	✓	✗
123-reg ( <a href="http://www.123-reg.co.uk">www.123-reg.co.uk</a> )	Bus Pro	0845 859 0018	£179.88	20GB	Unlimited	1,000	✓	✗	✗	✓	✓	✓	✓	✗
123-reg ( <a href="http://www.123-reg.co.uk">www.123-reg.co.uk</a> )	Plus (MS)	0845 859 0018	£59.88	2GB	25GB	100	✓	✗	✗	✓	✓	✓	✓	✗
123-reg ( <a href="http://www.123-reg.co.uk">www.123-reg.co.uk</a> )	Pro (MS)	0845 859 0018	£107.88	5GB	50GB	500	✓	✗	✗	✓	✓	✓	✓	✗
123-reg ( <a href="http://www.123-reg.co.uk">www.123-reg.co.uk</a> )	Bus Pro (MS)	0845 859 0018	£179.88	10GB	150GB	1,000	✓	✗	✗	✓	✓	✓	✓	✗
2020Media ( <a href="http://www.2020media.com">www.2020media.com</a> )	Light User	0870 321 2020	£45	20MB	1GB	3	✓	✓	✓	✓	✓	✓	✓	✗
2020Media ( <a href="http://www.2020media.com">www.2020media.com</a> )	Everyday	0870 321 2020	£100	200MB	10GB	15	✓	✓	✓	✓	✓	✓	✓	✗
2020Media ( <a href="http://www.2020media.com">www.2020media.com</a> )	Business/Pro	0870 321 2020	£275	500MB	20GB	50	✓	✓	✓	✓	✓	✓	✓	✗
2020Media ( <a href="http://www.2020media.com">www.2020media.com</a> )	JAVA Tomcat	0870 321 2020	£300	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✓	✗
2020Media ( <a href="http://www.2020media.com">www.2020media.com</a> )	ASP.Net	0870 321 2020	£275	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✓	✗
4D Data Centres ( <a href="http://www.4dhosting.com">www.4dhosting.com</a> )	Bronze Package	0845 166 8386	£40	10MB	500MB	2	✓	✗	✓	✓	✓	✓	✓	✗
4D Data Centres ( <a href="http://www.4dhosting.com">www.4dhosting.com</a> )	Silver Package	0845 166 8386	£64.99	20MB	2GB	10	✓	✗	✓	✓	✓	✓	✓	✗
4D Data Centres ( <a href="http://www.4dhosting.com">www.4dhosting.com</a> )	Gold Package	0845 166 8386	£79.99	50MB	2GB	50	✓	✗	✓	✓	✓	✓	✓	✗
4D Data Centres ( <a href="http://www.4dhosting.com">www.4dhosting.com</a> )	Titanium Package	0845 166 8386	£149.99	500MB	5GB	500	✓	✗	✓	✓	✓	✓	✓	✗
4D Data Centres ( <a href="http://www.4dhosting.com">www.4dhosting.com</a> )	Reseller Package	0845 166 8386	£299.99	1GB	10GB	1,000	✓	✗	✓	✓	✓	✓	✓	✗
Blackfoot Hosting Ltd ( <a href="http://www.blackfoot.co.uk">www.blackfoot.co.uk</a> )	Home	N/A	£40	500MB	5GB	5	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd ( <a href="http://www.blackfoot.co.uk">www.blackfoot.co.uk</a> )	Business	N/A	£50	1GB	20GB	100	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd ( <a href="http://www.blackfoot.co.uk">www.blackfoot.co.uk</a> )	eCommerce	N/A	£100	2GB	40GB	200	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd ( <a href="http://www.blackfoot.co.uk">www.blackfoot.co.uk</a> )	Professional	N/A	£150	3GB	60GB	300	✓	✓	✓	✓	✗	✓	✓	✗
Blacknight ( <a href="http://www.blacknight.com">www.blacknight.com</a> )	Minimus	35359 918 3072	£45	10GB	200GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Blacknight ( <a href="http://www.blacknight.com">www.blacknight.com</a> )	Medius	35359 918 3072	£79	20GB	400GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Blacknight ( <a href="http://www.blacknight.com">www.blacknight.com</a> )	Maximus	35359 918 3072	£45	30GB	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Bravo14 ( <a href="http://bravo14.co.uk">http://bravo14.co.uk</a> )	Starter Linux	N/A	£130	2,000MB	2,000MB	10	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 ( <a href="http://bravo14.co.uk">http://bravo14.co.uk</a> )	Starter Windows	N/A	£20	2,000MB	2,000MB	10	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 ( <a href="http://bravo14.co.uk">http://bravo14.co.uk</a> )	Business Linux	N/A	£45	4,000MB	4,000MB	4,000	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 ( <a href="http://bravo14.co.uk">http://bravo14.co.uk</a> )	Business Windows	N/A	£45	4,000MB	4,000MB	4,000	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 ( <a href="http://bravo14.co.uk">http://bravo14.co.uk</a> )	Ultimate Linux	N/A	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 ( <a href="http://bravo14.co.uk">http://bravo14.co.uk</a> )	Ultimate Windows	N/A	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✗	✓	✓	✗
catalyst2 ( <a href="http://www.catalyst2.com/web-hosting">www.catalyst2.com/web-hosting</a> )	Mega Deal	0800 107 79 79	11.99	250MB	2GB	1	✓	✓	✓	✓	✓	✓	✓	✗
catalyst2 ( <a href="http://www.catalyst2.com/web-hosting">www.catalyst2.com/web-hosting</a> )	Mega Plus	0800 107 79 79	29.99	400MB	10GB	10	✓	✓	✓	✓	✓	✓	✓	✗
catalyst2 ( <a href="http://www.catalyst2.com/web-hosting">www.catalyst2.com/web-hosting</a> )	Power	0800 107 79 79	49.99	750MB	20GB	50	✓	✓	✓	✓	✓	✓	✓	✗
catalyst2 ( <a href="http://www.catalyst2.com/web-hosting">www.catalyst2.com/web-hosting</a> )	Power Plus	0800 107 79 79	89.99	1000MB	40GB	100	✓	✓	✓	✓	✓	✓	✓	✗
catalyst2 ( <a href="http://www.catalyst2.com/web-hosting">www.catalyst2.com/web-hosting</a> )	Power Xtra	0800 107 79 79	129.99	1500MB	80GB	150	✓	✓	✓	✓	✓	✓	✓	✗
Designwasp ( <a href="http://designwasp.com">http://designwasp.com</a> )	Starter	0844 372 9848	£30	3GB	20GB	1,000	✓	✓	✗	✓	✗	✓	✓	✗
Designwasp ( <a href="http://designwasp.com">http://designwasp.com</a> )	Home	0844 372 9848	£40	10GB	50GB	10,000	✓	✓	✗	✓	✗	✓	✓	✗
Designwasp ( <a href="http://designwasp.com">http://designwasp.com</a> )	Business	0844 372 9848	£60	Unlimited	Unlimited	Unlimited	✓	✓	✗	✓	✗	✓	✓	✗


## Featured host of the month: **Netcetera** [www.netcetera.co.uk](http://www.netcetera.co.uk)



Getting more out of one of our quality listed hosting providers

Netcetera is a long-established and experienced hosting provider who has been around since 1996. It provides solutions with managed web hosting services, dedicated servers and cloud hosting services. The award-winning company boasts a 16,000 square foot ISO27001 certified Data Centre facility located in the Isle

of Man. They offer a £1 Hosting trial for those who want to try before they buy. Developer packages are powered by the latest Microsoft ASP.NET 4.5 platform, and include 1GB of web space for just £2.99 a month. Ideal for newbies, designers and developers who want a quick, simple and cheap hosting solution..

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Designwasp ( <a href="http://designwasp.com">http://designwasp.com</a> )	Windows Unlimited	0844 372 9848	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Designwasp ( <a href="http://designwasp.com">http://designwasp.com</a> )	Windows Home	0844 372 9848	£40	10GB	50GB	1,000	✓	✓	✓	✓	✓	✓	✓	✓
Designwasp ( <a href="http://designwasp.com">http://designwasp.com</a> )	CheapHost	0844 372 9848	£10	300MB	100MB	5	✓	✓	✓	✓	✓	✓	✓	✓
Digital Gibbon Ltd ( <a href="http://digitalgibbon.com">http://digitalgibbon.com</a> )	Personal	01865 589 990	£12	1GB	Unlimited	10	✓	✓	✓	✓	✓	✓	✓	✓
Digital Gibbon Ltd ( <a href="http://digitalgibbon.com">http://digitalgibbon.com</a> )	Personal Plus	01865 589 990	£48	Unlimited	Unlimited	50	✓	✓	✓	✓	✓	✓	✓	✓
Digital Gibbon Ltd ( <a href="http://digitalgibbon.com">http://digitalgibbon.com</a> )	Business	01865 589 990	£108	5GB	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓
Digital Gibbon Ltd ( <a href="http://digitalgibbon.com">http://digitalgibbon.com</a> )	Business Professional	01865 589 990	£132	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Domaincheck ( <a href="http://www.domaincheck.co.uk">www.domaincheck.co.uk</a> )	Bronze Linux	0191 261 2252	£30	100MB	1GB	5	✓	✓	✓	✓	✓	✓	✓	✓
Domaincheck ( <a href="http://www.domaincheck.co.uk">www.domaincheck.co.uk</a> )	Gold Linux	0191 261 2252	£100	500MB	5GB	25	✓	✓	✓	✓	✓	✓	✓	✓
Domaincheck ( <a href="http://www.domaincheck.co.uk">www.domaincheck.co.uk</a> )	Bronze Windows	0191 261 2252	£30	100MB	1GB	5	✓	✓	✓	✓	✓	✓	✓	✓
Domaincheck ( <a href="http://www.domaincheck.co.uk">www.domaincheck.co.uk</a> )	Gold Windows	0191 261 2252	£100	500MB	5GB	25	✓	✓	✓	✓	✓	✓	✓	✓
Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Reseller Unix	0845 226 5566	£399.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Reseller Windows	0845 226 5566	£499.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Enterprise	0845 226 5566	£89.99	1GB	2GB	250	✓	✓	✓	✓	✓	✓	✓	✓
Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Commerce	0845 226 5566	£179.99	2GB	5GB	500	✓	✓	✓	✓	✓	✓	✓	✓
Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Designer	0845 226 5566	£119.99	1GB	2GB	250	✓	✓	✓	✓	✓	✓	✓	✓
Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Developer	0845 226 5566	£259.99	2GB	5GB	500	✓	✓	✓	✓	✓	✓	✓	✓
eHosting ( <a href="http://www.ehosting.com">www.ehosting.com</a> )	Starter	0844 999 4100	£23.88	1GB	25GB	10	✓	✓	✓	✓	✓	✓	✓	✓
eHosting ( <a href="http://www.ehosting.com">www.ehosting.com</a> )	Personal	0844 999 4100	£59.88	2.5GB	Unlimited	50	✓	✓	✓	✓	✓	✓	✓	✓
eHosting ( <a href="http://www.ehosting.com">www.ehosting.com</a> )	Expert	0844 999 4100	£95.88	5GB	Unlimited	250	✓	✓	✓	✓	✓	✓	✓	✓
eHosting ( <a href="http://www.ehosting.com">www.ehosting.com</a> )	Virtual	0844 999 4100	£227.88	50GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Equipphase ( <a href="http://www.equipphase.net">www.equipphase.net</a> )	Bronze	0121 314 4865	£30	200MB	2GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Equipphase ( <a href="http://www.equipphase.net">www.equipphase.net</a> )	Silver	0121 314 4865	£42	400MB	5GB	20	✓	✓	✓	✓	✓	✓	✓	✓
Equipphase ( <a href="http://www.equipphase.net">www.equipphase.net</a> )	Gold	0121 314 4865	£72	800MB	10GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Equipphase ( <a href="http://www.equipphase.net">www.equipphase.net</a> )	Platinum	0121 314 4865	£114	1,200MB	40GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Eurofasthost.com ( <a href="http://www.eurofasthost.com">www.eurofasthost.com</a> )	Email Only	02380 249 823	£40	1GB	2GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Eurofasthost.com ( <a href="http://www.eurofasthost.com">www.eurofasthost.com</a> )	Essential	02380 249 823	£75	2GB	5GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Eurofasthost.com ( <a href="http://www.eurofasthost.com">www.eurofasthost.com</a> )	Superior	02380 249 823	£140	5GB	10GB	25	✓	✓	✓	✓	✓	✓	✓	✓
Eurofasthost.com ( <a href="http://www.eurofasthost.com">www.eurofasthost.com</a> )	Premium	02380 249 823	£250	10GB	25GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Evohosting ( <a href="http://www.evohosting.co.uk">www.evohosting.co.uk</a> )	Starter	N/A	£29.99	500MB	1GB	3	✓	✓	✓	✓	✓	✓	✓	✓
Evohosting ( <a href="http://www.evohosting.co.uk">www.evohosting.co.uk</a> )	Home	N/A	£54.99	2.5GB	30GB	50	✓	✓	✓	✓	✓	✓	✓	✓
Evohosting ( <a href="http://www.evohosting.co.uk">www.evohosting.co.uk</a> )	Business	N/A	£79.99	6.5GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Evohosting ( <a href="http://www.evohosting.co.uk">www.evohosting.co.uk</a> )	eCommerce	N/A	£159.99	30GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
 <b>Tsohost</b> <a href="http://www.tsohost.com">www.tsohost.com</a>	Lite Hosting (Linux)	0800 024 2931	£14.99	500MB	2GB	10	✓	✓	✓	✓	✓	✓	✓	✓
	Standard Hosting (Linux & MS)	0800 024 2931	£34.99	2.5GB	5GB	25	✓	✓	✓	✓	✓	✓	✓	✓
	Pro Hosting (Linux & MS)	0800 024 2931	£49.99	10GB	15GB	100	✓	✓	✓	✓	✓	✓	✓	✓
	Ultimate Hosting (Linux & MS)	0800 024 2931	£199.99	100GB	1000GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	Ultimate Reseller (Linux & MS)	0800 024 2931	£299.98	100GB	1000GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Giacom ( <a href="http://www.giacom.com">www.giacom.com</a> )	Business Pro	0800 542 7500	£199	100MB	2GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Heart Internet ( <a href="http://www.heartinternet.co.uk">www.heartinternet.co.uk</a> )	Starter Professional	0845 644 7750	£29.80	2.5GB	10GB	1,000	✓	✓	✓	✓	✓	✓	✓	✓
Heart Internet ( <a href="http://www.heartinternet.co.uk">www.heartinternet.co.uk</a> )	Home Professional	0845 644 7750	£89.99	10GB	50GB	10,000	✓	✓	✓	✓	✓	✓	✓	✓
Heart Internet ( <a href="http://www.heartinternet.co.uk">www.heartinternet.co.uk</a> )	Business Professional	0845 644 7750	£129.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Heart Internet ( <a href="http://www.heartinternet.co.uk">www.heartinternet.co.uk</a> )	Reseller Professional	0845 644 7750	£299.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Hostway ( <a href="http://www.hostway.co.uk">www.hostway.co.uk</a> )	Silver	0808 180 1880	£79.50	150MB	3GB	5	✓	Option	✓	✓	✓	✓	✓	✓
Hostway ( <a href="http://www.hostway.co.uk">www.hostway.co.uk</a> )	Gold	0808 180 1880	£139.50	300MB	5GB	10	✓	Option	✓	✓	✓	✓	✓	✓
Hostway ( <a href="http://www.hostway.co.uk">www.hostway.co.uk</a> )	Gold Plus	0808 180 1880	£189.50	450MB	10GB	30	✓	Option	✓	✓	✓	✓	✓	✓
Hostway ( <a href="http://www.hostway.co.uk">www.hostway.co.uk</a> )	Platinum	0808 180 1880	£359.50	600MB	20GB	50	✓	Option	✓	✓	✓	✓	✓	✓
Hostway ( <a href="http://www.hostway.co.uk">www.hostway.co.uk</a> )	Platinum Plus	0808 180 1880	£599.50	1.2GB	40GB	10	✓	Option	✓	✓	✓	✓	✓	✓
Hostway ( <a href="http://www.hostway.co.uk">www.hostway.co.uk</a> )	Email Plus	0808 180 1880	£49.95	50MB	N/A	5	N/A	N/A	N/A	✓	✓	✓	✓	✓
ICUK ( <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a> )	Professional	0845 009 9175	£30	250MB	1GB	50	✓	✓	option	✓	✓	✓	✓	✓
ICUK ( <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a> )	Advanced	0845 009 9175	£50	2GB	2.5GB	150	✓	✓	option	✓	✓	✓	✓	✓
ICUK ( <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a> )	Enterprise	0845 009 9175	£80	2GB	500MB	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
ICUK ( <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a> )	Professional Plus	0845 009 9175	£90	500MB	5GB	100	✓	✓	option	✓	✓	✓	✓	✓
ICUK ( <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a> )	Premium Plus	0845 009 9175	£150	1GB	12.5GB	500	✓	✓	option	✓	✓	✓	✓	✓
ICUK ( <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a> )	Enterprise Plus	0845 009 9175	£300	2GB	20GB	Unlimited	✓	✓	option	✓	✓	✓	✓	✓



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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
ICUK <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a>	Reseller Windows	0845 009 9175	£200	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
ICUK <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a>	Reseller Linux	0845 009 9175	£200	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
ICUK <a href="http://www.icukhosting.co.uk">www.icukhosting.co.uk</a>	Reseller Enterprise	0845 009 9175	£500	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
JAB Web Hosting ( <a href="http://www.jabwebhosting.com">www.jabwebhosting.com</a> )	Mail - M105	0800 043 0153	£15.17	256MB	3GB	50	✓	✓	✓	✓	✓	✓	✓	✓
JAB Web Hosting ( <a href="http://www.jabwebhosting.com">www.jabwebhosting.com</a> )	Home - H25	0800 043 0153	£24.47	1GB	8GB	50	✓	✓	✓	✓	✓	✓	✓	✓
JAB Web Hosting ( <a href="http://www.jabwebhosting.com">www.jabwebhosting.com</a> )	Professional - P55	0800 043 0153	£45	2GB	15GB	75	✓	✓	✓	✓	✓	✓	✓	✓
JAB Web Hosting ( <a href="http://www.jabwebhosting.com">www.jabwebhosting.com</a> )	Reseller - R25	0800 043 0153	£97.88	2GB	30GB	250	✓	✓	✓	✓	✓	✓	✓	✓
JAB Web Hosting ( <a href="http://www.jabwebhosting.com">www.jabwebhosting.com</a> )	Reseller - R105	0800 043 0153	£271.60	4GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
LCN ( <a href="http://www.lcn.com">www.lcn.com</a> )	Blog	01438 342 490	£20	100MB	1GB	5	✓	✓	✓	✓	✓	✓	✓	✓
LCN ( <a href="http://www.lcn.com">www.lcn.com</a> )	Starter	01438 342 490	£30	1GB	1GB	10	✓	✓	✓	✓	✓	✓	✓	✓
LCN ( <a href="http://www.lcn.com">www.lcn.com</a> )	Starter	01438 342 490	£30	1GB	1GB	10	✓	✓	✓	✓	✓	✓	✓	✓
LCN ( <a href="http://www.lcn.com">www.lcn.com</a> )	Dynamic	01438 342 490	£50	2GB	2GB	20	✓	✓	✓	✓	✓	✓	✓	✓
LCN ( <a href="http://www.lcn.com">www.lcn.com</a> )	Premium	01438 342 490	£80	5GB	5GB	50	✓	✓	✓	✓	✓	✓	✓	✓
LCN ( <a href="http://www.lcn.com">www.lcn.com</a> )	Unlimited	01438 342 490	£120	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts ( <a href="http://ldhosts.co.uk">http://ldhosts.co.uk</a> )	LD Budget (Linux)	07891 235858	£11.88	1GB	1GB	500	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts ( <a href="http://ldhosts.co.uk">http://ldhosts.co.uk</a> )	LD Home (Linux)	07891 235858	£23.88	10GB	10GB	5,000	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts ( <a href="http://ldhosts.co.uk">http://ldhosts.co.uk</a> )	LD Pro (Linux)	07891 235858	£41.88	50GB	50GB	20,000	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts ( <a href="http://ldhosts.co.uk">http://ldhosts.co.uk</a> )	LD Unlimited (Linux)	07891 235858	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts ( <a href="http://ldhosts.co.uk">http://ldhosts.co.uk</a> )	Windows Home	07891 235858	£17.88	2GB	2GB	1,000	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts ( <a href="http://ldhosts.co.uk">http://ldhosts.co.uk</a> )	Windows Unlimited	07891 235858	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Media Temple ( <a href="http://mediatemple.net">http://mediatemple.net</a> )	Shared-Server Pro	+1 310 841 5500	£64	2GB	1TB	1,000	✓	✓	✓	✓	✓	✓	✓	✓
Media Temple ( <a href="http://mediatemple.net">http://mediatemple.net</a> )	Shared-Server Advanced	+1 310 841 5500	£109	5GB	1.5TB	5,000	✓	✓	✓	✓	✓	✓	✓	✓
<b>NameHOG</b> Affordable internet solutions <b>NameHOG</b> <a href="http://www.namehog.net">www.namehog.net</a>	EMAIL ONLY	01604 212 904	£11.99	2.5GB	15GB	10	✓	✓	✓	✓	✓	✓	✓	✓
	STARTER	01604 212 904	£36.99	10GB	150GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	HOME PRO	01604 212 904	£59.99	25GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	BUSINESS	01604 212 904	£109.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Namesco ( <a href="http://www.names.co.uk">www.names.co.uk</a> )	Business	0845 363 3632	£149.99	2,000MB	20GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Namesco ( <a href="http://www.names.co.uk">www.names.co.uk</a> )	Business Plus	0845 363 3632	£89.99	3,000MB	30GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Namesco ( <a href="http://www.names.co.uk">www.names.co.uk</a> )	Designer	0845 363 3632	£239.88	1GB	20GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Namesco ( <a href="http://www.names.co.uk">www.names.co.uk</a> )	Designer Plus	0845 363 3632	£479.88	Unlimited	30GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
<b>Netcetera</b> <b>Netcetera</b> <a href="http://www.netcetera.co.uk">www.netcetera.co.uk</a>	DEVELOPER	0800 061 2801	£32.89	1GB	Unlimited	500	✓	✓	✓	✓	✓	✓	✓	✓
	ONE	0800 061 2801	£109.99	5GB	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓
	RESELLER	0800 061 2801	£274.89	Unlimited	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓
	VM500 Server	0800 061 2801	£300	20GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	2200DC Server	0800 061 2801	£720	160GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	3000DC Server	0800 061 2801	£1,200	2x500GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	2600QC Server	0800 061 2801	£1,800	2x500GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓

## 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 criteria like 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 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 peace of mind and factor good, comprehensive technical support against the price.

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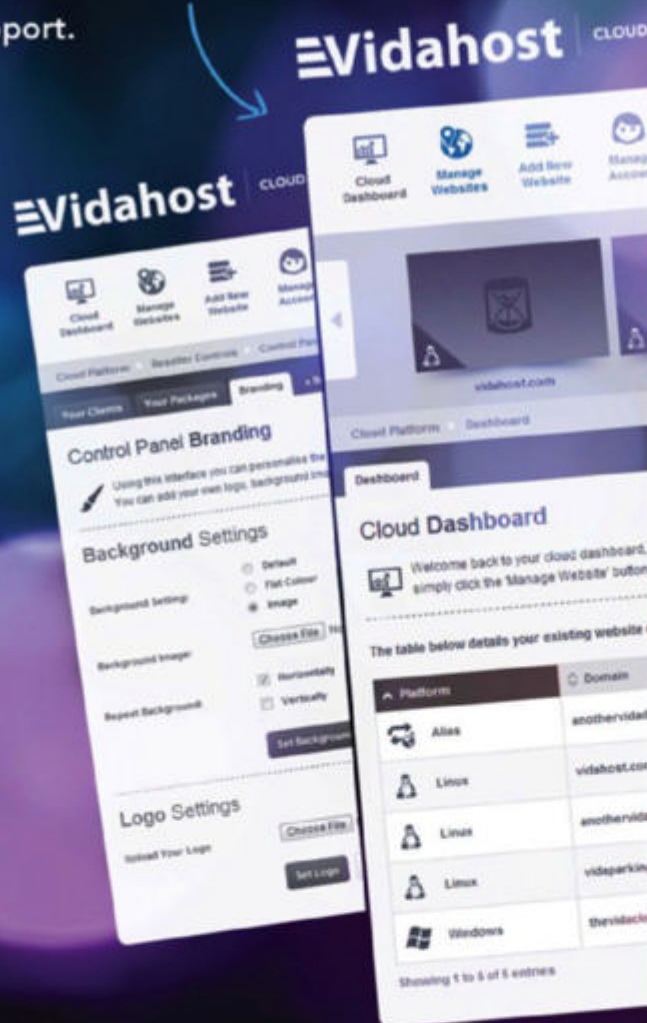
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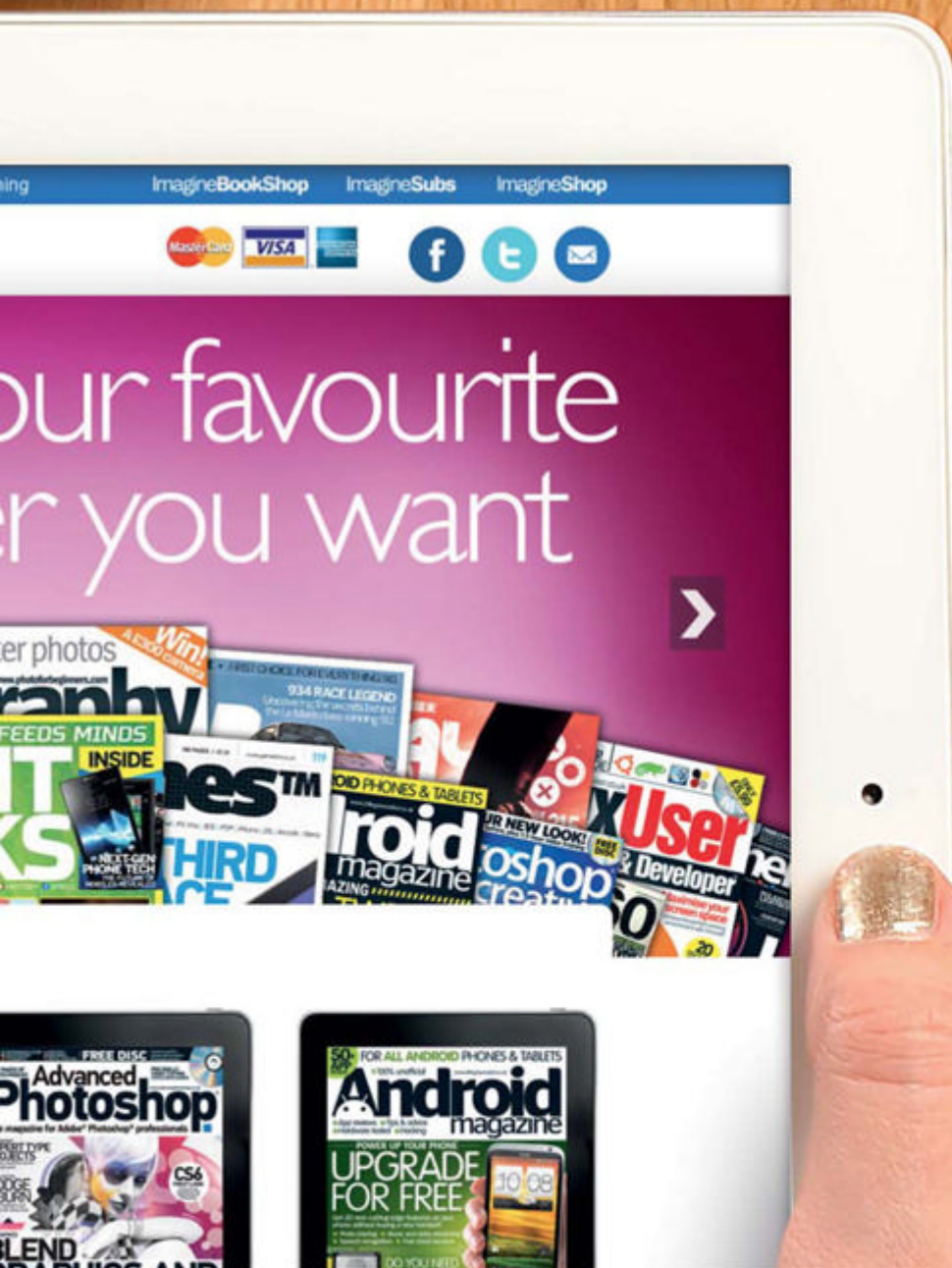
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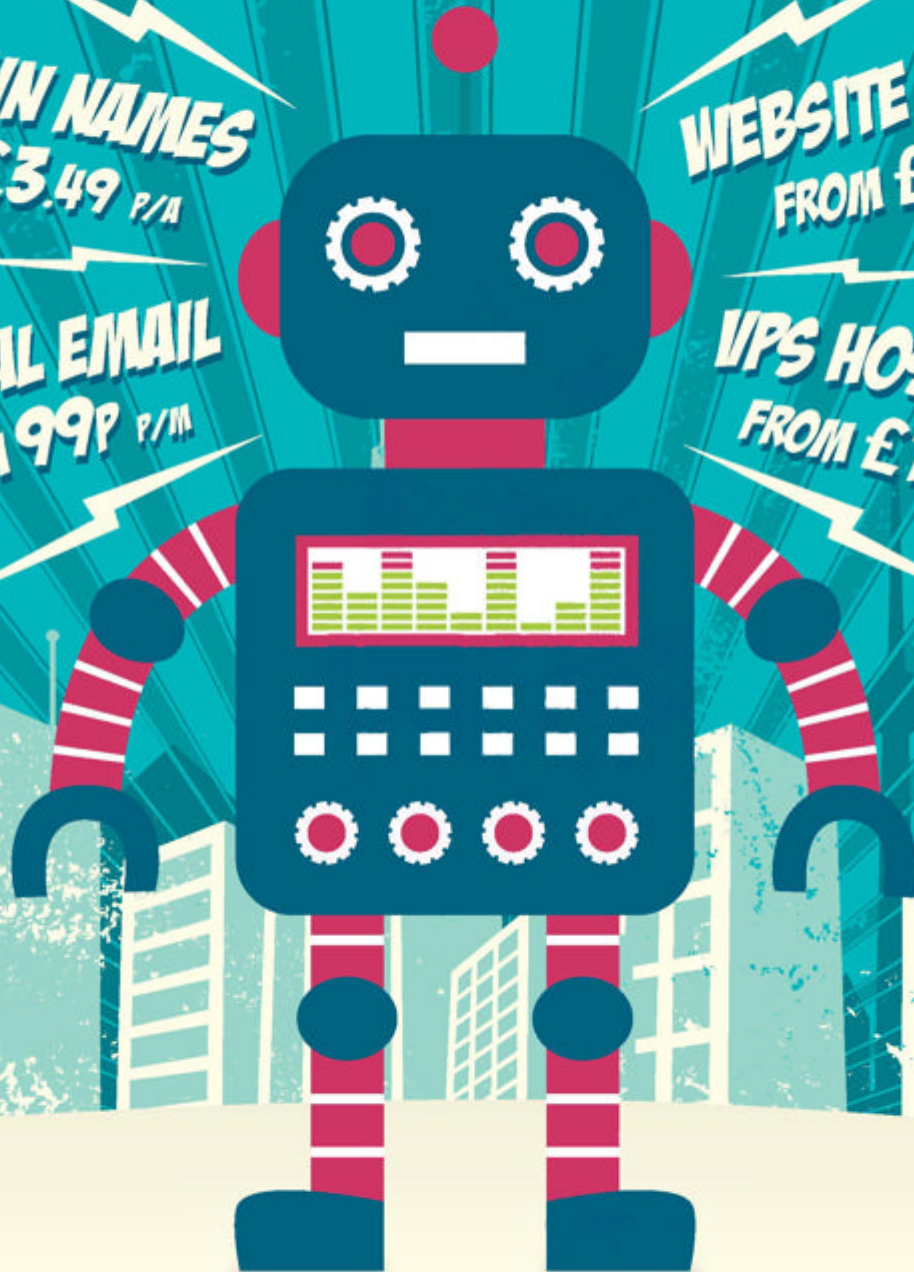
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