

33  
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EXPERT TUTORIALS

web



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ISSUE 225

**SAY HELLO TO  
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Discover the power behind the  
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# Welcome to the issue

## THE WEB DESIGNER MISSION

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



Steve Jenkins

## Highlight



“It's great to see the game engines used in the past now being used for the web. That's a very exciting development”

Web Designer talks to talented two-person studio Hello Enjoy. **Page 34**

## HTML5 and games - what more do you want?



HTML5 is a powerful and talented technology. Is there anything that it can't do? Of course, but as browsers evolve, support follows and its collective talent grows.

It wasn't long ago that Flash was the king of the online game, but its empire has crashed around its ears as HTML5 has taken hold. Building games for online is now a browser-based extravaganza. Our latest lead feature (page 42) digs into what you need to know to start building and beyond. We go into what needs to be considered, the assets, the audio and the game engines. Everything you

need to create your own classic platformer, including a 25-step tutorial, is waiting for you inside.

Another favourite, Photoshop, has also evolved. It's no longer the tool for creating polished, finished site designs to be sliced and rebuilt on the web, it offers much more. It's now a tool for prototyping, wireframing and bringing a project to life and to the client.

We have all heard of Node.js, but it still remains a mystery to many. Well, not for much longer with our invaluable introduction to the power behind the building of fast, scalable apps. Make sure you take a look (page 82), you won't be disappointed.

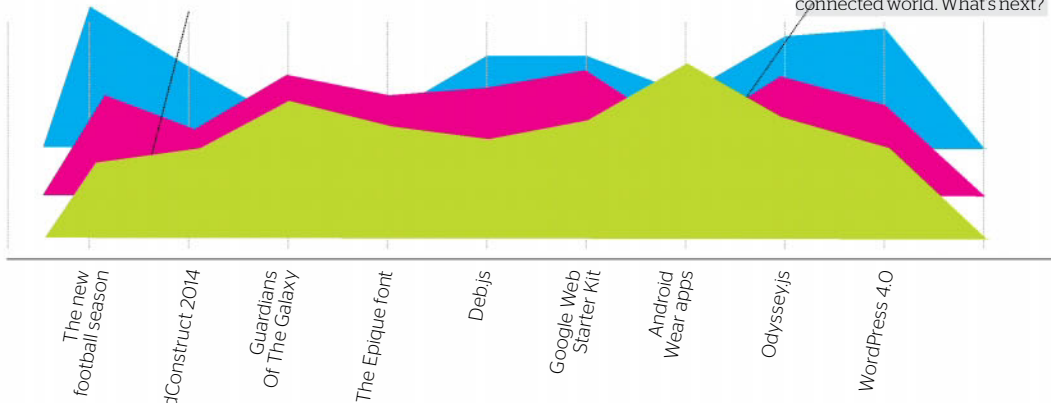
Don't forget to check the latest Lightbox and, as always, enjoy the magazine and see you next issue.

“Developers who create games have to keep in mind that the player can stop playing at any point in time - so efficient statekeeping is a must”

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Time for the real football to start

It's just the start of a fascinating connected world. What's next?



## Excitographic

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

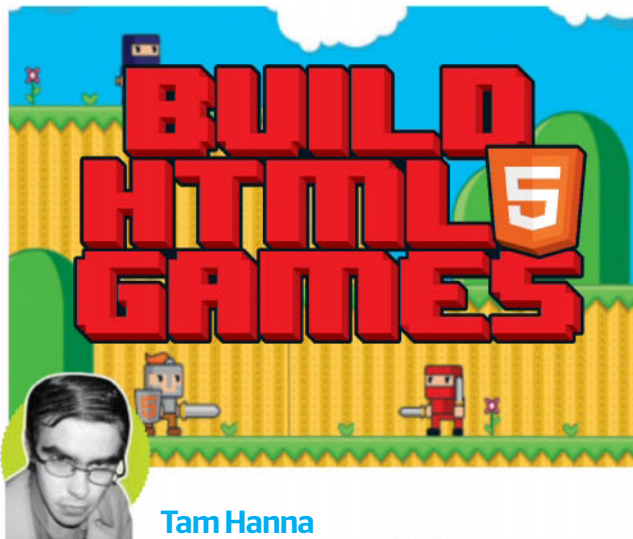
▲ Steve Jenkins, Editor  
▲ Andy Salter, Art Editor  
▲ Victoria Richards, Production Editor

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...

☞ The most important difference between mobile/web and desktop games involves the way the players interact with the product ☞



**Tam Hanna**

Tam is a veteran in the world of coding but a newcomer to **Web Designer**. He has worked with a host of languages with a focus on mobile. This issue Tam unveils the planning and building process for creating a browser-based game with HTML5 and friends. **Page 42**

## Mark Shufflebottom



Mark is a Professor of Interaction Design at Sheridan College, Ontario. This issue he uses Topcoat to show how you can make your own lightweight mobile framework and produce custom interfaces for your apps. **Page 56**



## Daniel Duke



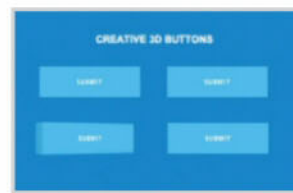
Daniel Duke is a freelance designer and illustrator, building brands and websites for clients all over the country. This issue he discusses the changing role of Photoshop and how you can use it in your design workflow. **Page 74**



## Neil Pearce



Neil is a designer and course editor for the Envato network who loves everything about CSS. In this issue he reveals how you can create your own CSS3 magic with some stylish 3D buttons for your projects. **Page 62**



## Matt Gifford



Matt Gifford is a lead RIA consultant developer and industry author from Cambridge who specialises in mobile development. This issue he introduces us to Node.js and explores the platform's dynamic capabilities. **Page 82**

## Jayson Winters



The creative lead at Brace Design, Jayson is always looking for new techniques to stand out from the competition. This issue he reveals how to create a functional but stylish single input 3D form using a sprinkling of CSS. **Page 68**

## Luke Guppy



Luke is a senior front-end developer at Redweb and has been building sites for over ten years. Using AngularJS, he shows how to rapidly handle data and render in your HTML using a scalable application structure. **Page 92**

## Steven Wu



Steven is an expert WordPress theme developer with over eight years in the eCommerce market. In this issue he demonstrates how to build a responsive WordPress theme using the FoundationPress starter theme. **Page 50**

## Tim Stone



Tim is a front-end developer working at Redweb after studying Interactive Media Production. This issue he shows how to use the Gulp taskrunner to help streamline your workflow and build a Gulp plugin. **Page 98**

**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

# web designer

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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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## Quick look...

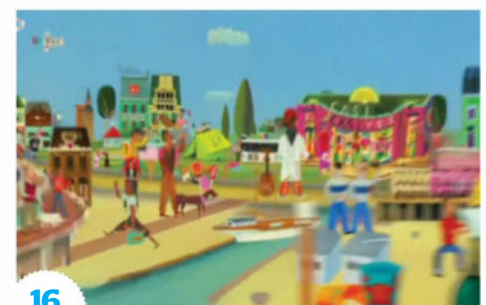
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“Allowing people to learn in different ways and along different paths would be better for the individual”

Danny Brown

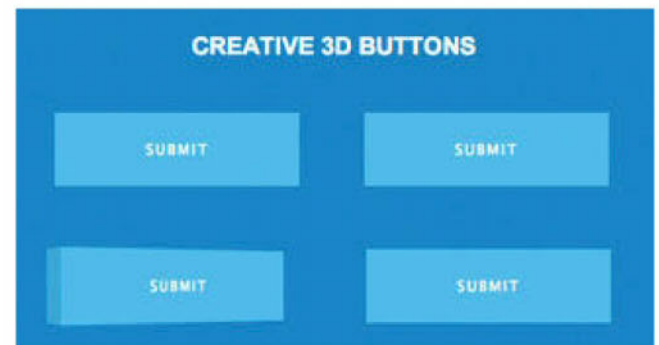
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## The tools and trends to inspire your web projects

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

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# HTML5 web apps: proceed with caution

The push to use standard web technologies to build apps has put mobile security on the backburner. **Web Designer** investigates...

**T**he drive to adopt HTML5/hybrid web apps is a path to be admired. Who wants to have to learn yet another programming language in order to create great-looking

apps when you can build with old favourites HTML, CSS and JavaScript?

And it seems that the march of web apps is only going to become more and more prevalent. The future is undoubtedly mobile, with mobile browsing expected to overtake desktop by the end of 2014. The continuous switch to mobile impacts on how consumers use the web and how designers and developers build for it.

The switch towards web apps is a steady upward climb, with native apps showing a

steady decline. Back in January 2013, a survey initiated by Kendo UI indicated that 36 per cent of developers were opting for a purely HTML approach, while native apps were hitting 15 per cent. Over 12 months later and the HTML option has risen to 41 per cent while the native option has fallen back to just 8 per cent.

Sandwiched in between HTML and native are 'hybrid' apps. These are apps that take from both sides, combining the technologies. The desire for hybrid has not changed, and they still provide a good solution as things stand at the moment.

With all this hyperbole for web apps, it's easy to be blinded by the light – but with great power comes responsibility. In the rush to create web-based apps some of the more obvious elements are sometimes forgotten. It may not be the glory

headline-grabber that gets our attention, but if not dealt with it could have serious repercussions. What are we talking about? Security. Imagine if an infected web app is released and goes global.

A recent paper from the Mobile Security Technologies 2014 conference goes into depth about exactly how web apps could have serious security issues. The report describes how HTML5-based apps can become vulnerable, how attackers can exploit their vulnerabilities through a variety of channels, and what damage these attacks can do. It goes on to reveal how common everyday elements such as free Wi-Fi, 2D barcodes, Bluetooth, NFC, MP3, SMS and images could all expose the vulnerabilities of an app. You have been warned. To get access to the full paper, head over to [bit.ly/1nPNUfb](http://bit.ly/1nPNUfb).

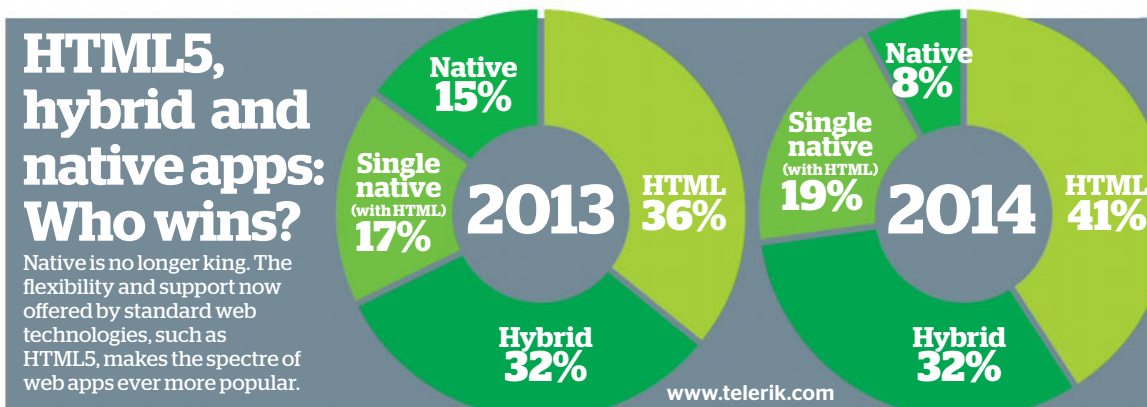
Common everyday elements such as free Wi-Fi, 2D barcodes, Bluetooth, NFC, MP3, SMS and images could all expose the vulnerabilities of an app

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Get the first in our new series of digital web design bookazines

Web designers love a good-looking website and when we see one we immediately want to know how it was put together. This is exactly what our new digital bookazine, **10 Amazing Websites And How To Build Them**, does. It cherry-picks 10 of the best websites out there and demonstrates a technique needed to build an element of the site.

To get your hands on one, head to Apple Newsstand, download the free **Web Designer** app and check the in-app purchases. This is just the first in a new series of digital bookazines being produced by **Web Designer** – watch out for more very soon!





## &lt;design notes&gt;

A collection of inspirational visuals

A Day In The Life Of  
A Tech Worker[bit.ly/1okH2Qt](http://bit.ly/1okH2Qt)

**1** A head-to-head comparison of facts and stats provides genuine interest and engagement for the reader.

**2** This is classic infographic styling with subtle textures and palettes. Illustrations have been kept simple but informative, with plenty of easy-to-digest facts along the way.



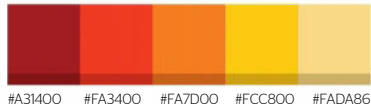
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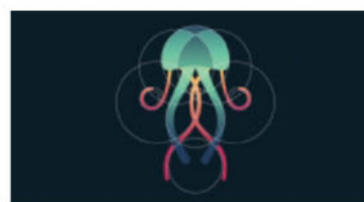
## Lexave

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A condensed display font that looks especially great in large type.

## Graphics

Great visuals to inspire



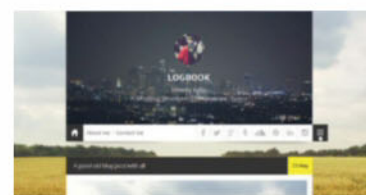
## Animal Logos

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

Beautifully designed logos are something that always deserve to be admired. Check out this collection from the very talented Tom Anders Watkins.

## Themematic

Style up your WordPress



## LogBook

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

This is a clean, simple and minimalist theme with a custom twist. The featured image becomes the background for the individual posts.

My Deejo [my.deejo.fr](http://my.deejo.fr)

Great example of an immersive 3D environment

Evolution Of The Office [bit.ly/1qdO2SW](http://bit.ly/1qdO2SW)

Single-page scroller with cool graphics and animation

808Cube [808cube.com](http://808cube.com)

Experimental 3D Rubik's cube music creation

McColl Center for Art [mccollcenter.org](http://mccollcenter.org)

Multi-directional information and gorgeous graphics

Sites  
of the  
month

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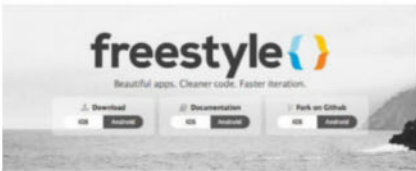
Discover the must-try resources that will make your site a better place



### Tumblr theme generator

[bit.ly/1rNWy6K](http://bit.ly/1rNWy6K)

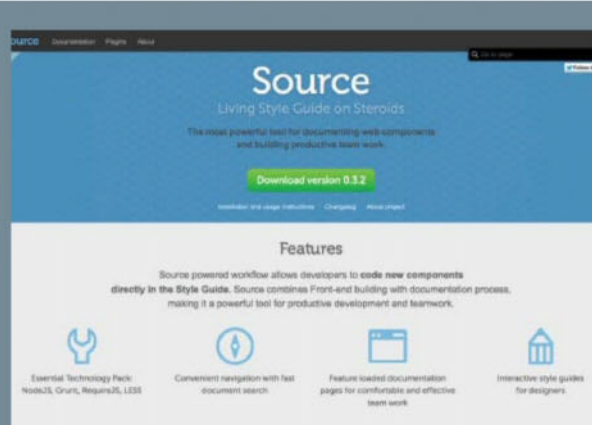
Tumblr is powered by themes – instead of using a pre-built one, create your own with this easy-to-use generator.



### Freestyle

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

An open source platform that is compatible with a hatful of frameworks. It uses CSS to create native-looking apps and works great with Android and iOS.



### Source

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

Source is tagged up as a front-end documentation engine and its purpose is to be 'The most powerful tool for documenting web interfaces and building productive team work'.

Documentation is a key component of any workflow and Source helps bring all of the different elements together. An example of how the documentation engine works is perfectly demonstrated by the actual Source documentation, which is itself powered by the Source engine.

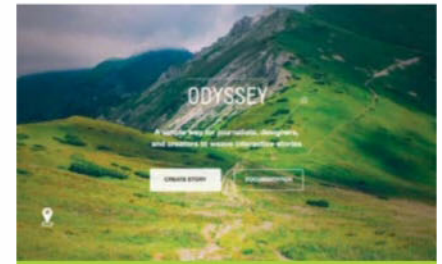
Source works with some of the best-known technologies and tools including NodeJS, Grunt, RequireJS and LESS. Plus, it allows developers to code new components directly into a style guide. If you want a faster, more efficient workflow, take a look at Source.



### Boba.js

[boba.space150.com](http://boba.space150.com)

Do you want to make working with Google Analytics a little simpler? Give this nifty (and ever so slightly nerdy) little library a try.



### Odyssey

[cartodb.github.io/odyssey.js](http://cartodb.github.io/odyssey.js)

A great library for creating interactive stories based on locations across the globe. An intuitive interface just adds to its appeal.

## TOP 5 Responsive HTML5 templates

Get a head start with these contemporary standards-friendly designs

# 01



### Magnetic

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

A visual extravaganza with the visual being the key focus, with a fixed menu making navigation easy. Ideal for artists and photographers.

# 02



### Strongly Typed

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

A blog-style template that puts a strong emphasis on the use of typography. It also offers plenty of white space that really helps the content breathe.

# 03



### Hydrogen

[bit.ly/1lZs57x](http://bit.ly/1lZs57x)

Big, bold fonts, with big background images and the option to customise the base colour. Plus, it's available in six different variations.

# 04



### Mamba

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

A minimalist Bootstrap-based theme with simple sections ready for customisation. An animated hamburger menu makes it ideal for small screens.

# 05



### Urbanic

[bit.ly/1rbEC7d](http://bit.ly/1rbEC7d)

A big fixed-image takes centre stage with text overlays. A fixed header and sections for Team, Portfolio and Contact make it suited for a personal site.



# Exploring structure

Should we be allowing users to explore content in a more interactive way?



**Las**t Autumn I had the honour of being invited to be a judge for the annual Lovie Awards (which 'recognise the unique and resonant nature of the European internet community'). However, as categories and projects were assigned randomly, I sadly didn't get a chance to look over the 'Navigation' category - but when the results were in, I was pleasantly amused.

The winner, an advertising microsite for an Adidas soccer range, featured a large round geometric structure resembling a wireframe football. At each point on this 3D shape were animated icons representing different sections of the site. The user could navigate by rotating the object around in space. Anyone who knows of the work of the late Roy Stringer, or my work for him and the Amaze company, is probably smiling knowingly right now.

A very elegant and unusual site though it is, ultimately this beautiful 3D navigation structure doesn't really have anything to do with the site's content. To use a term Roy loved, it is simply 'eye candy' - but I must stress that this isn't necessarily a bad thing.

In the early Nineties, the Amaze company was founded as a spin-off unit of an academic department within Liverpool John Moore's University. Its purpose was to create interactive products that aided teaching and learning. Our earliest projects, including an interactive 3D Immunology lecture, attest to this.

Two of the company's directors, Roy Stringer and Roger Harnden, came on board from the university. For a number of years they had concerned themselves with how interactive and networked computers could be used to make learning easier and more personalised. The main thrust of their work was about how non-linear structure could be used and, just as importantly, created.

The phrases 'interactive' and 'non-linear' are bandied about as new and 'better' than what we call 'linear' media. Linear media - a book for example - is almost always written from one person's idea of a natural progression: you start at the first page and finish at the last. It's useful - it allows the reader to follow a train of thought and see things come together as the author intended. It's great for stories. But when it comes to learning, that's not how humans think; people grasp things in different ways.

It is fairly obvious that allowing people to learn in different ways and along different paths would be more suited to the individual. But how do you build such a structure? It's hard. We have thousands of years of experience writing linear documents, but almost none writing interactive ones. You can, of course, just randomly create lots of pages and link whichever you like to any other, but this quickly becomes unwieldy. This kind of mess is inevitable when you have a huge global library, as anyone who used the web before search engines came along knows.

Roy and Roger set out to create methods for authoring a system that still had form and structure but could be navigated in a non-linear way. One of these structures was called a Navihedron. The original idea was to take a uniform shape - in the first case an icosahedron - and use it to map the subject you want to talk about.

An icosahedron has 12 sides, so in this case the subject could be split into twelve chapters. Now, looking at the geometry of the icosahedron, each chapter - side - is connected to (touches) three others. The author can now go write each of the 12 chapters bearing in mind the reader will come to the chapter from one of those adjoining three, and will likely move onto one of the other two. At the end, the author has a structured document that 'readers' can navigate through in a non-linear way.

This technique was later adjusted to take in shapes with different numbers of sides, and then later non-uniform shapes that could have an arbitrary number of chapters. The Navihedron was born. Ironically, in its visual incarnation it tended to resemble a 3D wireframe football with icons placed on each point of intersection.

It isn't suited to everything, but in a world that has spent ten years obsessed with a 'race to the bottom' sense of usability - where everything has to be like the plain text menus of Amazon, Yahoo et al - because we assume that's all the user can cope with. I wonder if it's time again to think of bigger ideas for our interfaces.

## PROFILE

### DANNY BROWN

Creative Technologist

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



## WordPress vs Joomla

### HOT TOPIC

With WordPress 4.0 on the horizon, we asked the question 'Who has the credentials to take the heavyweight CMS crown?'



**SASCHA FUCHS @GISUGOSU**

@WebDesignerMag Never Ever Joomla is lightyears behind WordPress. But Heavyweight CMS is more Typo3 - big, fat and ugly :D



**ANDY BELL @REDROBOTZOO**

@WebDesignerMag Definitely not Joomla 3.



**HEARINGSILENCE @HEARINGSILENCE**

@webdesignermag Typically I see that editors find the backend of #wordpress easier to use than #joomla and more intuitive to navigate.



**JOHN MILLIST @JMILLIST**

@webdesignermag I moved from Joomla(3) to WordPress... Fine to develop in but not as user-friendly for clients to get around as WP



**MATT LITHERLAND @MATTSINCE87**

@webdesignermag Most definitely never Joomla 3.



**COLETTE WILSON @COLETTEWILSON5**

@WebDesignerMag I definitely recommend switching, with a bit of coding know-how Joomla 3 offers a lot more flexibility than WordPress.



**MARC WAKEFIELD @MRM\_DESIGN**

@WebDesignerMag Joomla 3 all the way! It is so flexible you can do anything with it. Very easy for clients to use too.



**IGOR SNOOPER @IGOR\_SNOOPER**

@WebDesignerMag Joomla



**IWEBSITEZ.COM @IWEBSITEZ**

@WebDesignerMag We would not go for any of them to be honest...



**KIE @KIERANGREENWOOD**

@WebDesignerMag WordPress can have the "heavyweight" title as every wp-site I visit crawls.

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## PROFILE

■ **JO CRUICKSHANKS**

■ Co-founder

■ [www.wearefolk.com](http://www.wearefolk.com)



# BUILDING YOUR OWN EMPIRE

Folk MD Joanna Cruickshanks revels in the joy of creating a company

**Q. You are now the MD of a successful agency - but tell us, where and how did it all begin?**

It began when I finished university and got my first taste of how technology would transform the world in which we live. I worked for a local IT company and had to put together integrated campaigns to promote 'unified messaging' to SMEs. I was really thrown in at the deep end looking back, but this is what first gave me a deep understanding of technology. I was the only girl out of 80 staff and I fell in love with the geekiness of the guys I was working with. I became fascinated by the way that technology had the propensity to make marketing a really authentic communication experience between people and businesses.

From that job, I went off to work in a dot com and was lucky enough to have a boss who followed my vision to create a user-generated content community rather than simply try to sell something. This was over 16 years ago, so I'm really fortunate that at a young age, I was trusted to build a team, a business and a user community of over 200,000 teenagers. It was brilliant and I had a ball creating content deals with Lycos, Orange, Universal and many other early adopters of the digital revolution.

From there, I went to work for Tom Singh (owner of New Look), creating brand strategies and stories - always looking at the online opportunities for retail brands. Armed with tons of retail experience from Tom, I then moved to a niche make-up company called Pout and took them into eCommerce very successfully, as well as managing their 500 strong global retail accounts. Again, it was great fun but when I got pregnant with my first child, I knew I wanted to move out of London. My husband was already doing search engine marketing as a freelancer and so we were able to move easily.

After my first year of motherhood, I was ready for my next work project and I started a beauty website. It was great to do my own thing, but the experiences I

had with other digital agencies building my website just wasn't in tune with the vision I had for the brand - there was a disconnect between the brand and the online experience, and it impacted my business. This is where everything aligned and Paul and I decided that we would be able to pool all of our knowledge about digital and retail and be able to offer a greater experience for some of our favourite brands. This is when we rather naively started our own agency. We had no idea how hard it would be and we have learnt a lot of valuable lessons in the process, but I'm really glad we did - it's now a place where we get to live out our purpose with other great people.

**Q. Female MDs are still a rare breed in a male-orientated creative/web design industry. Why do you think this is and how would you encourage more women to join the industry?**

“Being a great leader is linked to having a purpose and then inspiring others to go there with you”

I'm not sure why this is really, I think there is a mindset about all things geeky being very male and the boss being a man, but actually the whole MD thing is really about communication and leadership. Being a great leader is totally linked to having a purpose and a cause and then inspiring others to go there with you. To do this, you have to become vulnerable and really, women (everyone) have had the vulnerability conditioned out of them. I've learned that you have to be comfortable with your own vulnerability to rise up and be a leader, so I would encourage women (and men) who want to lead to go and find out as much about themselves as they can - know who they are, what they value and what they want to do in the world. When you have that clear, it doesn't matter if you are male or female, it will just happen and you will, like me, find the right people around you to plug any skills gaps you may have.

**Q. Folk is not your first venture into setting up a site/business. How difficult is it and what did you learn from your different ventures?**

I have always been inspired to make change in the world for people. When you find the seed of a business idea, it's not often like you really have a choice to sit and think about the 'how' of everything - it seems to happen if it's meant to. Like anything in life, it depends on how comfortable you are taking risks and failing. I have learnt to see all the challenges as things to learn from. Setting up your own thing is hard work and it brings you into fear a lot, but I love that. What I have learnt from everything I have started is to not get too attached and to be able to let go of something and the expectation to make room for the next thing.

**Q. When you started Folk, what was your long-term vision for the agency and how has it evolved since its initial inception?**

It was about connecting brands with technology and with people - and really, that still applies. However, now I can see that leadership and culture is key to a brand and organisation

embracing this approach and I can also see that as an agency is not simply about building websites or doing digital - we are empowering transformation.

**Q. Finally, what do love about being the MD of your very own empire?**

I love the fact that by building and growing Folk, I can make a difference to people's lives, the way they feel about themselves and what they can create or do in the world. By making this difference to others everyday, I get to live my purpose and that's so rewarding. I also love creating big-thinking strategies and ideas - both for Folk and with our brand partners. The sense of satisfaction from seeing your vision come to life is great. At the same time, so is successfully deconstructing someone's limiting belief about what is possible for themselves or their brand/business.



**<Above>**  
 • The site is built fundamentally around the distinctive artwork of Belgian illustrator Tom Schamp



#333333



#77C3B9



#F1B700



#000000



**<Above>**  
 • A key section allows you to register your email for a chance to win a stay

**<Above>**  
 • Each location is represented with its own area, identifying the cultural landmarks visitors can find

**<Above>**  
 • Explorers can navigate more quickly using a breadcrumb-like menu, easily accessible throughout





# De Vlaamse Kust Extra Deluxe

extradeluxe.be

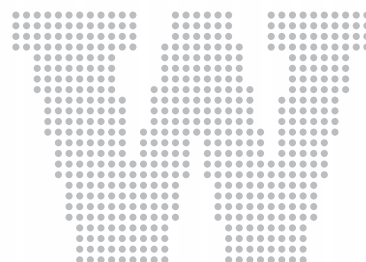
Development technologies HTML5, CSS3, jQuery



Designer/Developer **Kunstmaan,  
Tom Schamp**

[www.kunstmaan.be](http://www.kunstmaan.be) / [www.tomschamp.com](http://www.tomschamp.com)

There's nothing like a trip to the seaside and this Belgian URL succeeds in illustrating that excitement



Whether you are fluent in Dutch or not, the romantic love of coastal towns is universal. Buckets, spades, funky beach towels and the crunch of a sand-covered picnic are all conducive to memorable days out. De Vlaamse Kust translates roughly as The Flemish Seaside, with this site being a celebration of Northern Belgium's coastline.

Extra Deluxe positions itself as an interactive postcard for the destination. The picturesque locations featured span 60km, connected by a tramline, inviting website and real-world visitors to explore the region. Built by Leuven-based communications agency Kunstmaan,

the experience leans heavily on animation techniques to zoom you through immersive scenery. All the backdrops are heavily stylised, opting to use the distinctive artwork of Belgian illustrator Tom Schamp.

The result is bright, playful and childish in the best possible sense - adding real local charm and character throughout. Clickable hotspots are overlaid to signpost each of the destinations such as De Haan and Wenduine, Zeebrugge, Oostende and De Panne. The camera sweeps you through, allowing you to gain closer inspection and more hotspots putting the visual landmarks into context. Side panels offer a glimpse of the real sights you can look forward to, along with the facility to check Hotel and B&B availability should you decide to hit the shores.

**abcABC**  
**1234567890**

**<Above>**

• ITC Kabel appears in Demi, Book and Medium varieties and ensures typography is sharp and legible

☛☛ All the backdrops are heavily stylised, opting to use the distinctive artwork of Belgian illustrator Tom Schamp ☛☛



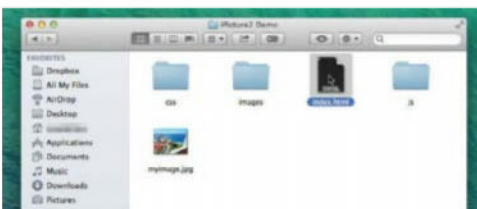
## Attach hotspot tooltips to your images with iPicture2

Inspired by extradeluxe.be, we show you how to add click or hover hotspots to your web images with the iPicture2 jQuery plugin



### 01 Pick up iPicture2

For this example we're going to use the iPicture2 plugin by Sara D'Alia. What this plugin does is allow you to very quickly overlay hotspot 'dot' buttons on an image, offering tooltip text for annotation purposes. These can easily be toggled between hover or click modes, requiring no code whatsoever. To start, head over to [ipicture-square.justmybit.com/getting-started.html](http://ipicture-square.justmybit.com/getting-started.html) and click the download link to save the zip.



### 02 Essential plugin files

Unpack the zip archive and we'll start by isolating the basic files we'll need. From the 'css' folder we need 'iPicture.css', along with 'jquery.picture.js' from the 'js' folder. Copy them into the root of a new HTML document. We also need the 'images' folder, so copy that too. However, if you wish, you can dispense of the contents apart from the 'moreblack' and 'morewatergreen' folders inside.

### 03 Attach the plugin

In the head of the page we need to link iPicture2's stylesheet, then the latest jQuery CDN. After that we can attach the 'jquery.picture.js' file as follows:

```
001 <link rel="stylesheet" type="text/
css" media="screen" href="css/
iPicture.css"/>
002 <script src="http://code.jquery.com/
jquery-1.11.0.min.js"></script>
003 <script type="text/javascript" src=
"js/jquery.ipicture.js"></script>
```



### 04 The wizard's way

Referring back to the original plugin files, among the demos you'll find 'wizard.html', so open this page in your browser. iPicture2 neatly provides this 'wizard' tool for dragging and dropping the dot icons onto a selected image. So, browse for your chosen graphic and position as many as you require before clicking the 'Get code' button below. This will generate the code you need to copy and paste into your page body:

```
001 <div id="iPicture" data-interaction
="hover">
002 <div class="ip_slide">
003 
004 <div class="ip_tooltip ip_img32"
style="top: 348px; left: 153px;
" data-button="moreblack" data-
tooltipbg="bgblack" data-round=
"roundBgW" data-animationtype=
"ltr-slide">
005 <p>
006 </p>
007 </div>
<!--Extra dots appear here-->
008 </div>
009 </div>
010 <script>
011 $(("#iPicture").iPicture();
012 </script>
```



### 05 Add your text

The previous code will add the default black dots with blank black bubbles to your image. As long as you have the corresponding folder in your images folder you can change this as we have to 'morewatergreen' or any of the other supplied colours. You then add your bubble text by just adding a string between the <p> tags of each hotspot <div> element, like so:

```
001 <div id="iPicture" data-
interaction="hover">
002 <div class="ip_slide">
003 <img class="ip_tooltipImg" src=
"myimage.jpg">
004 <div class="ip_tooltip ip_img32"
style="top: 348px; left: 153px;
" data-button="morewatergreen"
data-tooltipbg="bgblack" data-
round="roundBgW" data-
animationtype="ltr-slide">
005 <p>Silver Sands hotel and casino</p>
006 </div>
```

### 06 From hover to click

To switch iPicture2 between hover or click interactions, you only have to change a single line. Simply amend the data-interaction field of the main 'iPicture' container <div> to 'hover' or 'click' as desired. Like our example, you might also like to change the default cursor to the pointer by extending the '.ip\_tooltip' CSS class. Add the lines, save the page and preview!

```
001 CSS:
002 <style>
003 .ip_tooltip {
004 cursor: pointer;
005 }
006 </style>
```

```
HTML:
001 <div id="iPicture" data-
interaction="click">
```





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## Studio Indigo

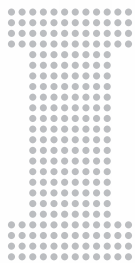
studioindigo.co.uk

**Development technologies** HTML5, CSS3, Flexbox, SASS, jQuery, Response.js, Grunt, Modernizer, AJAX, Google Maps, iOS Slider, iDangero.us swiper



Designer/developer **Green Chameleon**  
[www.greenchameleondesign.com](http://www.greenchameleondesign.com)

A sumptuous studio brochure epitomising how minimalist style can still manage to push the web development envelope



It's no coincidence that corporate portfolio or eCommerce brochure sites are consistently beautiful. When design-conscious clients have the imagination and budget to employ the skills of talented web designers, the marriage can be dynamite.

Studio Indigo of Chelsea Wharf London enlisted Bristol-based agency Green Chameleon to produce this slick example, giving license for measured indulgence. A minimalist style balances beauty with function, encouraging immersive exploration of breathtaking architectural and interior design work.

"Technically it gave us a chance to really stretch our legs with a few techniques we were keen to use in the

wild," says Tom Anderson, Green Chameleon's creative director. "We combined subtle AJAX loading techniques with history push state navigation to create smooth functional page transitions. Flexbox was carefully deployed to ensure a crisp and accurate page layout that would degrade gracefully where required."

A desire from the client for the site to scroll horizontally proved a challenge, especially given the need for responsiveness. There's no better way to convey an agile business attitude than ensuring compatibility across devices. "The site had to respond perfectly, supporting devices from iPhones to large retina displays. Fullscreen images were controlled using Response.js to use only the size needed - saving on bandwidth and load times for those on smaller devices."

Technically it gave us a chance to really stretch our legs with a few techniques we were keen to use in the wild



### <Above>

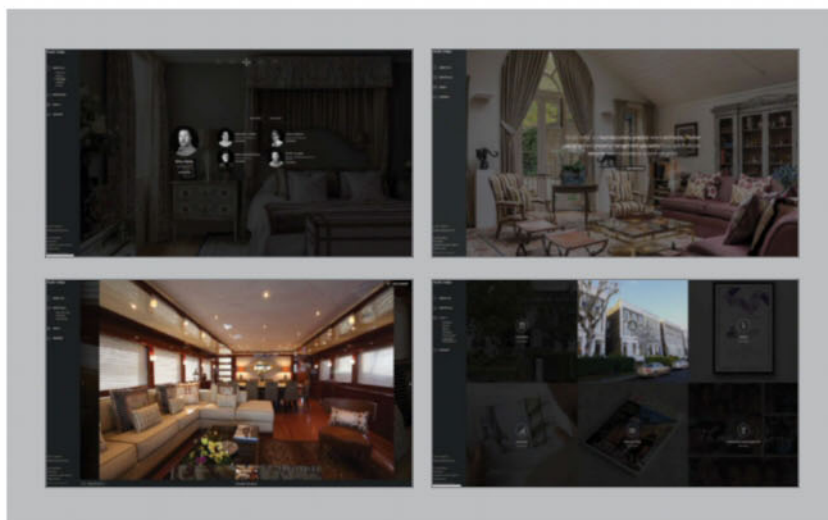
- Key services are divided into sections, with the site tempting you in with rollover panels

### <Below>

- The contact page features a customised Google Map colour palette and an HTML5 video playing in subtly the background







**<Below>**

- Freight Sans Pro by Phil's Fonts in light, book and medium styles handles the majority of headings

abcABC  
1234567890  
abcABC  
1234567890

**<Above>**

- PT Serif by ParaType in normal adds a touch of class to larger paragraphs of page text

**<Top left, clockwise>**

- Tasteful simplicity purveys the content on show, echoing the philosophy of the Indigo team
- Rather neatly, Studio Indigo's work is displayed from the off, with big photographic backgrounds throughout the site
- Icon fonts were also deployed to ensure crisp rendering on even the largest displays
- The horizontally scrolling structure makes the site feel almost as if it's a giant



## Build CSS rollover 'content reveal' sections

Full code found on the resource CD

Green Chameleon's Tom Anderson 'reveals' how these attractive and functional elements were produced using CSS3-based effects

### 01 Content reveal

For this technique we'll be looking at the creation of a vertically pushed content reveal section. You can see a similar element in action within the Project Category sections at [studioindigo.co.uk](http://studioindigo.co.uk), but it basically shows more of the content and hides some of the background image when a user rolls over a 'Read More' button. This uses CSS3 transformations and requires no JavaScript. We're using SASS with Compass here to make life easier, but it could be easily created using pure CSS.

### 02 Set up the DOM

We need a button to initiate the hover effect with different text for the normal and hover states. This basically consists of an image with some text that gets shown on hover, as well as some content that rises up to be shown also during hover. You can view a working demo of the effect with the code via Code Pen at: [codepen.io/greenschameleondesign/pen/Jwezq](http://codepen.io/greenschameleondesign/pen/Jwezq)

```
001 <div class="item-container">
002   <button>
003     <div class="button-text">Read
004       More</div>
005     <div class="button-text">View
006       Project</div>
007   </button>
008   <div class="item">
009     <div class="item-image">
010       <div class="item-image-
011         text">View Project</div>
012     </div>
013     <hgroup class="item-title">
014       <h2>Item Title</h2>
015       <h3>Sub Title</h3>
016     </hgroup>
017     <div class="item-text">
018       <p>Lorem ipsum.</p>
019     </div>
020   </div>
021 </div>
```

### 03 Initial state CSS

In its initial state, the item is a content area with a button that has a fixed height of 11em with the text, aside from the title, hidden. Using the 'item-image' class the image is made to fill the remaining space using 'calc(100% - 11em)' and 'background-size: cover'. The button is then positioned at the bottom of the page, ready for the interaction.

```
001 .item-image{
002   position: relative;
003   height: 75%;
004   height: calc(100% - 11em);
005   background: url(*YOUR IMAGE*)
006     no-repeat 50% 50%;
007   background-size: cover;
008 }
```

### 04 Interaction on button hover

To trigger the animations on button hover for multiple elements we use the 'adjacent sibling selector' (+) between our 'item-trigger' button pseudo-classes and the item <div>. We could use JavaScript instead here, but this is a good demonstration of an effective alternative technique:

```
001 .item-trigger:hover + .item,
002 .item-trigger:focus + .item{
003   // Do stuff to item here
004 }
```

### 05 Animate the item upwards

We move the whole item up vertically using a CSS transformation. As the overflow of the container <div> ('item-container') is set to hidden, this will cause the image to be partially hidden. This then provides us with the sufficient room to show the text content:

```
001 .item{
002   transition: 0.4s ease;
003 }
004 .item-trigger:hover + .item,
005 .item-trigger:focus + .item{
006   @include translateY(-6.5em);
007 }
008
```

### 06 Show text over image

The text on top of the image is vertically and horizontally centred using Flexbox, CSS3's Flexible Box Layout Module, with the 'display: flex;' property. Its top position (5em) and opacity (1) are animated on hover:

```
001 .item-image-text{
002   transition: 0.4s ease;
003   position: absolute;
004   top: 0; left: 0; right: 0;
005   bottom: 0;
006   display: flex;
007 }
```

```
006   align-items: center;
007   justify-content: center;
008   opacity: 0;
009 }
010 .item-trigger:hover + .item,
011 .item-trigger:focus + .item{
012   .item-image-text{
013     top: 5em;
014     opacity: 1;
015   }
016 }
017
```

### 07 Show text content

With the item moved upwards, we now have the space to show the text content. This is simply an animated opacity change, as the text has always been there, it was just hidden within the default 'item-text' class:

```
001 .item-content{
002   height: 11em;
003   .item-text{
004     transition: opacity 0.4s ease;
005     opacity: 0;
006   }
007 }
008 .item-trigger:hover + .item,
009 .item-trigger:focus + .item{
010   .item-text{
011     opacity: 1;
012   }
013 }
```

### 08 Show correct button text

Both sets of button text are in the markup within two <div> elements nested inside the button. Using CSS we position the text over each other, but hide the second lot of text using the 'nth-child(2)' selector. On hover, we fade out the first lot of text and fade in the second set of text to create a smooth transition effect. Check out the resource CD for the complete set of CSS.

HTML :

```
001 <button class="item-trigger">
002   <div class="button-text">Read
003     More</div>
004   <div class="button-text">View
005     Project</div>
006 </button>
```





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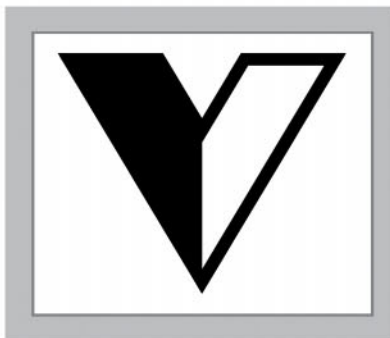
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# Letters, Inc.

letters-inc.jp

**Development technologies** HTML5 canvas, CSS3, jQuery, SVG animation



Designer/developer **Letters, Inc**  
letters-inc.jp

This two-tone agency effort from Japan still excites visually, serving as a masterclass in SVG-based animation



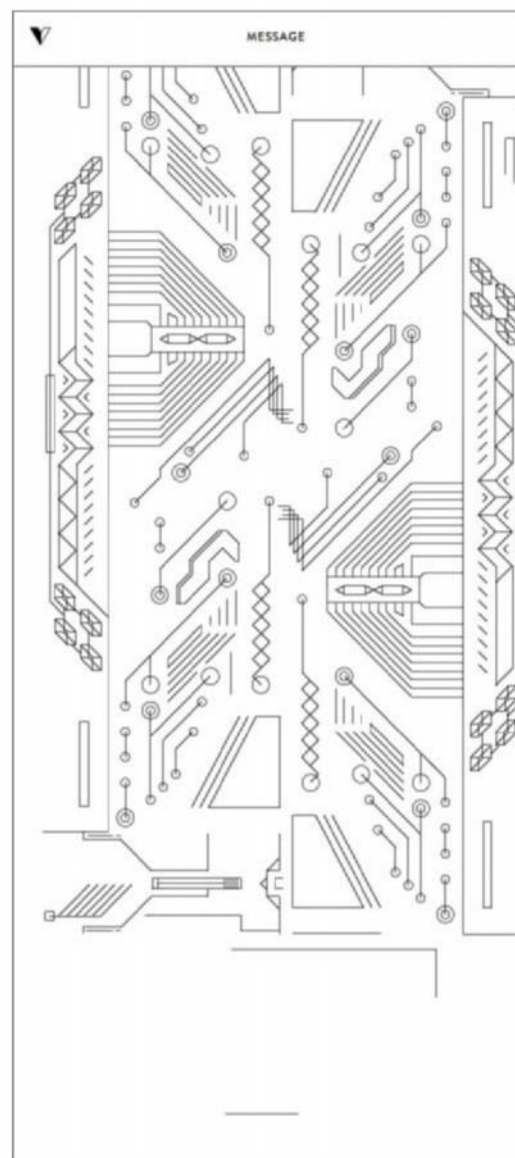
Sometimes you can come across colourful even when keeping things black and white. This agency portfolio site from Tokyo's Letters, Inc cheats a little by adding touches of blue and red, but it is still a monochrome masterpiece to us.

The team, founded in 2011 and consisting of just six members, has chosen to make SVG animations central to telling their story. From the densely intricate header, visitors are literally drawn through a pathway of content as they scroll. There's a wonderful Japanese philosophy called 'wabi-sabi' some may observe in these richly detailed and dynamic illustrations.

Transitory, fleeting and brimming with quirk, the line art aesthetic still feels international, epitomising classical style while remaining very modern.

"The concept behind this website is to convey the development abilities of the Letters, Inc. team - each of which have been gaining great power of expression and producing various kinds of creative works," explains lead designer Kenta Toshikura. "By using HTML5's canvas, CSS3 and jQuery and combining them with SVG path animation, we attempted to make the web design as interesting as possible. Few colours are used deliberately so that they harmonise with the dynamic movements of the path animation. Users can also enjoy parallax effects by virtue of the smartphone's gyroscope on the dedicated mobile site."

**Few colours are used deliberately so that they harmonise with the dynamic movements of the path animation**



#### <Above>

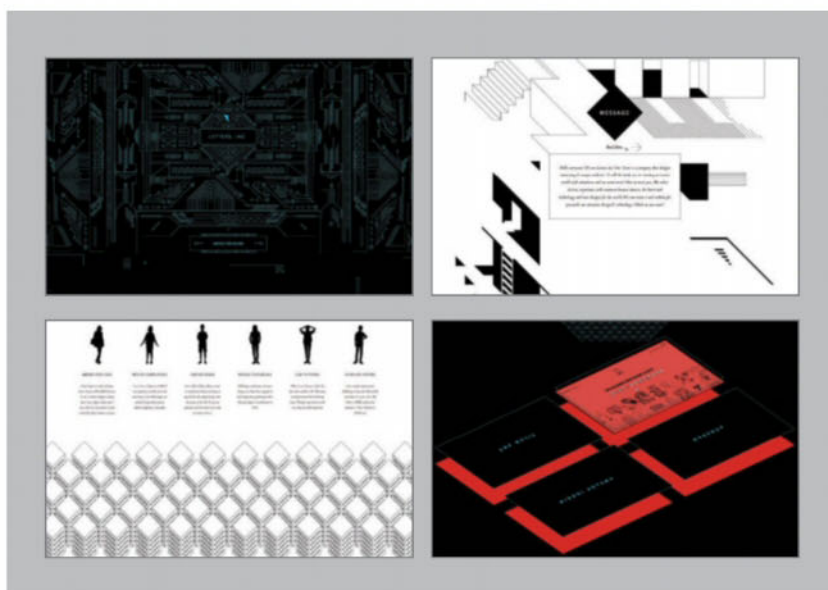
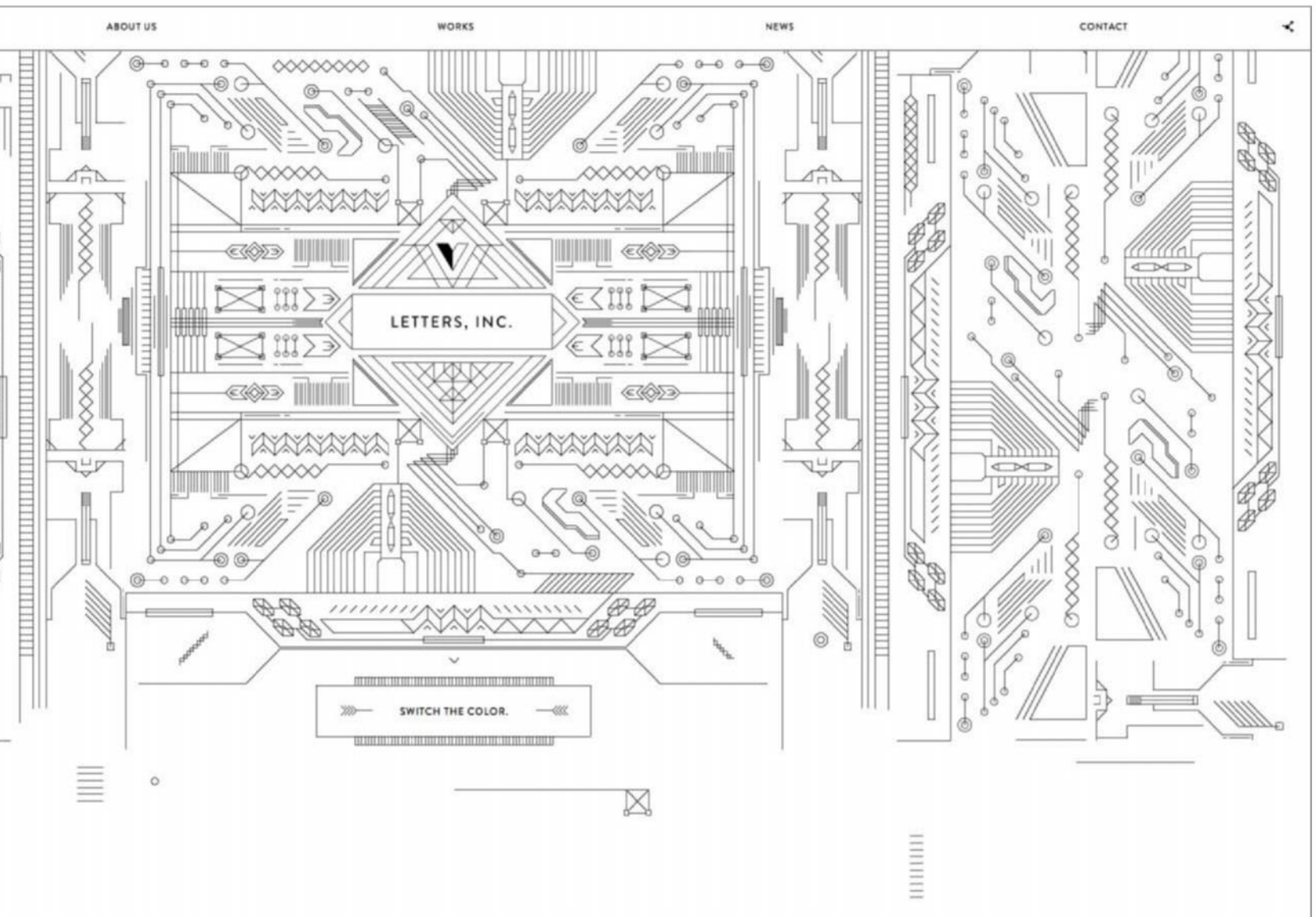
• The header section uses a richly detailed transparent PNG, containing elements of subtle motion

#### <Below>

• When we get to the work section, the site cleverly continues the line art style of presentation by framing examples within wireframe devices







*abcABC*  
1234567890

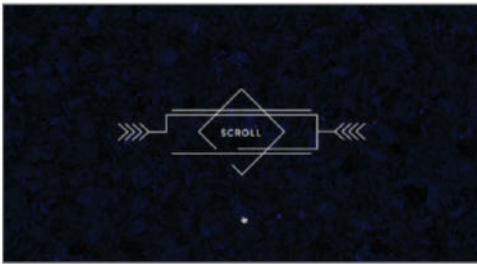
<Above>  
• Cardo by David Perry is used in italic form across the main sections of page text

**abcABC**  
1234567890

<Above>  
• Brandon Grotesque by HVD Fonts appears in regular, bold and medium varieties across page headings

<Top left, clockwise>

- A colour switcher lets you toggle between an equally gorgeous blue, black and red mode
- Abstract shapes suggesting steps, ladders and doorways emerge as you follow the flow down the page
- Tiny amounts of animation and isometric vector-like art combine to add a real sense of 3D
- Letters, Inc is a talented team of just six, happy to let their work do all of the talking



# Plot SVG path animations with Letters, Inc

Lead designer Kenta Toshikura describes how you can emulate the scroll-based animations featured on letters-inc.jp using SVG techniques

## 01 Download Skrollr plugin

We start with the Skrollr.js plugin by Alexander Prinzhorn, available to download via [github.com/Prinzhorn/skrollr](https://github.com/Prinzhorn/skrollr) and the 'Download ZIP' button. This will drive the scrolling part without requiring jQuery. In the archive you'll find the necessary 'skrollr.js' file and some documentation and demos. You'll find a relevant one for path animations like ours inside the repository's 'examples' folder and the 'path.html' page.

## 02 Link the files

Create a new HTML page and attach the skrollr.js plugin file via a `<script>` tag. We've added jQuery as well here, purely to make it easier to call subsequent actions after the document has loaded - Skrollr doesn't need it. Once the document has loaded we call `skrollr.init()` to run skrollr.js as follows:

```
001 <script type="text/javascript" src="
    http://code.jquery.com/jquery-
    2.0.1.min.js"></script>
002 <script type="text/javascript" src="
    js/skrollr.js"></script>
003 <script type="text/javascript">
004 $(function(){
005     skrollr.init();
006 });
007 </script>
```

## 03 Draw the SVG path

This is where we design and plot our desired shape, preferably using a graphics editing suite such as Illustrator CS6. We then extract the SVG data and use `<svg>` and `<path>` tags in our page. In Illustrator we draw some curves using the Pen tool and go to Object>Artboards>Fit to Selected Art. After that we save it as an SVG file and open it within a code or text editor. You should see something similar to the following:

```
001 <svg version="1.1" id="layer" xmlns="
    http://www.w3.org/2000/svg" xmlns:
    xlink="http://www.w3.org/1999/xlink"
    x="0px"
002     y="0px" width="359.814px" height
    ="159.813px" viewBox="0 0 359.
    814 159.813" enable-background="
    new 0 0 359.814 159.813"
003     xml:space="preserve">
004 <path fill="none" stroke="#ED003B"
    stroke-width="4" stroke-linecap="
```

```
"round" stroke-linejoin="round"
    stroke-miterlimit="10" d="
005     M2,2v46.512L48.512,2v46.512L95.023
    ,2v46.512L141.535,2v46.512L188.047
    ,2v46.512L234.559,2v46.512L45.
    349-45.349
006     c0,0,0,32.558,0,76.744s17.
    442,77.907,77.907,77.907"/>
007 </svg>
```

## 04 Scroll animation

From this SVG data we can set up our CSS classes for the `<svg>` tag using the width/height values from our graphic. For the path class we set desired styles for the line stroke, colour and width. Within the actual `<svg>` and `<path>` tags we then define our paths with the 'data' field, passing `stroke-dashoffset:2000` when the scrollbar is at the page top and `stroke-dashoffset:0` once the user has scrolled by 2,000 pixels. We then supply the 'd' string of path descriptions taken from our source graphic:

```
001 <style>
002 svg{
003     width:359.814px;
004     height:159.813px;
005 }
006 path{
007     stroke-dasharray:2000;
008     fill:none;
009     stroke:#fff;
010     stroke-width:4;
011 }
012 </style>
013 <svg>
014 <path data-0="stroke-dashoffset:
    :2000;" data-2000="stroke-
    dashoffset:0;" d="M2,2v46.512L48.
    512,2v46.512L95.023,2v46.512L141.535
    ,2v46.512L188.047,2v46.512L234.559,
    2v46.512L45.349-45.349 c0,0,0,32.558
    ,0,76.744s17.442,77.907,77.907,77.
    907"/>
016 </svg>
```

## 05 More complex animations

This simplified animation can be made more dynamic or intricate by adding more SVG paths. So, for example, the following features 14 paths as opposed to

just one. You can also opt for using a compound path for defining more complex shapes such as logos or typography. Check the full step code on the disc for links to the live examples online.

```
001 <style>
002 svg{
003     width:514px;
004     height:180px;
005 }
006 path{
007     stroke-dasharray:1400;
008     fill:none;
009     stroke-width:2;
010     stroke:#fff;
011 }
012 </style>
013 <svg>
014 <path data-0="stroke-dashoffset:
    1400;" data-2000="stroke-dashoffset:
    :0;" d="M44.872,106.965 c6.586-6
    .586,19.427-17.357,19.427-17.357"/>
015 <path data-0="stroke-dashoffset:
    1400;" data-2000="stroke-dashoffset:
    0;" d="M29.872,72.607 c7.922,7.922,
    19.428,17.356,19.428,17.356L19.
    428,17.354"/>
016 <path data-0="stroke-dashoffset:
    1400;" data-2000="stroke-dashoffset:
    0;" d="M14.872,107.32 c6.556-5.857
    ,19.428-17.355,19.428-17.355L14.
    872,72.607"/>
017 <path data-0="stroke-dashoffset:
    1400;" data-2000="stroke-dashoffset:
    0;" d="M0.872,72.607 c6.365,5.688,
    19.427,17.356,19.427,17.356L0.872,
    107.32"/>
018 <path data-0="stroke-dashoffset:
    1400;" data-2000="stroke-dashoffset:
    0;" d="M470.299,71.644 c-5.729,5.
    117-19.428,17.357-19.428,17.
    357L19.43,17.355"/>
019 <path data-0="stroke-dashoffset:
    1400;" data-2000="stroke-dashoffset:
    0;" d="M485.301,106.356 C479.067,
    100.122,465.872,89,465.872,89L119.
    43-17.356"/>
020 <path data-0="stroke-dashoffset:
    1400;" data-2000="stroke-dashoffset:
    0;" d="M499.299,71.644 c-9.004,
```



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# A DESIGN DISTILLED

Those with a taste for the finer things in life will appreciate the work of Norwegian agency Good Morning, and the story behind serving up Braastad Cognac to the web



hen it comes down to time, it's pretty tough to draw parallels between fine websites and fine alcoholic beverages. More and more we're seeing groundbreaking, memorable web designs forged in what

seems like no time at all. Clients are striving for more ambitious projects, all the while ever keen on them being delivered yesterday and at reasonable cost. It couldn't be more different for prestigious wines and whiskies; an industry where products sit waiting for years before commanding the highest price. So when the two worlds collide for a progressive marketing campaign - how do you strike a balance without ending up 'on the rocks'?

Well if [braasstad.com](http://braasstad.com), the new home for Braastad Cognac, is anything to go by, you draft in a bunch of Norwegians. 'But isn't Cognac so-called after the French town of Cognac?' is the question you'll likely be asking at this very moment. Quite true, however what the fabulous folks at Oslo agency Good Morning don't know about brandy, they certainly know about digital creativity. They were also more than prepared to conduct the necessary 'research', we would assume.

What we mean, of course, is investigating and conveying a brand legacy, one so proud of a heritage dating back to 1913. The Braastad name was borne out of the marriage of Edith Rousseau, the daughter of cognac producer Tiffon's founder, Médéric Rousseau. Edith married Sverre Braastad, who just so happened to come from a small town called Gjøvik in - where else? - Norway. Needless to say they've been distilling out of Château de Triac on the banks of the River Charente ever since.

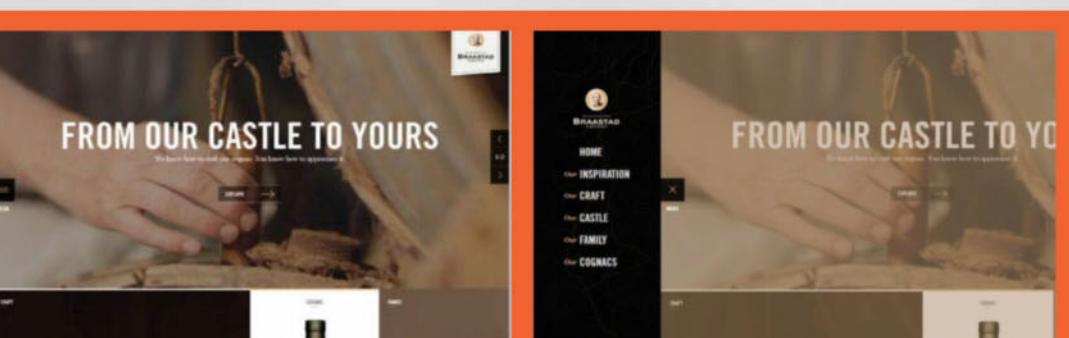






ESTABLISHED 1875

**BRAASTAD**  
COGNAC



Project  
Web

**Braastad Cognac**  
braastad.com

Agency  
Web

**Good Morning**  
good-morning.no

Duration

**4 months**

People  
involved

**Production: 3 people, agency: 4 people, client: 1 person**

Total hours

**375 hours**

Project budget

**N/A**

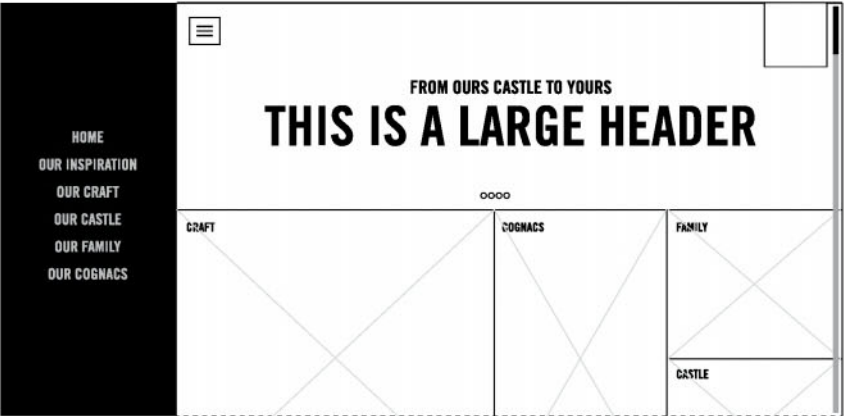
# THE TEAM BEHIND BRAASTAD



KAREN VAKSDAL  
MADSEN  
Producer

ROBERT BUE  
Senior developer

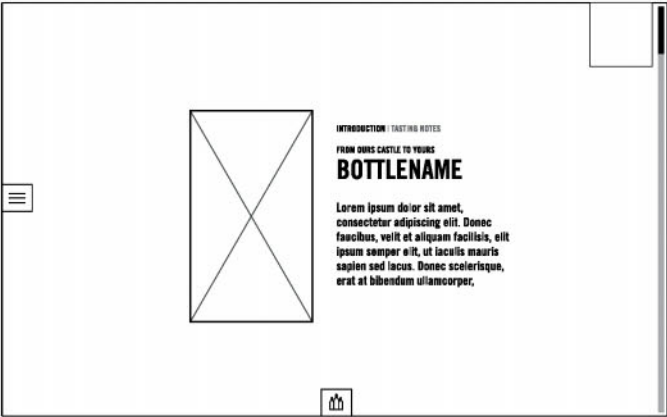
JØRGEN WINSNES  
Creative director/Senior designer



Good Morning and advertising agency Ernø Oslo shared similar visions for Braastad.com



The team developed early templates after seeing the content at its disposal





This brings us to 2014 and a dotcom live since May, reimagining that story for the HTML5 generation.

The project began with the traditional pitch process, with Good Morning claiming the commission based on the team's outlook and ideas. One of three agencies in the running and working to a new preprepared communication strategy/concept for the brand, the somewhat cryptic theme was 'From our castle to yours'. While confident of incorporating such a message, Good Morning's ability to bring its own storytelling ideas to such a high-profile table shone through.

"Though we are based in Norway and Sweden, our sights are also set on the world market. We have won numerous awards for our work with both national and international brands, and continue to connect with new clients and contacts around the world. Winning the pitch in front of two other agencies going for the new Braastad site was simply liberating, since the product is alcohol and so exclusive. There was no doubt that this was a pitch we wanted to go all-in with."

Clearly undaunted by Braastad's international scope for the site, Good Morning began production in the normal way. Start-up meetings with both client and advertising agency, in this case Ernø Oslo ([www.ernooslo.no](http://www.ernooslo.no)), were pivotal in establishing an approach. A production process was laid out so that all parties were aware of what each was thinking and ultimately how the working relationship fit together too: "There is often a big difference between the advertising agencies we work with. In some cases they are deep into the digital stuff, while other times they need us to hold their hand. On **Braastad.com** we took a leading role and ran the whole process."

This process quickly evolved out of sifting through existing content - assets that had already been created or were in the works up to that point: "We had to go through all the existing content, what to produce and the existing film and photos at an early stage, so that the client and advertising agency could work on this during the whole process. Within this process the client had a lot of images, video and text, so the advertising agency did a really great job making that fit to the webpage."

Much of this work dictated to a degree what the site should contain, giving license to the designers to structure it into a modern and responsive UX. Happily though, this wasn't seemingly such a challenge as one might assume: "Ever since I heard we had been invited to pitch in on **Braastad.com**, I had finished the whole website design in my head," boasts Jørgen Winsnes, senior designer. Such creative confidence from the outset can sometimes prove a double-edged sword, although spookily these visions pretty much hit the mark: "The funny thing was that the advertising agency had created a small profile guide where we almost had same the thoughts on the feel of the design. So there was never any challenge to design the whole website. Normally the discussion was on how the content would fit into our design."

The team very rapidly then took hold after reviewing the old and new content at its disposal, moving next to developing early templates. "The content was a good mix of text, images and video. When it came to the design, we got a small brief on how they wanted the new look to conform. As we place a big emphasis on style, we quickly approved the design in a meeting with both agency and client. After the design was approved, we started the

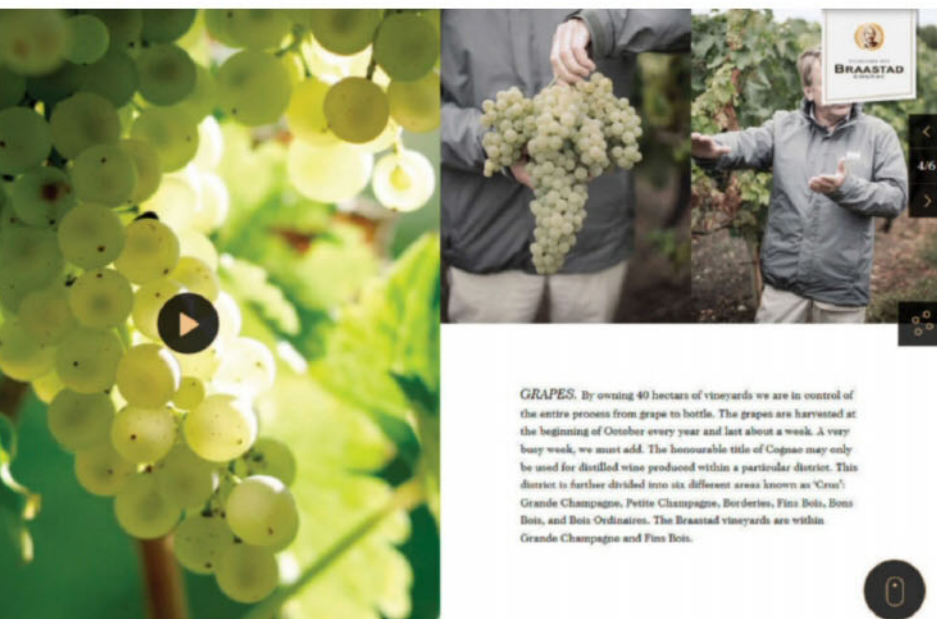
🍷 We almost had the same thoughts on the feel of the design... so there was never any challenge to design the whole website 🍷

# GOOD DAY TO GOOD MORNING

Behind every great website there's a great agency - or three - to discover along the way. We already know about the Norwegian connections between Good Morning and client Braastad, but the agency doesn't purely operate out of Oslo. With a second studio in Stockholm Sweden and a truly global client-base, this is one agency to have watched for a good four years now: "Good Morning is a full-service digital agency that specialises in design, creativity, strategy and technical services. We were founded in 2010 by three Norwegians and one Swede with the shared goal for creating outstanding digital communication. Today we continue to expand and achieve, constantly evolving along with creativity and technology."

Good Morning is also full-service in the truest sense, spanning web, digital strategy, mobile, games, ad banners, digital installations and print work. This breadth of expertise has helped them scoop 58 industry awards, so far, making them regular recipients of Webby and FWA honours.

"We follow proven processes to achieve the highest levels of clarity and distinction in our work. Organised within small, specialised teams our creatives, designers and developers work in close partnership to create highly integrated and intuitive solutions. Everyone at Good Morning shares a passion for design, technology and communication. Our focus, insight and determination allow us to combine those passions to create competitive and effective solutions."



# FRONTING UP TO THE DESIGN

Much of **Braastad.com**'s production was oriented around front-end work over a back-end coding slog. It seems that the main technical challenges were around optimising assets, adding effects and making the site's beautiful look work across multiple devices. So, when it came to communicating a vision for an aesthetic styling for the site, the designers employed mockups to convince the client.

"As usual we normally work with Mockingbird for mockups for ourselves. It's a really good online tool that makes it easy to co-operate with other people when making the wireframes. From different locations we can still work together while calling each other via Skype. For us, the wireframes are important for getting sign-off from the client. Often we have to design the main page so the client fully understands the whole concept with wireframes."

From a process of producing mockups, the designers could move to more sophisticated forms and provide hints towards eventual interactivity. Photoshop was a valuable tool here, previewing changes more rapidly and using a grid-based approach to tackle the various resolutions required.

"Since this was a site with an app-like menu, it was a bit hard to convey, so we instead mocked that up in Photoshop to make them see how it actually worked. The website and all subpages were designed for desktop in Photoshop with a 4 x 4 grid, making it easy for the developer to break it down into smaller resolutions. Normally we design in a 1440 x 900px resolution because that's a pretty typical size now. For the client we think it is easier to see the result of the design in Photoshop, because it is much faster to see the updates and effects here than with code. Sometimes we do prototypes of interaction to really get the feel for how it works. The good thing with prototypes is that advanced UX can be clickable and tested by less advanced users."

development phase. Here we normally get very much a free reign on animation, transitions and any other finishes. However, we often help the client with content filling."

This is, of course a reference to populating the site assets. This was relevant because of the development platform that had been chosen for the job. With WordPress a favoured solution for Good Morning, a certain amount of flexibility would be built-in for allowing client and advertisers to update the featured content.

"We also did a little colour correction work on the images and movies to make them look more interesting. After most of the content was in place, we invited both the agency and the client for a final presentation meeting. Usually these meetings are painless, but in some cases you might get feedback. Then we follow up with agency training of the CMS, in this case WordPress, plus any updates or optimisations for the website. We used WordPress because it's fast to set up and easy to use. We made almost everything editable for the client, so adding a new product or changing a story on the page wouldn't become a hassle in the future."

So, if WordPress made life easier for developer and client, the main technical challenges were centred on the front-end design. The team worked hard on templates, producing mockups, wireframes and prototypes here to communicate how everything might look. As is often the case, the trickiest aspect was ensuring the designs were responsive enough to perform consistently across all devices: "One of the biggest challenges was that the site uses a lot of images and video. But by compressing and optimising everything, including preloading most of the assets up front, we managed to achieve a nice and smooth experience. The videos particularly were compressed with special tools to get the best quality out of the lowest file size. Normally we say that 10MB per minute in 1280 x 720 is a good rule. For mobile we don't use video loops, because it's not possible. On mobile we focused on low KB and instead used images and text to tell the stories. We could have implemented the video, but this was also a question of budget at that stage."

Aside from the impressive brand assets running through **braastad.com**, the design also weaves in some

The site's extensive use of images and video made optimising content across devices a real challenge







## A design distilled

# THE BIG QUESTION...

We ask the team, which famous person would you like to sit down and share a Braastad Cognac with and why?



**JØRGEN WINSNES**  
CREATIVE DIRECTOR/  
SENIOR DESIGNER

🍷 I would rewind time and share a glass of Braastad with Steve Jobs, and get him to reveal the secret of his success. 🍷



**ROBERT BUE**  
SENIOR DEVELOPER

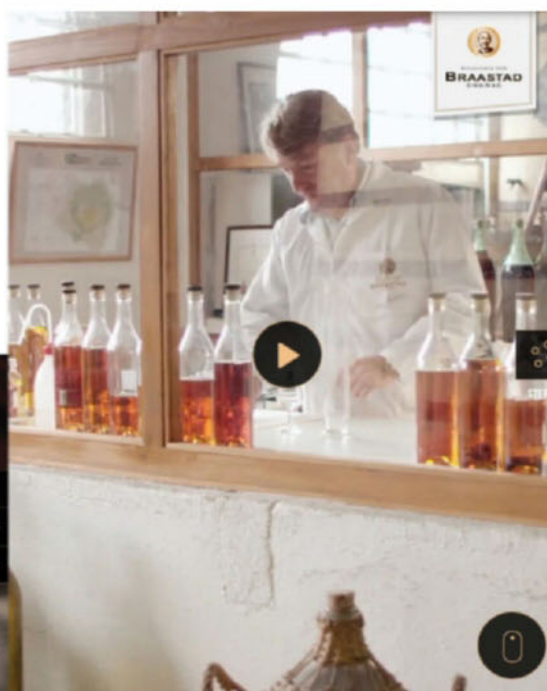
🍷 George Clooney. To ask him to be in a commercial for Braastad, after a few drinks... 🍷



**KAREN VAKSDAL  
MADSEN** PRODUCER

🍷 Braastad Cognac is a classy kind of alcohol and if I were to sit down with someone, I think I would get quite philosophical. It would be awesome if that was Paul McCartney 🍷

**BLENDING.** The nose of Richard Braastad plays an important role in the making of our cognacs. He has been with the company since the age of 16, following his father Christian and uncle Jacques as the Master Blender. Richard has around 13,000 casks of cognac from different crus and of different ages to keep track of and to choose from when seeking perfection in our products. For instance, if Richard feels that the sensation of vanilla in his latest VSOP blend is a little low, he might track down an old cask containing a certain 15 year old Petite Champagne Cognac that he knows has a distinct tone of vanilla and use this to balance his VSOP blend perfectly.



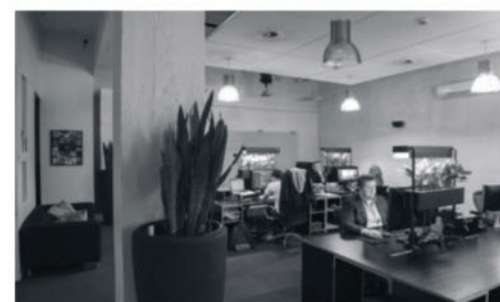
lovely visual effects. These include some seriously cool loading transitions, created using a combination of CSS and JavaScript - leaning more so on the JavaScript side to facilitate timeline-based animations. "We use GSAP (GreenSock Animation Platform) for its performance and flexibility. CSS is used on simple animations like hover effects. We wanted to make the whole experience really stand out, so we use this AJAX-load transition instead of the boring fade-out-fade-in method that we have all seen thousands of times before."

If the overriding sense is that design and development was relatively painless, the same could not be said of the whole campaign. Just the fundamental prospect of marketing alcohol in subtle and creative ways was troublesome from the outset, nevermind going forward. These strict constraints would not only influence the site's design, but how the content could be promoted.

"Since this is mainly a Norwegian alcohol brand, there are a few rules we had to follow. The first one is that alcohol products are totally illegal to promote in Norway. You are not allowed to show the bottle at all. So this gives the advertising agency some exciting challenges with a view to promote the product. There is a slight loophole, however, and that is advertising within in-flight magazines.

The Facebook page also has to be driven by English language, because it's illegal to make content about alcohol in Norwegian. The agency will also run competitions that are linked into the communication strategy of 'From our castle to yours' to promote the whole page in a legal way."

With such obstacles clearly a hindrance to attracting traffic, how has the live site performed and where might it go from here? Unsurprisingly, since launching in May, word of mouth, press coverage and social sharing has quickly snowballed interest: "The day with record visitor numbers so far was the day we won site of the day on Awwwards.com, with a pretty good score of 7.88. At that time we had nearly 6,000 visits. Normal days subsequently are around 200-1,500 visits. The goal going forward is to fill and grow the inspiration section with more content. The agency already has a lot of ideas to bring to life. We are also talking about making a new and improved experience around the castle with more film. It has also been discussed to run competitions and activities for boosting the Facebook page as well as the webpage. Good Morning will offer to follow up with the client monthly and also help the agency and client to develop special campaigns and activities."



# EXPERIENCE THE THIRD DIMENSION

A passion for games, play and interactive experiences has driven **HelloEnjoy** to become leading 3D developers with an international client list that reflects their skills and creativity

F

ounded in 2007, HelloEnjoy is a small agency with big ambitions and the skills to match. Carlos Ulloa outlined his working life before HelloEnjoy: "My background is in games development. I was working for developers such as Psygnosis in the mid-Nineties where I worked on a number of game projects for the original PlayStation. I continued to

work on PlayStation games after Sony bought the company. After that I began to work on web design instead of exclusively games development.

"Over this period of time I worked for a number of agencies in both London and in Spain. After spending around seven years working for various agencies, I decided it was time to start my own so that I could work on the projects that I thought would be groundbreaking. By then I could see how the whole 3D digital environment was beginning to develop, and how I could create new interactive experiences for the web."



**who** HelloEnjoy

**what** HelloEnjoy is an interactive studio that develops 3D games, music visualisations and creative apps

**where** 15 Sudeley Street, BN2 1HE Brighton

**web** [helloenjoy.com](http://helloenjoy.com)

## **Key clients**

Interscope Records

Samsung

Infiniti

Disney

Sony



1 Interactive designer +  
technical director +  
developer +  
creative director

## AGENCY BREAKDOWN

1 Project manager +  
studio manager +  
artist +  
creative director

HelloEnjoy reflects things we  
like to do: experiences anyone  
can enjoy, with interactivity to  
engage the audience

Carlos moved from games development to the web to see  
how today's web browsers would cope with 3D interactivity



Carlos studied computer science at university in Spain – something that has come in very handy over the years. “I think the degree that I did was very useful, as it taught me about programming, which came in very handy later on when I was doing more graphics-based work for the agencies I worked for,” said Carlos. “And of course when I began to develop my own projects, the programming knowledge I had gained, and the experience creating 3D objects and the environment they inhabit was a great skillset for the projects I have been working on since I founded the agency.”

Having worked for several years within digital agencies, Carlos inevitably began to think of how he could take more control of the projects he was working on. The pivotal moment came with the release of Papervision 3D. The project was conceived as an interactive experience to showcase the full power of the 3D engine that was available at the time of launch on 5 May 2007. The project puts the user inside a coral reef scene where they can look around and interact with the different fish. The reaction that Carlos received after the release of Papervision3D convinced him that doing more projects like that was the way forward for him.

Carlos explained: “Basically the background to Papervision3D was simply that when I moved from working in games development to the web, I couldn’t see the tools I needed that I had gotten used to with games design, so I decided to develop my own. If you think back to when the consoles first came out, you had to own these to see the games we had designed. Anyone that didn’t have these consoles couldn’t access the 3D interactive environments we had built.

“We began to think about how we could expand the user awareness of the games we were building, so a website seemed the obvious thing to do. However, back then it was unusual for a game to have a website. Doing this web design enabled me to share what I was doing with the games design – and actually, I became more interested in the website than the game itself.

The web then became the focus for Carlos after initially focusing on games development. He wanted to see what was possible with today’s browsers and



## industry insight

Carlos Ulloa, Founder

“It is great to see the games engines from the past now being used for the web. That’s a very exciting development. We used to spend weeks doing motion capture for games. You can now apply animation to your characters in minutes with the tools we now have available.”

update Facebook or Twitter – but at the same time it is never far from our minds and at least it gets updated whenever we finish a new project.”

The ways in which an agency attracts the clients it works for are manifold – often referrals are a key component. HelloEnjoy has a very different approach that Carlos outlined: “Being a small studio we are very specialised in what we do, which is interactive 3D for the web and mobile. We have a solid network of collaborators that we trust, so we can more or less tackle any size of project, but we never stray far from 3D. Which doesn’t mean we won’t take projects out of our comfort zone, we like challenges, like exploring new hardware and experimenting with new technologies.

“The approach we have taken when it comes to attracting clients is that we have created 3D interactive projects that we find interesting and that have new technologies that haven’t been used before, we find that clients, after seeing these projects, come to us with potential work. We have gained a number of client projects like this, which is gratifying, as it shows us that the kind of projects we are developing do have a commercial application that brands want to exploit.”

3D interactivity. And does HelloEnjoy pay as much attention to the development of its website, as it does building 3D projects for the web? “For us is very important, and it has taken lots of years to understand what we want from it and what is the ideal site,” says Carlos. “We have come to the conclusion that it is a work in progress, and the best site is the one that lets you work on it whenever you have a moment – but will also endure the passage of time, so every effort you devote to it won’t be scrapped when you decide it’s time for a redesign.

“Also, when we were coming up with a name for our site, we brainstormed with the guys at Build that worked with us on our image. It reflects the things we like to do: Experiences that anyone can enjoy, making heavy use of interactivity to engage the audience in a fun way, which is not necessarily games but also creative apps – anything that’s a joy to use.

“Being just a two-person studio, we don’t dedicate as much time as we would like to update our site – it’s far easier to



## HelloRun

[hellorun.helloenjoy.com](http://hellorun.helloenjoy.com)

Hypnotic 3D runner game focused on speed and rhythm. Tasked with the simple option of moving up or down to avoid blockades and survive the full experience, you must maneuver around tight platforms as the pace quickens. The music used plays a lead role in the experience, as the game mirrors the speed and rhythm of the song. High scores can only be achieved by making good use of the boost.



The game was constructed using JavaScript with HTML5 features like WebGL for the 3D graphics and Web Audio for the sound effects. HelloRun is one of the first 3D games created using WebGL to be fully optimised for mobile devices, with support for Chrome and Firefox for Android.



After creating Lights by Ellie Goulding, an interactive music experience using WebGL, Carlos and Liber wanted to continue exploring the relationship between music and interaction. They chose a simple game mechanic inspired in the trench run level of the original *Star Wars* arcade game from 1983, letting the music dictate the flow of the game.

Among the many projects that have been completed by the agency, is there one that typically defines the HelloEnjoy ethos and why? Carlos goes into detail: "Our HelloRun game I think answers that question. It ticks lots of boxes, from the technical - a web technology, greatly optimised for mobile (probably the first fully fledged 3D game on mobile using WebGL), that makes the most of all the R&D we had done in the previous months, to the few things that form our philosophy - fast, engaging, beautiful, fun, without asking from the users anything that they are in no mood to provide when having a quick fun ride on the web. But, in essence, it is a perfect example of what it means to be an independent studio: obtain results of fairly good

quality with very limited resources (it's all been done by two people while on parental leave)."

And HelloEnjoy works quickly for the clients that want to work with them. "Projects very rarely are longer than two to three months - not because they are not complicated enough but because we usually work for advertising and those are the standard timeframes," said Carlos. "It's very rare that a client comes to us and says that they need the work in six, as frequently they say just two.

"Being just two people, we put many hats on. We share the creative responsibility, which not only includes creative decisions, but mostly creative solutions to make the most of the resources. Depending on the project's requirements, we might

Being just two people, we put many hats on. We share the creative responsibility, which not only includes creative decisions, but mostly creative solutions to make the most of the resources



need to outsource asset creation, but ever more frequently we can take care of assets ourselves by modifying or adjusting pre-bought ones. We share those tasks between the two of us depending on the software that's needed to do it. I take care of the code and spoken communication with clients and Liber is in charge of written communication, and co-ordination of collaborators.

"Depending on the project, the most time consuming part can be the code itself, usually when there is a new technology involved, or if the team is very big and we don't have direct control over collaborators, implementation of all the different project parts and team management tasks."

With so many tools and frameworks to choose from when developing for the web, are there any that HelloEnjoy particularly favours? Carlos explained: "The best investment we have made in software in the past years has to be Unity; we also



## TIMELINE

Number of  
employees  
**02**

First FWA SOTD ever, Sony Bravia's 'colour. like.no.other.'



HelloRacer was HelloEnjoy's first piece for the Unity Web Player.



One year after Papervision3D is released, HelloEnjoy is founded in London to focus on 3D on the web.



2008

Launched MonsterTruck! as the home page of [helloenjoy.com](http://helloenjoy.com).



2009

2010

Launched the helloflower™ flower editor, an iOS app created with Unity.

2010

HelloEnjoy moves to balmy Brighton and falls in love with the city.



Ensuring that their 3D web experiences can be accessed across all devices is a big priority for HelloEnjoy



2011  
HelloRacer was ported to WebGL. Soon after, they landed their first WebGL client work, Lights.



2012  
Launched HelloRun, the first WebGL 3D game for mobile devices. Played over 1 million times.

**HelloRun**

2013  
Their first FWA SOTM ever, HelloRun.

2014  
HelloRun is awarded a Webby in the Games category.

Number of employees  
**02**







## Samsung Racer-S

[helloracer.com/racer-s](http://helloracer.com/racer-s)

Racer S is a WebGL demo designed for mobile browsers, commissioned by Samsung as a showcase for the latest HTML5 technologies supported by mobile devices.

The original HelloRacer demo became very popular with the WebGL community and browser developers use it to test their platforms. But the engineers at Samsung in Korea had even more ambitious ideas to test the limits of mobile browsing.

Their goals included a much bigger and detailed environment, featuring an entire racetrack complete with grandstands, boxes and spectators.

They also wanted full 3D sound to test their Web Audio API implementation. The characteristic doppler

effect of the engine sound is calculated using the position and speed of the car. This process creates highly realistic dynamic audio from every position.

Multiple cameras capture the action from different viewpoints, from the driver's seat to a more bird's-eye view. This allows the user to look around and explore the car and the circuit how they like.

It was the perfect project for HelloEnjoy, giving them the chance to learn and research about the strengths and limitations of real-time 3D on a mobile browser. Having the opportunity to work with the engineers gave them a unique and insightful perspective, which proved invaluable for future projects.



Liber is in charge of written communication and co-ordinating the agency's collaborators



Carlos takes care of spoken communication with clients and deals with the code





As we are a two-person agency we have over the years worked with a number of other people that have the specialist skills we lack. This has given us a stable of people we know we can count on when we need those skills for a new project

spend a lot of money in the Unity Asset Store, and it never ceases to amaze us how cheap everything is compared to either doing everything ourselves from scratch or finding someone else to do it.

"I think we are now at the stage where as developers we have a mass of tools to choose from when we are creating new 3D environments on the web. HTML5 offers a whole host of new opportunities, and with new tools being released it is now much easier to create these 3D environments than it was when I started. Where once you saw a lot of development going into high-end games engines, I am now seeing that level of development going into HTML5. It is great to see the games engines used in the past now being used for the web. That's a very exciting development. We used to spend weeks doing motion capture for games. You can now apply animation to your characters in minutes with the tools we now have available."

As a forward-thinking agency, HelloEnjoy is always looking for new platforms to use that can enhance the user experience of the 3D environments they build. "We are smitten with the Oculus Rift, although it is still early days," said Carlos. "It is an amazing experience already, and it's going to be a game changer." And when the multi-screen approach to digital design is considered, Carlos says: "Responsive design is clearly our goal. We want users to experience our pieces regardless of where they are."

The third screen approach to design is also, of course, joined by social media. Many of the most interesting digital projects are taking place in this space. For HelloEnjoy, social media is simply an essential component of the projects they create, as Carlos explained: "Social media should be an integral part of everything online, people either share things on social media or they don't share things, so if you don't integrate them as seamlessly as possible and in as many ways (without being annoying) you're missing out on a vital source of traffic. And they are not only important for traffic, but a vital tool of communication with your followers, clients and users. The way they talk to you and you talk to them is through social media."

Many agencies have a raft of talent that they draw upon when a new project is green lit by a client. For HelloEnjoy it's always just Carlos Ulloa and Libertad

Aguilera - but they do augment their substantial skills with many freelancers that have more particular skills, as Carlos elaborates: "As we are literally a two-person agency we have over the years worked with a number of other people that have the specialist skills we lack. This has given us a stable of people that we know we can count on when we need those skills for a new project. It's great to have the flexibility to call on these people as and when they are needed. As time has gone on, we have come to know who is the best at what they do. We actively try and find these people so that each of our projects is the best it can be."

And what does the future hold for HelloEnjoy? Carlos concluded: "We always look forward to new technologies and devices and like to be on the front line. We devote a lot of time to R&D. In the near future we plan to continue doing client work, particularly in WebGL now the technology looks more mature. We also hope to be able to dedicate some time to our own apps. We have a couple of ideas that we'd like to explore and are already in the works. So many things to do, so little time."



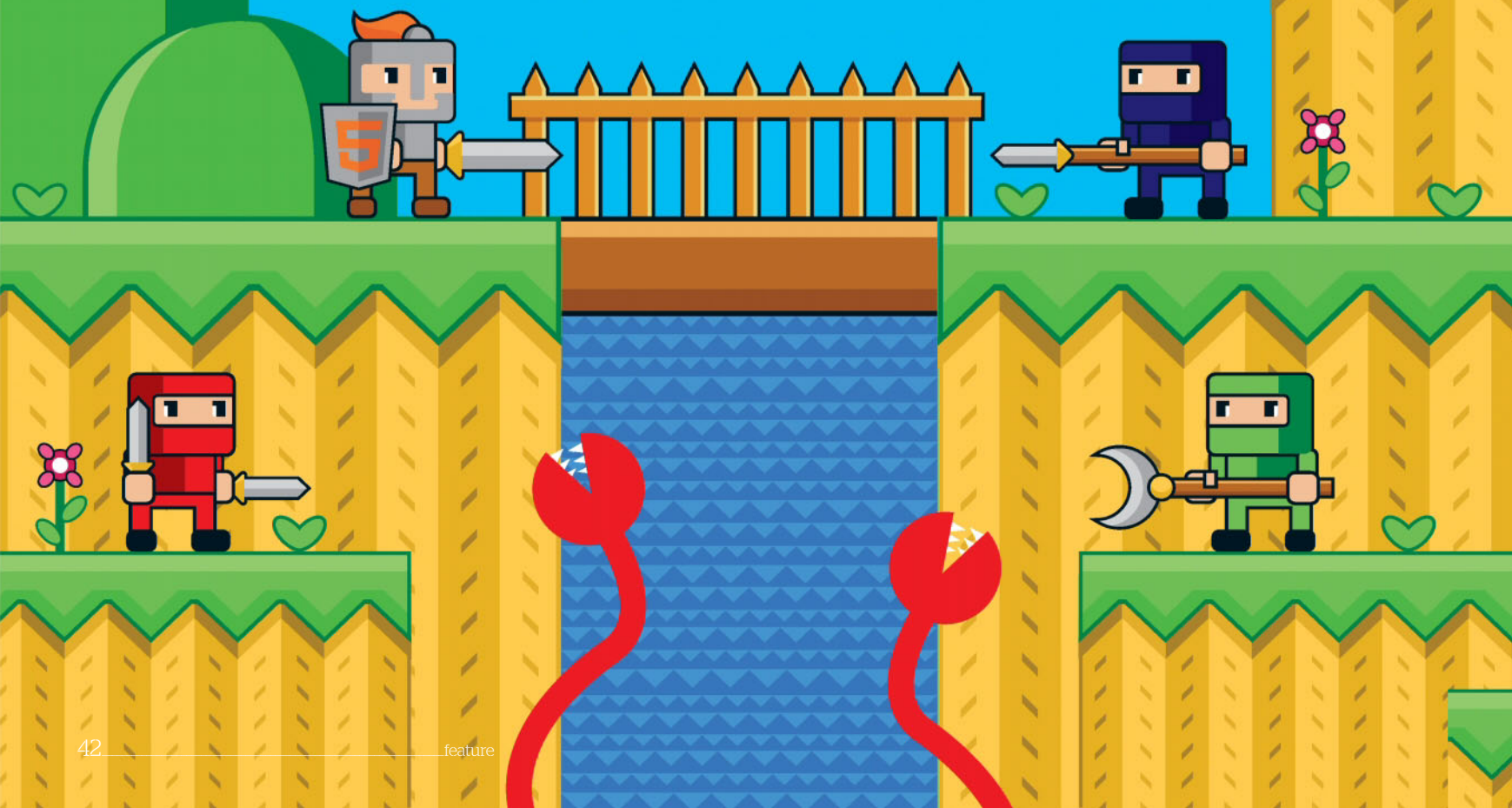
WEB.....helloenjoy.com  
FOUNDERS..... Carlos Ulloa & Libertad Aguilera  
YEAR FOUNDED..... 2007  
CURRENT EMPLOYEES.....2  
LOCATION..... Brighton

#### SERVICES

- > Interactive 3D design
- > Games
- > Music visualisation
- > Creative apps
- > Installations

# BUILD HTML5 GAMES

DISCOVER HOW YOU CAN HARNESS THE POWER  
OF HTML5 TO CREATE ENGAGING GAMES THAT  
CAN BE PLAYED IN THE BROWSER





# THE DIFFERENT APPROACHES

Developers seeking to create games for the web must pick one of two approaches. Canvas is better suited to 2D games, whereas WebGL provides a subset of the OpenGL standard interface.

## CREATING WITH CANVAS

Games don't necessarily have to be based on three-dimensional graphics. Worldwide hits such as *Grand Theft Auto* started as 2D games based on sprites; systems such as the original GameBoy were too slow to perform the necessary mathematics.

In principle, creating a sprite-based game is as easy as drawing the elements onto their specified positions on the screen. Most operating systems provide a group of APIs that handle the actual bitmap movement for you. Under Windows, the interface is known as GDI; Qt's implementation goes by the name QPainter.

As HTML was originally intended as a markup language, no such API was specified in the language standard. HTML5 remedies this by introducing the `<canvas>` control. It permits developers to access the pixels governed by it on a one-by-one basis.

In addition to that, a group of drawing functions is provided. They can be used to draw lines, rectangles and other graphical primitives with optimised functions as implementing efficient line- and circle-drawing algorithms by hand is a time-consuming affair.

Where custom graphical primitives are required, it is possible for a path to be set up and filled. This is illustrated in the following snippet of code, which has been taken from Mozilla's documentation:



The W3Schools example uses Canvas to render a red rectangle

```
001 canvas.fillStyle = "rgba(0,150,0,0.7)";
002 canvas.beginPath();
003 canvas.moveTo( 50, 75 );
004 canvas.lineTo( 100, 125 );
005 canvas.lineTo( 100, 25 );
006 canvas.fill();
```

Real games tend to be based on sprites. In essence, a sprite is little more than a bitmap showing a specific state of an element. Animation can be created by alternating the sprite in question quickly: if the switching takes place fast enough, the human eye will detect a continuous motion and see it as animation.

Developers using `<canvas>` in their games must - usually - create most of the required logic by hand. This has led to the development of various game engines, which provide a group of ready-made functions handling sprite display, collision detection and in some cases even body physics.

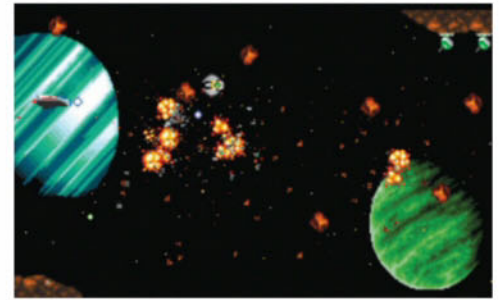
The step-by-step tutorial that features later on will focus on Crafty.js, a very well-maintained game engine developed by a group of Mozilla employees.

## WORKING WITH WebGL

Before Microsoft entered the scene with DirectX, OpenGL was considered the lingua franca of three-dimensional graphics on computer systems. Microsoft's mobile GUI standard managed to capture most of the PC gaming market, but has not been able to penetrate the professional graphics space. As mobile phones became viable gaming platforms, Khronos Group hurried to deploy its API in said market.

Mozilla never had particularly warm feelings towards Flash. Due to that, the browser manufacturer approached Khronos about the creation of a new API for three-dimensional web applications. Google joined the fray in 2010 and the first version of the product was made available to developers and end users in 2011.

Since that date, browser manufacturers have implemented the standard into most of their products. The current versions of all major browsers come with full WebGL support - older versions of Internet Explorer can be 'upgraded' with a third-party plugin. Furthermore, many mobile phones start to provide WebGL too: for developers seeking to target Firefox OS, it is the only way to create 3D games.



*Super Snail Rescue* uses Impact.js game engine, which handles some of the more tricky parts of game development



*Trigger Rally* uses WebGL to render its impressive GPU-accelerated 3D graphics in the browser



*Robots Are People Too* is written entirely in JavaScript, using just the HTML 5 canvas API with a sprinkling of jQuery

Sadly, getting started with OpenGL - or with WebGL - requires a large amount of technical knowledge. The three-dimensional scene must be transformed in order to generate a two-dimensional representation that can be displayed on the screen. Most games accomplish this via a series of matrix multiplications, which requires advanced calculus to understand.

Furthermore, three-dimensional model files must be created using special software, such as Blender or 3D Studio Max. This is a highly complex process that cannot be explained in a short amount of time - in fact, most three-dimensional games are created by a team made up of a collective of artists, musicians and programmers who are specialised in the creation of so-called shader programs.

Should you still feel like trying your luck, though, be sure to take a careful look at Three.js. This framework provides a rich set of wrapper APIs that tries to abstract ugly parts of WebGL away: the time spent on creating your own wrappers should be more ideally used to make your game more fun and engaging.



Google's WebGL examples use the interface to create a three-dimensional bird

**FULL CODE ON WEBSITE**  
<http://bit.ly/li3V3wG>

# CONCEPTS, CONSIDERATIONS AND PLANNING

**Even though graphics and sound are important, they are but part of the formula that makes up a successful game**

The most important difference between mobile/web and desktop games involves the way the players interact with the product. If a console game lets you save your progress only after completing a mission, not much harm is done – you tend to play for a few hours at a time.

Mobile phones, however, tend to get used in short bursts – and this is also true of browser games. Many of them get used as short timewasters by students or employees bored with the task at hand, or even as a non-committal way of unwinding at the end of a day. Developers who create such apps have to keep in mind that the player can stop playing at any point in time – so efficient statekeeping is a must.

## PLAYERS DO NOT READ

Games such as *Age Of Empires* were shipped with an actual printed manual. It offered dozens of pages worth of insight into strategies and also provided an outline of the history of the units in the game.

In today's marketplace, such a game may well be less likely to succeed. People using browser games tend to be more casual gamers who are not as interested in learning more about the title at hand.

If this type of player cannot discover how a browser or mobile game works fairly quickly, they are unlikely to continue with it. One good way to counter this problem involves the use of a built-in tutorial. When the player starts off, make them walk through a few set steps to get them acquainted with the mechanics.

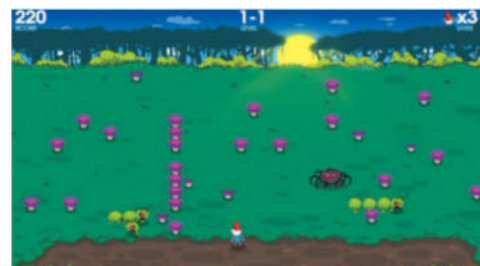
## TRACK YOUR PLAYERS!

In the good old days, releasing a game meant the end of your work: the thing was on the market, it's the PR's turn now. On today's connected handsets, tracking how players interact with your title opens up never-before-seen venues for further optimisation.

One great metric looks at where players perish, which can be used in order to find out enemies that are potentially too difficult. This can be remedied by releasing a 'rebalancing' update. Of course, you should also keep an eye on user ratings too.

## IN-APP PURCHASES

Selling the full version of a game for a set amount used to be the modus operandi for large and small developers alike. Today, in-app purchases (IAPs) tend to



be a more efficient way to monetise a game. Done right, IAPs can provide an almost endless stream of income. The Office of Fair Trading has published a set of regulations that can also be read as a guide to efficient IAP design – the PDF is linked in the resources section at the end of this article.

## DO NOT ANNOY PLAYERS

Background music and sound effects can and will improve the player's experience of the game. However, keep in mind that many players don't always want those around them to know that they are playing. As a result, implementing a sound on/off toggle is a necessity.

Finally, don't forget that an infinite amount of eyeballs makes all bugs shallow. Find players to test your game – and do so as early and often as possible!

Keeping your HTML5 game nice and straightforward is a good way to prevent players from giving up on it



## BROWSER SUPPORT

Canvas is pretty widely supported; IE has supported it since version 9.0, other vendors have had it implemented for ages. In the mobile space, the situation is similar: all major versions of Android and iOS support it.

WebGL is a slightly trickier customer. The browser vendors intent to support it is but a small part of the big picture: if the customer's hardware is not configured correctly, animations will stutter or fail.

Further information can be found by visiting [caniuse.com](http://caniuse.com), a really useful website that provides a neat overview of the capabilities of the various browsers that are currently in the marketplace.



# HOW TO BUILD A GAME

Create your very own Knights vs Ninjas retro platformer

## 01 Load Crafty.js

The first step to a functioning Crafty.js application involves the loading of the framework. For now, we will resort to downloading the relevant file online. In practice, creating a local cache might be more efficient as framework updates happen once a month.

```
001 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
1.0 Strict//EN"
002 "http://www.w3.org/TR/xhtml1/DTD/
xhtml1-strict.dtd">
003 <html xmlns="http://www.w3.org/1999/xhtml">
004 <head>
005 <script type="text/javascript" src="
https://raw.github.com/craftyjs/Crafty/
release/dist/crafty.js"></script>
006 <title>Knights and Ninjas</title>
007 </head>
008 <body>
009 <div id="game"></div>
010 </body>
011 </html>
```

## 02 Create a scene

Game elements should be organised into scenes. The scene() function requires a string with the name and a function, which is to be invoked when the scene is to be created. For now though, our scene just consists of a black background.

```
001 <script>
002 window.onload = function()
003 {
004   Crafty.init(400, 320, document.
getElementById('game'));
005   Crafty.scene("TitleScene", function()
006   {
007     Crafty.background("#000");
008   });
009   Crafty.enterScene("TitleScene");
010 };
011 </script>
```

## 03 Add a sprite

Sprites are created by invoking the sprite() function. It can take multiple images out of one file if the array is set up correctly. EO creates an entity that is provided with the behaviours outlined in the string. We finally set the position.

```
001 Crafty.scene("TitleScene", function()
002 {
003   Crafty.background("#000");
004   Crafty.sprite("banner.png",
{introbanner:[0,0,320,31]});
```

```
005   var banner=Crafty.e("2D, DOM,
introbanner");
006   banner.x=30;
007   banner.y=200;
008 } );
```

## 04 React to key presses

Crafty has an event subsystem. We use the bind method in order to notify our main scene about the availability of key presses. Hitting the right arrow key activates the main game. Keep in mind that mobile users cannot use the app as it stands.

```
001 . . .
002 banner.bind('KeyDown', function(e)
003 {
004   if(e.key==Crafty.keys.RIGHT_ARROW)
005   {
006     Crafty.enterScene("GameScene");
007   }
008 }
009 );
010 } );
011 Crafty.scene("GameScene",function()
012 {
013   Crafty.background("#F0F");
014 } );
```

## 05 Add some physics

Crafty.js contains a basic physics module. Its capabilities are surpassed by Box2D, which has established itself as an industry standard for 2D physics. Enabling it in a Crafty.js game requires you to include some additional components. Furthermore, a setup method must be called.

```
001 <head>
002 <script type="text/javascript" src=
"https://raw.github.com/craftyjs/Crafty/
release/dist/crafty.js"></script>
003 <script type="text/javascript" src=
"Box2dWeb-2.1.a.3.js"></script>
004 <script type="text/javascript" src=
"box2d.js"></script>
005 <title>Knights and Ninjas</title>
006 </head>
007 . . .
008 Crafty.scene("GameScene",function()
009 {
010   Crafty.background("#F0F");
011   //Gravity X, Gravity Y, Pixel to
Meter, speed up enabled
012   Crafty.box2D.init
(0, 10, 32, true);
013 } );
```

## 06 Create static bodies

Our knight character will need to have platforms to jump around on. Modelling them as so-called static bodies ensures that the physics engine will not permit the figure to fall through them. Such bodies can be considered rigid, since forces do not affect them.

```
001 Crafty.scene("GameScene",function()
002 {
003   Crafty.background("#F0F");
004   //Gravity X, Gravity Y, Pixel to
Meter, speed up enabled
005   Crafty.box2D.init(0, 10, 32, true);
006   var wall1=Crafty.e("2D, Canvas,
Box2D, Color");
007   wall1.color("green").attr({x: 13, y:
100, w: 220, h: 12});
008   wall1.box2d({ bodyType: 'static' });
009   //Must be after positioning
var wall2=Crafty.e("2D, Canvas,
Box2D, Color");
010   wall2.color("green").attr({x: 140,
y: 200, w: 220, h: 12});
011   wall2.box2d({ bodyType: 'static' });
012 } );
```

## 07 Add the knight

With that, it is time to add our protagonist. He is made up of a sprite, with a physics property set to dynamic. This means that all three body types can interact with the knight while he is on the playing field.

```
001 . . .
002 wall2.box2d({ bodyType: 'static' });
003 Crafty.sprite("Knight2.png",
{knight:[0,0,30,32]});
004 var knight=Crafty.e("2D, Canvas,
knight, Box2D");
005 knight.x=20;
006 knight.y=200;
007 knight.box2d({ bodyType: 'dynamic' });
```

## 08 Add a bounding box

If you run our game as it stands, the knight will appear on the screen for a split second. Gravity then kicks in and whirls him to the abyss. This can be solved by creating a bounding box around the game area, by using more static bodies.

```
001 Crafty.e("2D, Canvas, Color, Box2D").
attr({x: 1, y: 1, w: 10, h: 320} ).
box2d({ bodyType: 'static' });
002 Crafty.e("2D, Canvas, Color, Box2D").
attr({x: 390, y:1, w: 10, h: 320}).
box2d({ bodyType: 'static' });
```

```
003 Crafty.e("2D, Canvas, Color, Box2D").
    attr({x: 1, y: 1, w: 400, h: 10}).
    box2d({ bodyType: 'static' });
004 Crafty.e("2D, Canvas, Color, Box2D").
    attr({x: 1, y: 310, w: 400, h: 10}).
    box2d({ bodyType: 'static' });
```

## 09 Let's move (part 1)

Our knight's motion logic will be encapsulated into a class of its own. This is accomplished via a Crafty component, which is created by invoking the `c` function. The string in the declaration of the knight is modified so that it includes `PaddleControls`.

```
001 Crafty.c("PaddleControls",
002 {
003   init: function()
004   {
005     this.requires("Keyboard");
006   },
007   paddleControls: function()
008   {
009     this.bind("EnterFrame", function()
010     {
011       . . .
012       var knight=Crafty.e("2D, Canvas,
013       knight, Box2D, PaddleControls");
014       knight.y=200;
015       knight.x=30;
016       knight.paddleControls();
```

## 10 Let's move (part 2)

`EnterFrame` gets invoked once per frame. We check whether the A and D keys have been pressed. If they have, the knight's position is moved by invoking the `SetPositionAndAngle` function on its body.

```
001 paddleControls: function()
002 {
003   this.bind("EnterFrame", function()
004   {
005     if (this.isDown("D"))
006     {
007       var myVal=this.body.
008       GetPosition();
009       return this.body.SetPositionAnd
010       Angle(new b2Vec2(myVal.x+0.1,
011       myVal.y), this.body.GetAngle());
012     }
013     if (this.isDown("A"))
014     {
015       var myVal=this.body.GetPosition();
016       return this.body.SetPositionAnd
017       Angle(new b2Vec2(myVal.x-0.1,
018       myVal.y), this.body.GetAngle());
019     }
020   }
021 }
022 } );
```

## 11 Up and down

If it weren't for gravity, we would be able to jump

for miles. Here, jumping force can only be accumulated while the knight is standing on a floor. This requires us to check for collisions. We accomplish this by marking the ground with an empty component.

```
001 Crafty.c("JumpWall", function()
002 { } );
003 . . .
004 Crafty.e("2D, Canvas, Color, Box2D,
    JumpWall").attr({x: 1, y: 1, w: 400,
    h: 10}).box2d({ bodyType: 'static'
    });
005 Crafty.e("2D, Canvas, Color, Box2D,
    JumpWall").attr({x: 1, y: 310, w:
    400, h: 10}).box2d({ bodyType:
    'static' });
```

## 12 Act on contact!

The recently introduced `onContact` function can be used for interactions between elements. We invoke it in order to make sure that the `canJump` flag will be set to true whenever the knight touches one of the walls that contain the `JumpWall` component.

```
001 knight.onContact("JumpWall", function()
002 {
003   window.canJump=true;
004 } );
```

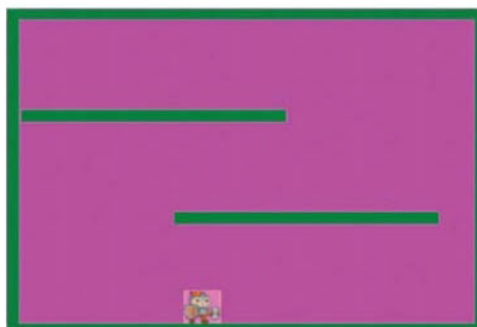
## 13 Up we go

If the user presses the W button while the knight is standing on one of the platforms, we invoke `ApplyForce` in order to whirl him up into the air. The gravity that we set up in the initial stages ensures that he lands again after some time.

```
001 if (this.isDown("W") && window.
    canJump==true)
002 {
003   window.canJump=false;
004   return this.body.ApplyImpulse(new
    b2Vec2(0, -20), this.body.GetWorld
    Center());
005 }
```

## 14 Time to test

We have now reached a stage where the game can be run. Open it in your web browser of choice and



press the right arrow key in order to close the introductory scene. The screenshot shown was made with `Crafty.box2D.showDebugInfo()` invoked, which in turn activates the Box2D debugger.

## 15 Disable rotation

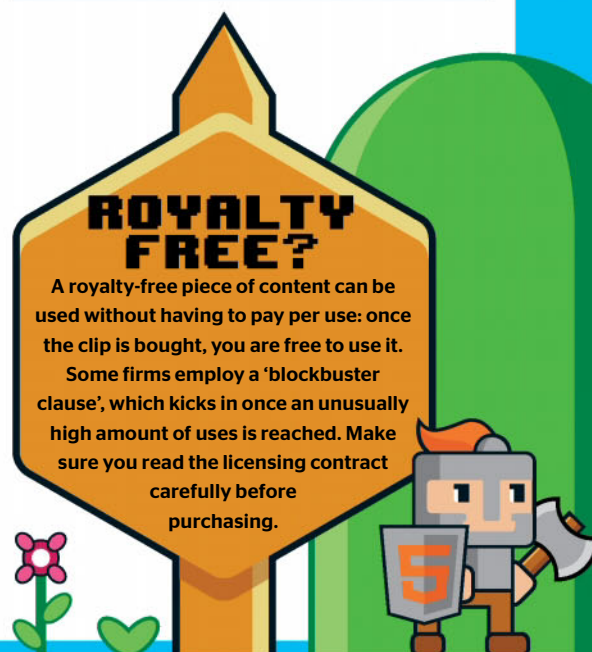
Sadly, our knight can topple over due to inaccuracies in the positioning of the forces applied to him. This problem can be solved by invoking `SetFixedRotation` in the knight.body.

```
001 Crafty.sprite("Knight2.png",
    {knight:[0,0,30,32]});
002 var knight=Crafty.e("2D, Canvas,
    knight, Box2D, PaddleControls");
003 knight.y=200;
004 knight.x=30;
005 knight.paddleControls();
006 knight.box2d({ bodyType: 'dynamic' });
007 knight.body.SetFixedRotation(true);
008 knight.onContact("JumpWall", function()
009 {
010   window.canJump=true;
011 } );
```

## 16 Add an enemy

With that out of the way, it is now time to bring in the pesky ninjas. Let us start out by producing a ninja that 'floats' across the screen endlessly. He should be lethal on touch, but should not be constrained by walls.

```
001 window.redninja=Crafty.e("2D, Canvas
    , redninja, Box2D");
002 window.redninja.y=50;
003 window.redninja.x=30;
004 window.redninja.box2d({ bodyType:
    'kinematic' });
005 window.redninja.body.SetLinear
    Velocity(new b2Vec2(0.33, 0));
```





## 17 Stay on screen!

Bodies in motion differ from static ones in that they can be moved by applying forces to them. Sadly, they are not supported by collision detection. We can solve this issue by checking the position on every frame and resetting it from time to time.

```
001 window.redninja.bind
    ("EnterFrame", function()
002 {
003     var myVal=this.body.
        GetPosition();
004     if(myVal.x>400/32) //convert
        pixels to meters
005     {
006         this.body.SetPositionAndAngle
            (new b2Vec2(0,50/32), this.body.
                GetAngle());
007     }
008 } );
```

## 18 Die on touch

Our knight should die when he gets touched by an enemy. This can be accomplished by invoking onContact yet again. If contact takes place, we simply return the player to the title screen of our game by changing the active scene.

```
001 Crafty.c("LethalEntity", function()
002 {} );
003 ...
004 window.redninja=Crafty.e("2D, Canvas
    , redninja, Box2D, LethalEntity");
005 window.redninja.y=50;
006 window.redninja.x=30;
007 window.redninja.box2d({ bodyType:
    'kinematic' });
008 window.redninja.body.SetLinear
    Velocity(new b2Vec2(0.33, 0));
009 knight.onContact("LethalEntity",
    function()
010 {
011     Crafty.enterScene("TitleScene");
012 } );
```

## 19 Two in one!

Loading images takes time. Sprite maps are large bitmaps that contain a group of smaller pictures placed next to one another. Our red ninja comes from a map that also contains images of his other brethren; they can be accessed by modifying the constructor.

## 20 Add more enemies

Once the images have been loaded, spawning an extra ninja at the top of the playing field is relatively simple. You could spawn multiple ninjas in a loop in order to vary the difficulty of the game.

```
001 Crafty.sprite("ninjas.png", {redninja:
    [0,0,32,30], blueninja:[32,0,43,30]});
```

## 21 Make them move

Currently, the blue ninja stands at the top of the playing field. We can solve this by moving him along the screen as time passes by. More realistic games would likely make the movement speed and direction depend on the surroundings.

```
001 window.blueninja=Crafty.e("2D, Canvas,
    blueninja, Box2D, LethalEntity");
002 window.blueninja.y=50;
003 window.blueninja.x=30;
004 window.blueninja.box2d
    ({ bodyType: 'dynamic' });
005 window.blueninja.bind
    ("EnterFrame", function()
006 {
007     var myVal=this.body.GetPosition();
008     return this.body.SetPositionAnd
        Angle(new b2Vec2(myVal.x+0.1,
            myVal.y), this.body.GetAngle());
009 } );
```

## 22 Fight back!

Pressing the S button should allow our knight to ignore the incoming ninjas. This can be accomplished by modifying the onCollision function so that the scene is not changed if the key is pressed while the collision occurs.

```
001 knight.onContact("LethalEntity",
    function()
002 {
003     if(this.isDown("S")==false)
004         Crafty.enterScene("TitleScene");
005 } );
006
```

## 23 Find sound files

Games profit from background sound and effects. Kevin MacLeod's [incompetech.com](http://incompetech.com) website is a definitive source for all kinds of royalty-free music. In the case of Mr MacLeod, the clips can be used if you mention his name in your game's 'About' dialog.



## 24 Load sound clip

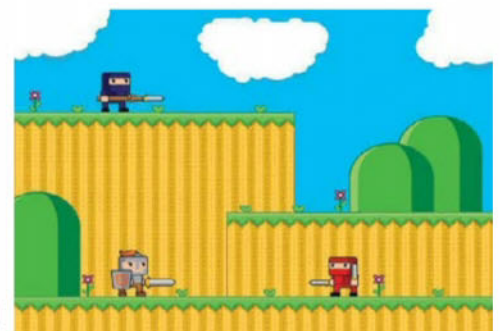
HTML5 specifies WAV, MP3 and OGG files – but browser manufacturers can choose which file formats they wish to support. Helpfully, Crafty allows you to work around this issue by providing an array of different files – the correct one will be chosen automatically during program execution.

```
001 Crafty.audio.add("walk", [
002 "sounds/walk.mp3",
003 "sounds/walk.ogg",
004 "sounds/walk.wav"
005 ]);
006
```

## 25 Play background music

The file we've chosen is only available only in MP3 format. As it is intended to linger in the background as the game runs, we must initialise it outside of any scenes. Setting the repetition counter to -1 ensures an infinite loop throughout gameplay.

```
001 window.onload = function()
002 {
003     Crafty.init(400, 320, document.
        getElementById('game'));
004     Crafty.audio.add("bgm", "Ambler.mp3");
005     Crafty.audio.play("bgm", -1);
006
```



Creating your own assets can turn a simple game, like the one created here, into something like the above

# DON'T STEAL CONTENT!

Services like Google Images provide a wealth of images. Sadly, most of them are not licensed for reuse in your content. Using some of them illegally is a very bad idea: copyright infringement lawsuits can easily fetch thousands of pounds per image.



# BEST GAMES ENGINES

Even though *Crafty.js* is an impressive system, it is not the only game engine available. Here are a few other ones that you should consider...

## THREE.JS

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

The aforementioned *three.js* is a wrapper around the mechanics of WebGL. It simplifies the handling of the underlying elements and comes with a group of prepared shaders and helper routines.

*Three.js* is ideally suited to all kinds of three-dimensional games. Resources can be loaded via a group of classes that abstract the actual file formats for you. In addition to that, a large selection of mathematical utility functions is provided in order to simplify advanced computations.

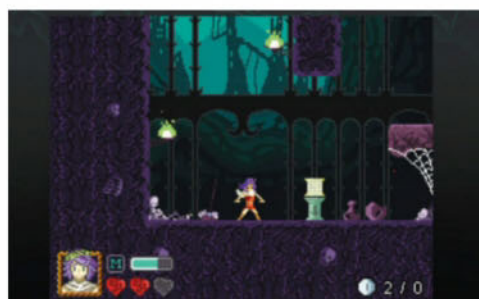
Finally, developers trying to smoke out bugs can resort to a special debugging framework, which can attach itself to hooks in the game engine.

### PROS

- Export utilities for programs like Blender allow you to export resources into a format that *Three.js* can use directly. This relieves you from the effort of performing manual conversions.
- *Three.js* can be considered the 'de facto' standard of three-dimensional gaming on the web. This means that documentation and frequently asked questions can be accessed easily.

### CONS

- Even though *Three.js* contains a load of helpful glue code, it can still be quite difficult to use. Models need to be drawn up and prepared, which takes a significant amount of time and effort.
- The performance of *Three.js* is highly dependent on the underlying hardware. It is recommended that you perform thorough tests on every handset and browser that you want to support.



## IMPACT.JS

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

Developed by Dominic Szablewski, *Impact.js* was, for a long time, considered to be the prime example of a commercial HTML5 game engine. It is specialised on platformer and action games, whose creation is simplified by a group of classes handling physics and other commonly faced tasks.

The price of \$99 buys you access to a product called *Weltmeister*, a level editor integrated into the rest of the engine. It can even be used for setting up elementary logic such as collision detection and item pick-up. Finally, a sound module called *Ejecta* is offered. It handles sound on iOS in a more efficient fashion.

### PROS

- Being made available as a commercial program, *Impact.js* comes with a company that is legally obliged to support you if you run into issues.
- The *Weltmeister* level editor can turn out to be a real time-saver when it comes to designing maps that are made up of individual tiles.

### CONS

- *Impact.js* costs \$99 and is not available as an open source option. This can be an issue for very small teams trying to work on a shoestring budget.
- Being highly specialised on platformers and action games, *Impact.js* is not ideally suited for developers trying to work on sprawling, epic games such as *Command & Conquer* or *Civilization*.

## CUBE ENGINE

[github.com/Nurgak/Cube-engine](https://github.com/Nurgak/Cube-engine)

3D graphics do not necessarily need to be accelerated with dedicated hardware. Engines are also able to run the required computations on the CPU, which offers developers independence from the often-ficky accelerators and their brittle drivers.

*Cube Engine* is a classic example of this. It was designed to prove that 3D graphics are feasible without hardware acceleration. Of course, the performance reached is not nearly on par with the speed that can be achieved with a dedicated graphics processing unit (GPU). Furthermore, many advanced features such as shaders are not supported.

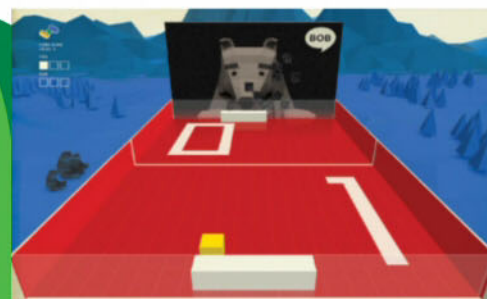
Nevertheless, the proof-of-concept *Minecraft* clone is more than playable. Developers seeking to create similar titles should definitely take a look.

### PROS

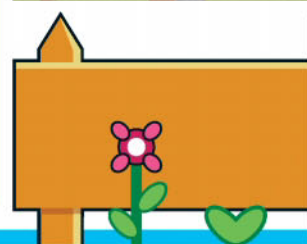
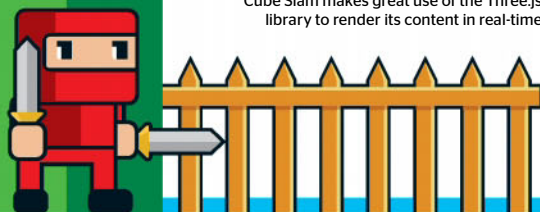
- *Cube* does not use WebGL functions. This means that it can be used to generate three-dimensional graphics on all computers that support the canvas tag.
- *Cube's* source code is well designed. Working with it can serve as a good introduction into the concepts involved in the creation of 3D games.

### CONS

- *Cube* is not hardware accelerated. This means that an enormous level of CPU power is required for rendering all but the very simplest of scenes, making practical use a little on the difficult side.
- *Cube's* developer intended the product as a proof of concept and has not updated it in over a year. Getting answers to open questions is further hampered by the lack of a community.



Cube Slam makes great use of the *Three.js* library to render its content in real-time





## GAMEMAKER STUDIO

[www.yoyogames.com/studio](http://www.yoyogames.com/studio)

This product was founded when Dutchman Mark Overmars set out to create an IDE for non-programmers. As learning a programming language tends to be a rather cumbersome process, his product attempts to guide users to the finished product on a step-by-step basis. Should a game require features that could not be implemented in the GUI, a dedicated scripting language was available.

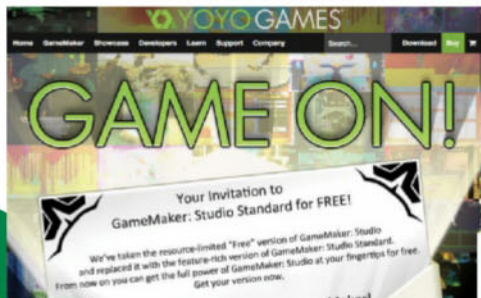
GameMakers' major strength is its universal cross-platform capability. A game created with this framework is not restricted to the browser, as it is able to be deployed across a huge selection of mobile and desktop operating systems.

### PROS

- GameMaker can be used by people who are not familiar with JavaScript and other programming languages, walking them through the process.
- Products based on GameMaker can be ported onto various operating systems with minimal effort. Desktop and mobile can be targeted with one code base.

### CONS

- Exporting the game to most mobile platforms requires the purchase of an additional, quite pricey licence. Developers can expect to pay up to around \$99 per operating system.
- Results are said to be less efficient than the ones achieved by direct and native JavaScript coding.



## PHASER

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

Photon Storm's Phaser is based on the Pixijs library. This permits the framework to render components with both WebGL and Canvas, which can lead to a significantly improved performance.

As the framework has been developed by a games consultancy company, frequent updates can be expected. Co-operation with the TypeScript team has led to Visual Studio support, which can be of great help when it comes to tracking down pesky bugs.

Phaser's track record is similar to the one of Crafty.js; hundreds of games based on it can be downloaded in various app stores, while a large community of developers also ensures that any questions that crop up get answered quickly.

### PROS

- Widespread popularity and usage ensure that the product will not disappear in the near or far future.
- WebGL backend leads to improved performance and advanced effects. Shader code can be used to spruce up 2D scenes with post-processing effects.

### CONS

- Lack of WebGL on iOS 7 means that some of the advanced features of the Phaser engine cannot be used on this operating system.
- The framework cannot be purchased off the shelf. This means that there is no easy way to get a direct contract between you and the platform vendor.



## RESOURCES

Be sure to check out these websites, all of which provide helpful extra information

### ALL ABOUT IAPS

[bit.ly/1o68Yiv](http://bit.ly/1o68Yiv)

In-app purchases are more efficient if they are optimised to use the psychology of the player to its advantage. The overwhelming success of some of the titles has led to OFT stepping in with a set of regulations that are well worth checking out.

### DOCUMENTATION OF CRAFTY.JS

[craftyjs.com/api/Crafty.html](http://craftyjs.com/api/Crafty.html)

Having a deep understanding of your chosen tools is paramount to being able to use them efficiently. The manual for Crafty.js provides a great overview of the various functions that are contained in the framework. For most of them, a small example with further data is also provided.



### GAMASUTRA

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

GamaSutra is the online version of the *Game Developer* magazine. The website provides a smorgasbord of interesting, amusing and inspiring content that can be useful for game developers and designers. Some of the stories also take a helpful look at marketing.

### HTML5 GAME ENGINE

[html5gameengine.com](http://html5gameengine.com)

The web is full of game engines. The HTML5 Game Engine list contains an overview of all the products that are available. You can list the engines by their feature set, or even analyse them by popularity or specifics such as frequency of updates.

Name	Version	Release Date	Download
Construct 2	2.8.0	2014-03-10	Download
GameMaker: Studio	1.4.0	2014-03-10	Download
Phaser	2.0.0	2014-03-10	Download
Crafty.js	1.1.0	2014-03-10	Download
...	...	...	...

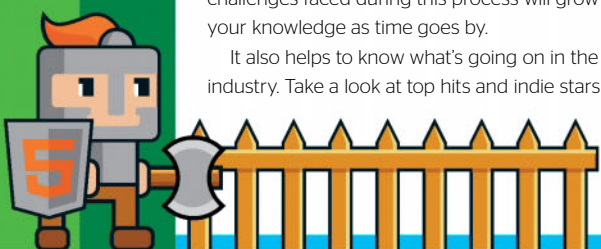
## WHAT NEXT?

Programming is an art that can only be perfected with a lot of practice – the best way to get better at creating games is quite simply to just carry on creating them. Look at an interesting title, identify its best aspects and try to make these work in your own code. The challenges faced during this process will grow your knowledge as time goes by.

It also helps to know what's going on in the industry. Take a look at top hits and indie stars

to see what is doing well with audiences. It's also a good idea to keep an eye on real-life events – many events can end up being a great little promotional game (*Snowden Saga - Escape From Den of Iniquity*, anyone?).

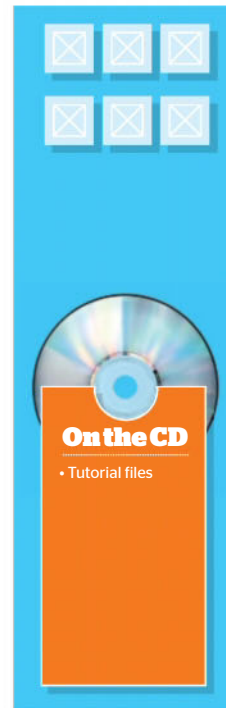
Finally, make sure you read around the subject. Technical bookstores and Amazon.com are brimming with tomes that contain valuable advice from seasoned game developers.



# Build a responsive WordPress theme

As the most advanced responsive framework available, Zurb's Foundation is ideal for your latest WordPress project

**tools | tech | trends** WordPress, HTML, CSS  
**expert** Steven Wu



## 01 Download FoundationPress

To begin, make sure you have the latest version of WordPress installed and set up. Head over to the FoundationPress starter theme GitHub page: [github.com/olefredrik/foundationpress](https://github.com/olefredrik/foundationpress) and download this theme. Once you've downloaded it, extract it and upload it to your theme's directory in WordPress and activate it.

## 02 Custom stylesheet

Start by opening up the 'header.php' file in your text editor. You'll want to add in your own custom stylesheet so that when it comes to upgrading FoundationPress it won't override any custom work. You may use Sass with Foundation, but to allow beginners to follow along this tutorial, we'll be using pure CSS.

```
001 <link rel="stylesheet" href="php echo get_template_directory_uri(); ?/style.css" />
```

## 03 Customise the menu

WordPress already features a built-in Appearance Menus Screen, enabling users to create custom navigation. FoundationPress takes this a step further by allowing us to create multiple navigations on either side on the nav bar. When you create a new menu in WordPress, you have the option to enable your navigations for mobile devices.

## 04 Customise the header

FoundationPress has already pre-written a lot of the WordPress basic theming. We're going to dive in and modify it. To give this theme a visual punch we're going to add in a header with the website name, including a gradient background. Open up the 'header.php' and paste in the following HTML code.

```
001 <header class="main-head">
002   <div class="row">
003     <div class="large-12 columns">
004       <h1 class="title"><?php bloginfo
005         ( 'name' ); ?></h1>
006     </div>
007   </div>
```

## 05 Style the header

With our header implemented we'll now need to style it. Open up 'style.css' in the FoundationPress starter theme, start by giving the main header a gradient background, using CSS3 gradient. Position the main h1 above the header. Let's make all characters upper-case and give it a text shadow to stand out from the light backdrop.

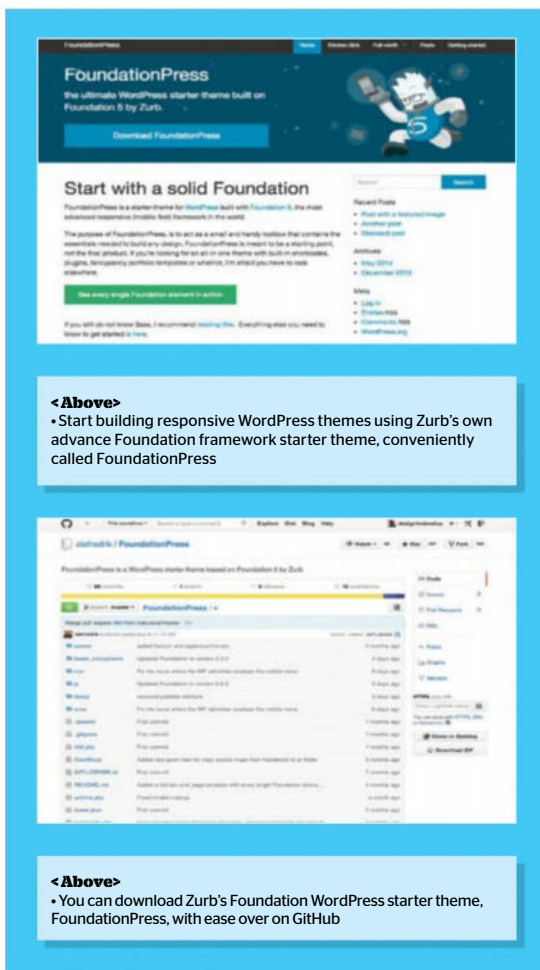
```
001 .main-head {
002   margin-bottom: 2em;
003   padding: 1.2em;
004   background: #00b3d3;
005   background: -moz-radial-gradient(center,
    ellipse cover, #00b3d3 0%, #007295
    100%);
```

Following the previous tutorial on how to build a custom template using Zurb's Foundation framework (from issue 223), we'll be taking this lightweight, advance responsive framework with a mobile-first approach to the popular CMS/ blogging platform WordPress.

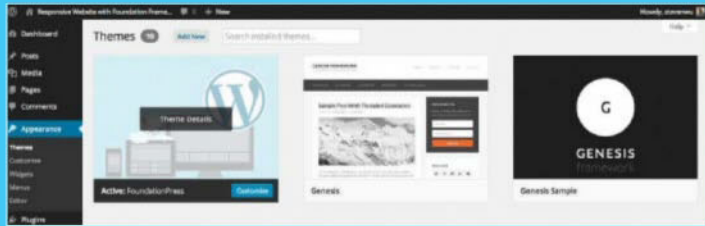
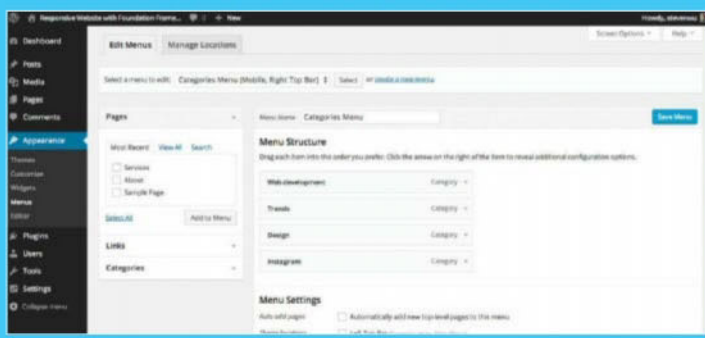
Previously to incorporate Zurb's Foundation framework into WordPress you had to manually link the necessary JavaScript and CSS using the WordPress functions 'wp\_enqueue\_script' and 'wp\_enqueue\_style'. But now, thanks to Zurb and the popularity of WordPress, Zurb has provided a starter-theme called FoundationPress, which you can download directly from its GitHub page to start building your own WordPress theme with the Foundation framework.

The purpose of this ultimate starter theme is to act as a springboard; it comes packed with useful re-useable components, a 12-column responsive grid, JavaScript functions and much more. This starter theme contains all the necessary design elements, including the JavaScript and CSS libraries.

Still, FoundationPress is not an all-in-one WordPress theme with plugins, shortcodes, custom options or custom templates - it is only to be used as a starting point. Luckily it has done most of the hard work for us including setting up widgets, navigations, displaying blog posts and general clean-up of WordPress.





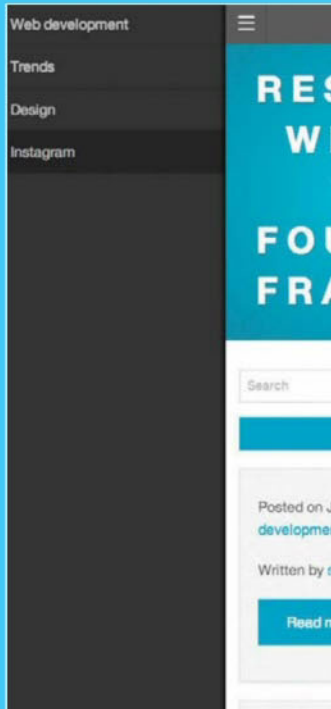
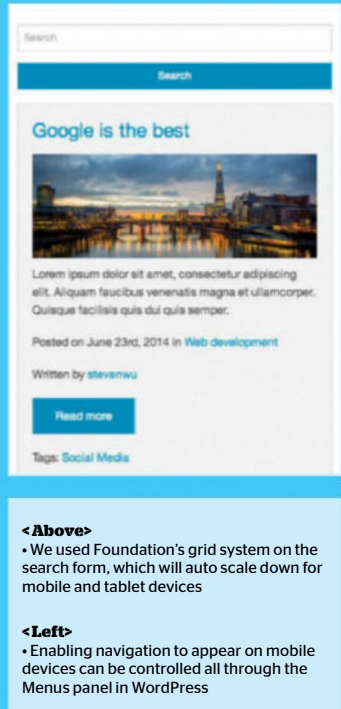



**<Top>**

- In WordPress, activate FoundationPress starter theme. This theme includes all the Foundation framework library

**<Bottom>**

- FoundationPress allows you to order menus to be on the left or right side of the menu and enable for mobiles

**<Above>**

- We used Foundation's grid system on the search form, which will auto scale down for mobile and tablet devices

**<Left>**

- Enabling navigation to appear on mobile devices can be controlled all through the Menus panel in WordPress

```

006 background: -webkit-gradient(radial,
    center center, 0px, center center, 100%,
    color-stop(0%,#00b3d3), color-stop
    (100%,#007295));
007 background: -webkit-radial-gradient
    (center, ellipse cover, #00b3d3 0%,
    #007295 100%);
008 }
009 .main-head h1 {
010     text-align: center;
011     font-weight: 900;
012     text-transform: uppercase;
013     letter-spacing: 10px;
014     text-shadow: 1px 1px 2px rgba
    (50, 50, 50, 0.59);
015     font-size: 2.5rem;
016     color: #fff;
017 }

```

## 06 Add a search

Currently in our widgets list, the search form is located in the sidebar. In WordPress Widgets we can disable the search widget. Now inside our 'head.php' at the very bottom, paste in the following function, which will print out the search form. We're going to place our search form just below the header of our website.

```
001 <?php get_search_form(); ?>
```

## 07 Customise search

With the get search form function added in our 'header.php' we can now structure this search form by editing the 'searchform.php'. Directly below the form tag

we have applied a row <div> and changed the default grid layout to use the large grid system as well as setting some custom classes to be referenced in our CSS.

```

001 <div class="row">
002     <?php do_action('foundationPress_
    searchform_top'); ?>
003     <div class="large-8 columns searchbox">
004         <input type="text" value="" name="s"
    id="s" placeholder="<?php esc_attr_e
    ('Search', 'FoundationPress'); ?>">
005     </div>
006     <?php do_action('foundationPress_
    searchform_before_search_button'); ?>
007     <div class="large-4 columns
    searchbutton">
008         <input type="submit" id="searchsubmit"
    value="<?php esc_attr_e('Search',
    'FoundationPress'); ?>" class="prefix
    button">
009     </div>

```

## 08 Modify index.php

The 'index.php' is the main template in WordPress theming hierarchy. We're going to modify it and remove some of the grid components and place them in 'content.php' instead. Remove the <div> row and grid classes just below the 'get\_header' function and replace it with the code below. Finally, migrate the <?php get\_sidebar(); ?> just above the 'get\_footer' function.

```

001 <?php get_header(); ?>
002 <div class="row" data-equalizer>

```

## Update Foundation with Bower

Make sure that you have Node.js, Grunt and Bower installed locally so you can perform an update to the Foundation framework directly just by running this in the command line:

```
$ foundation update
```

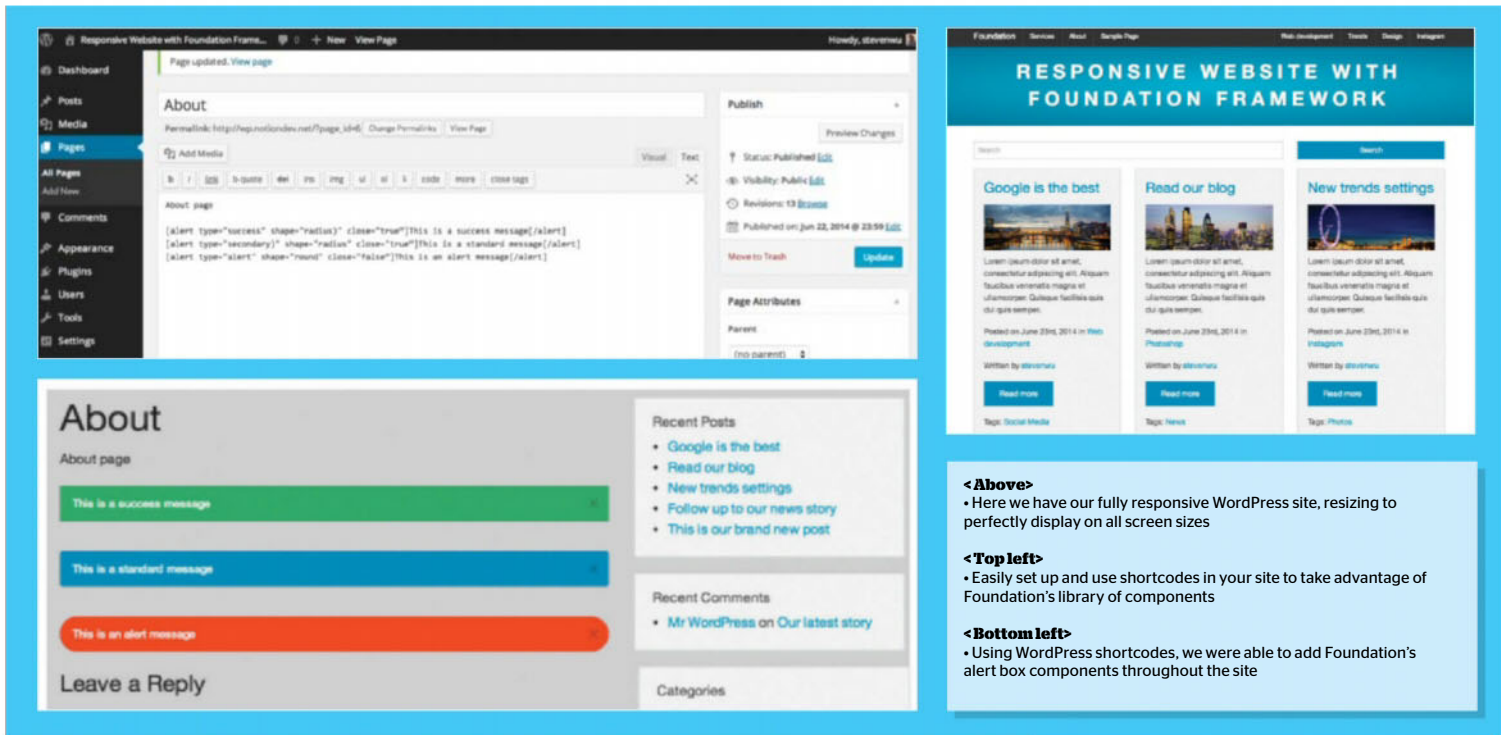
## 09 Blog post

With the homepage structure completed, we'll want to structure each blog post in a grid column of four rows; this will lay out three blog posts organised next to each other on a large monitor. Using the grid system will force our layout to be responsive. Remove the original code all the way down to the <footer> tag in 'content.php'.

```

001 <div class="large-4 columns" role="main">
002     <article id="post-<?php the_ID(); ?>"
    <?php post_class('panel'); ?> data-
    equalizer-watch>
003     <header>
004         <h2><a href="<?php the_permalink();
    ?>">?php the_title(); ?></a></h2>
005     </header>
006     <div class="entry-content">
007         <figure><a href="<?php the_permalink
    (); ?>">?php if ( has_post_
    thumbnail() ) {the_post_thumbnail
    ('large'); } ?></a></figure>

```



```
008 <?php the_excerpt(); ?>
009 <p>Posted on <?php the_time('F jS, Y
    '); ?> in <?php the_category(' ');
    ?></p>
010 <p class="byline author">Written by
    <?php the_author_posts_link(); ?>
    </p>
011 <a href="<?php the_permalink(); ?>"
    class="button">Read more</a>
012 </div>
```

## 10 Style the blog

With our blog post structure set up in a grid column in a set of threes, we'll now implement some simple styling to this homepage. Back in our 'style.css', we'll add some box shadow so the panels don't look so flat. We don't need to style the panels themselves as these styles are already set up inside Foundation.

```
001 .panel {
002   box-shadow: 0 1px 5px #D5DEE5;
003 }
004 figure {
005   margin: 0;
006 }
007 .entry-content figure img {
008   margin: 10px 0;
009 }
010 @media only screen and
    (min-width: 40.063em) {
011   h2 {
012     font-size: 1.8rem;
013   }
014 }
```

## 11 Style search form

With our blog posts neatly organised in a row of threes, our search field and search button are not quite aligned with the rest of the design. Let's fix this by adding some padding. With a mobile-first approach, Foundation takes care of the responsive nature - it's unnecessary to add styles for mobile or tablet devices.

```
001 .searchbox, .searchbutton {
002   padding: 0 15px;
003 }
004
```

## 12 Move the sidebar

Rather than having our sidebar situated on the right-hand column, we will position it directly below all the blog posts and just above the footer. Inside the 'sidebar.php' we're going to use Foundation's Equalizer component, which will set equal height to all the widget panels. We simply place the data-equalizer attribute to the parent container here.

```
001 <div class="bottom-sidebar">
002   <aside id="sidebar" class="row" data-
    equalizer>
003     <?php do_action('foundationPress_
    before_sidebar'); ?>
004     <?php dynamic_sidebar("sidebar-
    widgets"); ?>
005     <?php do_action('foundationPress_
    after_sidebar'); ?>
006   </aside>
007 </div>
008
```

## Working with Sass

Working with Sass provides greater flexibility and control over this theme. All Sass variables are located in scss/config/variables.scss and your site structure within scss/site/\_structure.

## 13 Widgets

Now to actually lay out our widgets, we will need to open up the 'widget-areas.php' located in the library directory. Inside the first array on line 8, remove what is currently there and replace it with the below, which uses the large-4 grid and a 'data-equalizer-watch' attribute that the Equalizer component requires to set equal heights to each panel.

```
001 'before_widget' => '<article id="%1$s"
    class="widget %2$s large-4 columns"><div
    class="panel" data-equalizer-watch>'
```

## 14 Style the sidebar

Within WordPress in the Widgets panel, we only require three widgets so remove any of the other existing ones. When you check the homepage you will notice our widget panels all have equal heights to the tallest panel. To finish up with our sidebar beneath our blog posts, we will give this section its own background colour and some padding.

```
001 .bottom-sidebar {
002   padding-top: 10px;
```



```
003 background-color: #cecece;
004 }
```

## 15 Set up shortcodes

Because there is a vast amount of components available in Foundation, we convert some of them into shortcodes so that we can reuse these components whenever we're in the editor. Creating shortcodes requires two steps: create a primary handler method and hook up the handler into WordPress. Inside the 'functions.php' we need to set up our primary function.

```
001 function foundation_add_alerts
    ( $atts, $content = null ) {
002     extract( shortcode_atts( array(
003         'type' => '',
004         'shape' => '',
005         'close' => 'true',
006         'class' => ''
007     ), $atts ) );
```

## 16 Shortcode array

In the previous code snippet we noted that our function receives the parameters of type, shape and close. We're going to use this to display alert boxes using one of Foundation's components. The type attribute will display success, warnings or informative information using this shortcode. Let's set up an array that will capture these attributes.

```
001 $class_array[] = ( $shape ) ? $shape : '';
002 $class_array[] = ( $type ) ? $type : '';
003 $class_array[] = ( $class ) ? $class : '';
004 $class_array = array_filter( $class_array );
005 $classes = implode( ' ', $class_array );
```

## 17 Shortcode markup

When this shortcode is executed we want to make sure that it's using the correct formatted markup and CSS classes. We need to use a wrapping class alert-box. This is very important because we want to make sure that Foundation calls the Alert JavaScript plugin for us. This particular plugin is in fact handled in the 'foundation.alert.js'.

```
001 $output = '<div class="alert-box ' . $
    classes . '">';
002 $output .= do_shortcode( $content );
003 $output .= ( 'false' != $close ) ? '<a
    class="close" href="#">&times;</a>' : '';
004 $output .= '</div>';
005 return $output;
006 }
```

## 18 Hook into WordPress

Before finishing off our shortcode we're going to ensure that it has all been registered correctly, otherwise WordPress won't know what to do with it. To do this we use the 'register\_shortcodes' function and the 'add\_shortcode' method. The first parameter defines

the shortcode in the editor while the second points to the function that we created previously.

```
001 function register_shortcodes() {
002     add_shortcode('alert', 'foundation_add_
    alerts');
003 }
004 add_action('init', 'register_shortcodes');
```

## 19 Shortcodes to use

We can now use the following shortcodes in the editor to display alert boxes, which is a native component from the Foundation framework. All we have to do is pass in which type of alert box type we want displayed by selecting the attributes: success, secondary or alert. We can even choose what type of shape to use and whether we want a close off function.

```
001 [alert type="success" shape="radius"
    close="true"]This is a success message
[/alert]
002 [alert type="secondary" shape="radius"
    close="true"]This is a standard message
[/alert]
003 [alert type="alert" shape="round" close=
    "false"]This is an alert message[/alert]
```

## 20 Alert boxes

Without any CSS styling or JavaScript and just using the shortcodes we have set up, we can implement alert boxes wherever we like in our WordPress site. By simply using shortcodes we can easily convert many of the rich components from Foundation to be used easily throughout our site.

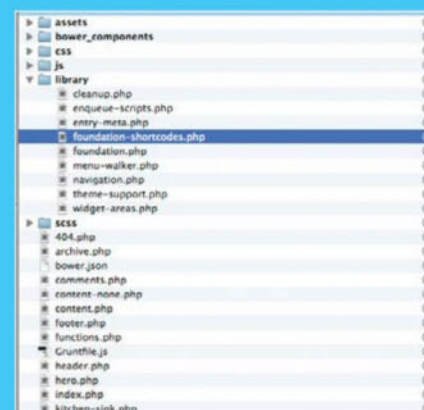
## 21 Footer

To finish up we're just going to add in a footer navigation by using the WordPress WP list pages. Open up the 'footer.php' and just below the closing </section> tag, remove everything including the <footer> tag. Replace it with the following code, which will display a list of all pages on our site.

```
001 <footer class="main-footer">
002     <div class="row"
003         <ul>
004             <?php wp_list_pages(); ?>
005         </ul>
006         <?php do_action('foundationPress_
    before_footer'); ?>
007         <?php dynamic_sidebar("footer-
    widgets"); ?>
008         <?php do_action('foundationPress_
    after_footer'); ?>
009     </div>
010 </footer>
```

## 22 Style the footer

Finally, we're just adding the final touches by styling up our footer. Through this tutorial we've taken



## Store all your shortcodes in a separate file

In this tutorial our code for the WordPress shortcodes are placed in the 'functions.php'. While this is valid, to keep our 'functions.php' clean and easy to maintain it's good practice to copy all of the shortcodes into a separate file instead. The benefit of having this separate file is that it becomes more modular and, should you have lots of shortcodes, it won't become cluttered in unnecessary code compared to being in the 'functions.php'.

To follow FoundationPress standards we can copy all our shortcodes into a new file called 'foundation-shortcodes.php'. Within the 'functions.php' we can just reference this with:

```
require_once('library/foundation-
shortcodes.php');
```

You could even store all of your shortcodes within a separate plugin. That way, in the event that you switch themes, they will always be available and working.

the starter theme FoundationPress and quickly customised it as our own theme using a variety of Foundation's components and functionality. Using FoundationPress allowed us to focus on the front-end development and less on the actual backend efforts.

```
001 .main-footer {
002     padding: 10px 0;
003     background-color: #9c9c9c;
004 }
005 .pagenav ul {
006     margin: 10px 0 0 0;
007 }
008 .main-footer li {
009     float: left;
010     margin-right: 10px;
011     list-style: none;
012 }
```

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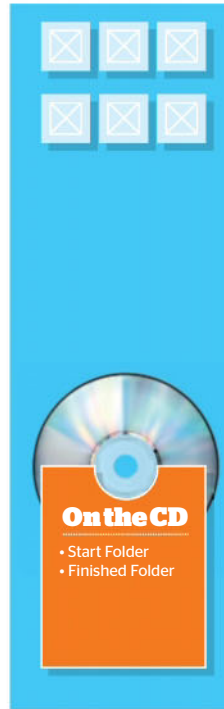


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# Make a lightweight mobile framework

Full-on frameworks like jQuery Mobile can be a little bloated, we show you how to create a custom interface for your apps with Topcoat

**tools | tech | trends** Brackets, Topcoat.io, Effectt.css, jQuery 2.x  
**expert** Mark Shufflebottom



here are tons of mobile UI frameworks out there that offer something unique. However, some of them are a little on the bloated side when all you really need is the transition effects between pages and a few UI

elements to get you started. That's exactly what we are going to focus on in this tutorial. We are still going to use jQuery, but we'll be using the leaner version 2 as this doesn't have support for old IE browsers.

Adobe has built a very lightweight set of CSS UI components called Topcoat that we'll use to start our UI. This has no JavaScript and renders quickly in the DOM, so we can easily build on this to create a custom UI. For transitions on our pages we're going to use the Effectt.css library, which, while it isn't quite finished yet, will give us quick and easy page transitions that mostly use CSS and only have JavaScript to switch classes on objects. We're not focusing too much on the app's functionality except to show how to render a Google map when it isn't on screen, as this can cause problems. Ready to make a custom UI? Let's get going!



#### <Above>

• Here is the header we added to the page using Topcoat's CSS and our icon for the main screen of the app

## 01 Start the project

From the resource CD, copy the Start Folder to your computer and open this folder in Brackets code editor. There is the barebones of a four-page app in the body with sections for each page to go. In the head section, we'll add the CSS we need to work with. This is the Topcoat UI library ([topcoat.io](http://topcoat.io)) and Effectt.css library ([h5bp.github.io/Effectt.css](https://github.com/h5bp.github.io/Effectt.css)).

```
001 <link rel="stylesheet" href="css/topcoat-mobile-dark.min.css">
002 <link rel="stylesheet" href="css/modules/page-transitions.css">
```

## 02 Link the JS libraries

At the bottom of the document we will add the JavaScript files that we need to power this. You will find a comment called 'libs' at the bottom of the body section. Add the code shown, just below this. We are using jQuery, Modernizr and initialising Effectt.js, then including the code that writes the CSS for the page transitions.

```
001 <script src="js/libs/jquery-2.1.1.min.js">
    </script>
002 <script src="js/libs/modernizr.js">
    </script>
003 <script src="js/Effectt.js"></script>
004 <script src="js/modules/page-transitions.js"></script>
```

## 03 Add the heading

Inside the two <div>s that start the first page add the following code, which will set up a header for the app

on the screen. This uses Topcoat's mobile UI styles to make this work. We also add in here an image as our main logo for the app. You can save this and have a quick look at it in the browser now.

```
001 <div class="topcoat-navigation-bar">
002   <div class="topcoat-navigation-bar__item center full">
003     <h1 class="topcoat-navigation-bar__title"> Festival Survivor</h1>
004   </div>
005 </div>
006 
```

## 04 Create the navigation

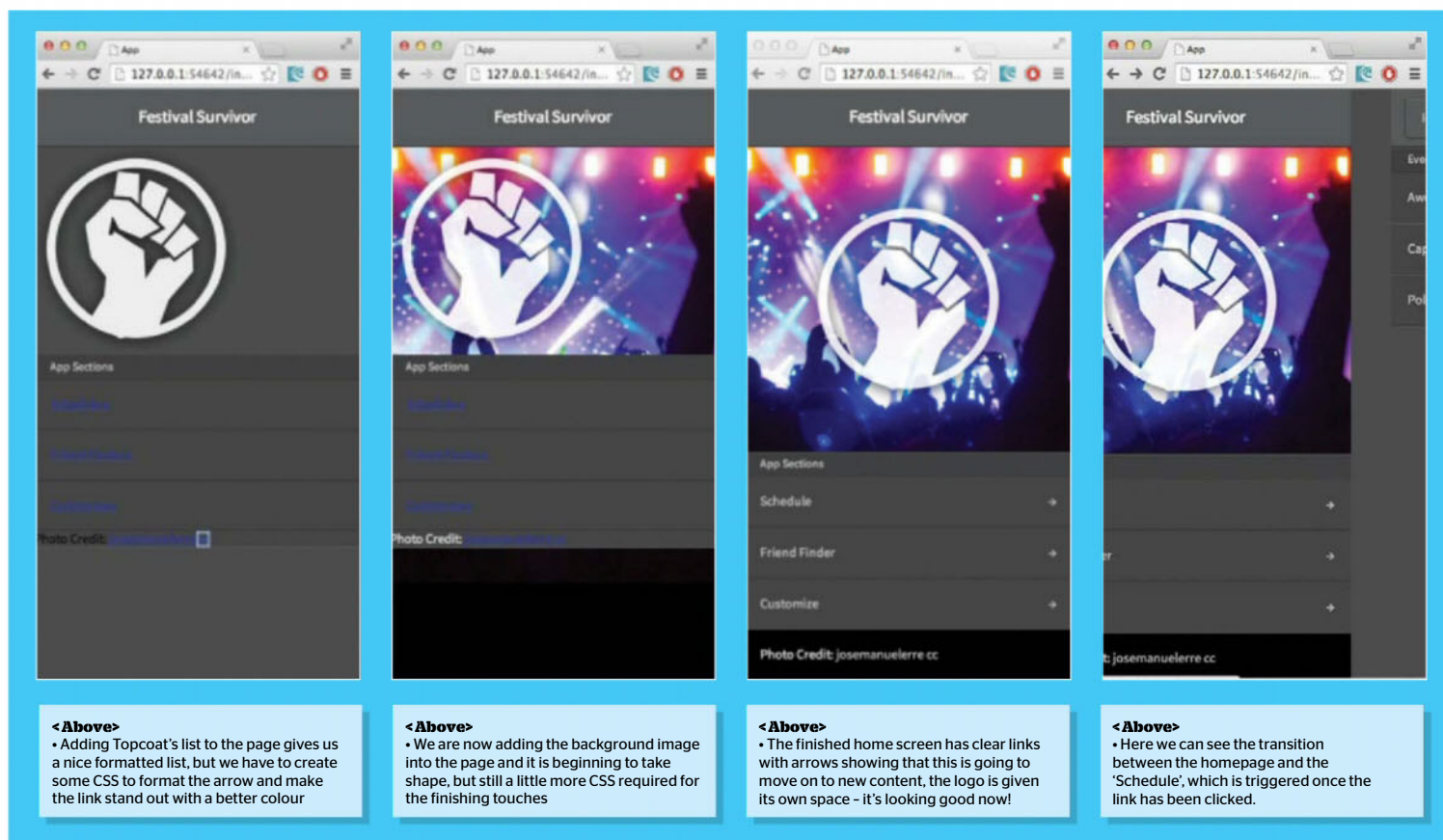
We are going to use Topcoat's list to create our navigation. This creates a simple list on our page, so here we set up the <div> that will wrap it, give it a title in the h3 tag and create the unordered list. Because Topcoat is lightweight and only using CSS, we can easily add to it in order to create extra formatting.

```
001 <div class="topcoat-list">
002   <h3 class="topcoat-list__header">
     App Sections</h3>
003   <ul class="topcoat-list__container">
```

## 05 First link

Here we are adding our first link for navigation using the Effectt.css library. You can see the transitions in here and the page that this is going to link to, which is 'page:2'. Further down the code you will see an id of





'page-2' on the next block of code. This will create a transition from one page to the next.

```
001 <a href="#" class="effectk-page-transition-
    button" data-effectk-transition-in="slide-
    from-right" data-effectk-transition-
    out="slide-to-left" data-effectk-
    transition-page="page-2"><li class=
    "topcoat-list_item">
002     Schedule<span class="list-right">
        &#8594;</span>
003 </li></a>
```

## 06 Second link

The next code we add will link up to page 3. This link has an additional ID. We need to detect if this is clicked later as we need to build a Google map for when the user clicks it. If a Google map isn't present on the screen when you create it, then the map doesn't render properly when it is clicked.

```
001 <a href="#" id="link-3" class="effectk-
    page-transition-button" data-effectk-
    transition-in="slide-from-right" data-
    effectk-transition-out="slide-to-left"
    data-effectk-transition-page="page-3">
    <li class="topcoat-list_item">
002     Friend Finder<span class="list-right">
        &#8594;</span>
003 </li></a>
```

## 07 Third link

Our final link is dropped in now. The link title is 'customize' and positioned to the right, in a separate span is an ASCII code for a right arrow symbol. We will position this arrow later when we add some CSS to style this up the way we need it to look. Save your page before continuing with the next code.

```
001 <a href="#" class="effectk-page-transition-
    button" data-effectk-transition-in="slide-
    from-right" data-effectk-transition-out=
    "slide-to-left" data-effectk-transition-
    page="page-4"><li class="topcoat-list_
    _item">
002     Customize<span class="list-right">
        &#8594;</span>
003 </li></a>
```

## 08 Finish the page

We now finish the page by closing the unordered list and adding a link to the author of the Creative Commons image that we will place in the background. Save and check this page in the browser. At this stage it's beginning to look like an app, but we need to style up some of the content. So, in the 'head' section of the page, add an opening and closing style tag.

```
001 </ul>
002 </div>
003 <div class="credit">Photo Credit: <a
```

```
href="http://www.flickr.com/
photos/41463627@N05/8999209560/"
>josemanuelerre</a><a href="https://
creativecommons.org/licenses/
by-nd/2.0/"> cc</a></div>
```

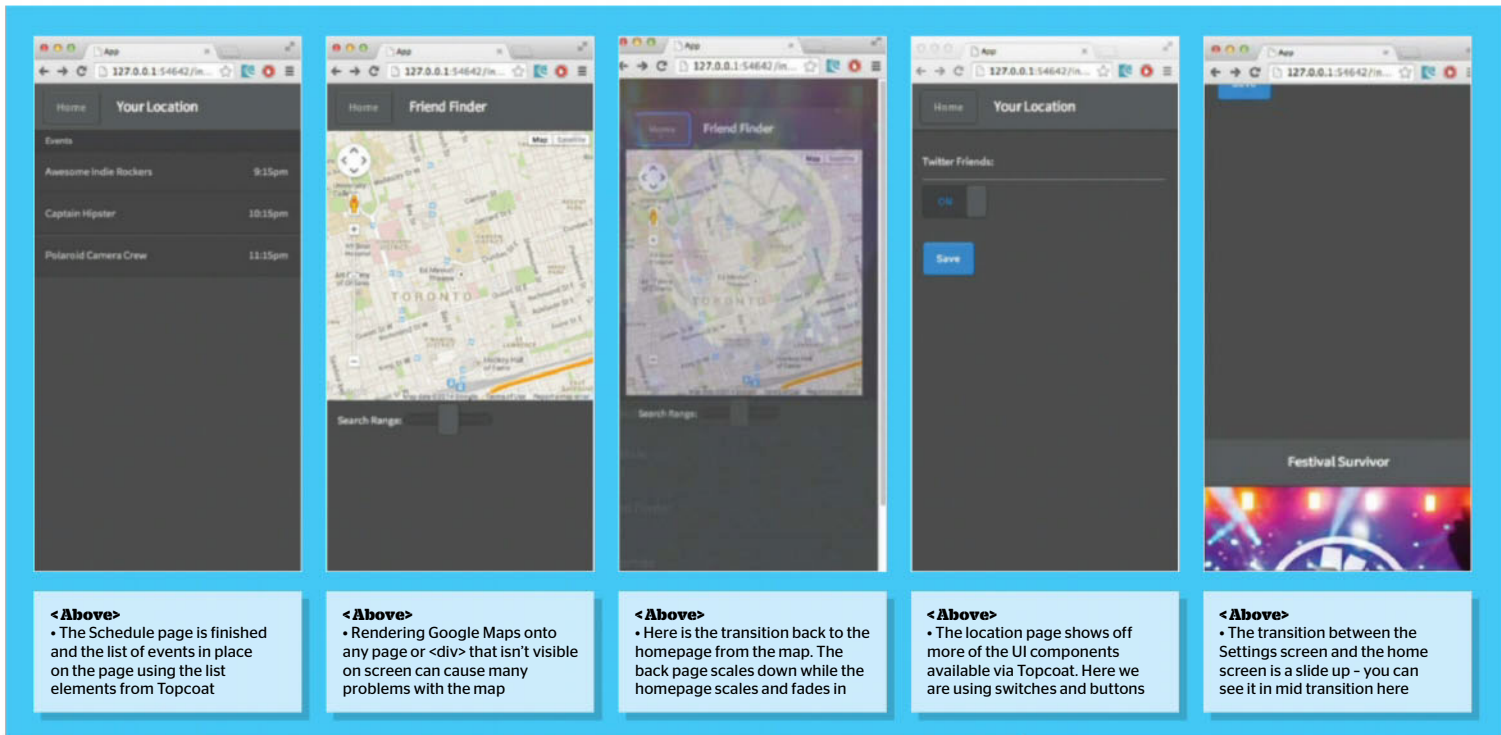
## 09 Add the background

Inside the style tag add this CSS. The background is made to fill the screen and the text colour is changed slightly. We then begin styling up page 1 by making this fill the available space and placing an image in the background to give the app the look that we want behind the main logo. Save and test this.

```
001 html, body{width: 100%; height: 100%;
    color: #ddd;}
002 #page-1{
003     width: 100%;
004     height: 100%;
005     background: url(img/bg.jpg)
    no-repeat center center fixed;
006     -webkit-background-size: cover;
007     -moz-background-size: cover;
008     -o-background-size: cover;
009     background-size: cover;
010 }
```

## 10 Position right

Our logo is now positioned to have a little padding at the top and bottom, it is also centred



horizontally in the browser window. We then turn our attention to the span that has the class 'list-right'. This contains the arrows for our app, so we will style them to be on the right-hand side of the screen.

```
001 .logo{display: block; margin: 60px auto;}
002 .list-right{
003     display: inline-block;
004     position: relative;
005     float: right;
006 }
```

## 11 Finish the links

We now add the code that will make the links work and add the credit to the bottom of the screen. Save this and view it in the browser to see the first page complete. You can click on the links and navigate to the other pages, however there is nothing on them yet and also no way to get back to the first page!

```
001 a, .topcoat-list__item {
002     color: #c6c8c8; text-decoration: none;
003 }
004 .topcoat-navigation-bar__title .
005     topcoat-button {
006     margin: 10px 20px 0 0;
007 }
008 .credit{
009     padding: 20px;
010 }
```

## 12 Start page 2

Inside the first two <div>s for page 2, add the code as shown. This is almost the same as in Step 3, except this

has a button in the top bar that will give us a link back to the first screen. If you save and test this in the browser you can link across to the second page and back again.

```
001 <div class="topcoat-navigation-bar">
002     <div class="topcoat-navigation-bar_
003         _item full">
004         <h1 class="topcoat-navigation-bar_
005             _title"><button class="topcoat-
006                 button effect-page-transition-
007                     button" data-effect-page-transition-
008                         in="slide-from-left" data-effect-
009                             transition-out="slide-to-right" data-
010                                 -effect-page-transition="page-1">
011                             Home</button> Your Location</h1>
012     </div>
013 </div>
```

## 13 Add the content

We are also going to create a list on this page for the content, however these are not going to be links. If this were a real app, we'd probably code a way to add these to an array of favourites and display those on the app on another page. Notice that we are making use of the classes that we created in CSS earlier.

```
001 <div class="topcoat-list">
002     <h3 class="topcoat-list__header">
003         Events</h3>
004     <ul class="topcoat-list__container">
005         <li class="topcoat-list__item">
006             Awesome Indie Rockers<span class=
007                 "list-right">9:15pm</span>
008         </li>
```

## More UI options

More UI components can be found at [topcoat.io](http://topcoat.io), along with snippets to paste in. There aren't that many, which keeps the size down, and they are all CSS only for extra fast performance.

## 14 Finish the content

Here we add our final two list elements - feel free to add more as necessary. The styling from Topcoat ensures that we get a nicely formatted list displayed in the mobile browser. At the end, we close off the unordered list and the <div> for the list container. Save this and take a look in the browser.

```
001 <li class="topcoat-list__item">
002     Captain Hipster<span class="list-
003         right">10:15pm</span>
004 </li>
005 <li class="topcoat-list__item">
006     Polaroid Camera Crew<span class=
007         "list-right">11:15pm</span>
008 </li>
009 </ul>
010 </div>
```

## 15 Add the third page

Move into the space between the <div>s for page 3 in the code. Similar to page 1 and 2, we are adding a header onto this screen. This has a Back button but the effect for moving between pages is for the page to scale out behind the new page that will scale in over the top. Save the page and give it a test in your browser.



```
001 <div class="topcoat-navigation-bar">
002   <div class="topcoat-navigation-bar__
      item full">
003     <h1 class="topcoat-navigation-bar_
        _title"><button class="topcoat-
        button effectk-page-transition-
        button" data-effectk-transition-
        in="scale-down-from-front" data-
        effectk-transition-out="scale-down-
        to-behind" data-effectk-transition-
        page="page-1">Home</button> Friend
        Finder</h1>
004   </div>
005 </div>
```

## 16 Add a map

We're going to add a Google Map to the page, but it won't render properly so we have to call it through JavaScript when this page - or <div> to be more precise - is displayed in the browser. We've also added a slider on here with Topcoat so that you can see some of the interface widgets that are available.

```
001 <div id="maps"></div>
002 <div class="content">
003   Search Range: <input type="range"
      class="topcoat-range">
004 </div>
```

## 17 Link to Google Maps

Move to the bottom of the page and after the existing script tags add the code here. This links up the Google Maps library so that we can display a Google Map. We get the 'maps' id and then get ready to call the code into here by calling the initialize function.

```
001 <script src="https://maps.googleapis.com/
      maps/api/js?v=3.exp&sensor=false"></script>
002 <script>
003   function displayMap() {
004     document.getElementById('maps')
      .style.display="block";
005     initialize();
006   }
```

## 18 Initialise the map

Here we zoom to the appropriate level and define our area of interest. You will need to change the latitude and longitude to make it more relevant for your uses. The map is then built using the new command to create the map inside the <div> tag with the id of 'maps'.

```
001 function initialize() {
002   var myOptions = {
003     zoom: 14,
004     center: new google.maps.LatLng
      (43.6561, -79.3803),
005     mapTypeId: google.maps.MapTypeId.
      ROADMAP
006   }
```

```
007   map = new google.maps.Map(document.
      getElementById("maps"), myOptions);
008 }
```

## 19 Detect the page

The easiest way to test if the page is open is to check if the 'link-3' button has been pressed and, if so, then we call the displayMap function after half a second to give the transition time to take effect. We call the Google Maps resize to make the map fit the space available, which is what causes the problem.

```
001 $( "#link-3" ).bind( "click touchstart",
      function() {
002     setTimeout(function() {
003       displayMap();
004       google.maps.event.trigger
        (map, "resize");
005     }, 500);
006   });
007 </script>
```

## 20 Style the map

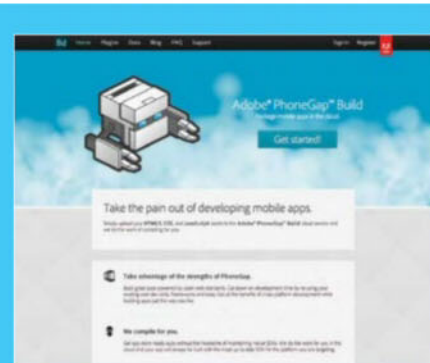
Move to the style tags at the top of the page and add the following CSS code that styles up the map space. Here we are also styling a horizontal rule that will be used in the next few steps. Save the page and view this in the browser in order to see the map rendered correctly on the screen of the app.

```
001 #maps{ width:100%; height: 400px; }
002 .content{ padding: 20px;}
003 hr {
004   border: none;
005   height: 1px;
006   background-color: #ccc;
007   overflow: hidden;
008 }
```

## 21 Page 4 content

Now we will finish the final page of the app. Move your cursor to page 4 and add the following code in to add the header. Again, this header has a Home button that will enable us to get back to the homepage of the app from here. You can test whether the navigation is working to this screen and back again.

```
001 <div class="topcoat-navigation-bar">
002   <div class="topcoat-navigation-bar_
      _item full">
003     <h1 class="topcoat-navigation-bar_
        _title"><button class="topcoat-
        button effectk-page-transition-
        button" data-effectk-transition-in=
        "slide-from-bottom" data-effectk-
        transition-out="slide-to-top" data-
        effectk-transition-page="page-1">
        Home</button> Your Location</h1>
004   </div>
005 </div>
```



## Publish your App

The easiest way to publish your app is to use Adobe PhoneGap Build ([build.phonegap.com](http://build.phonegap.com)). This will enable you to package your HTML, CSS and JavaScript files up as an app. You will need an example 'config.xml' file (available in the documentation [docs.build.phonegap.com](http://docs.build.phonegap.com)) as this enables you to name the app and add splash screens and icons for the phone. Once you've done this you simply zip your file up and sign in using an Adobe ID, which you will have if you have a Creative Cloud account. Once signed in, you can upload the zip and PhoneGap Build will create the app. After you've got the QR code for the app, snap this on your phone and the app will download and install right away!

## What is Effectk.css?

Effectk.css is not quite production-ready yet, but will be a library of effects that perform well on mobile. These will be useful in animating UIs into position and giving the finishing polish to an app.

## 22 App finished

Add this final page content now, which shows toggle switches - and feel free to add some more. Save the page and test it in the browser. What you should see this time is the content sliding up from below as a transition going back to the homepage.

```
001 <div class="content">
002   <p>Twitter Friends: <hr>
003     <label class="topcoat-switch">
004       <input type="checkbox" class=
        "topcoat-switch__input" checked>
005     <div class="topcoat-switch__toggle">
006     </div>
007   </p>
008   <br>
009   <button class="topcoat-button--cta" >Save
010 </div>
```

# web workshop

## Smooth background rollover transitions

inspiration [series.canalsat.fr](http://series.canalsat.fr)



avigation is a subject that fascinates many web designers and here at **Web Designer HQ** we are obsessed with discovering unique uses of navigation.

Canalsat has released a micro site to show off the series' that it has aired on its channels. The site is really just a giant list of links, but it's what Canalsat has done with this that makes it so interesting.

The background of the site is an image but it's subtly faded so that it remains in the background. When the user rolls over one of the links for the series, the background changes by fading in a new background image and making it scale down in size. The effect works very nicely and makes full use of the background without taking over or distracting from the links in the foreground.

### 1 INSPIRATION

#### Flipped links

The Canalsat site also has some lovely rollover effects for the foreground links as well. When the user rolls over the links and the background changes, the link slides up with the background of the link changing as well. This ensures that the link really does stand out over the top of the changing background image feature.

By having two elements change when the user rolls over a link, it really highlights the content available to the user. These kinds of effects are not too difficult to produce but give good visual feedback to the user and so are worth incorporating.

#### Large scaling

The background images can be heavily compressed because they have a reduced colour palette; this is handy, given that they are being used to fill the screen. The images in the background disappear on small screen devices, such as mobile, and only the rollover on the list is visible in order to optimise the content.

The screenshot shows the Canalsat website interface. At the top left is the 'CANALSAT' logo. The main content area lists several TV series: 'GAME OF THRONES', 'RAY DONOVAN', 'SONS OF ANARCHY', 'AWKWARD', 'THE FALL', 'AMERICAN HORROR STORY', and 'TWISTED'. A 'S'ABONNER' button is in the top right. A '13 RUE' logo is in the bottom right. Annotations are placed over the site: a blue circle with '1' points to the series list; a blue circle with '2' points to the 'THE FALL' link; a blue circle with '3' points to the 'S'ABONNER' button. Lines connect these annotations to descriptive text boxes at the bottom.

**Fading background**  
The background image scales and fades in as the user rolls over the various different links to TV series in the foreground.

**Rollover effects**  
Each link has a great rollover effect, which shows the content slide up to use a background colour with the channel logo positioned on the right.

**Optimisation**  
On mobile screens the rollover loses the large background image to keep the experience nice and accessible for mobile users.

**Animations**  
Clicking on the link moves the content out from above and loads the content in behind. Each element is animated onto the screen.

**Flourishes**  
The Subscribe button has another rollover effect that seems to spin from bottom to top and reverses on rollout, adding detail to the site.





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

## Scaling a site

"The Dagobert Agency in Paris has created a simple site for the Canalsat microsite. It can easily be scaled without losing its look and all the design is in the interactions and rollover effects that give feedback to the user. This is a classic example of how to make a site work across multiple-size screens."

**Mark Shufflebottom**

3

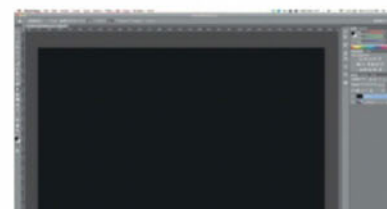
## TECHNIQUE

### Create the faded images

The background on the Canalsat Series site has the images faded so they look quite dark. It's possible to do this with CSS, but you would then be asking the browser to do extra unnecessary work. Here we explore how to create the same look with images.

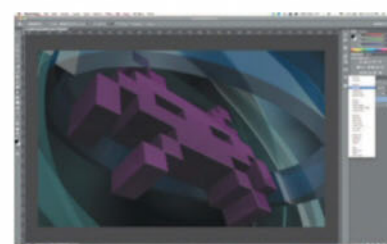
#### 01 Create the black

Open Photoshop and open your image that you want to display in the background of your page. Create a new layer and choose black as the foreground fill colour. Click on the paint bucket icon in order to fill this new layer so that it is black.



#### 02 Fade the black

Now reduce the Opacity of the black layer to approximately 70% in the Layers panel. Change the blending mode in here from Normal to Multiply, as this will offer better blending between the image and the black layer over the top of it.



#### 03 Save for Web

Choose File>Save for Web and use JPEG as the file type. Because the colour is reduced, you should be able to apply a heavy compression of 35-40 for the quality to get a low file size. Hit the Save button to finish.



2

## TECHNIQUE

### Create the background rollovers

#### 01 Get started

We are going to create background transitions between images just like on the Canalsat Series website. In the body section of your page add the following tags. Here we are creating a <div> that holds the images and the links in an unordered list.

```
001 <div id="bg">
002   
004   
006   
008   <ul>
009     <a href="#"><li id="one">Link One
010     </li></a>
011     <a href="#"><li id="two">Link Two
012     </li></a>
013     <a href="#"><li id="three">
014       Link Three</li></a>
015   </ul>
016 </div>
```

#### 02 Style the content

We need to style the content correctly to make it work, so add these tags to the head section of the page. Here we position the background element, which could easily be 100% the size of the browser. We also position the images and hide all of them but one.

```
001 <style>
002   #bg {
003     position:relative;
004     height:281px; width:450px;
005     margin:0 auto;
006     background: #000;
007   }
008   img {position:absolute;left:0;}
009   .hidden {display: none;}
```

#### 03 Position the menu

Over the top of the images we add the menu, which is the unordered list. Here we position it centrally

with a white border underneath it. We've added a simple rollover to the actual list but you could also make use of CSS transitions in here too.

```
001 #bg ul{
002   width:450px;
003   position:absolute;
004   list-style: none; text-align:
005     center;
006   left:0; margin: 0; padding: 0;
007 }
008 a {text-decoration: none; color:
009   #fff;}
010 li {padding: 20px; border-bottom:
011   1px solid #fff;}
012 li:hover {background: #000;}
```

#### 04 Start the JavaScript code

Before the closing body tag, let's link up to jQuery and then we'll run a 'document ready' function to ensure the document has loaded. Here we are grabbing the first background as that is currently displayed - when we rollover other menu items this will fade out.

```
001 <script src="js/jquery.min.js">
002 </script>
003 <script>
004   $(function() {
005     var lastOver = $("#bg-one");
006     var over;
```

#### 05 Add the <div> tags

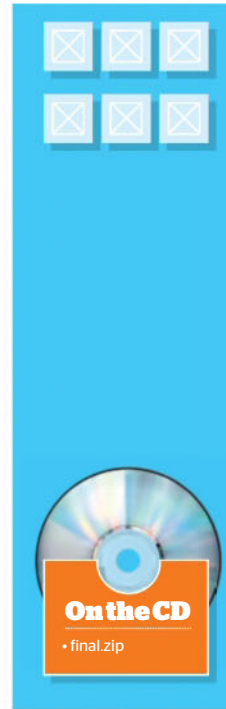
Now we detect if the mouse has rolled over any of the list elements. If so, we grab the current one and fade in the appropriate background while fading out the last background on display. Save this and test in the browser to see it working properly.

```
001 $( "li" ).mouseover(function() {
002   over = "#bg-"+this.id;
003   $(over).fadeIn("slow");
004   lastOver.fadeOut("slow");
005   lastOver = $(over);
006 });
007 });
008 </script>
009
```

# Create animated buttons with CSS3

Using the transform property, we'll create some cool-looking 3D buttons that will add that extra polish to your site

**tools | tech | trends** HTML, CSS  
**expert** Neil Pearce



CSS3 transform has been doing the rounds for quite some time.

Browsers like Firefox, Chrome and Opera have full support for CSS3 2D and 3D transform techniques. Along with transform, we also have another cool property called perspective.

The perspective property defines the intensity of the 3D effect. This is because it defines how far the object is away from the user. So, a lower value will result in a more intensive 3D effect than a higher value. But one thing we need to remember is, when defining the perspective property for an element, it is the child elements that get the perspective view, not the element itself. When the transform and perspective properties are combined, you can create some great-looking 3D animations on a number of different elements.

In this tutorial we're going to work with the transform and perspective properties and their values to create four cool-looking 3D buttons that you can use on your webpages. Each button will be slightly different in its perspective, which will allow us to really get to know how the perspective property works. So, open up your favourite text editor and let's get started!

## 01 Get ahead

After creating a new HTML5 file, open it up within your favourite text editor and add in the head section. We will need to add in the link to our CSS file and make sure we have good browser support for our HTML5 and CSS3 – so we will use Modernizr. Head over to [modernizr.com](http://modernizr.com) and grab the latest version.

```
001 <!DOCTYPE html>
002 <html lang="en" class="no-js">
003 <head>
004 <meta charset="UTF-8" />
005 <meta http-equiv="X-UA-Compatible"
006 content="IE=edge,chrome=1">
007 <meta name="viewport" content=
008 "width=device-width, initial-scale=1.0">
009 <title>Creative 3D Buttons</title>
010 <link rel="stylesheet" type="
011 text/css" href="css/main.css" />
012 <script src="js/modernizr.custom.js">
013 </script>
014 </head>
```

## 02 Content body

With the head section done, we can now move on and start adding some HTML within the <body> section. As always, we are going to add in a container element with a class name of 'container' to allow us to centre things easily. Then, we will use the 'section' element and give it a class name of '3d-buttons'.

```
001 <body>
002 <div class="container">
```

```
003 <section class="3d-buttons">
004 </section>
005 </div><!-- END container -->
006 </body>
007 </html>
```

## 03 Button HTML

Within the 'section' element, we add in a paragraph tag with a class name of 'btn\_perspective', which we'll target later using the perspective CSS3 attribute. We then add in our first button, which will contain several class names that we'll target later on.

```
001 <body>
002 <div class="container">
003 <section class="3d-buttons">
004 <p class="btn_perspective">
005 <button class="btn btn-3d btn-3da">Submit
006 </button>
007 </p>
008 </section>
009 </div><!-- END container -->
010 </body>
011 </html>
```

## 04 Finish up the HTML

We already have the HTML for one button, but we want to create another three so we can really test out our 3D skills. So, copy and paste the paragraph tag we created in the last step and make sure the last class name is changed accordingly.

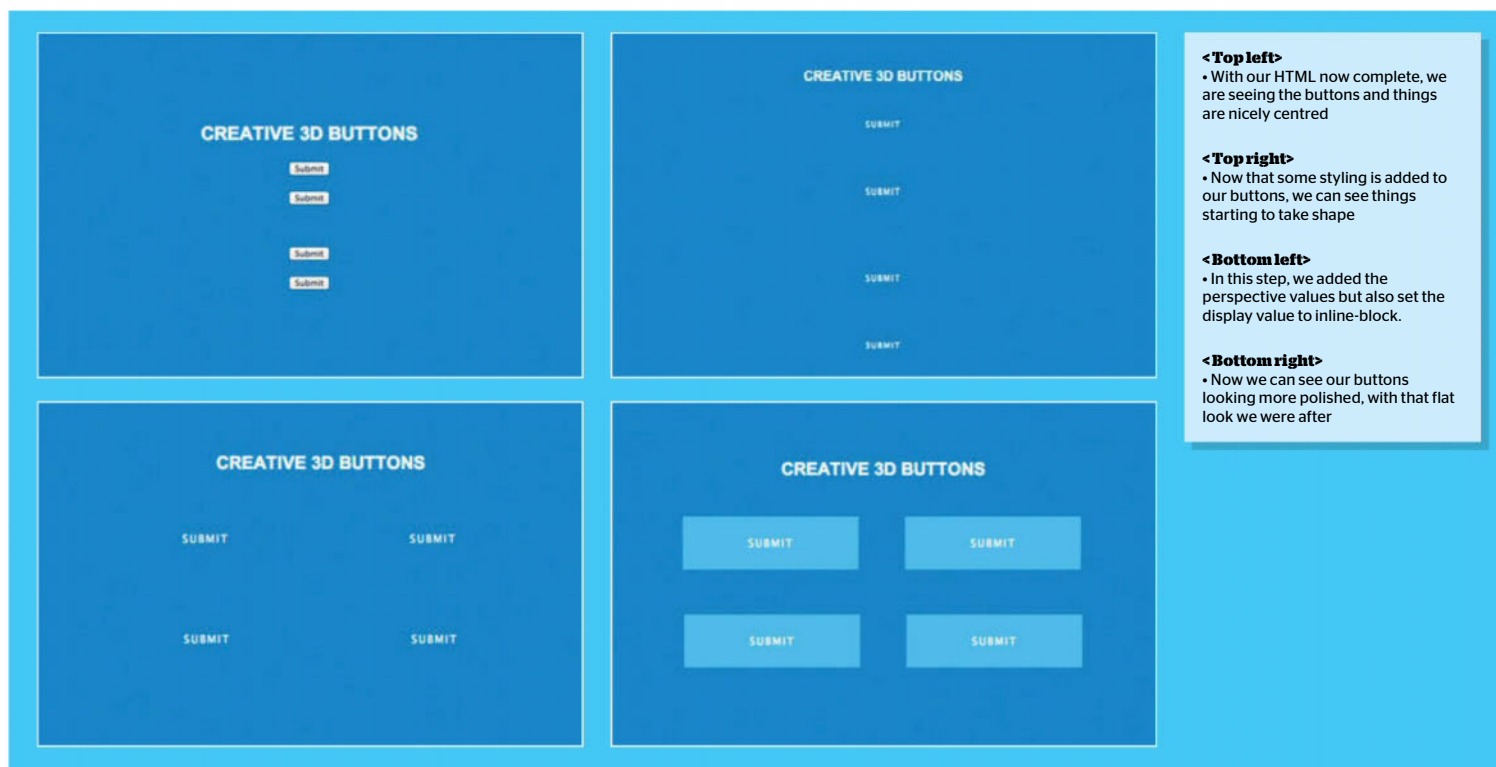
```
001 <body>
```

```
002 <div class="container">
003 <section class="3d-buttons">
004 <h2>Creative 3D buttons</h2>
005 <p class="btn_perspective">
006 <button class="btn btn-3d btn-3da">Submit
007 </button>
008 </p>
009 <p class="btn_perspective">
010 <button class="btn btn-3d btn-3db">Submit
011 </button>
012 </p>
013 <p class="btn_perspective">
014 <button class="btn btn-3d btn-3dc">Submit
015 </button>
016 </p>
017 <p class="btn_perspective">
018 <button class="btn btn-3d btn-3dd">Submit
019 </button>
020 </p>
021 </section>
022 </div><!-- END container -->
023 </body>
024 </html>
```

## 05 The CSS

It's important to start every project with some default CSS that we often add to an external CSS reset file. For this tutorial we'll just keep it simple and go ahead and add some CSS to the top of a file called 'main.css', and with this CSS we are making sure our box model is set properly to every single element that uses the box model ([css-tricks.com/box-sizing](http://css-tricks.com/box-sizing)).





```
001 *, *:after, *:before {
002 -webkit-box-sizing: border-box;
003 -moz-box-sizing: border-box;
004 box-sizing: border-box;
005 }
006 body, html {
007 font-size: 100%;
008 padding: 0;
009 margin: 0;
010 height: 100%;
011 }
012
```

## 06 Body styles

Next we need to add in some default styles for our body and links. This is not vital but makes things nice and simple as it keeps it all in one place. The background colour is going to be a nice light blue and we're going to stick to using Arial as our main font.

```
001 body {
002 font-family: Arial, sans-serif;
003 background: #0e83cd;
004 }
005 a {
006 color: #888;
007 text-decoration: none;
008 }
009 a:hover,
010 a:active {
011 color: #333;
012 }
013
```

## 07 Contain it

Now we need to create a container that wraps around our content. We're going to set the height of the outer container to 100% and position it relative. Then we use a child combinator selector (>) to target our <section> element and centre everything within and add some other default styles.

```
001 .container {
002 height: 100%;
003 position: relative;
004 }
005 .container > section {
006 margin: 0 auto;
007 padding: 6em 3em;
008 text-align: center;
009 color: #fff;
010 }
```

## 08 Heading styles

What would a page be without a page title? Let's add some styles to that. We're going to keep it simple and make the text white with a 20px margin all around. Then we align it centre and make it uppercase. All nice and straightforward – so let's move on to the buttons.

```
001 h2 {
002 color: #fff;
003 margin: 20px;
004 text-align: center;
005 text-transform: uppercase;
006 }
007
```

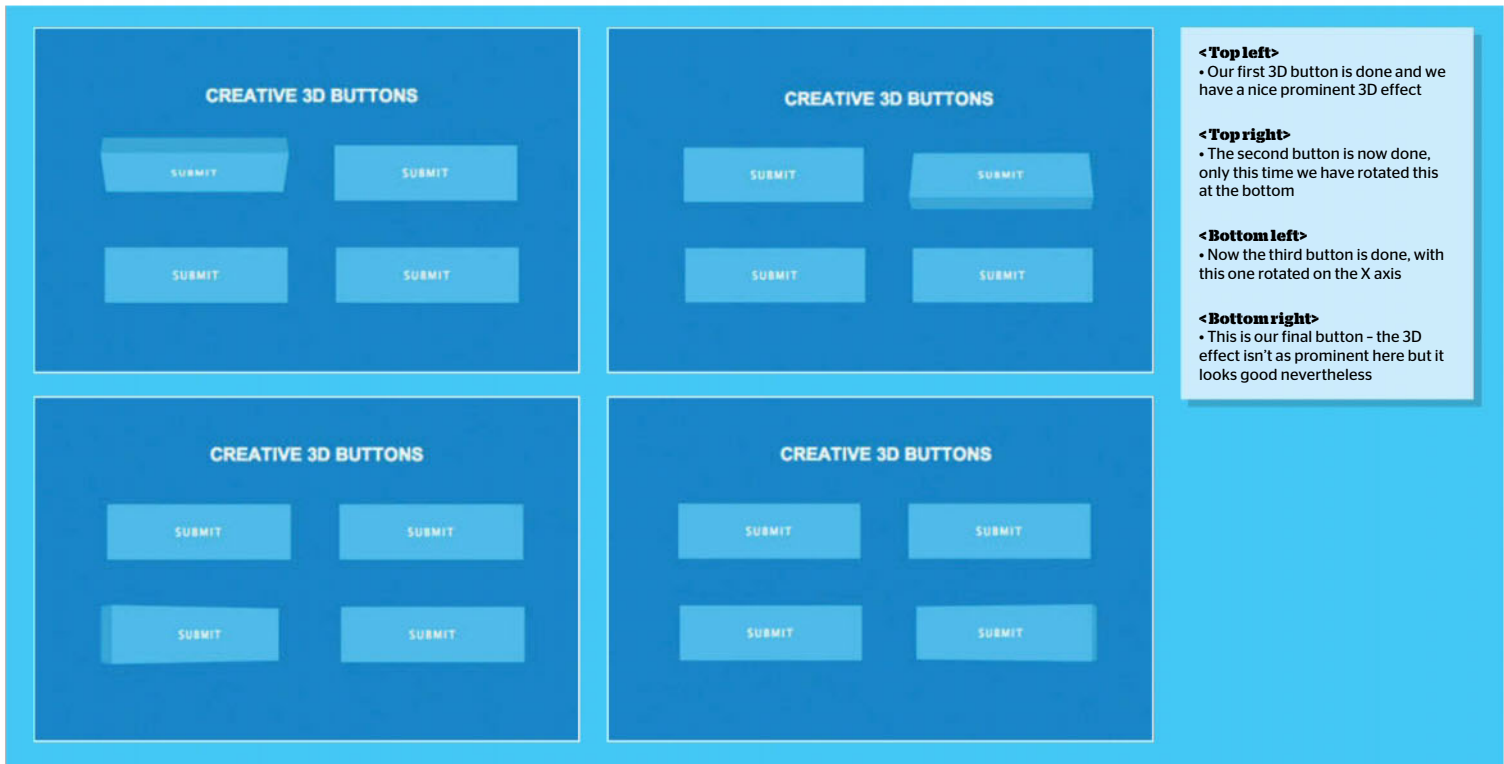
## 09 Button styles

The idea is to give our buttons that flat look, which can easily be achieved by not adding any rounded corners or drop shadows. We will make sure they are fairly large so we can clearly see the 3D effect once we are finished and, as they are buttons, let's not forget to add the 'cursor: pointer' at the bottom of our rule.

```
001 /* General button styles */
002 .btn {
003 border: none;
004 position: relative;
005 background: none;
006 padding: 28px 90px;
007 display: inline-block;
008 text-transform: uppercase;
009 margin: 15px 30px;
010 color: inherit;
011 letter-spacing: 2px;
012 font-size: .9em;
013 outline: none;
014 -moz-transition: all 0.4s;
015 -webkit-transition: all 0.4s;
016 transition: all 0.4s;
017 cursor: pointer;
018 }
```

## 10 Button pseudo

Using the 'after' pseudo-element, we will make sure any content behind our button is taken out by using the 'content' property. We then ensure that everything is positioned absolute so we can then set its index to '1', with everything else behind.



## Transform property

There are several different transform functions, each applying a different visual effect. Be sure to experiment and find your favourites.

```
001 .btn:after {
002   content: '';
003   position: absolute;
004   z-index: -1;
005   -webkit-transition: all 0.4s;
006   -moz-transition: all 0.4s;
007   transition: all 0.4s;
008 }
```

### 11 Button perspective

The 'perspective' CSS property gives an element a 3D-space by affecting the distance between the Z plane and the user. The strength of the effect is determined by the value. The smaller the value, the closer you get from the Z plane and the more impressive the visual effect is. The greater the value, the more subtle the effect will be.

```
001 /* Button */
002 .btn_perspective {
003   -webkit-perspective: 800px;
004   -moz-perspective: 800px;
005   perspective: 800px;
006   display: inline-block;
007 }
```

### 12 Button 3D

The 'transform-style' property will determine whether that element is in 3D space or is flattened. Of course we want it to be in 3D, so we add the 'preserve-3d' value to bring the button into 3D space and not be flattened (which is the default).

```
001 .btn-3d {
002   display: block;
003   background: #5cbcf6;
004   outline: 1px solid transparent;
005   transform-style: preserve-3d;
006 }
007 .btn-3d:active {
008   background: #55b7f3;
009 }
```

### 13 3D animation

Here we add our first 3D animation to our first button (a) and set some other styles. The 'transform-origin' property sets the point of origin of a transform; the first value is the horizontal position, the second is the vertical position. We rotate the 'x' plane to 90 degrees.

```
001 .btn-3da:after {
002   width: 100%;
003   height: 42%;
004   left: 0;
005   top: -40%;
006   background: #53a6d7;
007   transform-origin: 0% 100%;
008   transform: rotateX(90deg);
009 }
010 }
```

### 14 Hover state

Now this is where the magic happens. We are going to rotate the whole button when we hover over it, making the rotate quite big so that we can see the 3D effect more prominently. To do that we add a -45 degree tilt to the button on the 'x' plane.

```
001 .btn-3da:hover {
002   transform: rotateX(-45deg);
003 }
```

### 15 Button B

The next button (button B) will be using similar styles as our first button, but with a few changes. First we make sure that the button is positioned 100% to the top and origin values both set to 0%. Then we just need to rotate this -90 degrees.

```
001 /* Button 3db */
002 .btn-3db:after {
003   width: 100%;
004   height: 40%;
005   left: 0;
006   top: 100%;
007   background: #53a6d7;
008   transform-origin: 0% 0%;
009   transform: rotateX(-90deg);
010 }
```

### 16 Hover state B

Now we have our first button animated in all its glory, we just need to use the same property on this one. To give us some variation, we will not make this as



CREATIVE 3D  
BUTTONS

SUBMIT

SUBMIT

SUBMIT

SUBMIT

## &lt;Above&gt;

• All done! Now we can see how things look when we resize the browser window

## Mobile first

Even with a small project like this, you should always think about making it responsive and suitable for mobile like how we made our buttons larger.

deep as the first button, so we give the rotateX property a value of just 35 degrees.

```
001 .btn-3db:hover {
002   transform: rotateX(35deg);
003 }
```

## 17 Button C styles

Here we continue on to our next button and add some slightly different styles. The thing to note here is that the origin is now set to 100% at the top and we are rotating the 'Y' axis, not the 'X'. Also, to make sure we are targeting all browsers, we've added the browser prefixes to this rule (which you should do for the previous rules)

```
001 /* Button 3dc */
002 .btn-3dc:after {
003   width: 20%;
004   height: 100%;
005   left: -20%;
006   top: 0;
```

```
007   background: #53a6d7;
008   -webkit-transform-origin: 100% 0%;
009   -webkit-transform: rotateY(-90deg);
010   -moz-transform-origin: 100% 0%;
011   -moz-transform: rotateY(-90deg);
012   -ms-transform-origin: 100% 0%;
013   -ms-transform: rotateY(-90deg);
014   transform-origin: 100% 0%;
015   transform: rotateY(-90deg);
016 }
```

## 18 C button animation

Let's animate button C by using the same rule as before. This time we need to make sure we are rotating the 'Y' axis. Again, we'll change things up a little by making this 3D effect less prominent by giving it a smaller value of 25 degrees.

```
001 .btn-3dc:hover {
002   transform: rotateY(25deg);
003 }
```

## 19 Finish up

Now we are almost done with our 3D buttons. All we need to do is add some styles to our last button. Again, there's only some small adjustments in this rule, but we are staying on the 'Y' axis at a positive 90 degrees and our origin top and left is 0%.

```
001 /* Button 3dd */
002 .btn-3dd:after {
003   width: 20%;
004   height: 100%;
005   left: 100%;
006   top: 0;
007   background: #53a6d7;
008   -webkit-transform-origin: 0% 0%;
009   -webkit-transform: rotateY(90deg);
010   -moz-transform-origin: 0% 0%;
011   -moz-transform: rotateY(90deg);
012   -ms-transform-origin: 0% 0%;
013   -ms-transform: rotateY(90deg);
014   transform-origin: 0% 0%;
015   transform: rotateY(90deg);
016 }
```

## 20 Button D animation

Finally we will add in our animation for Button D. We are going to rotate this one on the 'Y' axis and again we will make this a lot less prominent than before by lowering the value to 15 degrees. We've also added in our browser prefixes too.

```
001 .btn-3dd:hover {
002   -webkit-transform: rotateY(-15deg);
003   -moz-transform: rotateY(-15deg);
004   -ms-transform: rotateY(-15deg);
005   transform: rotateY(-15deg);
006 }
007
```

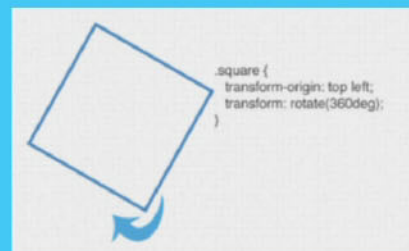
## 21 Responsiveness

It's only natural that before we wrap this little project up, we think about making the buttons responsive. By default the buttons will fall underneath each other when the browser window is resized, but we want to think about making these buttons slightly bigger so that they are easily clickable using your finger. So, all we do is increase the font size as shown.

```
001 @media screen and (max-width:480px) {
002   .container {
003     font-size: 1.2em;
004   }
005 }
```

## 22 Final thoughts

Creating 3D buttons can really help enhance your web projects. Hopefully this tutorial has demonstrated that not only is it a fun thing to do, but it's fairly straightforward to implement as well. A challenge for you now would be to try this technique to other elements on your page, such as vertical menus - it can look really great on logos, too.

Understanding  
transform-origin.

As indicated throughout this tutorial, the transform-origin property can take up to two space-separated keywords or length values for a 2D transform and up to three values for a 3D transform.

```
.square {
  transform-origin: top left;
  transform: rotate(360deg);
}
```

Using the code above on a 100x100px box, with the transform applied to a transition using a click event, a box would swing around 360 degrees once clicked on. By default, the origin of a transform is '50% 50%', which is exactly in the centre of any given element. Changing the origin to 'top left' (as in the code above) causes the element to use the top-left corner of the element as a rotation point.

The first value is the horizontal position, the second value is the vertical position and the third value represents the position on the Z axis. The third value will only work if you are using 3D transforms - and it cannot be a percentage.

# web workshop

## Slide-up page transitions with jQuery Mobile

inspiration [www.don-guri.com/donguri-magazine](http://www.don-guri.com/donguri-magazine)



One aspect of the website experience that can often get left behind in the thoughts of designers and developers is the page transition. After all, what's the problem? You click a link and the connecting page appears. Simple. If it ain't

broke, don't fix it. However, a smooth or pleasingly executed page transition can add something to your website's

character that will not go unnoticed by users – and it's not difficult to incorporate.

There are a few options for creating the effect of a page sliding up to replace the current page – by far the simplest is making use of the jQuery Mobile library. Designed to make developing for mobile easier, here we're going to call one of its many cool functions.

### Tying it all together

The Don Guri site is one of those websites that fans of the 'less is more' approach may not appreciate. That said, it takes a great deal of development skill to pull together so many web functions into a coherent whole, without scripting conflicts or browser bugs. This is an accomplished web experience.

## 1 INSPIRATION

### An effects extravaganza

Don Guri is a Japanese art direction company with a website that certainly catches the eye, throwing just about every web effect in the known universe at you as you wander around its labyrinthine structure. Various hover effects, drop-down picture menus, a scroll-activated footer, even an animated logo. It's quite remarkable work.

The magazine section, a blog of sorts, is like a manga-themed introduction to the company. You'll get more out of it if you can read Japanese, to be sure, but it has a brilliant menu structure with expanding menu elements and, of course, slide-up pages for each click.

**Hidden gems**  
Hovering on any of the menu elements in the fixed left-hand sidebar will activate a pop-out sub-menu, which will also activate slide-up content.

**Slow loading**  
The sheer amount of functionality present on the Don Guri site can make it a little slow to load in areas, but the custom loading icon is cute enough to distract you.

**Colour links**  
Each coloured section acts as a menu link to the sliding page content, expanding in height on hover while the other sections fade slightly.

**Close pages**  
Each slide-up page can be closed by clicking on an animated 'X' icon (not visible in picture). The page slides down again on clicking the icon

**Highly stylised**  
Every slide-up page is comic book based, with content that then slides left to right as it tells its story, frame by illustrated frame.





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

## Angled design

"Purists may argue that tapping into a library that is predominantly designed for mobile development is the incorrect way to approach a site intended for desktop web surfing. This may well be true if you're intending to mix it with other frameworks, such as Bootstrap, but as a resource with some handy functionality, jQuery Mobile is worth a look.."

Richard Lamb



## TECHNIQUE

### Expanding on the function

Now we have our pages sliding, why not take things a step further and try out some modifications to the functionality? jQuery Mobile, while providing a variety of in-built styles and functions, is extremely customisable - especially when we are just tapping into its library.

#### 01 Reverse direction

jQuery reverses the direction of a link when the Back button is pressed by default, but if you want a return link to reverse the direction too, simply add a data-direction attribute to the link.

```
001 <div class="link-home">
    <a href="index.html" data-
      transition="slideup" data-
      direction="reverse" class=
        "link-home"><h2>Or go back
        Home?</h2></a></div>
```

#### 02 Change transition

Why not try one of the other page transitions available? 'Pop' will make the new page zoom toward the screen, 'turn' simulates a page turn and 'fade' speaks for itself. Or, try 'flip', which simulates a quick revolve of the page.

```
001 <div class="link-three">
    <a href="page-three.html"
      data-transition="flip" class
        ="link-three"><h2>Perhaps
        you'd like to see Page Three?
        </h2></a></div>
```

#### 03 Change transition speed

By adding some of jQuery's CSS into our own stylesheet, we can override the default settings, including the speed at which each transition executes. Use the browser developer tools to identify which styles to replicate.

```
001 .slideup.in {
002   -webkit-animation-
      duration:600ms;
003   -moz-animation-
      duration:600ms;
004 }
```



## TECHNIQUE

### Create the sliding pages

#### 01 Homepage

jQuery Mobile is HTML5 based, so start your page with the basic HTML5 doctype declaration. The meta viewport tag should set the screen width to the pixel width of the device. Then, add links to jQuery Mobile's CSS and script library as well as a link to our own stylesheet, both for our own styles and some modifications to the library styles.

```
001 <link rel="stylesheet" href="
      http://code.jquery.com/mobile/1.2.0/
      jquery.mobile-1.2.0.min.css">
002 <link href="style.css" rel="
      stylesheet">
003 <script src="http://code.jquery.com/
      jquery-1.8.2.min.js"></script>
004 <script src="http://code.jquery.com/
      mobile/1.2.0/jquery.mobile-1.2.0.min
      .js"></script>
```

#### 02 Start building content

Add a container in the body with some basic content inside it. We're giving our pages h1 tags and links nested inside other <div>s. We'll add the links soon. jQuery Mobile identifies the content it is overseeing by the use of a data-role of 'page' in the containing <div>. Also, give that <div> a unique class identifier.

```
001 <div id="container" data-role="page"
      class="one">
002   <h1>Welcome to Page One</h1>
003   <div class="link-two"></div>
004   <div class="link-three"></div>
005 </div>
```

#### 03 Add the links

Add the links inside the assigned <div>s. Once you have done this you will need to create the pages we have named in the links. Duplicate the code so far for each, but change the links. For example, page two should have links to page three and home. You will be left with a three-page interlinked website.

```
001 <div class="link-two"><a href="
```

```
page-two.html"><h2>Perhaps you'd like
to see Page Two?</h2></a></div>
002 <div class="link-three"><a href="
page-three.html"><h2>How about Page
Three?</h2></a></div>
```

#### 04 Add some styling

Each container on the three pages has its own background colour, which is reflected in the background for each link to it. Choose your own font and style for the links, but give the link <div>s some nice padding to create the coloured band they sit in. The containers should have some generous padding too.

```
001 .one {background:#7D1935;}
002 .two {background:#4A96AD;}
003 .three {background:#A2AB58;}
004 .link-home {padding:30px 0; background
      :#7D1935;}
005 .link-two {padding:30px 0; background
      :#4A96AD;}
006 .link-three {padding:30px 0; background
      :#A2AB58;}
```

#### 05 The slide function

It may seem like we've been building up to a grand reveal, but adding the page slide function is as simple as placing a data-transition attribute in each link. There are a few different options you can use for the transition attribute, not just the four possible directions, but we are looking to slide up each new page.

```
001 <div class="link-two"><a href="page
      -two.html" data-transition="slideup">
      <h2>Perhaps you'd like to see Page Two?
      </h2></a></div>
002 <div class="link-three"><a href="page
      -three.html" data-transition="slideup">
      <h2>How about Page Three?</h2></a>
      </div>
```



# Create a single input 3D form with CSS

If you have limited space but want to capture input with maximum style, this is the technique for you

**tools | tech | trends** HTML, CSS, JS  
**expert** Jayson Winters



ne of the most common and useful online interactions that web designers and developers can do is devote time to encouraging visitors to subscribe to a newsletter or blog. Once signed up, visitors can then be

included in online promotional activities and hopefully be converted into paying customers in due course.

To part with an email address, however, visitors need to trust the website and be sufficiently interested in the product, service or blog – even so, this by itself might not be enough. Then again, if your website looks the part and has an original-looking and slick method for encouraging signup, this could provide the extra nudge some visitors need in order for you to secure those all-important email addresses.

The technique demonstrated in this tutorial makes ingenious use of CSS and JavaScript to create a 3D box providing all of the required functionality, user prompts and confirmation within the space of a single input field. If you want to increase the number of subscribers to your website, for example, this could be just the solution you are looking for. Let's give it a go.

## 01 HTML first

This technique works in all modern and even not-so-modern browsers. Please do check the functionality if you need to ensure compatibility with older browsers like IE8. The HTML starts with the now familiar HTML5 declaration. The customary 'utf-8' character set is declared, assuming you use this character set, the page title is put in place and the link to the stylesheet established.

```
001 <!DOCTYPE html>
002 <html>
003 <head>
004 <meta charset="utf-8">
005 <title>Be the first to know</title>
006 <link rel="stylesheet" href="css/
007   screen.css">
008 </head>
009 <body>
```

## 02 Decoration and heading

This technique uses Font Awesome icons as part of the styling. Here, the envelope class is applied to a <div>. The class is used to increase the size of the icon to be displayed and to knock back its opacity. The #cuboid <div> is the container for the main action and each of the four faces of the cuboid are set starting with the invitation to 'Subscribe'.

```
001 <div class="envelope">
002   <i class="fa fa-envelope"></i></div>
003 <h1>Be the first to know</h1>
004 <!-- heirarchy: #cuboid > form >
```

```
div*4(cuboid faces) -->
004 <div id="cuboid">
005 <form>
006 <!-- #1 hover button -->
007 <div>
008 <p class="cuboid-text">Subscribe</p>
009 </div>
```

## 03 Fill the form

The text input face has several more elements to it, as a submit icon is required. The autocomplete property is set to 'off' as you don't want the field pre-filling with someone else's email address and inadvertently sending it to you. Forms will generally require a Submit button, but since this is being handled within the field, the #submit <div> sets the display of the Submit button to 'none'.

```
001 <!-- #2 text input -->
002 <div>
003 <!-- Label to trigger #submit -->
004 <label for="submit" class="submit-icon">
005   <i class="fa fa-chevron-right"></i></label>
006 </label>
007 <input type="text" id="email" class=
008   "cuboid-text" placeholder=
009   "Your Email" autocomplete="off"/>
010 <!-- hidden submit button -->
011 <input type="submit" id="submit" />
012 </div>
```

## 04 Complete the cuboid

While the form is being submitted, a short

message is displayed. The final face of the cuboid (on the long side of the cuboid, that is) is used for displaying the success message and an icon to enable the form to be refreshed and therefore reused.

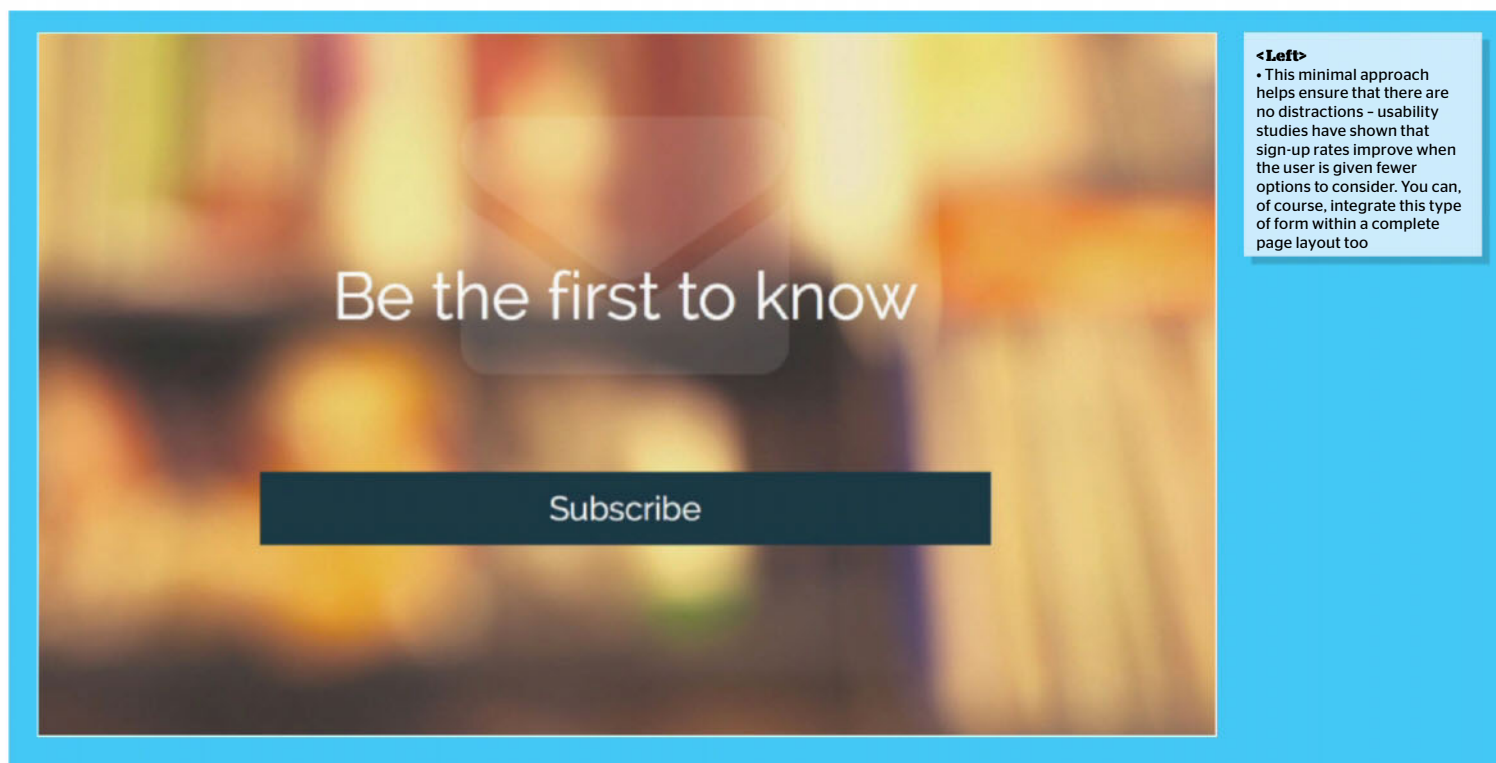
```
001 <!-- #3 loading message -->
002 <div>
003 <p class="cuboid-text loader">
004   We're submitting your request</p>
005 </div>
006 <!-- #4 success message -->
007 <div>
008 <!-- reset/retry button -->
009 <span class="reset-icon">
010   <i class="fa fa-refresh"></i></span>
011 <p class="cuboid-text"> Thankyou.
012   You're all signed up! </p>
013 </div>
014 </form>
015 </div>
```

## 05 Join the JavaScript

Finally, jQuery and small JavaScript are loaded. You could use a CDN for the jQuery. Remember to load a minified version. Occasionally links to an uncompressed version at nearly 300kb are found in source code. Do your users a favour, use a minified version and save about 200kb. The '3dform.js' weighs in at only 34 lines and is less than 1kb.

```
001 <!-- jQuery -->
002 <script src="js/jquery-1.11.0.min.js">
003   </script>
```





## &lt;Left&gt;

• This minimal approach helps ensure that there are no distractions - usability studies have shown that sign-up rates improve when the user is given fewer options to consider. You can, of course, integrate this type of form within a complete page layout too

```
003 <script src="js/3dform.js"></script>
004 </body>
005 </html>
```

## 06 Coding the CSS

The two custom fonts used are imported first. The font used for the text is imported from Google's content delivery network but the minified Font Awesome file is linked locally. You'll also need local versions of the Font Awesome EOT, SVG, TTF, WOFF and OTF files all saved in a fonts folder, which is where the font-awesome.min.css expect to find them.

```
001 /*Custom fonts - Raleway and FontAwesome*/
002 @import url(http://fonts.googleapis.com/
  css?family=Raleway);
003 @import url('font-awesome.min.css');
004 * {margin: 0; padding: 0;}
005 body {
006   background: url(..img/bg.jpg)
  no-repeat center center fixed;
007   -webkit-background-size: cover;
008   -moz-background-size: cover;
009   -o-background-size: cover;
010   background-size: cover;
011   padding-top: 150px;
012   font: normal 18px Raleway; color:
  white; text-align: center;
013 }
```

## 07 Start the styling

Raleway has already been set in 'body' as the font to be used everywhere on the page, so it's not necessary

to keep setting this font for each of the page elements. The ghostly envelope shape is created by increasing a Font Awesome icon's size tenfold and then reducing its opacity to 0.1 (where 1 is completely opaque). The container for the form is created here.

```
001 /*general styles*/
002 h1 {font-weight: normal; font-size:
  36px; margin-bottom: 75px;}
003 .envelope i {-webkit-transform: scale(10);-
  ms-transform: scale(10);transform: scale
  (10); opacity: 0.1;}
004 #cuboid {
005   width: 400px; margin: 0 auto;
006   /*this also makes #cuboid a container
  for absolutely positioned descendants*/
007   -webkit-perspective: 1000px;
008   perspective: 1000px;
009 }
```

## 08 Set the space

'Preserve-3d' is set to enable the elements to be positioned in 3D space. As the height of the input field is 40px, the elements are translated half that height to create the illusion of the cuboid being rotated through its centre. Feel free to experiment with the transition speed to suit your own requirements.

```
001 #cuboid form {
002   /*counter translate*/
003   -webkit-transform: translateZ(-20px);
004   -ms-transform: translateZ(-20px);
005   transform: translateZ(-20px);
```

## TheCodePlayer

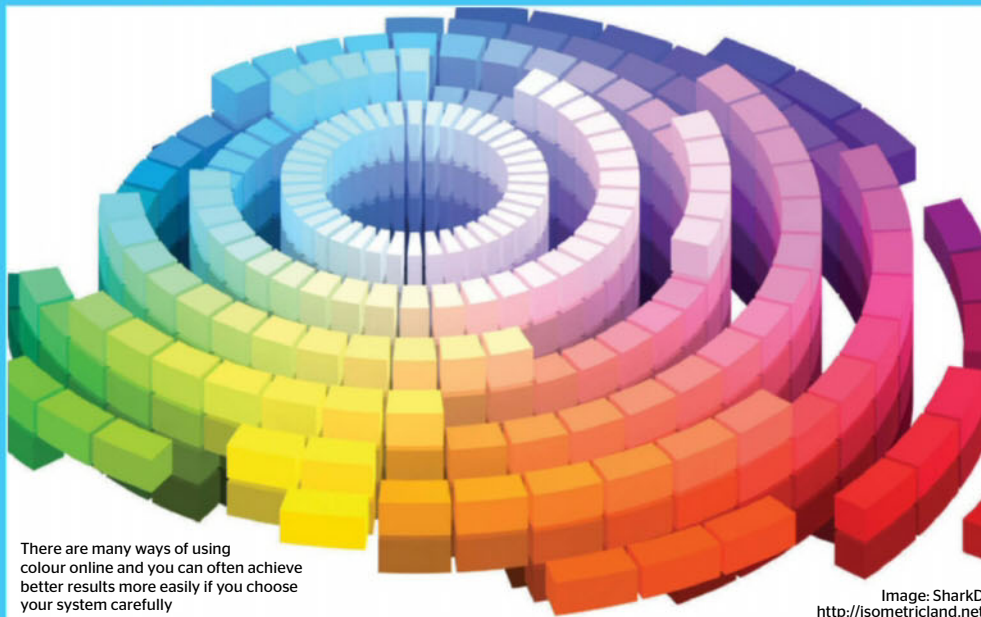
This tutorial is based on the walkthrough published by [thecodeplayer.com/walkthrough/single-input-3d-form](http://thecodeplayer.com/walkthrough/single-input-3d-form). Be sure to check out their other walkthroughs too.

```
006 /*propagate 3d space for children*/
007 -webkit-transform-style: preserve-3d;
008 transform-style: preserve-3d;
009 /*prevent height collapse as children
  are absolutely positioned*/
010 height: 40px;
011 /*for smooth animations*/
012 -webkit-transition: all 0.35s;
013 transition: all 0.35s;
014 }
```

## 09 Form the faces

Height sets the height of the text area and line-height sets the distance between each line of text (also known as 'leading'). A line-height of 40px positions the single line of text in exactly the right place within a 40px space. The colour of the loader face is set here together with the animation that is to be used.

```
001 /*faces*/
002 .cuboid-text {
003   /*each face will be 40px high*/
004   line-height: 40px; height: 40px;
005   background: hsl(200, 40%, 20%);
006 }
```



There are many ways of using colour online and you can often achieve better results more easily if you choose your system carefully

Image: SharkD  
http://isometricland.net

## Choose your colour model

Every designer must surely be familiar with the hexadecimal system for setting colours, which in many cases this is the perfectly good 'go to' system for defining your colours. You've probably also used the three-digit short form at some point as well (eg #09C in place of #0099CC). But, did you know 140 different color names are defined in HTML and CSS? You've probably seen color: 'gray' or 'red' but aren't 'palegoldenrod' and 'papayawhip' worth exploring too?

There are other systems available that have their own uses. RGB and HSL and their more advanced counterparts RGBA and HSLa (that includes an alpha channel) can certainly make things easier for you depending on the colour job at hand. If you need transparency you'll certainly need to use of these systems, but they can also be useful when managing groups of colours as a palette or making more intuitive selective changes (like the pulsing effect in this tutorial).

## Distraction-free solutions

When influencing online behaviour (eg encouraging sign up), it's important to get the balance right between giving people enough reasons to sign up and not distracting them so much that they forget to actually do it.

```
007 .loader {
008   background: hsl(200, 40%, 30%);
009   -webkit-animation: phase 1s infinite;
010   animation: phase 1s infinite;
011 }
```

## 10 Hue, saturation, luminance

As HSL colour is specified it's easy to create a pulsing effect by animating a colour between different saturation values - in this case between 40% and 70%. The styling for the email input field is set including the white background and the coloured text. Border-box is used here in order to ensure that the whole box appears within the space allocated.

```
001 /*Lets create a pulsating animation for
002    the loader face*/
002 @-webkit-keyframes phase {
003   50% {background: hsl(200, 70%, 30%);}
004 }
005 @keyframes phase {
006   50% {background: hsl(200, 70%, 30%);}
007 }
008 #email {
```

```
009   background: white; outline: none;
010   border: 0 none;
011   font: inherit; text-align: left; color:
012   hsl(200, 40%, 30%);
013   display: block; width: 100%; padding:
014   0 10px;
015   -webkit-box-sizing: border-box;
016   -moz-box-sizing: border-box;
017   box-sizing: border-box;
018 }
```

## 11 Styled into submission

The default Submit button is rendered invisible using display: none. Again, 40px line-height is used to ensure the correct vertical positioning of the icons. One of the many benefits of using icons from a font file is that you can apply all of the font properties to them. Here, HSLa colour is used to change the opacity of the icons to 25%.

```
001 #submit {display: none;}
002 .submit-icon, .reset-icon {
003   position: absolute; top: 0; right: 0;
004   color: hsla(30, 50%, 30%, 0.20);
005   line-height: 40px; padding: 0 10px;
006   /*smooth transitions when user activates
007      input and types something*/
008   -webkit-transition: all 0.5s;
009   transition: all 0.5s;
010   /*to make the icons feel like buttons*/
011   cursor: pointer;
```

## 12 Recognise the input

The Submit icon is made more prominent once content has been entered into this field. The JS shown in the Code Library is responsible for adding the 'active'

class when content has been added to the field. The cuboid <div> is defined, positioned absolutely and completely fills the container.

```
001 /*.active = when the user is typing
002    something*/
002 .submit-icon.active {color: hsl
003    (30, 70%, 70%);}
003 .reset-icon {color: hsla
004    (0, 100%, 100%, 0.25); font-size: 14px;}
004 #cuboid div {position: absolute; top: 0;
005    left: 0; width: 100%;}
```

## 13 Rotate the result

Watch out here as the vendor prefixes have been removed from this step for brevity - make sure you check the tutorial files for the full code. Rotating each face 90 degrees in the X dimension and moving each face in and out by 40px (20px from -20px) completes the cuboid illusion.

```
001 /*3D transforms. Each face will be rotated
002    in multiples of -90deg and moved 20px(half
003    of their 40px height) out*/
002 #cuboid div:nth-child(1) {transform:
004    rotateX(0deg) translateZ(20px);}
003 #cuboid div:nth-child(2) {transform:
005    rotateX(-90deg) translateZ(20px);}
004 #cuboid div:nth-child(3) {transform:
006    rotateX(-180deg) translateZ(20px);}
005 #cuboid div:nth-child(4) { transform:
007    rotateX(-270deg) translateZ(20px);}
006 /*the form will have 4 states/classes
008    (default+3) for rotation*/
007 #cuboid form: hover,
008 #cuboid form: ready {transform: translateZ
```



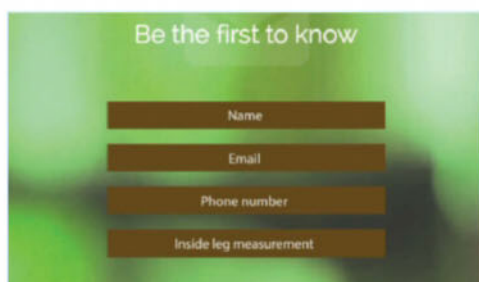
```

    (-20px) rotateX(90deg);}
009 #cuboid form.loading {transform:
    translateZ(-20px) rotateX(180deg);}
010 #cuboid form.complete {transform:
    translateZ(-20px) rotateX(270deg);}

```

## 14 Take it further

This technique really suits an ultra-minimal 'Coming soon' page layout - no distractions, just sign up please. You could adapt it by creating extra <div>s and classes but it would soon become tiresome for the user - a little like being forced to open one advent calendar door after another but without the reward of chocolate!



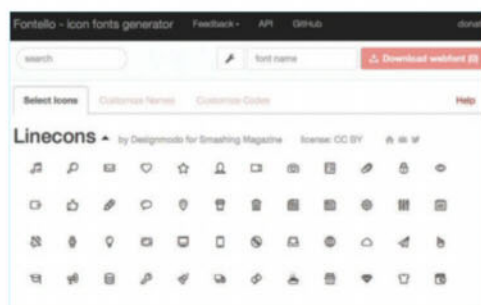
## 15 Other solutions

Having your labels jump out of the way when you enter the field has a similar space-saving quality and surprise appeal as the single 3D input field, but lends itself better to multiple fields. TheCodePlayer also has a great solution for this, check it out at [thecodeplayer.com/walkthrough/animating-float-labels-jquery-css3](http://thecodeplayer.com/walkthrough/animating-float-labels-jquery-css3).



## 16 Icons as fonts

Font Awesome, used here, is one of the most popular icon font solutions but it is by no means the only way to go. Fontello provides an incredibly useful online tool for creating your own custom icon fonts, so you can choose just what you need from a wide range of sets and keep the file size down to an absolute minimum.



## Code library

# Understanding the JavaScript

While CSS can deliver most of the solution, a sprinkling of JavaScript is needed to bring it all together

When the mouse passes into the input field, the 'ready' class is added to the #cuboid form <div>. This initiates a 90-degree rotation and 20px translation to expose the first face of the input form.

If the user subsequently mouses away, the cuboid is returned to the default hover state - but only if nothing has been typed into the input field.

More visual feedback is provided to the user by changing the colour of the arrow once content has been typed into the field.

The loading class is added to the #cuboid form for three seconds after the form is submitted. If you're switching between classes in this way, remember that when adding a new class you need to remove any classes that have been added previously.

```

001 //add '.ready' to form when user focuses on it
002 $("#email").focus(function(){
003     $("#cuboid form").addClass("ready");
004 })
005 //remove '.ready' when user blurs away but only if there
    is no content
006 $("#email").blur(function(){
007     if($(this).val() == "")
008         $("#cuboid form").removeClass("ready");
009 })

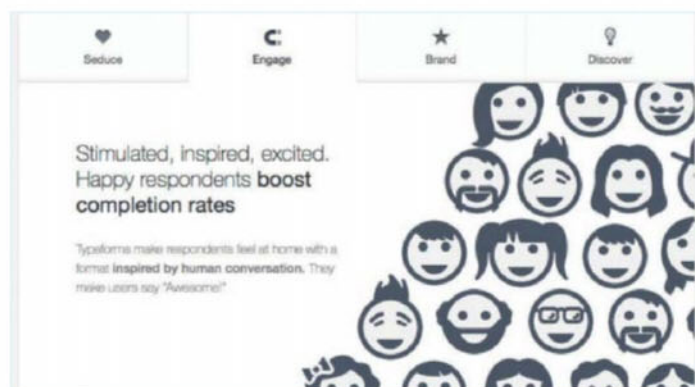
010 //If the user is typing something change the arrow colour/
    .active
011 $("#email").keyup(function(){
012     //this adds .active class only if the input has some text
013     $(".submit-icon").toggleClass("active", $(this).val(
        ).length > 0);
014 })

015 //on form submit remove .ready and add .loading to the form
016 $("#cuboid form").submit(function(){
017     $(this).removeClass("ready").addClass("loading");
018     //finish loading in 3s
019     setTimeout(complete, 3000);
020     //prevent default form submission
021     return false;
022 })
023 function complete()
024 {
025     $("#cuboid form").removeClass("loading").addClass
        ("complete");
026 }
027 //reset/refresh functionality
028 $(".reset-icon").click(function(){
029     $("#cuboid form").removeClass("complete");
030 })

```

## 17 Do you DIY?

If you have the time, skill and inclination, often it will be better to create your own bespoke forms. However, sometimes the smart thing to do is to reach for a solution that already exists. One relative newcomer to the forms party is the Barcelona-based Typeform - you should definitely check out how their forms look and work.



# web workshop

## Create an expanding panel on hover

inspiration [www.outdatedbrowser.com](http://www.outdatedbrowser.com)



There are various different approaches that can be taken when dealing with the issue of cross-browser compatibility. Add to that the proliferation of devices over recent years and it's easy to see why developers sometimes feel they spend

more time ironing out compatibility issues than creating engaging and rewarding online experiences.

Therefore, anything that helps developers out in this area is welcomed – and [outdatedbrowser.com](http://outdatedbrowser.com) by Bürocratik has created an out-of-the-box solution that you can add to any site to alert users that they are using an outdated browser, explain that their experience may be affected, and provide a link to the latest version of the browser they're using. Their award-winning project website is pretty special as well.

### 1 INSPIRATION

#### Fresh thinking

Bürocratik has done a fine job of paring back the amount of content delivered by its project website – it could easily have been left with an easy-to-ignore and plain-looking homepage. Instead, it reached for an unlikely solution: the accordion slider – often a bit of a fudge when used as a traditional slider. As the name suggests, it squeezes and expands the space within

each panel of content and both images and text rarely benefit from such treatment. However, when the accordion is made fullscreen, responsive and used to deliver minimal content, it really comes into its own.

Full code on website  
[bit.ly/1i3V3wG](http://bit.ly/1i3V3wG)

#### Kwicks by Jeremy Martin

While this highly functional plugin can be downloaded from a number of sources including GitHub, the plugin's birthplace ([devsmash.com](http://devsmash.com)) appears to be down for the foreseeable future, which might provide a little obstacle to using the plugin to its fullest.

The screenshot shows the 'Outdated Browser' website. It features a central orange panel with a '19.6% PEOPLE ARE USING THIS BROWSER' statistic and a 'DOWNLOAD' button for 'VERSION 30'. To the left is a yellow panel with a '2' annotation pointing to a 'GOOGLE CHROME' icon. To the right are blue and red panels with a '3' annotation pointing to a grid of browser icons including 'INTERNET EXPLORER', 'APPLE SAFARI', and 'OPERA'. A hamburger menu icon is in the top left corner.

**Menu icon**  
The classic hamburger menu icon provides visitors with access to extra pages of available content, including more information about the project itself as well as access to the necessary files that can be installed on websites.

**Invite interaction**  
The presentation encourages users to play and interact with the page. Comparing the details on each panel is easy and content appears and disappears as required to really help deliver the message.

**Expanding panels**  
On hover, each of the panels expands to reveal the percentage of users who are currently using that browser. Visitors are also able to download the browser, while a caption states the current version.

**Laid-back design**  
The metro-style interface is clean, fresh and feels totally contemporary. The limited content and functionality combine to make for a very easy and laid-back user experience that invites visitors to look around.

**Award-winning agency**  
Bürocratik was established in 2005 in Coimbra, Portugal and has won a huge number of awards and recognitions over the year. This project is a contribution to the web community, for which many developers will likely be thankful.





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

## Good ideas well executed

"Half the battle is trying to come up with something that is worthwhile communicating. Sometimes your client might take ownership of this and sometimes they might need your help. Then, the job is to execute the development and design process to the best of your ability. Occasionally you'll achieve something that's really quite special."

Jayson Winters



## TECHNIQUE

### Alternative icons

It's always useful to consider your options when working with icons or similar image sets, and Phoca's library of SVG-based CSS-only flags ([phoca.cz/cssflags](http://phoca.cz/cssflags)) provides an interesting alternative. Make sure you only include the flags you actually need in your project though, as the whole library is over 4Mb.

#### 01 Download and choose

The provided files include CSS that is required for each instance of a flag, and then code for each flag as a separate CSS class encoded in base64. As you might expect, simple flags have a very short string of code, while more complex flags require a longer string to accurately render them.



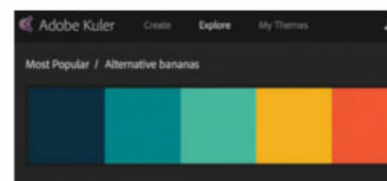
#### 02 Manipulate

Even at very large sizes, these flags are accurate and well drawn. You will be able to apply SVG filters to the flags and CSS gradient techniques, as well as scaling and transforming the flags with no loss of image quality. Keep in mind that not all flags are the same shape. - but Phoca has some useful advice for dealing with this issue.



#### 03 Colour schemes

Just as libraries of icons can give your next project a head start, you might find that a library of colours provides you with just the inspiration you need. This workshop uses a popular colour scheme (Alternative Bananas) at [kuler.adobe.com](http://kuler.adobe.com), but have a dig around and you're sure to find something to help choose your next colour scheme.



## TECHNIQUE

### Expanding <div> effect on hover

#### 01 HTML first

Links to the two stylesheets are established; 'jquery.kwicks.css' is for the universal styling required for any Kwicks slider and demo.css is for page specific styling. Each panel is a list item in an unordered list and content is placed and styled using <div>s. This demo uses SVG images deployed by declaring classes within <div>s - this is all explained in detail in the Technique section.

```
001 <link rel='stylesheet' type='text/css'
    href='css/jquery.kwicks.css' />
002 <link rel='stylesheet' type='text/css'
    href='css/demo.css' />
003 </head>
004 <body>
005 <div id="header"><h1>Top 5 tea
    producing countries</h1></div>
006 <ul class='kwicks kwicks-horizontal'>
007 <li id='china'>
008 <div id="percent"><h2>35.13%</h2>of
    global tea production<br />1,640,310
    m/t</div>
009 <div class="phoca-flagbox"><span
    class="phoca-flag cn"></span></div>
010 <div id="footer"><h3>China</h3></div>
011 </li>
012
```

#### 02 Scripts

After the HTML for each panel, the scripts are loaded and the Kwicks function called. To match the Outdated Browser site, the maxSize for the active panel has been set to 36%. There's scope to radically change the look by changing this value. The Kwicks plugin is capable of much more than what it's used for here, and also works very well with different easing options. Refer to the 'kwicks-master.zip' for examples and more inspiration.

#### 03 demo.css

The header is fixed to the top of the page with top:0 and position:absolute. Z-index brings it in front of the slide panels. The percent class sets the font-size and positioning of that element and is set to hidden. When hovered, its visibility is then set to visible.

#### 04 The slider container

Minimum heights and widths are used to stop the layout from becoming ugly if the browser is reduced below the allowed for sizes. Setting height:100% to have the panel fill the page wouldn't work here but height:100vh sets the <div> to 100% of the viewport height and works very well in all modern browsers.

```
001 .kwicks {
002   text-align:center;
003   min-width: 800px;
004 }
005 .kwicks > li {
006   height:100vh;
007   min-height: 440px;
008 }
009 </li>
```

#### 05 Style the flags

The Outdated Browser site uses CSS sprites and uses a white version of the browser logo in the inactive state and a full-colour version on hover. This demo uses CSS-drawn images. The height and width of the flags can be set to any size. The panel background colour is also set here.

```
001 .phoca-flagbox {
002   width:120px;
003   height:120px;
004   display:inline-block;
005   position:relative;
006 }
007 .phoca-flag {
008   position:absolute;
009   top:0;
010   bottom:0;
011   left:0;
012   right:0;
013   margin:auto;
014   display:inline-block;
015   vertical-align:middle;
016 }
017 #china {
018   background-color:#ed553b;
019 }
020 .cn {
021   background:url(data:image/svg+xml; xx);
022   width:100%;
023   height:66.666666666667%;
024   background-size:100% 100%;
025 }
```

WAR HAS LONG  
BEEN WAGED  
OVER DESIGNING  
IN PHOTOSHOP  
VERSUS DESIGNING  
IN THE BROWSER.  
BUT, MAYBE IT'S  
TIME WE ALL JUST  
GOT ALONG

PS

NEW WAYS TO W  
PHOTOS



# WORK WITH PHOTOSHOP



With the development of HTML5 and CSS3, 'designing in the browser' has become common practice. Adobe's most (and least) popular software package has taken a back seat for most web designers, as better standards and new technologies have allowed

for more creative freedom when working with code. With the ability to create gradients, round corners, drop shadows and more with ease in CSS, it sometimes feels like Photoshop's bloated feature set is steadily becoming obsolete. However, a new movement has started, bringing Photoshop back into the web design fold and repurposing its powerful tools for brainstorming sketching and wireframing.

Many designers have criticised designing in the browser for what Andy Budd (CEO at Clearleft) described as, a lack of "even the most rudimentary tools, like the ability to draw lines or irregular objects through direct manipulation". The argument here is, although HTML and CSS are capable of rendering designed elements without the use of Photoshop, the lack of freedom to directly manipulate designs can be risky for creativity. Instead, critics argue, we should be using Photoshop to create mood boards and sketches at the start of the web design process, allowing creative ideas to flow and develop without the abstraction of a text editor and strict standards to stunt them.

This year, Photoshop is 24 years old and, with the release of CC 2014, now in its 21st iteration. Over that time, Adobe's flagship software has seen radical changes, developing from an image-editing application into a powerful design tool, with a huge and dedicated user base. With competitors - including Adobe's own Illustrator and Bohemian Coding's Sketch, popping up all over the place - Photoshop has had to battle to stay relevant to print and web designers alike. This has led to a repositioning of Photoshop in the arsenal of any designer. It's no longer the tool used to create polished, finished site designs to be sliced and rebuilt on the web. Instead, it's found a place as a prototyping tool, allowing designers to present clients with ideas, palettes, styles and wireframes that can be easily edited and don't involve hours of development time.

In response to these changes, Adobe and third-party developers have been building tools to bridge the gap between Photoshop and CSS, making the transition from prototype to product even smoother. In this article, we'll take a look at some of the tools, plugins and features that make Photoshop the perfect application for getting your ideas down on canvas, before you even open a text editor.

## SKETCHING IN PHOTOSHOP

Designing directly in the browser can often make it hard to quickly move elements around and try out new ideas and layouts. If you're struggling with this, why not turn to Photoshop? You can use all those familiar tools to mock up simple, visual layouts to explore ideas and see if they work. These don't have to look perfect and can be made up of simple shapes - the idea is to just get a feel for what works and what doesn't, without spending hours trying to do it in code.

Photoshop's Vector Smart Objects are perfect for creating simple layouts to explore designs for a site. Once you've created something you're happy with, you can try it in browser and build out the details later on. This approach utilises the best of both worlds, using Photoshop to experiment fluidly with designs and HTML and CSS to implement the final product. Having problems with breakpoints in your responsive design? This method is especially useful if you're having trouble with where elements should go in responsive layouts - it also avoids getting stuck staring at code for hours, when a little bit of creative freedom could give you the answer in minutes.

## BEST TOOL FOR SKETCHES



### WEBZAP

[webzap.uiparade.com](http://webzap.uiparade.com)

WebZap is a fantastic Photoshop plugin that makes sketching mockups incredibly quick and easy. It lets you create fantastic looking UI elements, grid layouts (based on the 960 grid) and Lorem Ipsum text layouts all with a few clicks. You'll save countless hours searching for UI kits and templates with WebZap's fantastic library of tools. It only costs \$19 and could make the difference between spending hours on a mockup, rather than days. It also comes with a great little preview function that will have your mockups looking polished for the client.

## BETTER THAN THE BROWSER

Sketching ideas in Photoshop has many advantages over starting your initial concepts in HTML and CSS. There is more room for creative freedom and quick changes to modules and page elements without the abstraction of code. This is not to say you should be creating full-page comps in Photoshop and then translating them to the web - this method can still cause more problems than it solves and is best avoided due to the sheer amount of time it can take. Rather, Photoshop is the perfect tool for creating visual concepts that aren't confined by the CSS, helping to avoid the initial stumbling blocks of building the site in the browser.

# GAUGING THE MOOD

Be

fore jumping into the browser, to start putting together your site, it's important to determine a set of aesthetic guides for your designs. By creating mood boards, collages, wireframes

and mockups you are more able to establish the mood and atmosphere you, and the client, are aiming for.

## SPEAKING THE LANGUAGE

Photoshop's toolset isn't completely perfect for building layouts. Even in the sketching stage you'll find that sometimes it can be less than fluid for putting together designs. What it is perfect for, however, is creating and exploring the visual language of your designs: styles, effects, colour palettes, fonts and a whole lot more can be predetermined through experimentation in Photoshop, saving you time when it comes to the code. This also allows the client to feed back on many of the basic elements before you devote a lot of time to building anything. Using collages, mood boards and mockups, you can explore the aesthetics of the site and develop a mood, while providing the client with a variety of deliverables.

## GETTING IN THE MOOD

Creating mood boards can be a really useful exercise for establishing a visual direction, right at the beginning of a project. This is one step that can't be done in the browser, so Photoshop is the perfect tool for getting all your ideas in one place, either for your own inspiration, or to talk over with the client to find the perfect feel for the project.

## DON'T GET CAUGHT UP IN PROTOTYPING

Make sure you don't get too obsessed with the finer details of prototyping. It's all too easy to waste too many hours in Photoshop polishing mockups.

## FACING THE ELEMENTS

Element collages let you sketch out ideas for particular elements of a site without putting the whole design on paper. Dan Mall, the creator of element collages thinks they are useful because we don't often come up with an entire site design in one go, so full page comps aren't always a realistic concept. "An element collage allows me to document a thought at any state of realization and move on to the next," he writes on his site.

This method is useful as it lets you explore the visual language of the site through elements that are likely to appear in the final designs. It also gives the client something more solid to feed back on as the elements appear in context more so than in many other prototyping methods.

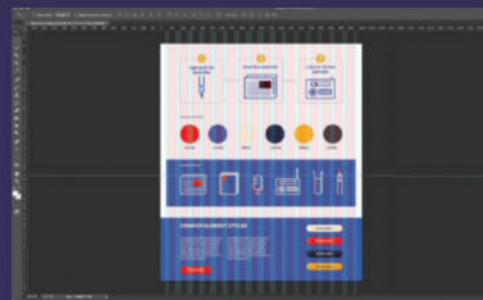
# 5 GREAT PLUGINS & TOOLS



### PAGE LAYERS

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

Page Layers is a nifty little app that converts webpages into layered Photoshop files. You can open and edit entire webpages as PSDs, perfect for late stage editing.



### 960 GRID

[960.gs](http://960.gs)

The 960 grid is a simple but effective grid system that comes with PSD and CSS templates to translate your perfectly proportioned site to the web with ease.



## EXPLANATION, EXPLANATION, EXPLANATION

Help your client out. It's sometimes hard to visualise how mockups will be realised later in the process. A little explanation goes a long way.

## WIREFRAMING AND PROTOTYPING

Wireframes and page prototypes are usually basic representations of page elements, as they might appear in the final product. They should be simple, without detail and show the basic structure of the page. You can use these to establish the visual language of the site. Menus, headers, and breadcrumbs might need to be differently styled to the other changeable page elements like text and sidebars. Often, the client might want to see a working prototype, in browser. For this purpose, Photoshop takes a back seat as it's relatively straightforward and normally quicker to build the working prototypes completely in the text editor.

## FOR DISCUSSION, NOT DESIGN

A combination of any of these prototyping techniques should be a perfect solution for getting your ideas down and translating them to the client. The important thing to remember is that you're repositioning Photoshop in the design process, using it as a tool for creating a dialogue between you and the client or a collaborator – not for pushing out finished pages. It can still be used for creating assets to be implemented in finished designs but in a responsive world, static page mockups just don't cut it.

# STYLE TILES

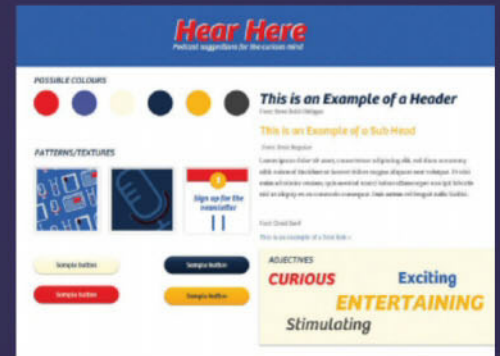
## WHAT ARE THEY?

Style Tiles are the invention of Samantha Warren, who compared them to “the paint chips and fabric swatches an interior designer gets approval on before designing a room”. They consist of styles for specific design elements, including fonts, colours and UI elements that together portray a brand's visual language for the web. They are great for starting and progressing discussion between designers and clients about the visual direction they want and can be extremely useful in establishing the basic aesthetics for a site design.

Creating Style Tiles helps to avoid the 'do four Photoshop mockups of different webpages' stage of the design process, which often just ends up wasting time and provides very little. Using Style Tiles, the designer and the client can nail down many of the important interface choices needed to progress with a build. They are also a good alternative for anyone who thinks that mood boards are a little too vague.

## CREATING STYLE TILES

Just like any design process, using Style Tiles begins with a lengthy conversation with the client. Finding out what they want and then interpreting it can be a



Using Style Tiles is a great way to start crafting the visual language of any design

difficult task, but using Style Tiles helps to convey your ideas and get feedback to keep the revision process quick and efficient. With each round of feedback, you can develop the tiles until everyone is happy – but the revisions won't take as long as a full comp.

Then you can move on to the prototyping stage.

You can download a handy Photoshop document from [styletil.es](http://styletil.es) to get started. Start

experimenting with colours, fonts and imagery to begin building up a visual language. Then play with the elements until you have three or four individual tiles that all say something different about the brand. Style Tiles are well suited to responsive design, because, rather than designing a fixed-width page layout, you're developing a system that can be used and developed throughout the site.

## NO CONTEXT

Remember, while they are great idea, Style Tiles lack context and are sometimes hard to visualise for clients. Element collages will solve this problem.

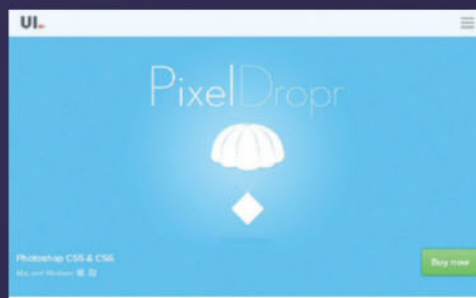
ONE OF THE MANY ADVANTAGES OF USING PHOTOSHOP OVER ALTERNATIVE SOFTWARE IS THE HUGE NUMBER OF BUILT-IN AND THIRD-PARTY TOOLS, AVAILABLE TO HELP YOU OUT WHEN YOU MOST NEED IT



## WEB FONT PLUG-IN

[bit.ly/1qen6lt](http://bit.ly/1qen6lt)

Web Font Plug-in is a handy tool that lets you use Google Fonts in Photoshop, meaning you won't have any nasty surprises when you move from PSD to CSS.



## PIXEL DROPR

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

Pixel Dropr lets you create libraries of UI elements and images and instantly drop them into Photoshop as you're working. Great for prototyping.



## CUT&SLICE ME

[www.cutandslice.me](http://www.cutandslice.me)

Cut&Slice allows you to export assets for different devices quickly and efficiently. If you do have to slice up a PSD, use this tool to improve your workflow.

# FROM PS TO CSS

On

ce you've finished with all of the prototyping stages, it's time to take your designs to the browser. But what's the best way to go about translating from Photoshop to CSS?

Once you've done your sketches, created your Style Tiles and developed your element collages, it's time to take the visual elements you have established and translate them to web. In the past this was a difficult enough operation. You would create a huge bitmap in Photoshop, slice it up and reassemble it online. It could be painstaking and things often didn't turn out as planned. Then came CSS3 and implementing Photoshop style effects in the browser, without the use of images, became a reality.

That being said, it's still sometimes difficult to get the exact look you had achieved in PS, when you're working with a whole different set of tools and

variables in a text editor. It can be very time-consuming translating layer styles in Photoshop into CSS, which is just another reason why lots of designers started avoiding the Photoshop step completely.

These days though, there's a whole host of tools and plugins available to help you translate your ideas from canvas to browser as smoothly as possible. Some, that we'll look at in a moment, directly convert your layer styles to CSS, while others simply aid in the transition. Layerstyles.org, for example, is a totally web-based version of Photoshop's layer styles dialogue that lets you mock up the style you want and then export the result as CSS.

## THE IN-HOUSE METHOD

As of version 13.1 (CS6 and above), Adobe has included a CSS export feature right inside the Photoshop package. Just select the layer that you want the CSS properties for, click on 'Layer' in the menu bar and hit



'Copy CSS'. Photoshop will output a nice chunk of code and copy it straight to your clipboard. When you paste it into your editor with a little bit of HTML, you'll have a button like the one you designed in app.

Unfortunately, this is a far from perfect solution; the homebrewed tool just isn't up to scratch and neglects to use RGBA values for low opacity - and sometimes ignores effects altogether. It also provides no formatting options before copying, so everything has to be fixed later in the editor. Nevertheless, even with these bugs, it does provide you with a great base to start working from, without having to manually input all of the basics yourself.

## THIRD-PARTY CSS PLUGINS

PHOTOSHOP'S OWN CSS EXPORT FUNCTION WORKS WELL - BUT IT ISN'T THE DREAM SOLUTION WE'VE ALL BEEN WAITING FOR. WITH A FEW KINKS LEFT TO IRON OUT IT'S UP TO THE THIRD-PARTY PLUGINS TO OFFER A NEAT AND EFFICIENT WAY TO GET OUR STYLES FROM CANVAS TO BROWSER



### CSS3Ps css3ps.com

CSS3Ps is a totally free Photoshop plugin that's been around since long before the built-in PS to CSS3 functionality. With the extension installed, the functionality all sits inside a neat little window. All you have to do is select a layer group and then click the CSS3Ps logo to start the process.

Due to the nature of being free, you're forced to wait 20 seconds and look at an ad, but that's a small price to pay for such great functionality. CSS3Ps takes you to a page with your code, ready to copy and paste. Something to note is that this plugin ignores positioning, so you'll need to fix that later.



### CSS HAT csshat.com

Unlike CSS3Ps, CSS Hat will set you back \$30. Still, for the additional features and lack of ads, the price is worth it. CSS Hat has the ability to export in multiple formats, including LESS, SASS and SCSS. You can also toggle a variety of other features, like comment explanations, browser prefixes, whether the code gets wrapped in a rule named after the layer and layer dimensions.

Exporting with CSS Hat isn't quite as simple as CSS3Ps, as it doesn't support layer groups. This means you'll have to export each layer separately. Other than that, the process is simple and intuitive and the versatility of this plugin is a huge advantage.



# WORKING WITH TYPE/TYPEKIT

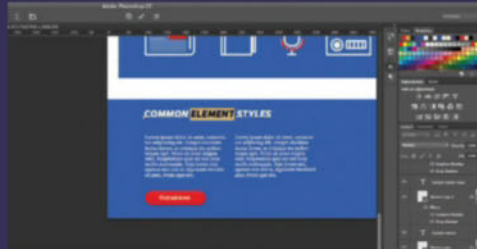


Typography has always been a problem for Photoshop. Font rendering has never been its strong suit and this can become a problem when you're designing for the web.

There's more and more emphasis, these days, on typography for the web. With print designers moving into the digital world en masse, a new importance has been placed on type and fonts in web design.

Photoshop has always struggled with rendering fonts and its Type tool is clunky and leaves much to be desired.

The biggest problem is that, with new web-font-only subscriptions, you can't see what the fonts will look like when you're mocking up designs in Photoshop. There's nothing worse than getting a design to the web and realising your chosen font clashes horribly with the design. Web Font Plug-in from Extensis goes a long way in solving this issue, by allowing designers to use Google Fonts in their PSDs.



With Typekit's desktop functionality, you can use the exact same fonts in your mockups as you'll be using in your final page designs online.

If you're a CC user you will also have access to Typekit, Adobe's own take on the webfont library. With Typekit you can download a set number of fonts through CC to be used with your apps. This means that you can access your Typekit fonts with ease, since they sit directly in Photoshop's font window - so you are able to test out firm favourites such as Proxima Nova and Bree in your static designs.

There's more and more emphasis, these days, on typography for the web. With print designers moving into the digital world en masse, a new importance has been placed on type and fonts in web design.

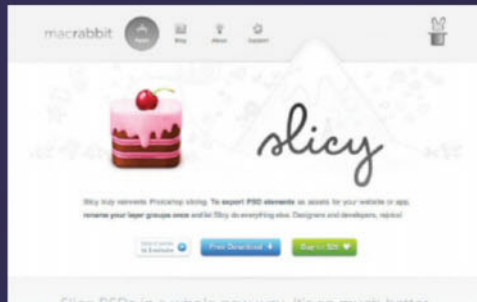
# CREATING AND EXPORTING ASSETS



It's not forget that Photoshop will always be essential for some tasks; creating icons, banners and images. But when the code can't cut it, what are the best ways to get your assets online?

Even with all these tools and tips for effectively combining Photoshop and code, there will always be jobs that CSS and HTML can't handle. If you need to create any kind of bitmap image or element, Photoshop will always be the fallback. You can continue creating designs in Photoshop as usual but remember that, although you'll be exporting assets in bitmap format, you should utilise the vector tools as much as possible so that revising designs isn't a hassle.

Slicing up designs with Adobe's 'Save for Web' option has always been long-winded. These days there are plenty of options for getting your raster assets into the browser, quickly and efficiently. Slicy from Macrabbit ([macrabbit.com/slicy](http://macrabbit.com/slicy)) is an app that exports layer groups as independent files, giving you the freedom to move, hide and overlap elements. It also offers retina



Slicy is a powerful tool for exporting elements, with built-in retina-scaling features - best of all, it's free.

scaling on vector designs. Cut&Slice me is a free plugin that will export your assets from Photoshop and make them ready for use on all kinds of devices.

It also never hurts to have some extra tips on hand for best practice. Make sure you have a look at [bjango.com/articles/actions](http://bjango.com/articles/actions) - this list of Photoshop actions, put together by the good people at bjango, will save you countless hours when creating and exporting images and artwork from Photoshop.

# ALTERNATIVE OPTIONS



## ADOBE ILLUSTRATOR

[adobe.com/uk/products/illustrator.html](http://adobe.com/uk/products/illustrator.html)

In recent years, Adobe's own Illustrator has become more and more powerful and now features many of the tools and effects that we're so used to seeing in Photoshop. With layer effects and some very powerful drawing and type tools there isn't much Illustrator can't do. It can also be a much more useful tool than Photoshop when it comes to sketching and exploring the early stages of a design.

**PRO:** More fluid workflow and working completely in vectors mean that the process can be quicker and easier.

**CON:** There's no endless list of third-party plugins to make your life a little easier like there is with Photoshop.



## SKETCH

[bohemiancoding.com/sketch](http://bohemiancoding.com/sketch)

Sketch is a beautiful, lightweight and very powerful design app. The Mac-only software began life as a drawing package but was quickly adopted by web and UI designers due to its flexibility and rich feature list. It allows for export of PNG and CSS assets as well as on-the-fly previews for all iOS device sizes.

**PRO:** Predetermined UI element styles make creating buttons and sliders a breeze.

**CON:** After being in the Adobe family so long, it's hard to get used to Sketch's tools and interface.



# IMAGE IS EVERYTHING

[www.advancedphotoshop.co.uk](http://www.advancedphotoshop.co.uk)

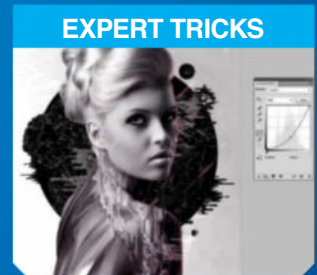


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# Get started with Node.js



Discover the power behind the making of fast, scalable apps  
**Page 82**

# GETTING STARTED WITH



**GET STARTED WITH THE SERVER-SIDE JAVASCRIPT PROGRAMMING LANGUAGE NODE.JS AND EXPLORE THE DYNAMIC CAPABILITIES OF THIS POWERFUL DEVELOPMENT PLATFORM**

**J**avaScript, a language feared by many and loved by many more, has proven its value in the modern web landscape, dramatically changing the face of web development.

The coupling of both client-side and server-side JavaScript means that developers can now build and create a unified language application using JSON, while reusing existing developer skillsets and resources. So, what once could have only been manageable through employing Flash or Java Applets is now available, easily, for all developers to manage and build.

Node.js is a core library packaged and built upon Google's V8 JavaScript runtime, enabling developers to build fast, scalable applications that can handle a large number of concurrent connections at any one time thanks to its event-driven, non-blocking I/O model.

Originally developed by Ryan Dahl, having been inspired by real-time applications such as Gmail, Node.js aims to provide the ability to create powerful web applications with push capabilities - perfect for real-time data deployment and management.

Node.js can greatly enhance the performance of your applications thanks to its single-thread nature and can also, as a result, reduce the costs of running your servers and instances. So, with all that in mind, let's dig a little deeper and explore Node.js.



# INSTALL NODE.JS

The task of installing Node.js is far from a daunting one – you can be up and running in a matter of moments!



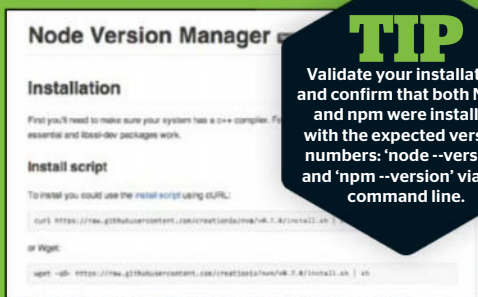
## 01 Platform-specific installers

By far the easiest method to install Node.js onto your operating system is to use one of the OS-specific installers available directly from the Node.js website as a Windows or OS X installer, or the binary source code.



## 02 Homebrew OS X package manager

If you're running OS X, you can use the powerful Homebrew package manager tool to install Node.js for you and automatically symlink where relevant. Install Homebrew from `brew.sh` and run the `'brew install node'` command to get underway.



**TIP**  
Validate your installation and confirm that both Node and npm were installed with the expected version numbers: `'node --version'` and `'npm --version'` via the command line.

## 03 Node Version Manager

Similar to Ruby Version Manager, you can use the open source project called Node Version Manager ([github.com/creationix/nvm](https://github.com/creationix/nvm)), which enables you to install multiple versions of Node.js and select which one to use for a specific project via the command line.

# CREATE A RUNNING SERVER

Build a web server using the built-in Node.js API

A great learning exercise for Node.js is building a web server. Thanks to the `http` API, it isn't a huge task and doesn't involve much code. In the following we'll put together a simple server that will respond with static content served from a sub directory.

## 01 Preparation

To house all of our web server code, create a new folder with a file called `'server.js'`. We also need a sub-directory of this called `'public'` to hold our static web files to be served. For testing, you may want to either copy some existing files into the `'public'` folder or create some simple HTML pages.

## 02 Deal with requests

To deal with incoming web requests, we can use the `'http'` API. This allows you to create a server that will listen on a given port for requests. Each request will be queued and fire the function when Node is ready.

```
001 var http = require('http');
002 var onRequest = function(req, resp) {
003   resp.end('Hello World');
004   http.createServer(onRequest).listen(8888);
```

## 03 Control the port

We may have services already using port 8888 and it would be nice to have a way to easily set the port we'll use. Passing it as a command line argument is a simple method for doing so: `'node server.js 9999'`.

```
001 var port = process.argv[2] || 8888;
002 http.createServer(onRequest).listen(port);
```

## 04 From URL to file path

To safely handle URL parsing and easily strip information from it, we use the `'url'` API, then, to handle paths easily, the `path` API. For now we'll construct the path and return it to the browser.

```
001 var http = require('http'), url = require('url'),
002   path = require('path');
003 var port = process.argv[2] || 8888;
004 var onRequest = function(req, res) {
005   var uri = url.parse(req.url).pathname;
006   var file = path.join(process.cwd(), 'public', uri);
007   res.end(file);
008   http.createServer(onRequest).listen(port);
```

## 05 Check existence

It's important to check that the file requested isn't above our public directory and exists before we try and return anything. This provides us a chance to also create a 404 and 500 error handler. To perform the checks, we can use the `'fs'` and `'path'` APIs.

```
001 var http = require('http'), url = require('url'),
002   path = require('path'), fs = require('fs');
003 var port = process.argv[2] || 8888,
004   publicDir = path.join(process.cwd(), 'public');
005 var handle404 = function(req, resp) {
006   resp.writeHead(404);
007   console.log(404);
008   resp.end('404');
009 var handle500 = function(req, resp) {
010   resp.writeHead(500);
011   console.log(500);
012   resp.end('500');
013 var handle200 = function(file, resp) {
014   console.log('200: ' + file);
015   resp.writeHead(200);
016   resp.end(file);
017 var onRequest = function(req, resp) {
018   var uri = url.parse(req.url).pathname;
019   var file = path.join(publicDir, uri);
020   if (publicDir !== file.substr(0, publicDir.length)) {
021     return handle500(req, resp);
022   fs.exists(file, function(exists) {
023     if (!exists) return handle404(req, resp);
024     if (fs.statSync(file).isDirectory()) {
025       file = path.join(file, 'index.html');
026       fs.exists(file, function(indexExists) {
027         if (!indexExists) {
028           return handle404(req, resp);
029         return handle200(file, resp);
030       });
031     } else {
032       return handle200(file, resp);
033     }
034   });
```

## 06 Stream files

The final step is to stream the files. Node.js takes advantage of streams in its `'http'` API, making it simple to pipe the files into the `resp` object.

```
001 // replace: resp.end('404'); with...
002 fs.createReadStream(
003   path.join(publicDir, '404.html')
004 ).pipe(resp);
005 // replace: resp.end('500'); with...
006 fs.createReadStream(
007   path.join(publicDir, '500.html')
008 ).pipe(resp);
009 // replace: resp.end(file); with...
010 fs.createReadStream(file).pipe(resp);
011
```



# COMMAND LINE NODE

There are plenty of benefits to familiarising yourself with the command line – and it's not as difficult as you think

The command line interface can be daunting for some developers as it's not necessarily something they deal with often – or have ever had to deal with. Node.js is run from the command line and the invaluable npm command line tool set impressively manages and maintains your application dependencies and configuration from the command prompt as well.

## NPM commands

Node.js applications require a file called 'package.json', inside of which metadata for your project is written, as well as the modules installed and associated with it. Use npm to help generate this for you using 'npm init' and follow the on-screen instructions to fill out the data.

'npm install' and 'npm uninstall' will work to fetch all of the modules required and uninstall any unwanted ones from your project's module directory.

## Node.js REPL

Thanks to the command line capabilities, developers also have the ability to interact with the underlying engine as opposed to just running scripts. This opens up the Node.js REPL (which stands for Read Eval Print Loop) and means you can run and execute JavaScript

functions and expressions directly in the Terminal window. By simply typing the 'node' command into the command prompt you enter the inner workings of the engine and can run your code samples against it for immediate testing purposes.

If you'd like more detailed information or to try and follow some useful tutorials on the benefits and use cases for REPL interaction, make sure you pay a visit to [www.nodelabs.org/repl.html](http://www.nodelabs.org/repl.html).

## Command line utilities

Embrace the ecosystem and features offered by the command line capabilities and develop your very own executable command line utilities to cater for any special requirements your development process or organisation may require. There are many useful online resources to help you with this, including the following, available at [monkeh.me/86ayb](http://monkeh.me/86ayb).

Take control of the command line as part of your development process or simply by using the features provided by Node.js and have fun!

**TIP**  
**STREAMLINE WORKFLOW**  
Node is not just for the server. Use it to install and run task runners such as Grunt and Gulp to streamline your front-end development workflow.



# NODEJS IN ACTION

Node.js applications and sites are everywhere on the web. Here we take a look at some of the big names using the language in production



## Trello

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

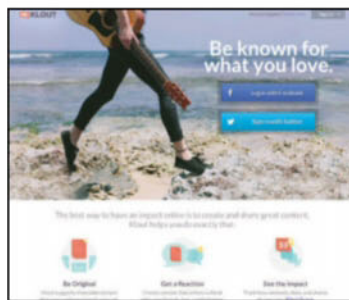
The team behind Trello, the popular online planning tool, used Node.js on the server-side, as Trello needed to handle a number of open connections at a time – to which Node.js is ideally suited thanks to its non-blocking I/O capabilities. The full blog post regarding the reasoning for their development stack is available at: [monkeh.me/kwyis](http://monkeh.me/kwyis).



## LinkedIn

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

LinkedIn rebuilt its mobile application and decided to implement Node.js for its mobile application server ([monkeh.me/uuz5](http://monkeh.me/uuz5)). This acts as a rest endpoint for the mobile device requests, as well as interacting with its in-house platform API and database. The revision saw its server instances drop from 15 down to just 4, handling twice the original traffic.



## Klout

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

Previously running its app on a LAMP stack, the popular social media brand had the chance to write its app from the ground up and chose to dive head first into a full Node.js environment, working closely with the core Node.js team. Klout found it to be an incredibly CPU-efficient environment to continue to build upon ([monkeh.me/awela](http://monkeh.me/awela)).



## LearnBoost

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

Not only did online academic tool provider LearnBoost choose to build its application entirely on Node.js, it was also the employer of the prolific TJ Holowaychuk, a GitHub committer who is responsible for an incredibly large number of some of the most popular Node modules available, including Express and Socket.io.





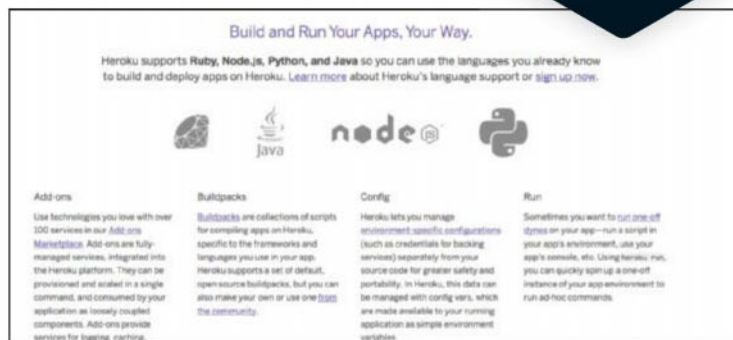
# DEPLOY A NODE SERVER

Deploy your Node.js project using Heroku's free hosting services

Once you have a Node.js app ready, you'll need to deploy it for others to access. Heroku makes for a great choice for hosting your first Node.js project, thanks to its free tier providing 1 CPU, 512MB RAM and a PostgreSQL database (10,000 row limit). You can always scale up further if needed, but at a price.

## TIP

There are alternative places to deploy, such as OpenShift. They also have a free tier for hosting Node.js and use git for deployments.



## Prerequisites

To begin the process, Heroku offers a toolbelt. This is a command line package to ease creation and management of apps on Heroku and is available from **toolbelt.heroku.com**. Make sure your Node.js code also has a 'package.json' file ready, with all the modules required listed inside it. If not, use 'npm init' to create it and any installed will be listed. Open this file up, as you'll need to tell Heroku which version of Node.js you require by adding the following before the final curly bracket:

```
001 "engines": {
002   "node": "0.10.x"
003 }
```

Heroku also needs to know how to fire up your code. Create a file called Procfile, alongside your 'package.json' file, containing the following line with a reference to your main application script:

```
001 web: node web.js
```

Finally, you have to manage your code with git, which is included in the toolbelt if you don't have it already. If you already do, this step can be skipped but be sure to have 'node\_modules' ignored, as Heroku will take care of module installation for you.

```
001 git init
002 echo node_modules> .gitignore
003 git add .
```

## Deployment

Now it's time to log into Heroku, providing your email and password at the prompt. Then you can create an 'app' with them and push your code.

```
001 heroku login
002 heroku create
003 git push master heroku
```

You will initially see all of the normal git push messages, which will then be followed by the Heroku deployment messages. This will include detection of a Node.js deployment, the version of Node.js that's required, dependency installation and then finally the launching of the instance.

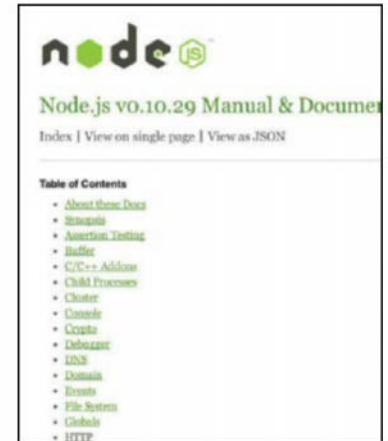
# RESOURCES

Check out these useful sites that can help you with your Node development

## Node.js docs

[nodejs.org/api](http://nodejs.org/api)

The first port of call for all things Node should be the official documentation site. The complete API is broken down into a subset of each available method grouping. These contain detailed code examples for each specific method, along with information for all parameters and functional requirements. As the official resource, this is most likely to be kept up to date with every future release.



## The Node Beginner Book

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

If you're completely new to Node and development in general, have some basic knowledge and want to ramp up, or you are adding Node.js to an existing development skillset and alternate language knowledge, *The Node Beginner Book* is a great resource. The first 21 pages are available online for free and two full books can be purchased for the same as the cost of lunch for a day – a worthy investment.



## Node School

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

One of the best ways to learn is by doing and this resource manages that exceedingly well. Tutorials are well written, varied in topic and are fully interactive through the command line. Simply install a specific Node module for each lesson and follow the steps to run and verify your code. Each step delves deeper into the processes and tasks at hand.



# PLUGINS AND MODULES

Explore the Node Package Manager toolset and extend your application using modules

## TIP

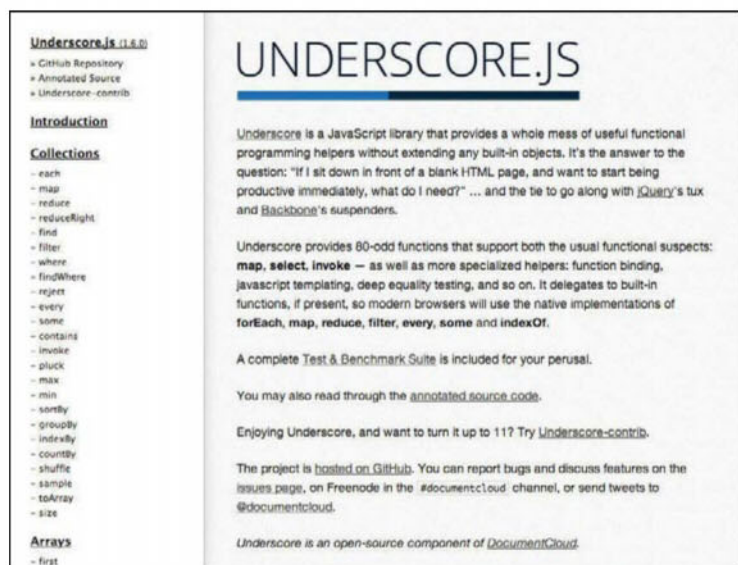
**NPM COMMANDS**  
A full list of available npm commands can be viewed in the terminal window by typing 'npm -help' into the command prompt.

The Node.js installation includes the 'npm' command line tool, which grants powerful and efficient means for extending your application. This can be done by installing plugins through the online registry of user-submitted modules, projects and resources as well as managing your currently installed modules and dependencies. You can browse, search and explore the npm online registry at [npmjs.org](http://npmjs.org).

These modules (Node Packaged Modules, hence 'npm') are, in essence, ordinary JavaScript files developed following the additional guidelines and requirements of the CommonJS module spec ([monkeh.me/ibjhb](http://monkeh.me/ibjhb)). Each module is a standalone Node.js app that itself can have numerous dependencies on other modules within the registry. As a result, each installation of a module will use the intelligent loading

and dependency checks to install all modules it relies upon until all have been resolved based upon your initial installation request.

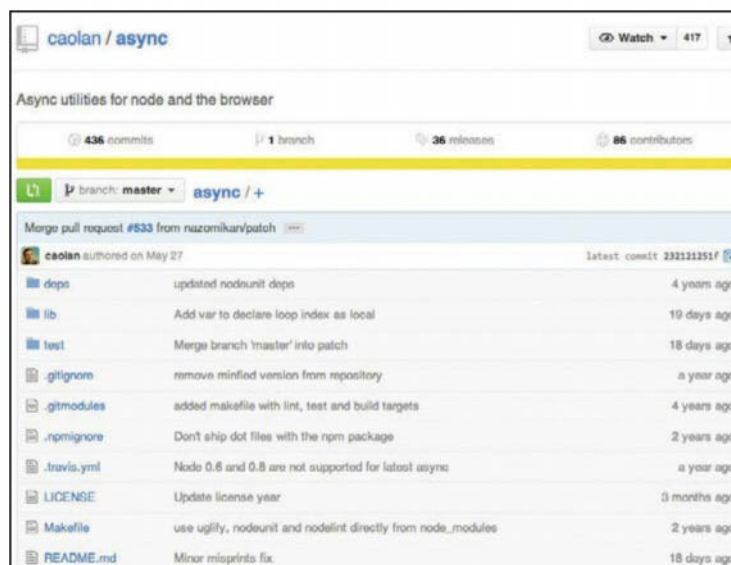
Here we take a look at some of the most popular modules available, as well as those that have some of the highest number of dependencies within other modules and plugins.



## Underscore

[npmjs.org/package/underscore](http://npmjs.org/package/underscore)

Underscore is a powerful JavaScript library that provides a vast number of functional programming helpers that do not extend any of the built-in objects, keeping it an independent extension to the programming platform.



## Async

[npmjs.org/package/async](http://npmjs.org/package/async)

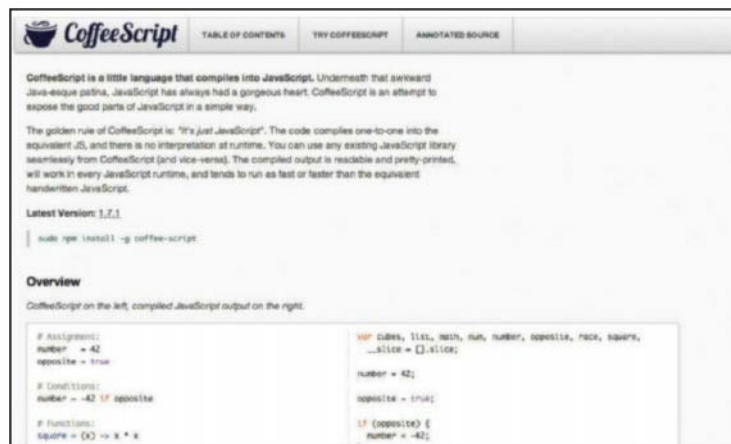
Async provides some powerful functions for working with asynchronous JavaScript, which can also be used independently of Node.js. This utility module contains around twenty functions to help streamline your control flow.



## Express

[npmjs.org/package/express](http://npmjs.org/package/express)

ExpressJS is a fully functioning web application framework for Node.js, inspired by the popular Sinatra framework for Ruby applications. It is ideal for creating anything from full-blown web apps to RESTful APIs.



## CoffeeScript

[npmjs.org/package/coffee-script](http://npmjs.org/package/coffee-script)

CoffeeScript helps empower developers by allowing them to write clean, clear and concisely formatted and readable code, which is then compiled into fully functioning JavaScript for inclusion into your application.



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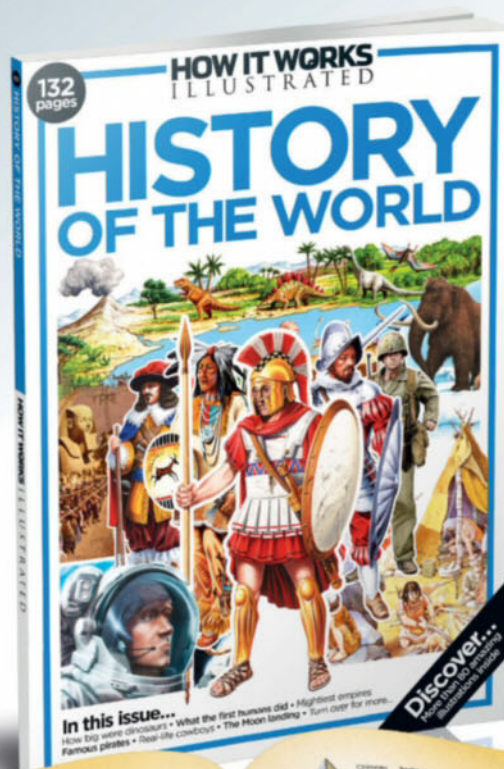
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# Build a listing application with AngularJS

Discover how to use Angular \$http requests and the resulting JSON data to create a filtered listing

**tools | tech | trends** AngularJS, JavaScript, HTML, JSON  
**expert** Luke Guppy

Full code  
found on the  
resource CD



**T**he days of users waiting for page reloads when filtering and ordering information are long gone. With the increased capability of browsers to run more complex code, JS applications are becoming a key part of most website builds. AngularJS is a powerful application framework that makes large applications easier to create. The data and presentation layers are clearly separated and easy to manage. With its own HTTP request methods and a cut-down version of jQuery built in (jqLite), AngularJS provides all the tools needed for web app development.

We will cover the app setup, retrieval of data from web services, binding data to your HTML and then filtering it for the user. All Controllers, Services and Filters are created within Angular modules, making each module reusable and the app easy for other developers to extend. It is easier to manage these modules as separate files but it is recommended that these files are bundled together in a live environment, reducing HTTP requests for the app.

## 01 Set up the HTML

Start by adding a reference to AngularJS from the Google CDN to your HTML page. Then, add a reference to your application on the body tag using an attribute as shown. If you use the 'data-ng-' prefix for your Angular attributes as opposed to 'ng-', your HTML will be valid.

```
001 <!DOCTYPE html>
002 <html lang="en" xmlns="http://www.w3.org/1999/xhtml">
003 <head>
004   <meta charset="utf-8" />
005   <title>Angular Listing App</title>
006   <script src="http://ajax.googleapis.com/ajax/libs/
    angularjs/1.2.15/angular.min.js"></script>
007 </head>
008 <body data-ng-app="listingApp">
009 </body>
010 </html>
```

## 02 Create the scripts

In your scripts folder, create a folder for modules. Then create a file named 'myApp.js' in the scripts folder and a file named 'listing.js' in the modules folder - be sure to reference these in your HTML page. Add the following code to these files; this defines your core application and uses dependency injection to add your module to this application.

```
001 //modules/listing.js
002 angular.module('listing.module', [])
003 //myApp.js
004 var myApp = angular.module
    ('listingApp', ['listing.module']);
```

## 03 Add a controller

Define a controller in listing.js and pass in \$scope - all data and methods defined in this controller will extend \$scope. Add a reference to your new


controller in your HTML page and you can then display any data defined in \$scope. In a browser window you should now see the \$scope.title value displayed in a h1 tag.

```
001 <!DOCTYPE html>
002 <html lang="en" xmlns="http://www.w3.org/1999/xhtml">
003 <head>
004   <meta charset="utf-8" />
005   <title>Angular Listing App</title>
006   <script src="http://ajax.googleapis.com/ajax/libs/
    angularjs/1.2.15/angular.min.js"></script>
007   <script src="scripts/modules/listing.js"></script>
008   <script src="scripts/myApp.js"></script>
009 </head>
010 <body data-ng-app="listingApp">
011   <section data-ng-controller="listingCtrl">
012     <h1>{{title}}</h1>
013   </section>
014 </body>
015 </html>
016 //modules/listing.js
017 angular.module('listing.module', [])
018 .controller('listingCtrl', ['$scope', function
    ($scope) {
019   "use strict";
020   $scope.title = "Technology News";
021 }]);
022
```


## 04 Create a data service

Create a services folder and a file named 'listingServices.js'. In this file you can create a services module with a data service providing GET and POST methods using Angular's \$http methods. These GET and POST methods accept a callback function to pass the retrieved data to.

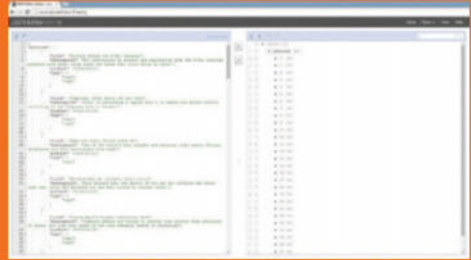




**<Above>**  
• All file downloads are available from [angularjs.org](http://angularjs.org) or on GitHub, along with extensive documentation and tutorials



**<Above>**  
• Properties defined within your controller \$scope are available to render within your HTML using Handlebars syntax



**<Above>**  
• Create, edit and visualise JSON data using [www.jsoneditoronline.org](http://www.jsoneditoronline.org), making data changes quick and easy

```

001 angular.module('listing.services', [])
002 .service('data', ['$http', function ($http) {
003   "use strict"
004   this.get = function (url, callback) {
005     $http({ method: 'GET', url: url }).
006     success(function (data, status, headers, config) {
007       // this callback will be called asynchronously
008       // when the response is available
009       callback(data);
010     }).
011     error(function (data, status, headers, config) {
012       // called asynchronously if an error occurs
013       // or server returns response with an error
014       status.
015       throw "No data returned from " + url;
016     });
017   this.post = function (url, callback, obj) {
018     $http({ method: 'POST', url: url, data: obj }).
019     success(function (data, status, headers, config) {
020       // this callback will be called asynchronously
021       // when the response is available
022       callback(data);
023     }).
024     error(function (data, status, headers, config) {
025       // called asynchronously if an error occurs
026       // or server returns response with an error
027       status.
028       throw "No data returned from " + url;
029     });
030 }]);

```

## 05 Create some test data

Now we have a service to make HTTP requests, we need some data. If you are working with a web service that is already available to you then you can use this. In this tutorial we will be using some test JSON data as a separate file, created using [www.jsoneditoronline.org](http://www.jsoneditoronline.org) with the following structure.

```

001 {
002   "articles": [
003     {
004       "title": "Science behind the D-Day landings",
005       "description": "How innovations in science and

```

```

006       engineering made the D-Day landings possible
007       with giant troop tanks and tanks that could
008       drive on water.",
009       "pubDate": "2014-02-14",
010       "tags": [
011         "tag1",
012         "tag4"
013       ]
014     },
015     {
016       "title": "...",
017       "description": "...",
018       "pubDate": "...",
019       "tags": [
020         ...
021       ]
022     }
023   ]
024 }

```

## 06 Add your service

To use the methods within your service you need to add the reference to your service script in your HTML page and inject this module and its methods into your controller as shown. You can pass a URL and callback function to the 'data.get' method. You should now see the data logged out in your browser console.

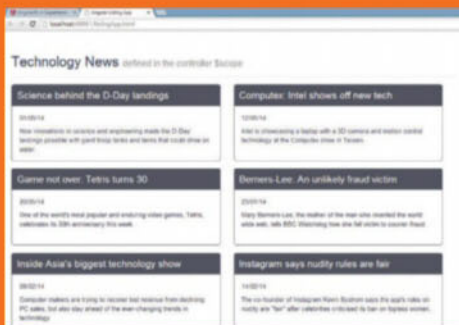
```

001 angular.module('listing.module', ['listing.services'])
002 .controller('listingCtrl', ['$scope', 'data', function
003   ($scope, data) {
004     'use strict';
005     $scope.title = "Technology News";
006     $scope.setData = function (data) {
007       $scope.articles = data.articles;
008       console.log($scope.articles);
009     }
010     data.get('articles.json', $scope.setData)
011 }]);

```

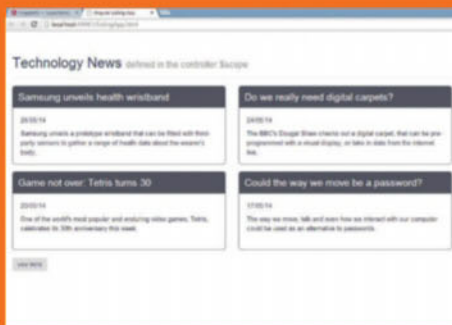
## 07 Render your data

Now the data is stored within the controller \$scope it can be displayed within the HTML page. For an array of items a repeater can be used that will render the HTML element bound for each item in the data set. Properties held within each data item are also available to be rendered as shown with the 'title' and 'description' properties.



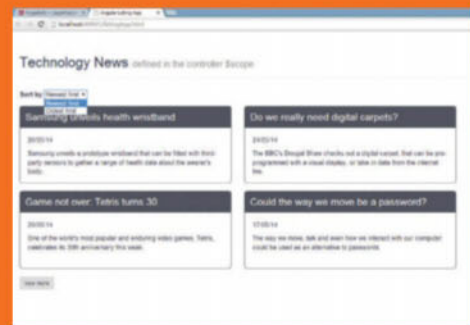
## &lt;Above&gt;

- By using Angular bindings in your HTML you can render a listing from the stored data



## &lt;Above&gt;

- The number of items in view is defined in the controller \$scope, any ordering will still apply to the full set of data



## &lt;Above&gt;

- Ordering is simple to adjust and can be applied to any consistent data within your listed items

```
001 <ul>
002   <li data-ng-repeat="article in articles">
003     <h2>{{article.title}}</h2>
004     <p>{{article.description}}</p>
005   </li>
006 </ul>
```

## 08 Handling dates

Dates can be stored in a range of formats and can be converted within an Angular binding. Simply add ' | date' after your property reference and your chosen format option eg `article.pubDate | date:'m/d/yy'`. You can see the range of format options available at [docs.angularjs.org/api/ng/filter/date](https://docs.angularjs.org/api/ng/filter/date).

```
001 <ul>
002   <li data-ng-repeat="article in articles">
003     <h2>{{article.title}}</h2>
004     <p>{{article.pubDate | date:'dd/MM/yy'}}</p>
005     <p>{{article.description}}</p>
006   </li>
007 </ul>
008 //modules/listing.js
009 $scope.viewLimit = 4;
```

## 09 Ordering and Limiting

To order the listing, an 'orderBy' filter can be added to the repeater; this can be followed by 'true' to reverse this ordering. To control the number of items shown in the list a 'limitTo' filter can be set. The value for limitTo must be a number and we can store this in our controller as `$scope.viewLimit`.

```
001 <ul>
002   <li data-ng-repeat="article in articles |
003     orderBy:'pubDate':true | limitTo: viewLimit">
004     <h2>{{article.title}}</h2>
005     <p>{{article.pubDate | date:'dd/MM/yy'}}</p>
006     <p>{{article.description}}</p>
007   </li>
```

## 10 View more

Now add a button after your listing labelled 'View more'. Use the Angular click binding to increase the `$scope.viewLimit` value and display more articles. In this example the number will be incremented by eight each time.

The Angular hide binding is also used to hide the button; if all data items are displayed, it expects an expression returning a boolean value.

```
001 <button data-ng-click="viewMore(8)" data-ng-
002   hide="viewLimit >= articles.length">view more</button>
003 //modules/listing.js
004 $scope.viewMore = function(num){
005   $scope.viewLimit += num;
006 }
```

## 11 Add a sort option

As the listing is already ordered, it is simple to provide a select drop-down for the user to adjust the ordering. The Angular model binding can be used to bind any HTML element to an item in the model or `$scope`. Create `$scope.descending` in your listing module and then build a select drop-down bound to it. Now replace the 'true' value for reversing the orderBy filter with a reference to this new property.

```
001 <div class="controls">
002   <label for="sortBy">Sort by</label>
003   <select id="sortBy" data-ng-model="descending">
004     <option value="true">Newest first</option>
005     <option value="false">Oldest first</option>
006   </select>
007 </div>
008 <ul>
009   <li data-ng-repeat="article in articles |
010     orderBy:'pubDate':descending | limitTo: viewLimit">
011     <h2>{{article.title}}</h2>
012     <p>{{article.pubDate | date:'dd/MM/yy'}}</p>
013     <p>{{article.description}}</p>
014   </li>
015 </ul>
016 //modules/listing.js
017 $scope.descending = true;
```

## 12 Simple text filter

Add a text input to your page with an Angular model binding. Then, add this new model property as a filter on your repeater. As there is no need to set a default, this model binding doesn't have to be explicitly created in the `$scope`. This will update the listed items as the text field is typed, matching by string.



```
001 <div class="controls">
002   <input type="text" data-ng-model="query" placeholder
003     ="search news" />
004   <label for="sortBy">Sort by</label>
005   <select id="sortBy" data-ng-model="descending">
006     <option value="true">Newest first</option>
007     <option value="false">Oldest first</option>
008   </select>
009 </div>
010 <ul>
011   <li data-ng-repeat="article in articles |
012     filter: query | orderBy:'pubDate':descending |
013     limitTo: viewLimit">
014     <h2>{{article.title}}</h2>
015     <p>{{article.pubDate | date:'dd/MM/yy'}}</p>
016     <p>{{article.description}}</p>
017   </li>
018 </ul>
```

## 13 Custom filtering

A custom filter can be created as a module and injected into your listing module. This receives the array of items and a filter object and returns a new filtered array. Create a new folder named 'filters' and a new file named listingFilters.js with an Angular module as shown.

```
001 angular.module('listing.filters', [])
002 .filter('newsFilter', function () {
003   return function (items, filters) {
004     }
005   });
006 //modules/listing.js
007 angular.module('listing.module', ['listing.services',
008   'listing.filters'])...
```

## 14 Use angular.forEach

Now the angular.forEach method can be used to iterate over the data items to be filtered. Add this method, passing in the items and change the 'filter' on your listing repeater to 'newsFilter'. If you log out each item you can check this is running correctly before building your filters object.

```
001 <ul>
002   <li data-ng-repeat="article in articles
003     | newsFilter: filters | orderBy:'pubDate':descending
004     | limitTo: viewLimit">
005     <h2>{{article.title}}</h2>
006     <p>{{article.pubDate | date:'dd/MM/yy'}}</p>
007     <p>{{article.description}}</p>
008   </li>
009 </ul>
010 //filters/listingFilters.js
011 angular.module('listing.filters', [])
012 .filter('newsFilter', function () {
013   return function (items, filters) {
014     angular.forEach(items, function (item) {
015       console.log(item);
016     });
017   };
018   return items;
019 }
```

## 15 Create some filters

In your controller \$scope create a filters object to include your search text property (remember to change the reference to 'query' in your HTML page) and an array of tags. Each tag should have label[string] and selected[boolean] properties. You can then render a checkbox for each tag in your HTML page, as shown below.

```
001 <input type="text" data-ng-model="filters.
002   query" placeholder="search news" />
003 <div class="clear">
004   <div data-ng-repeat="tag in filters.
005     tags" class="checkbox">
006     <label for="{{tag.label}}">{{tag.label}}</label>
007     <input id="{{tag.label}}" type="checkbox" data-ng-
008       -checked="{{tag.selected}} />
009   </div>
010 </div>
011 //modules/listing.js
012 $scope.filters = {
013   query: "",
014   tags: [
015     {
016       label: "tag1",
017       selected: false
018     },
019     {
020       label: "tag2",
021       selected: false
022     },
023     {
024       label: "tag3",
025       selected: false
026     },
027     {
028       label: "tag4",
029       selected: false
030     }
031   ]
032 }
```

## 16 Filter for text

In the filter module now add a check against filter.query. Start with an empty array named 'filtered', then check each item for the search text defined. If the item matches, add it to the filtered array, then return the filtered array.

## 17 Filter for tags

Extend the filter function to check through all selected tags and compare against the tags of each item. This filter can be extended to support any data structure or range of filters you need. Just make sure that the filters are all held within the filters object passed to this function and you cater for any empty or null values.

## 18 Fix the view more button

Once the filtering is implemented you may notice that the 'View more' button does not get hidden when fewer items match the filters. This is because it is bound to the total number of items. Instead, you can access the total number of filtered items by creating a new 'filtered' variable within your HTML.

```
001 <ul>
002   <li data-ng-repeat="article in filtered =
```

```

    (articles | newsFilter: filters) | orderBy:
    'pubDate':descending | limitTo: viewLimit">
003   <h2>{{article.title}}</h2>
004   <p>{{article.pubDate | date:'dd/MM/yy'}}</p>
005   <p>{{article.description}}</p>
006 </li>
007 </ul>
008 <button class="btn" data-ng-click="viewMore(8)"
    data-ng-hide="viewLimit >= filtered.length">view
    more</button>

```

## 19 Results numbering

Now the total number of filtered items and total number of items can be displayed to the user by simply adding a text element above the listing. This is a common requirement for filtered listings.

```
001 <p>{{filtered.length}} articles of {{articles.length}}
    match your search.</p>
```

## 20 Use multiple controllers

In many applications you will need to share Properties in the \$scope of one controller with another. As \$scope relates to a specific controller you need to create \$rootScope to share properties and inject it into each controller. Create a run function on your controller and add a test property to \$rootScope.

```
001 .run(['$rootScope', function ($rootScope) {
002   $rootScope.testValue = "I am in rootScope";
003 }]);
```

## 21 Share \$rootScope

Now you can share \$rootScope by injecting it into each controller you need to. As well as providing access to anything defined within \$rootScope, it can also be extended from any controller. Make a new controller in your listing module and add this new controller into your HTML page.

```

001 <section data-ng-controller="testCtrl">
002   <h2>{{dataFromRoot}}</h2>
003 </section>
004 //modules/listing.js
005 .controller('testCtrl', ['$scope', '$rootScope',
    function ($scope, $rootScope) {
006   $scope.dataFromRoot = $rootScope.testValue;
007 }])
008 .run(['$rootScope', function ($rootScope) {
009   $rootScope.testValue = "I am in rootScope";
010 }]);
011

```

## 22 Utilise \$watch

If you have a property or dataset being changed within \$rootScope you can use the \$watch method to listen for that change and then act upon it. This provides a vital connection across multiple controllers and modules, allowing you to build much more complex applications.

```

001 $rootScope.$watch('testData', function(newValue,
    oldValue){
002   // $rootScope.testData has been updated
003 });
004

```

## Code library

### The application structure

Keep your code separated into modules and you can build up your application reusing these components:

```
001 var myApp = angular.module('listingApp',
    ['listing.services', 'listing.filters', 'listing.
    module']);
```

Your application file needs to include any required modules to be injected, but should only define the structure.

```

002 angular.module('listing.services', [])
003 .service('data', ['$http', function ($http) {
004   "use strict"
005   this.get = function (url, callback) {
006     $http({ method: 'GET', url: url }).
007     success(function (data, status, headers,
    config) {
008       // this callback will be called
    asynchronously
009       // when the response is available
010       callback(data);
011     }).
012     error(function (data, status, headers, config) {
013       // called asynchronously if an error occurs
014       // or server returns response with an
    error status.
015       throw "No data returned from " + url;
016     });
017   };
018   this.post = function (url, callback, obj) {
019     $http({ method: 'POST', url: url, data: obj }).
020     success(function (data, status, headers, config) {
021       // this callback will be called asynchronously
022       // when the response is available
023       callback(data);
024     }).
025     error(function (data, status, headers, config) {
026       // called asynchronously if an error occurs
027       // or server returns response with an error
    status.
028       throw "No data returned from " + url;
029     });
030   };
031 }]);

```

Services and Filters can be created and managed independently of any Controllers modules but, again, any dependencies must be declared.

## Dependency injection

Dependencies for modules and methods within Angular are provided including namespace strings as well as the object references. This ensures that, when minified, the namespaces remain unchanged so that your dependency references remain intact.



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# Speed up your workflow with the Gulp task runner

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Discover how you can build a plugin with Gulp and extend it to meet your specific needs

**tools | tech | trends** Gulp, Node, JavaScript  
**expert** Tim Stone



**W**e should have some ways of connecting programs like [a] garden hose – screw in another segment when it becomes necessary to massage data in another way.” This was written on a memo by Doug McIlroy

in 1964 and it's still true today. The principle makes sense when applied to a build system, which is a series of automated commands that are run either each time you save a file or before you push to a production environment. Gulp can be used to run tasks like image optimisation as well as CSS and JS minification. It's similar to Grunt but prides itself on its ease of use and efficiency.

We're going to write a Gulpfile and a plugin. The plugin will scan a CSS file for images and convert those image references to Base64. Base64 is a way to encode images within a file without linking to it externally. We'll then use Mocha to test our plugin. There's already a Gulp plugin that does this, but the one we'll build bears no resemblance to it.

## 01 Create a Gulpfile

To use Gulp we first need a file of instructions called 'gulpfile.js'. This defines the process and order that our build process will follow. Ours is going to convert our images and then minify the CSS with the gulp-minify-css plugin. Here we're requiring the modules to use and specifying where our CSS files are.

```
001 var gulp = require('gulp'),
002     gulpBase64 = require('./index.js'),
003     minifyCSS = require('gulp-minify-css'),
004     paths = {
005       css: 'client/css/**/*.css'
006     };
007
```

## 02 Write a task

To specify a Gulp task we pass a string (the ID of the task) and a callback function to run when that task is invoked. Gulp handles passing the files to our plugin through piping. Pipes are a powerful way to chain together different bits of functionality to perform complex operations.

```
001 gulp.task('css', function() {
002   return gulp.src(paths.css)
003     .pipe(gulpBase64())
004     .pipe(minifyCSS())
005     .pipe(gulp.dest('build/css'));
006 });
007
```

## 03 Running Gulp

We then specify the default tasks to run when the Gulp file is run, in our case it's simple because we only have one. In your Terminal navigate to the folder and simply run 'gulp' to run your Gulpfile. Gulp then displays output as each task is run, letting you know the duration of each task. You can run tasks individually too, with '\$ gulp css', for example.

```
001 gulp.task('default', ['css']);
002 $ gulp
```

## 04 Plugin dependencies

We're going to write our own plugin that will analyse a CSS file, find all the images, check to see if they're under a certain size and then convert them to Base64. First we're requiring all of the modules that we'll use (on the disc these are in a package.json file, so you can run 'npm install' to grab them all).

```
001 var through = require('through2'),
002     gutil = require('gulp-util'),
003     fs = require('fs'),
004     q = require('q'),
005     path = require('path'),
006     PluginError = gutil.PluginError;
```

## 05 Const and config

We use the ES6 keyword 'const' to define the plugin name; 'const' tells our program that this value won't change (it'll be constant). We then make a 'config' object that will store any default configuration details. We currently only have one, the maximum size (in kilobytes) that our images should be. We've used kilobytes instead of bytes to make it more usable.

```
001 const PLUGIN_NAME = 'gulp-base64';
002 var config = {
003   limit: 8
004   };
005
```

## 06 Module export

We point 'module.exports' to the main function in our plugin; this is what is exposed when we require this module in other files. Because our configuration object is basic we replace it if 'options' exists (ideally you'd do some more rigorous checking!). 'through' is a wrapper for streams – Gulp pipes a file to us and 'through' handles receiving it.



```

Tims-MacBook-Pro:base64ify timstone$ npm install gulp
npm WARN package.json gulp-base64@0.1.0 No repository field.
npm WARN package.json gulp-base64@0.1.0 No README data
gulp@3.7.0 node_modules/gulp
├─ tildify@0.2.0
├─ interpret@0.3.3
├─ pretty-hrtime@0.2.1
├─ deprecated@0.0.1
├─ archy@0.0.2
├─ minimist@0.1.0
├─ semver@2.3.0
├─ chalk@0.4.0 (has-color@0.1.7, ansi-styles@1.0.0, strip-ansi@0.1.1)
├─ orchestrator@0.3.3 (sequencify@0.0.7)
├─ liftoff@0.11.1 (extend@1.2.1, resolve@0.7.0, findup-sync@0.1.3)
├─ vinyl-fs@0.2.0 (graceful-fs@2.0.3, map-stream@0.1.0, mkdirp@0.5.0, strip-bom@0.3.1, glob-watcher@0.0.6, glob-stream@3.1.11)
Tims-MacBook-Pro:base64ify timstone$

```



gulp.js  
The streaming build system

**<Top left>**

- Gulp is installed through npm (`$ npm install -g gulp`) and is run as a command line program

**<Top right>**

- As well as touting its benefits, the Gulp site links to a number of helpful resources on GitHub

**<Bottom left>**

- This is what a buffer looks like: it's a series of pairs that correlate to raw memory

**<Bottom right>**

- When an image is not found we log a message to the console – yellow is recommended for non-breaking messages

```

Tims-MacBook-Pro:base64ify timstone$ gulp
[gulp] Using gulpfile ~/Dropbox/Web Designer/base64ify/gulpfile.js
[gulp] Starting 'css'...
<Buffer 62 6f 64 79 20 7b 0a 20 20 20 20 62 61 63 6b 67 72 6f 75 6e 64 3a 20 75
72 6c 28 27 62 63 6c 69 65 6e 74 2f 69 6d 61 67 65 73 2f 74 65 73 74 2e 70 6e 67 27
...>
[gulp] Finished 'css' after 22 ms
[gulp] Starting 'default'...
[gulp] Finished 'default' after 15 μs
Tims-MacBook-Pro:base64ify timstone$

```

```

Tims-MacBook-Pro:base64ify timstone$ gulp
[gulp] Using gulpfile ~/Dropbox/Web Designer/base64ify/gulpfile.js
[gulp] Starting 'css'...
[gulp] gulp-base64 "lol.png" was not found.
[gulp] Finished 'css' after 30 ms
[gulp] Starting 'default'...
[gulp] Finished 'default' after 7.03 μs
Tims-MacBook-Pro:base64ify timstone$

```

```

001 function base64 (options) {
002   config = options || config;
003   return through.obj(function(file, encode, callback) {
004     });
005 }
006 module.exports = base64;
007

```

## 07 Check null files

Part of the Gulp plugin guidelines states that if a file's contents can't be read then we shouldn't throw an error, we should just pass it through. 'through' includes some convenience methods like 'isNull' to help us with this. Later on we'll write a test to ensure this behaviour never changes.

```

001 if (file.isNull()) {
002   self.push(file);
003   return callback();
004 }

```

## 08 Throwing errors

Files can come in two types: a buffer or a stream. It's recommended that plugins support both types but if it doesn't then we emit an error through the 'gulp-util' PluginError helper. Plugins shouldn't throw their own errors, they should always use this method and preface errors with the plugin name.

```

001 if (file.isStream()) {
002   new PluginError(PLUGIN_NAME, 'This plugin does not
support streams');
003 }

```

## 09 Buffer checking

We're going to be handling buffers in our plugin, so the rest of this program will be within this statement. A buffer is like an array that points to bits of memory to form a whole. This makes them very efficient but something

**Plugin resources**  
The Gulp guide on writing a plugin is the de facto resource for plugin developers: [github.com/gulpjs/gulp/tree/master/docs/writing-a-plugin](https://github.com/gulpjs/gulp/tree/master/docs/writing-a-plugin).

that most JavaScript developers don't usually have to deal with; thankfully Node makes it all relatively straightforward.

```

001 if (file.isBuffer()) {
002   // next step
003 }

```

## 10 Convert buffer

A file's contents are stored as a buffer; to convert this into something that we can read, we call 'toString' so that we can treat it as we would any other string. We set our initial starting position, create an empty array to push found images into, and cache the number of images (here we're just looking for the frequency of 'url').

```

001 var css = file.contents.toString(),
002     lastIndex = 0,
003     images = [],
004     numberOfImages = css.match(/url/g) ? css.match(/
url/g).length : 0;
005

```

## 11 Find image paths

To extract the path we look for 'url' from the last index until there are no 'url' matches left. This approach has one main limitation, that it requires

```
Tims-MacBook-Pro:base64ify timestone$ gulp
[gulp] Using gulpfile ~/Dropbox/Web Designer/base64ify/gulpfile.js
[gulp] Starting 'css'...
[gulp] gulp-base64 "client/images/test2.png" was too large to encode.
[gulp] Finished 'css' after 40 ms
[gulp] Starting 'default'...
[gulp] Finished 'default' after 16 μs
Tims-MacBook-Pro:base64ify timestone$
```

### <Above>

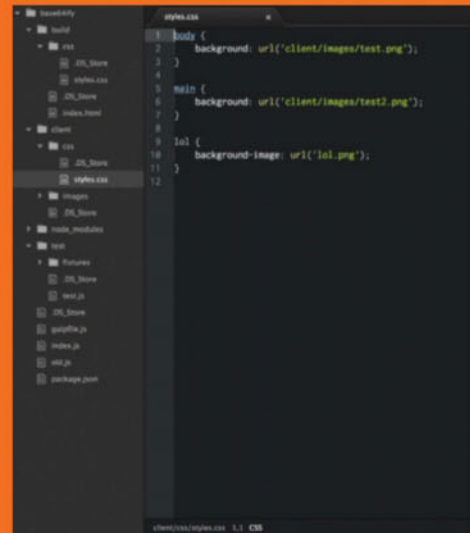
- If an image is too big to be processed we'll show an informational message to the user

```
Tims-MacBook-Pro:base64ify timestone$ npm install mocha
npm WARN package.json gulp-base64@1.0.0 No repository field.
npm WARN package.json gulp-base64@1.0.0 No README data
mocha@1.20.0 node_modules/mocha
├── debug@0.8.1
├── diff@0.7.0
├── growl@1.7.0
├── commander@2.0.0
├── mkdirp@0.3.5
├── jade@0.26.3 (commander@0.6.1, mkdirp@0.3.0)
├── glob@3.2.3 (inherits@2.0.1, graceful-fs@2.0.3, minimatch@0.2.14)
Tims-MacBook-Pro:base64ify timestone$
```

### <Above>

- Installing Mocha is a straightforward process, again through npm. You should include this as a devDependency in your package.json

```
Tims-MacBook-Pro:base64ify timestone$ mocha
..
2 passing (17ms)
Tims-MacBook-Pro:base64ify timestone$
```



### <Above>

- The outputted CSS file. Node writes the file and passes it onto the next process in the Gulpfile

images to be wrapped in single quotes. If the path isn't already converted to Base64 then we push it to our 'images' array to process later.

```
001 for (var i = 0; i < numberOfImages; i++) {
002   var start = css.indexOf('url', lastIndex) + 5,
003     end = css.indexOf('\"', start),
004     imgPath = css.substring(start, end);
005   lastIndex = start;
006   if (imgPath.indexOf('base64') === -1)
007     images.push(imgPath);
008 }
```

## 12 Making a promise

'readFiles' is quite complicated because we now want to loop through each of our found image paths, read their contents asynchronously, and pass it back only when all the files have been processed. To achieve this we're going to use a popular promise library called Q. If there are no images then we immediately resolve the promise.

```
001 var readFiles = function () {
002   var deferred = q.defer();
003   var numberOfProcessedImages = 0;
004   if (!images.length) {
005     deferred.resolve();
006   }
007   // next step
008 };
```

## 13 Reading file stats

Within the loop we create a closure to maintain the value of 'i'. 'fs.stat' is a Node filesystem method for getting file stats, we do this because we want to know the size of the file without loading the entirety of it into memory. If the file is not found then we'll show a message in red to let the user know.

```
001 for (var i = 0; i < images.length; i++) {
```

```
002   (function (i) {
003     fs.stat(images[i], function (err, data) {
004       numberOfProcessedImages++;
005       if (err) {
006         gutil.log(gutil.colors.yellow
007           ('\"' + images[i] + '\" was not found.'));
008       } else {
009         // next step
010       }
011     })(i);
012 }
```

## 14 Create read stream

If the file is small enough then we'll create a read stream. No matter what size the user specifies, it must be below 32kb otherwise IE 8 won't display it. Each chunk of data that we receive is pushed to an array, which will contain all of the chunks, so we'll eventually have the entire file.

```
001 if (data.size < config.limit * 1024 && data.size
002   < 32768) {
003   var all = [];
004   fs.createReadStream(images[i])
005     .pipe(through.obj(function (chunk, enc, cb) {
006       all.push(chunk);
007       cb();
008     })))
```

## 15 Convert to Base64

To join all of the buffers together we must use Buffer's 'concat' method. To convert this image data to Base64 we simply call 'toString', passing the encoding that we'd like. We then find where the image is in 'css' and replace it with the encoded version. If we have processed all of the images, then we resolve the promise at this point too.



```
001 .on('data', function (data) {
002   //push chunk of data to array
003   all.push(data);
004 })
005 .on('end', function () { //once all of file read
006   var base64 = Buffer.concat(all).toString('base64');
007   var ext = path.extname(images[i]);
008   css = css.replace(images[i], 'data:image
009   /' + ext + ';base64,' + base64);
010   if (numberOfImages === numberOfProcessedImages) {
011     deferred.resolve();
012   }
013 })
```

## 16 Print to console

If our image file's size is too large then we print a message to the console to inform the user. We could add a verbose flag to our plugin to allow users more control over what they see; part of the Gulp philosophy is code over configuration - 'gulp-util' includes ways to easily colour-code messages.

```
001 } else {
002   gutil.log(gutil.colors.blue('"' + images[i] + '
003   " was too large to encode.'));
004 }
```

## 17 Return promise

At the end of 'readFiles' we return a promise to let the plugin know not to carry on with the other Gulp processes while we run our asynchronous file reads. This is important as otherwise our plugin will carry on potentially writing to a file when other plugins are trying to do the same.

```
001 return deferred.promise;
```

## 18 Call callback

Once all of the files are read and the promise is resolved the 'then' callback is called. To write the new contents to our CSS file we can convert our 'css' string back to a buffer and simply assign 'file.contents' to it. We then return the callback to let 'through' know to carry on.

```
001 readFiles().then(function () {
002   file.contents = new Buffer(css);
003   self.push(file);
004   return callback();
005 });
```

## 19 Test dependencies

Plugins must be testable, so we write a couple of tests to check our plugin is working. We're going to use a testing framework called Mocha. Create a folder called 'test' and a file called 'test.js', then require our dependencies.

```
001 var assert = require('assert'),
002     gutil = require('gulp-util'),
003     gulpBase64 = require('../index'),
004     fs = require('fs'),
005     es = require('event-stream'),
006     path = require('path');
```

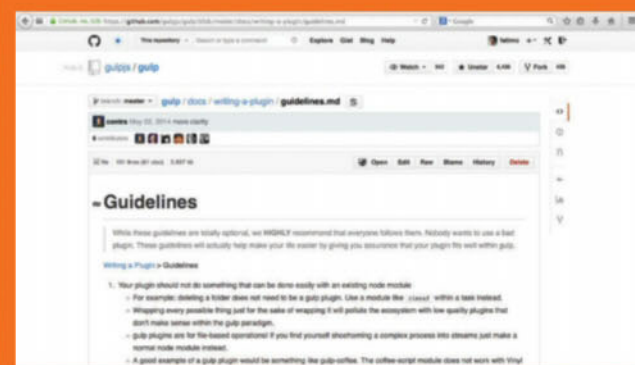
## 20 Describe test

We describe our module and then functionality within that module. If we supported streaming this would allow us to test in both buffer and stream

## Why adhere to the stringent Gulp guidelines?

Gulp has a set of guidelines for plugin writers at [bit.ly/TIJ2aG](http://bit.ly/TIJ2aG). It states that plugins should do one thing well and make use of other plugins to reduce complexity. As well as this, it shouldn't duplicate functionality that other plugins provide. This follows the Unix philosophy of small programs loosely coupled to build a larger one.

The goal of these guidelines is to keep a high-quality ecosystem to decrease the amount of plugins that don't work and increase developer happiness. Currently any npm module that has a keyword of 'gulpplugin' is added to their list, but eventually these plugins will have to meet some acceptance criteria that will ensure the plugin meets the expected standards in order to be listed.



## Base64 a silver bullet?

Base64 does inflate the size of an image by roughly 33 per cent, but generally you make it up in the time it would take to make another network request.

modes, or whichever major blocks of functionality you decide to test. 'describe' is for grouping tests that make sense to put together and you can nest these as deep as you want.

```
001 describe('gulp-base64', function() {
002   describe('in buffer mode', function() {
003   });
004 });
```

## 21 Create fake file

Our first test makes sure that we're generating the correct output. The more human-readable your tests are the better, but because we're dealing with files there's quite a lot of setup to do beforehand. We're using the 'File' helper in 'gulp-util' to create a fake file from the contents of another.

```
001 it('should encode images to base64 and generate a
002   css file', function(done) {
003   var filename = path.join(__dirname, '/fixtures/
004   styles-pre.css');
```

```
005   path: filename,
006   contents: new Buffer(fs.readFileSync(filename))
007 });
008 //next step
009 });
```

## 22 Assert contents

Our plugin returns a 'through' stream that we can listen to. We use Node's 'assert' capability to ensure the file that is returned from our plugin matches the expected output. 'styles.css' within the fixtures folder is a static file that has the image already encoded. When the test has completed we call 'done' to fully complete the test.

```
001 var stream = gulpBase64();
002 stream.on('data', function (newFile) {
003   var file = fs.readFileSync(path.join(__dirname, '
004     /fixtures/styles.css'), 'utf8').toString();
005   assert.equal(String(newFile.contents), file);
006   done();
007 });
```

## 23 Write to stream

We've added the data event listener but not started writing the fake input file to our plugin. We do this by writing it to the stream with the 'write' method, which passes the data to the stream, which triggers the 'data' event.

```
001 vstream.write(input);
```

## 24 Pass null files

Our second test will make sure that our plugin adheres to the Gulp guidelines, which states that files with no contents are just passed along. We can test this by creating a file with no contents and test to see if the data event is triggered. If the file has been processed then we can pass it on.

```
001 it('should ignore files with no content', function
002   (done) {
003   var stream = gulpBase64(),
004     n = 0,
005     filename = path.join(__dirname, '/fixtures
006     /styles-pre.css');
007 });
```

## 25 Further assertions

We want to ensure three things: that the files are equal, that the contents are 'null' and that this has only happened once. The structure for these tests comes from the 'gulp-cat' plugin. The Gulp authors encourage learning from other plugins to see how they test but you don't (and shouldn't) have to use Gulp within your tests.

```
001 stream.on('data', function(file) {
002   assert.equal(file.path, filename);
003   assert.equal(file.contents, null);
004   n++;
005   assert.equal(n, 1);
006   done();
007 });
```

## 26 Writing and ending

In the same way we did before, we're writing a fake file to the stream - only this time we are going to set the contents to 'null'. Finally, we close the

```
Tims-MacBook-Pro:base64ify timstone$ node debug index.js
< debugger listening on port 5858
connecting... ok
break in index.js:3
1
2 // through2 is a thin wrapper around node transform streams
3 var through = require('through2');
4 var gutil = require('gulp-util');
5 var fs = require('fs');
debug> s
break in module.js:380
378
379 function require(path) {
380   return self.require(path);
381 }
382
debug> o
break in index.js:4
2 // through2 is a thin wrapper around node transform streams
3 var through = require('through2');
4 var gutil = require('gulp-util');
5 var fs = require('fs');
6 var q = require('q');
debug> █
```

## Working with files in Node and how to debug them

Working with files is difficult. The Gulp documentation has guides on using buffers ([bit.ly/118tHu7](http://bit.ly/118tHu7)) and dealing with streams ([bit.ly/1oTqHRH](http://bit.ly/1oTqHRH)) but the documentation could definitely be consolidated in this area. You'll find the Node documentation on buffers ([nodejs.org/api/buffer.html](http://nodejs.org/api/buffer.html)) and streams ([nodejs.org/api/stream.html](http://nodejs.org/api/stream.html)) invaluable - but it makes a number of assumptions about your understanding.

To debug your app you can use 'console.log', which will output to the console; this can prove helpful but you can also use Node's input debug tools with '\$ node debug index.js'. This way you can then interact with your code as you navigate through it.

## Articles and recipes

You can use Gulp to watch for file changes and perform tasks automatically with 'watch'. You can find many examples at [bit.ly/1xHHL3h](http://bit.ly/1xHHL3h).

stream with 'end', which ensures that no more data can be written to the stream, so the contents should stay as 'null'.

```
001 stream.write(new gutil.File({
002   path: filename,
003   contents: null
004 }));
005 stream.end();
006
```

## 27 Run tests

We can run the tests from Terminal with the 'mocha' command. You'll have to have it installed through npm - if you haven't then you can install it with '\$ npm install mocha'. Mocha will then tell you if a test has passed or failed as well as a stack trace if any errors are encountered.

```
001 $ mocha
```





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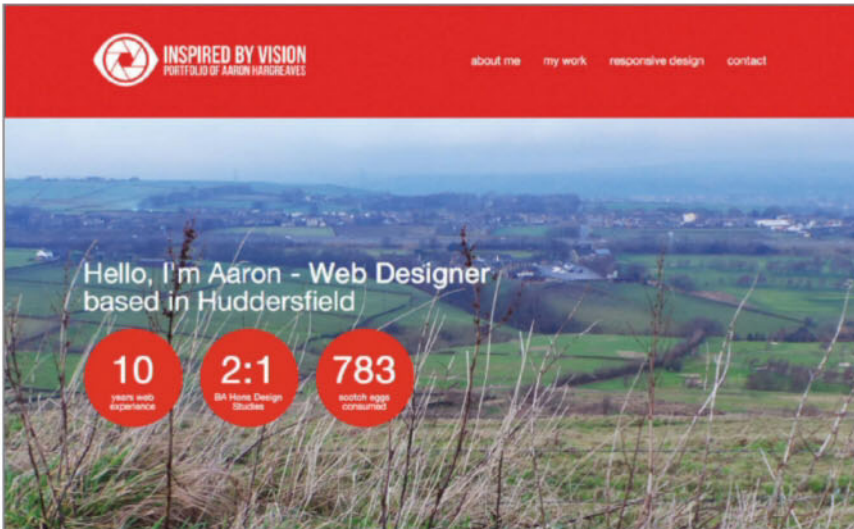


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01 [www.inspiredbyvision.co.uk](http://www.inspiredbyvision.co.uk)

# Aaron Hargreaves

web [www.inspiredbyvision.co.uk](http://www.inspiredbyvision.co.uk)



**Current role** Lead web designer  
**Education** 2:1 BA (Hons) degree in Design Studies  
**Expertise** Responsive design, graphic design, UI & UX design, branding, HTML5, CSS3, jQuery, Bootstrap, Flash, WordPress, Photoshop, Illustrator, Dreamweaver,  
**Clients** Humdinger, 188BET, NHS, HiFX, Northcote Manor, Blackburn Cathedral  
**Twitter** @IBVDesign

Aaron is a creative web designer and front-end developer based in Huddersfield, West Yorkshire. Passionate about usability, interactive and responsive design, he has been creating web solutions and mobile applications for start-ups, small businesses and advertising agencies since 2005.

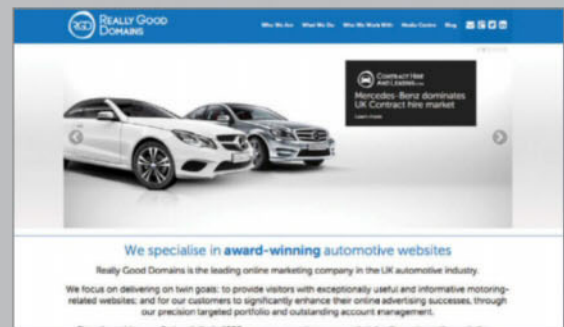
Before falling in love with web design, art and design was always Aaron's passion. After developing an early interest in interior and fashion design, Aaron enjoyed using various different media - from pencil sketches to paint to graphic marker pens before expressing his creative flare with digital design and illustration.

Aaron relishes that being a creative designer can lead you in many different directions and often opens up a range of opportunities. After

choosing to specialise in interactive design and animation, he successfully pursued a career as a web designer/front-end developer, further broadening his skills in HTML and CSS.

Always striving for progression, Aaron gains satisfaction from designing and developing experiences that can be used efficiently from a user's perspective as well as designing bespoke customer relationship management systems and larger corporate applications, which lead to increased sales and traffic.

Understanding how users interact dependent on the device they use is essential when designing a site. Learning more about conversion-centred design and A/B testing has also made Aaron approach his recent projects in a different way.



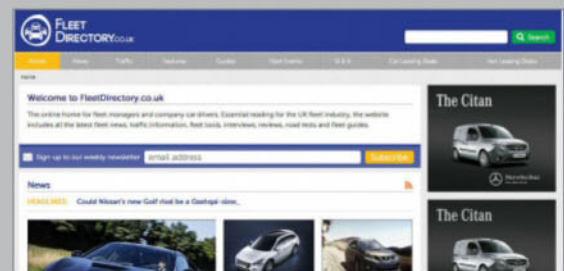
02 [www.reallygooddomains.com](http://www.reallygooddomains.com)



03 [www.inspiredbyvision.co.uk/pcassociates](http://www.inspiredbyvision.co.uk/pcassociates)



04 [www.hellokaty.co.uk](http://www.hellokaty.co.uk)



05 [www.fleetdirectory.co.uk](http://www.fleetdirectory.co.uk)

## 01

A portfolio website created using WordPress. Alex decided to use the custom post type to separate his work and blog posts, allowing for more control of the content.

## 02

With striking header graphics and responsive design, this brochure website for Really Good Domains showcases its portfolio of award-winning websites.

## 03

PC Associates was delivered a responsive brochure site to promote the company, using its branding and utilising large generic header graphics.

## 04

Katy is a talented packaging designer and wanted a website to promote her portfolio. The site was designed to maximise the full scale of the viewport area.

## 05

Fleet Directory is an useful online resource for fleet managers to keep up to date with the industry. This was the first responsive site developed in the RGD portfolio.



# Andy Smith

web [www.andysmithdev.co.uk](http://www.andysmithdev.co.uk)



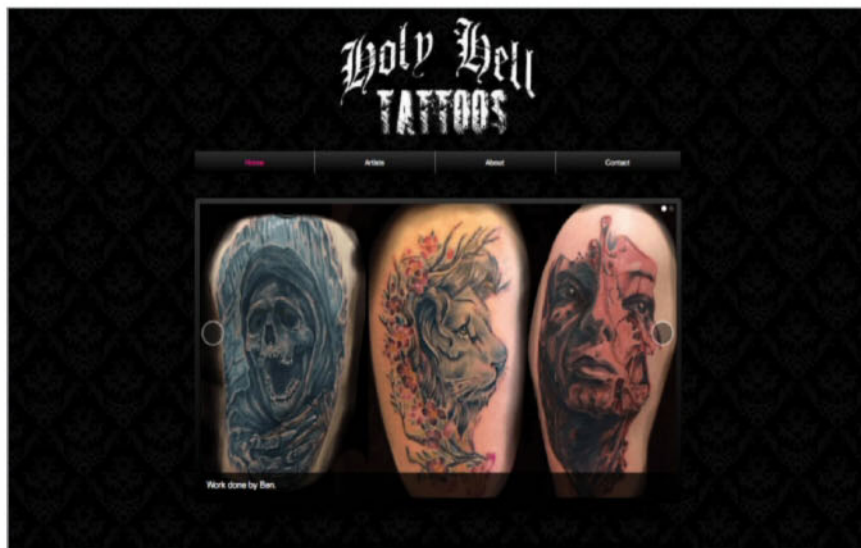
**Current role** Website developer  
**Education** HND Internet Computing, plus nine years' experience  
**Expertise** HTML, CSS, jQuery, XSLT, MVC Razor, Twitter Bootstrap, WordPress, Umbraco, Photoshop, InDesign  
**Clients** Sue Rorstad, Photographic Memories North East, Holy Hell Tattoo  
**Twitter** @Andy85Smith

Andy Smith first developed a passion for web design over ten years ago when he first began to experiment with designing and creating websites on his home PC – and later within college and university.

From this point he started his career working within a variety of roles within the web development industry in the North East of England, working for both small and large digital agencies. Inspired by a desire to create user-friendly and aesthetically pleasing websites that are created around the needs of the user, he has, over the last decade, created websites for both small businesses and large organisations, keeping in mind the individual client's needs with every step of the creation process.

Andy also prides himself on creating all of his websites to a high standard; these fully responsive sites are created using HTML5 and CSS3, however Andy aims to keep up to date on all aspects of the web design industry and is currently familiarising himself with Angular.js. Alongside this he has been developing with Umbraco as a CMS, as well as WordPress to create responsive sites accessible to all users.

Andy loves the way the industry is in a constant state of change, with new technologies and other challenges arising on a regular basis, keeping his work on the forefront of the development industry. Andy has recently moved to Devon with his fiancée Megan, where he continues to progress in his development career in a new role in the area.



01 [holyhelltattoo.co.uk](http://holyhelltattoo.co.uk)

## 01

This is the official website for a tattoo studio based in the North East, showcasing the work of the artists in the studio. The focus of the website is on the artists' portfolios.

## 02

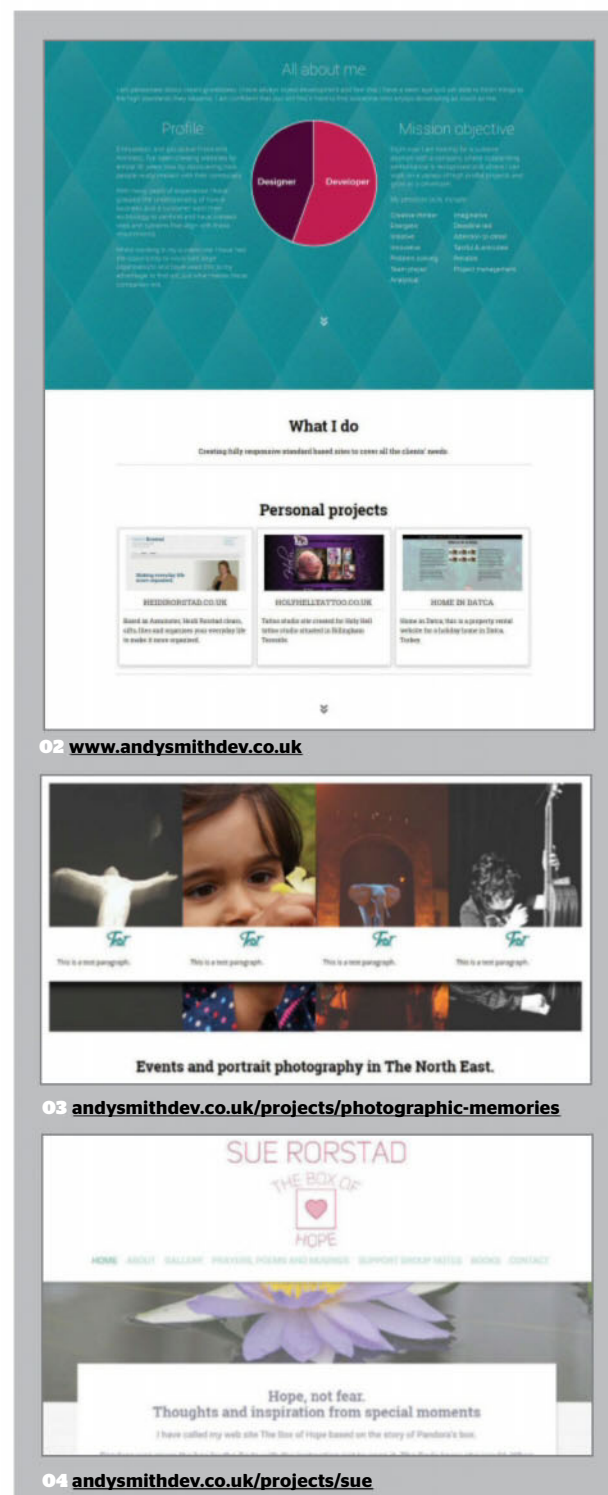
Andy's professional portfolio site was developed using HTML5 and CSS3 in order to create an engaging experience for the visitor. Various graphics also showcase in a visual way Andy's skills and what he is capable of.

## 03

This website was created for a photographer. Naturally the site is dominated by the striking photos, with text being brought into focus as the visitor scrolls through.

## 04

An inspirational blog written by a cancer patient for others. The website was created using pastel colours and friendly-looking fonts to promote a relaxed experience.



02 [www.andysmithdev.co.uk](http://www.andysmithdev.co.uk)

03 [andysmithdev.co.uk/projects/photographic-memories](http://andysmithdev.co.uk/projects/photographic-memories)

04 [andysmithdev.co.uk/projects/sue](http://andysmithdev.co.uk/projects/sue)

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 <b>1 &amp; 1 Internet Ltd</b> www.1and1.co.uk	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	£59.88	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	£83.88	Unlimited	Unlimited	5,000	✓	✗	✓	✓	✓	✓	✓	✓
	1&1 Business (Linux)	0844 335 12 11	£119.88	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	Free	✓	✓	✓
	1&1 Business (Windows)	0844 335 12 11	£119.88	Unlimited	Unlimited	Unlimited	✓	✗	✓	✓	Free	✓	✓	✓
 <b>111WebHost</b> 111webhost.com	Budget Web Hosting Pack	N/A	£10	1GB	1GB	5	✓	✗	Add-on	N/A	✗	✓	✓	✗
	WordPress Web Hosting Pack	N/A	£20	5GB	2GB	100	✓	✓	Add-on	N/A	✗	✓	✓	✗
	Startup Web Hosting Pack	N/A	£25	5GB	Unlimited	100	✓	✓	Add-on	N/A	✗	✓	✓	✗
	Unlimited Web Hosting Pack	N/A	£50	Unlimited	Unlimited	Unlimited	✓	✓	Add-on	N/A	✗	✓	✓	✗
	Unlimited Multi-site Web Hosting Pack	N/A	£300	Unlimited	Unlimited	Unlimited	✓	✓	Add-on	N/A	✗	✓	✓	✗
123-reg (www.123-reg.co.uk)	Starter	0845 859 0018	£29.88	1GB	5GB	20	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Plus	0845 859 0018	£59.88	5GB	50GB	500	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Pro	0845 859 0018	£107.88	10GB	100GB	750	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Bus Pro	0845 859 0018	£179.88	20GB	Unlimited	1,000	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Plus (MS)	0845 859 0018	£59.88	2GB	25GB	100	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Pro (MS)	0845 859 0018	£107.88	5GB	50GB	500	✓	✗	✗	✓	✓	✓	✓	✗
123-reg (www.123-reg.co.uk)	Bus Pro (MS)	0845 859 0018	£179.88	10GB	150GB	1,000	✓	✗	✗	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	Light User	0870 321 2020	£45	20MB	1GB	3	✓	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	Everyday	0870 321 2020	£100	200MB	10GB	15	✓	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	Business/Pro	0870 321 2020	£275	500MB	20GB	50	✓	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	JAVA Tomcat	0870 321 2020	£300	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✓	✗
2020Media (www.2020media.com)	ASP.Net	0870 321 2020	£275	100MB	3GB	15	✓	✓	✓	✓	✓	✓	✓	✗
 <b>4D Hosting</b> www.4dhosting.com	Big Web Hosting	0207 183 0602	£60	5GB	Unlimited	20	✓	✓	✓	✓	✓	✓	✓	✓
	Bigger Web Hosting	0207 183 0602	£120	10GB	Unlimited	75	✓	✓	✓	✓	✓	✓	✓	✓
	Biggest Web Hosting	0207 183 0602	£180	20GB	Unlimited	100	✓	✓	✓	✓	✓	✓	✓	✓
	Big VPS	0207 183 0602	£204	75GB	500GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	Bigger VPS	0207 183 0602	£360	100GB	1,000GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	Biggest VPS	0207 183 0602	£720	200GB	1,500GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Home	N/A	£40	500MB	5GB	5	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Business	N/A	£50	1GB	20GB	100	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	eCommerce	N/A	£100	2GB	40GB	200	✓	✓	✓	✓	✗	✓	✓	✗
Blackfoot Hosting Ltd (www.blackfoot.co.uk)	Professional	N/A	£150	3GB	60GB	300	✓	✓	✓	✓	✗	✓	✓	✗
Blacknight (www.blacknight.com)	Minimus	35359 918 3072	£45	10GB	200GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Blacknight (www.blacknight.com)	Medius	35359 918 3072	£79	20GB	400GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Blacknight (www.blacknight.com)	Maximus	35359 918 3072	£45	30GB	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Starter Linux	N/A	£130	2,000MB	2,000MB	10	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Starter Windows	N/A	£20	2,000MB	2,000MB	10	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Business Linux	N/A	£45	4,000MB	4,000MB	4,000	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Business Windows	N/A	£45	4,000MB	4,000MB	4,000	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Ultimate Linux	N/A	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✗	✓	✓	✗
Bravo14 (http://bravo14.co.uk)	Ultimate Windows	N/A	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✗	✓	✓	✗
CityCM (www.citycm.co.uk)	City250	0330 223 0120	£10.99	250MB	5GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City500	0330 223 0120	£14.99	500MB	10GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City2000	0330 223 0120	£29.90	2GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City10000	0330 223 0120	£49.90	10GB	100GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	CityR10	0330 223 0120	£120	10GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	CityR20	0330 223 0120	£180	20GB	100GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	CityR30	0330 223 0120	£240	30GB	150GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City VPS15	0330 223 0120	£180	15GB SSD	400GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City VPS30	0330 223 0120	£300	30GB SSD	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
CityCM (www.citycm.co.uk)	City VPS75	0330 223 0120	£420	75GB SSD	600GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓





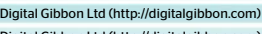
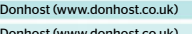
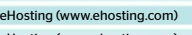

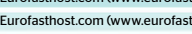
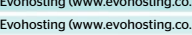
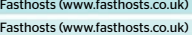
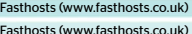
## Featured host of the month: 111WebHost 111webhost.com



Getting more out of one of our quality listed hosting providers

111WebHost is a provider committed to making website hosting easy to use while offering the best possible value. It provides solutions for small- and medium-sized businesses as well as individuals – and web designers and developers are high on their list. 111WebHost offers a range of top-value packages starting at

the ridiculously low price of £1 per month. For this, users get 1GB of webspace and 1GB of monthly traffic. For those looking for more, there is 5GB of webspace and unlimited traffic for just £2.50 a month. Unlimited webspace and traffic is available for just £5 a month. They also provide specialist hosting for WordPress, Joomla and Drupal.

NAME AND URL	PACKAGE	PHONE NUMBER	COST PER YEAR	WEB SPACE	MONTHLY BANDWIDTH	POP3 ACCOUNTS	DATABASE SUPPORT	SHOPPING CART	VIRUS FILTER	FIREWALL	PHONE SUPPORT	EMAIL SUPPORT	WEB CONTROL PANEL	SERVICE LEVEL AGREEMENT
 <b>Cyber Host Pro</b> <a href="http://www.cyberhostpro.com">www.cyberhostpro.com</a>	Budget	0845 527 9345	£29.99	500MB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	Home	0845 527 9345	£50.00	2GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	Business	0845 527 9345	£100	5GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	Linux Reseller Starter	0845 527 9345	£99.90	5GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	Windows Reseller Bronze	0845 527 9345	£229.90	20GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	WordPress Pro	0845 527 9345	£49.90	1GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
 <b>Domaincheck</b> <a href="http://www.domaincheck.co.uk">www.domaincheck.co.uk</a>	WordPress Lite	0845 527 9345	£99.90	5GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	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	✓	✓	✓	✓	✓	✓	✓
	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	✓	✓	✓	✓	✓	✓	✓
 <b>Digital Gibbon Ltd</b> <a href="http://digitalgibbon.com">www.digitalgibbon.com</a>	Digital Gibbon Ltd ( <a href="http://digitalgibbon.com">http://digitalgibbon.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	✓	✓	✓	✓	✓	✓	✓
	Digital Gibbon Ltd ( <a href="http://digitalgibbon.com">http://digitalgibbon.com</a> )	Business Professional	01865 589 990	£132	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓
 <b>Donhost</b> <a href="http://www.donhost.co.uk">www.donhost.co.uk</a>	Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Bronze	0191 2612252	£30+VAT	500MB	5GB	5	✓	✓	Optional	✓	✓	✓	✓
	Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Silver	0191 2612252	£50+VAT	1000MB	10GB	10	✓	✓	Optional	✓	✓	✓	✓
	Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Gold	0191 2612252	£100+VAT	2500MB	50GB	25	✓	✓	Optional	✓	✓	✓	✓
	Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Platinum	0191 2612252	£200+VAT	5000MB	100GB	50	✓	✓	Optional	✓	✓	✓	✓
	Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Small	0191 2612252	£10	20GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
	Donhost ( <a href="http://www.donhost.co.uk">www.donhost.co.uk</a> )	Small	0191 2612252	£10	20GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓
 <b>eHosting</b> <a href="http://www.ehosting.com">www.ehosting.com</a>	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	✓	✓	✓	✓	✓	✓	✓
 <b>Equipahase</b> <a href="http://www.equipahase.net">www.equipahase.net</a>	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	✓	✓	✓	✓	✓	✓	✓
	Equipahase ( <a href="http://www.equipahase.net">www.equipahase.net</a> )	Bronze	0121 314 4865	£30	200MB	2GB	10	✓	✓	✓	✓	✓	✓	✓
	Equipahase ( <a href="http://www.equipahase.net">www.equipahase.net</a> )	Silver	0121 314 4865	£42	400MB	5GB	20	✓	✓	✓	✓	✓	✓	✓
 <b>Eurofasthost</b> <a href="http://www.eurofasthost.com">www.eurofasthost.com</a>	Equipahase ( <a href="http://www.equipahase.net">www.equipahase.net</a> )	Gold	0121 314 4865	£72	800MB	10GB	100	✓	✓	✓	✓	✓	✓	✓
	Equipahase ( <a href="http://www.equipahase.net">www.equipahase.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	✓	✓	✓	✓	✓	✓	✓
 <b>Evohosting</b> <a href="http://www.evohosting.co.uk">www.evohosting.co.uk</a>	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	✓	✓	✓	✓	✓	✓	✓
	Fasthosts ( <a href="http://www.fasthosts.co.uk">www.fasthosts.co.uk</a> )	Personal	0808 168 6777	£32.87	5GB	Unlimited	50	✓	✓	✓	✓	✓	✓	✓
	Fasthosts ( <a href="http://www.fasthosts.co.uk">www.fasthosts.co.uk</a> )	Business Bronze	0808 168 6777	£58.38	50GB	Unlimited	500	✓	Option	✓	✓	✓	✓	✓
 <b>Giacom</b> <a href="http://www.giacom.com">www.giacom.com</a>	Fasthosts ( <a href="http://www.fasthosts.co.uk">www.fasthosts.co.uk</a> )	Business Silver	0808 168 6777	£76.39	Unlimited	Unlimited	Unlimited	✓	Option	✓	✓	✓	✓	✓
	Fasthosts ( <a href="http://www.fasthosts.co.uk">www.fasthosts.co.uk</a> )	Business Gold	0808 168 6777	£101.89	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓
	Fasthosts ( <a href="http://www.fasthosts.co.uk">www.fasthosts.co.uk</a> )	WD Starter	0808 168 6777	£149.99	20GB	Unlimited	Unlimited	✓	Option	Option	✓	✓	✓	✓
	Fasthosts ( <a href="http://www.fasthosts.co.uk">www.fasthosts.co.uk</a> )	WD Advanced	0808 168 6777	£199.99	Unlimited	Unlimited	Unlimited	✓	Option	Option	✓	✓	✓	✓
	Giacom ( <a href="http://www.giacom.com">www.giacom.com</a> )	Business Pro	0800 542 7500	£199	100MB	2GB	100	✓	✓	✓	✓	✓	✓	✓
	Giacom ( <a href="http://www.giacom.com">www.giacom.com</a> )	Business Pro	0800 542 7500	£199	100MB	2GB	100	✓	✓	✓	✓	✓	✓	✓
 <b>Heart Internet</b> <a href="http://www.heartinternet.co.uk">www.heartinternet.co.uk</a>	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	Unlimited	Unlimited	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	£349.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓
	Heart Internet ( <a href="http://www.heartinternet.co.uk">www.heartinternet.co.uk</a> )	Reseller Professional	0845 644 7750	£349.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓
	Heart Internet ( <a href="http://www.heartinternet.co.uk">www.heartinternet.co.uk</a> )	Reseller Professional	0845 644 7750	£349.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓

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# Hosting listings

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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
Hostway (www.hostway.co.uk)	Silver	0808 180 1880	£79.50	150MG	3GB	5	✓	Option	✓	✓	✓	✓	✓	✓
Hostway (www.hostway.co.uk)	Gold	0808 180 1880	£139.50	300MB	5GB	10	✓	Option	✓	✓	✓	✓	✓	✓
Hostway (www.hostway.co.uk)	Gold Plus	0808 180 1880	£189.50	450MB	10GB	30	✓	Option	✓	✓	✓	✓	✓	✓
Hostway (www.hostway.co.uk)	Platinum	0808 180 1880	£359.50	600MB	20GB	50	✓	Option	✓	✓	✓	✓	✓	✓
Hostway (www.hostway.co.uk)	Platinum Plus	0808 180 1880	£599.50	1.2GB	40GB	10	✓	Option	✓	✓	✓	✓	✓	✓
Hostway (www.hostway.co.uk)	Email Plus	0808 180 1880	£49.95	50MB	N/A	5	N/A	N/A	N/A	✓	✓	✓	✓	✓
ICUK www.icukhosting.co.uk	Professional	0845 009 9175	£30	250MB	1GB	50	✓	✓	option	✓	✓	✓	✓	✓
ICUK www.icukhosting.co.uk	Advanced	0845 009 9175	£50	2GB	2.5GB	150	✓	✓	option	✓	✓	✓	✓	✓
ICUK (www.icukhosting.co.uk)	Enterprise	0845 009 9175	£80	2GB	500MB	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
ICUK (www.icukhosting.co.uk)	Professional Plus	0845 009 9175	£90	500MB	5GB	100	✓	✓	option	✓	✓	✓	✓	✓
ICUK (www.icukhosting.co.uk)	Premium Plus	0845 009 9175	£150	1GB	12.5GB	500	✓	✓	option	✓	✓	✓	✓	✓
ICUK (www.icukhosting.co.uk)	Enterprise Plus	0845 009 9175	£300	2GB	20GB	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
ICUK (www.icukhosting.co.uk)	Reseller Windows	0845 009 9175	£200	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
ICUK (www.icukhosting.co.uk)	Reseller Linux	0845 009 9175	£200	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
ICUK (www.icukhosting.co.uk)	Reseller Enterprise	0845 009 9175	£500	Unlimited	Unlimited	Unlimited	✓	✓	option	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Mail - M105	0800 043 0153	£15.17	256MB	3GB	50	✓	✓	✓	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Home - H25	0800 043 0153	£24.47	1GB	8GB	50	✓	✓	✓	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Professional - P55	0800 043 0153	£45	2GB	15GB	75	✓	✓	✓	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Reseller - R25	0800 043 0153	£97.88	2GB	30GB	250	✓	✓	✓	✓	✓	✓	✓	✓
JAB Web Hosting (www.jabwebhosting.com)	Reseller - R105	0800 043 0153	£271.60	4GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Blog	01438 342 490	£20	100MB	1GB	5	✓	✓	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Starter	01438 342 490	£30	1GB	1GB	10	✓	✓	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Starter	01438 342 490	£30	1GB	1GB	10	✓	✓	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Dynamic	01438 342 490	£50	2GB	2GB	20	✓	✓	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Premium	01438 342 490	£80	5GB	5GB	50	✓	✓	✓	✓	✓	✓	✓	✓
LCN (www.lcn.com)	Unlimited	01438 342 490	£120	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	LD Budget (Linux)	07891 235858	£11.88	1GB	1GB	500	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	LD Home (Linux)	07891 235858	£23.88	10GB	10GB	5,000	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	LD Pro (Linux)	07891 235858	£41.88	50GB	50GB	20,000	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	LD Unlimited (Linux)	07891 235858	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	Windows Home	07891 235858	£17.88	2GB	2GB	1,000	✓	✓	✓	✓	✓	✓	✓	✓
LD Hosts (http://ldhosts.co.uk)	Windows Unlimited	07891 235858	£60	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Media Temple (http://mediatemple.net)	Shared-Server Pro	+1 310 841 5500	£64	2GB	1TB	1,000	✓	✓	✓	✓	✓	✓	✓	✓
Media Temple (http://mediatemple.net)	Shared-Server Advanced	+1 310 841 5500	£109	5GB	1.5TB	5,000	✓	✓	✓	✓	✓	✓	✓	✓
NameHog (www.namehog.net)	Email Only	01604 212 904	£11.99	2.5GB	15GB	10	✓	✓	✓	✓	✓	✓	✓	✓
NameHog (www.namehog.net)	Starter	01604 212 904	£36.99	10GB	150GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
NameHog (www.namehog.net)	Home Pro	01604 212 904	£59.99	25GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
NameHog (www.namehog.net)	Business	01604 212 904	£109.99	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	StartUp Plus	0845 363 3632	£89.99	500MB	5GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Business	0845 363 3632	£149.99	2,000MB	20GB	100	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Business Plus	0845 363 3632	£89.99	3,000MB	30GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Designer	0845 363 3632	£239.88	1GB	20GB	200	✓	✓	✓	✓	✓	✓	✓	✓
Namesco (www.names.co.uk)	Designer Plus	0845 363 3632	£479.88	Unlimited	30GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
 <b>Netcetera</b> www.netcetera.co.uk	DEVELOPER	0800 808 5450	£32.89	1GB	Unlimited	500	✓	✓	✓	✓	✓	✓	✓	✓
	ONE	0800 808 5450	£109.99	5GB	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓
	RESELLER	0800 808 5450	£274.89	Unlimited	Unlimited	1000	✓	✓	✓	✓	✓	✓	✓	✓
	VM500 Server	0800 808 5450	£300	20GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	2200DC Server	0800 808 5450	£720	160GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	3000DC Server	0800 808 5450	£1,200	2x500GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
	2600QC Server	0800 808 5450	£1,800	2x500GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	Shared 100	0207 1000 424	£60	100MB	1GB	5	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS100	0207 1000 424	£600	5GB	5GB	5	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS200	0207 1000 424	£1,000	10GB	10GB	10	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	VS300	0207 1000 424	£2,000	15GB	50GB	20	✓	✓	✓	✓	✓	✓	✓	✓
Netplan (www.netplan.co.uk)	Dedicated Servers	0207 1000 424	£3,000+	73GB+	1,500GB	100+	✓	✓	✓	✓	✓	✓	✓	✓



## Can you recommend your host?

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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
PurplePaw (www.purplepaw.co.uk)	Email	N/A	£25	100MB	1GB	10	x	x	✓	✓	x	✓	✓	✓
PurplePaw (www.purplepaw.co.uk)	Play	N/A	£40	100MB	1GB	10	x	x	✓	✓	x	✓	✓	✓
PurplePaw (www.purplepaw.co.uk)	Plus	N/A	£65	750MB	5GB	25	✓	✓	✓	✓	x	✓	✓	✓
PurplePaw (www.purplepaw.co.uk)	Power	N/A	£95	2GB	10GB	100	✓	✓	✓	✓	x	✓	✓	✓
PurplePaw (www.purplepaw.co.uk)	R3 Reseller	N/A	£660	10GB	50GB	Unlimited	✓	✓	✓	✓	x	✓	✓	✓
Reddex UK (www.reddexuk.com)	Reddex Design Starter	0843 289 4625	£18	1GB	Unlimited	10	✓	x	✓	✓	✓	✓	✓	✓
Reddex UK (www.reddexuk.com)	Reddex Design Business	0843 289 4625	£59.88	10GB	Unlimited	100	✓	✓	✓	✓	✓	✓	✓	✓
Reddex UK (www.reddexuk.com)	Reddex Design Premium	0843 289 4625	£107.88	100GB	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
STRATO Hosting (www.strato-hosting.co.uk)	STRATO BasicWeb	00800 8007 0070	£48	2GB	Unlimited	1,000	x	x	✓	✓	✓	✓	✓	x
STRATO Hosting (www.strato-hosting.co.uk)	STRATO PowerWeb	00800 8007 0070	£72	6GB	Unlimited	2,000	✓	x	✓	✓	✓	✓	✓	x
STRATO Hosting (www.strato-hosting.co.uk)	STRATO AdvancedWeb	00800 8007 0070	£120	20GB	Unlimited	4,000	✓	x	✓	✓	✓	✓	✓	x
STRATO Hosting (www.strato-hosting.co.uk)	STRATO EnterpriseWeb	00800 8007 0070	£180	50GB	Unlimited	6,000	✓	x	✓	✓	✓	✓	✓	x
Streamline.net (www.streamline.net)	Trial (3 month)	0844 941 1000	N/A	10GB	Unlimited	1,000	✓	Option	✓	✓	✓	✓	✓	x
Streamline.net (www.streamline.net)	Starter	0844 941 1000	£23.88	500MB	Unlimited	20	✓	Option	✓	✓	✓	✓	✓	x
Streamline.net (www.streamline.net)	Personal	0844 941 1000	£41.88	3GB	Unlimited	500	✓	Option	✓	✓	✓	✓	✓	x
Streamline.net (www.streamline.net)	Plus	0844 941 1000	£71.88	10GB	Unlimited	1,000	✓	Option	✓	✓	✓	✓	✓	x
Streamline.net (www.streamline.net)	Multisite	0844 941 1000	£137.88	20GB	Unlimited	Unlimited	✓	Option	✓	✓	✓	✓	✓	x
Swish Hosting (www.swishhosting.co.uk)	Email	08445 67 69 71	£18	-	Unlimited	Unlimited	x	x	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	Windows Hosting	08445 67 69 71	£66	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	Linux Hosting	08445 67 69 71	£66	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	eCommerce	08445 67 69 71	£90	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Swish Hosting (www.swishhosting.co.uk)	SiteBuilder	08445 67 69 71	£12	-	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
Switch Media (www.switchmedia.com)	Switch Standard	0151 236 9111	£159	1GB	50GB	500	✓	x	x	x	✓	✓	x	x
Switch Media (www.switchmedia.com)	Switch Business	0151 236 9111	£249	10GB	150GB	1500	✓	x	x	x	✓	✓	✓	x
Switch Media (www.switchmedia.com)	Business Pro	0151 236 9111	£348.96	20GB	300GB	5000	✓	x	x	x	✓	✓	✓	x
Tidy Web Hosting (www.tidywebhosting.co.uk)	Entry	0844 884 9100	£25	100MB	1GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	x
Tidy Web Hosting (www.tidywebhosting.co.uk)	Home	0844 884 9100	£50	500MB	5GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	x
Tidy Web Hosting (www.tidywebhosting.co.uk)	HomePro	0844 884 9100	£100	1GB	10GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	x
Tidy Web Hosting (www.tidywebhosting.co.uk)	Business	0844 884 9100	£150	2GB	20GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	x
Tidy Web Hosting (www.tidywebhosting.co.uk)	BusinessPro	0844 884 9100	£250	5GB	50GB	Unlimited	✓	✓	✓	✓	✓	✓	✓	x
TwentyHost (www.twentyhost.co.uk)	Basic55	0845 641 0776	£24	100MB	1,500MB	25	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Standard55	0845 641 0776	£45	200MB	3,000MB	50	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Business55	0845 641 0776	£70	500MB	7,500MB	100	✓	✓	✓	✓	✓	✓	✓	✓
TwentyHost (www.twentyhost.co.uk)	Advanced55	0845 641 0776	£110	1,000MB	15,000MB	200	✓	✓	✓	✓	✓	✓	✓	✓
UK2.NET (www.uk2.net)	Starter Hosting	0808 168 2427	£24	500MB	1GB	x	✓	✓	✓	✓	✓	✓	✓	x
UK2.NET (www.uk2.net)	Business Hosting	0808 168 2427	£54	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	x
UK2.NET (www.uk2.net)	Business Cloud	0808 168 2427	£108	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
UK2.NET (www.uk2.net)	Reseller Starter	0808 168 2427	£180	10GB	100GB	10	✓	✓	✓	✓	✓	✓	✓	x
UK2.NET (www.uk2.net)	Reseller Plus	0808 168 2427	£360	Unlimited	Unlimited	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
UK2.NET (www.uk2.net)	Dedicated Server	0808 168 2427	£704	2x500GB	10TB	Unlimited	✓	✓	✓	✓	✓	✓	✓	✓
VARIHOST (www.varihost.net)	WordPress Basic	0208 144 7057	£47.88	2GB	10GB	10	✓	x	x	✓	✓	✓	✓	✓
VARIHOST (www.varihost.net)	WordPress Plus	0208 144 7057	£71.88	4GB	100GB	100	✓	✓	x	✓	✓	✓	✓	✓
VARIHOST (www.varihost.net)	WordPress Extra	0208 144 7057	£119.88	unlimited	Unlimited	Unlimited	✓	✓	x	✓	✓	✓	✓	✓
WebFusion (www.webfusion.co.uk)	Fusion Professional	0845 130 1602	£107.40	5GB	50GB	1,000	✓	x	✓	✓	✓	✓	✓	x
WebFusion (www.webfusion.co.uk)	Fusion Business	0845 130 1602	£179.40	10GB	150GB	1,500	✓	x	✓	✓	✓	✓	✓	x
WebFusion (www.webfusion.co.uk)	Fusion Developer	0845 130 1602	£227.40	20GB	300GB	5,000	✓	x	✓	✓	✓	✓	✓	x
WebFusion (www.webfusion.co.uk)	Fusion Reseller	0845 130 1602	£329.99	Unlimited	Unlimited	Unlimited	✓	x	✓	✓	✓	✓	✓	x
Z-Host (z-host.co.uk)	Z-100	N/A	£15	100MB	10GB	Unlimited	✓	✓	✓	✓	x	✓	✓	✓
Z-Host (z-host.co.uk)	Z-200	N/A	£21	100MB	10GB	Unlimited	✓	✓	✓	✓	x	✓	✓	✓

## Golden rules to top hosting

We identify and explain the key criteria for success...

1

### The best resources for you

Selecting your ideal package is largely determined by the kinds of resources and quantity of features you require from your hosting solution. Key aspects such as web space and monthly bandwidth are important for those services likely to be subjected to heavy amounts of traffic, which is why package solutions for enterprise applications are typically much more expensive. The general rule of thumb is not to buy more than you need or underestimate potential requirements.

2

### Competitive and reliable

The hosting market is big business and hosting providers do try to drive prices down in a bid to entice your custom. Use our chart to compare costs, but be sure to visit the vendor websites to keep track of the latest deals, as they do change. Remember that low price should not always be a deciding factor and that paying a premium for a more reliable, trusted and experienced vendor can offer you much better value for money in the long term.

3

### Putting you in control

Modern hosting is all about giving customers the power to set up, monitor and maintain their web space with minimal fuss. Most commercial vendors offer access to award-winning and intuitive control panels that enable you to log in remotely and intuitively tweak your account - without the need to relay complicated instructions down the phone. Be sure to find out from your potential host as much as you can about the control panel and request a demo.

4

### Fantastic customer support

If all else fails and you need some extra help to get your hosting back online, then a commitment to future customer support is key. Many vendors offer a service-level agreement which outlines what you can expect here, however most will be more explicit about whether phone support is included or email contact is preferred. Think about what you need for your own peace of mind and factor good, comprehensive technical support against the price.

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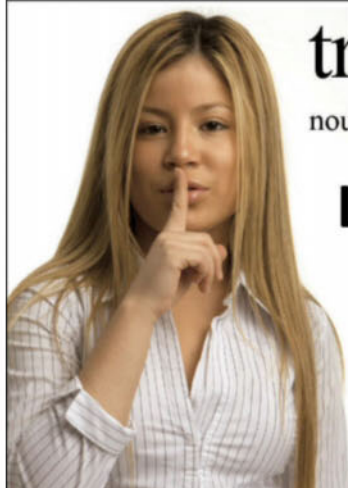
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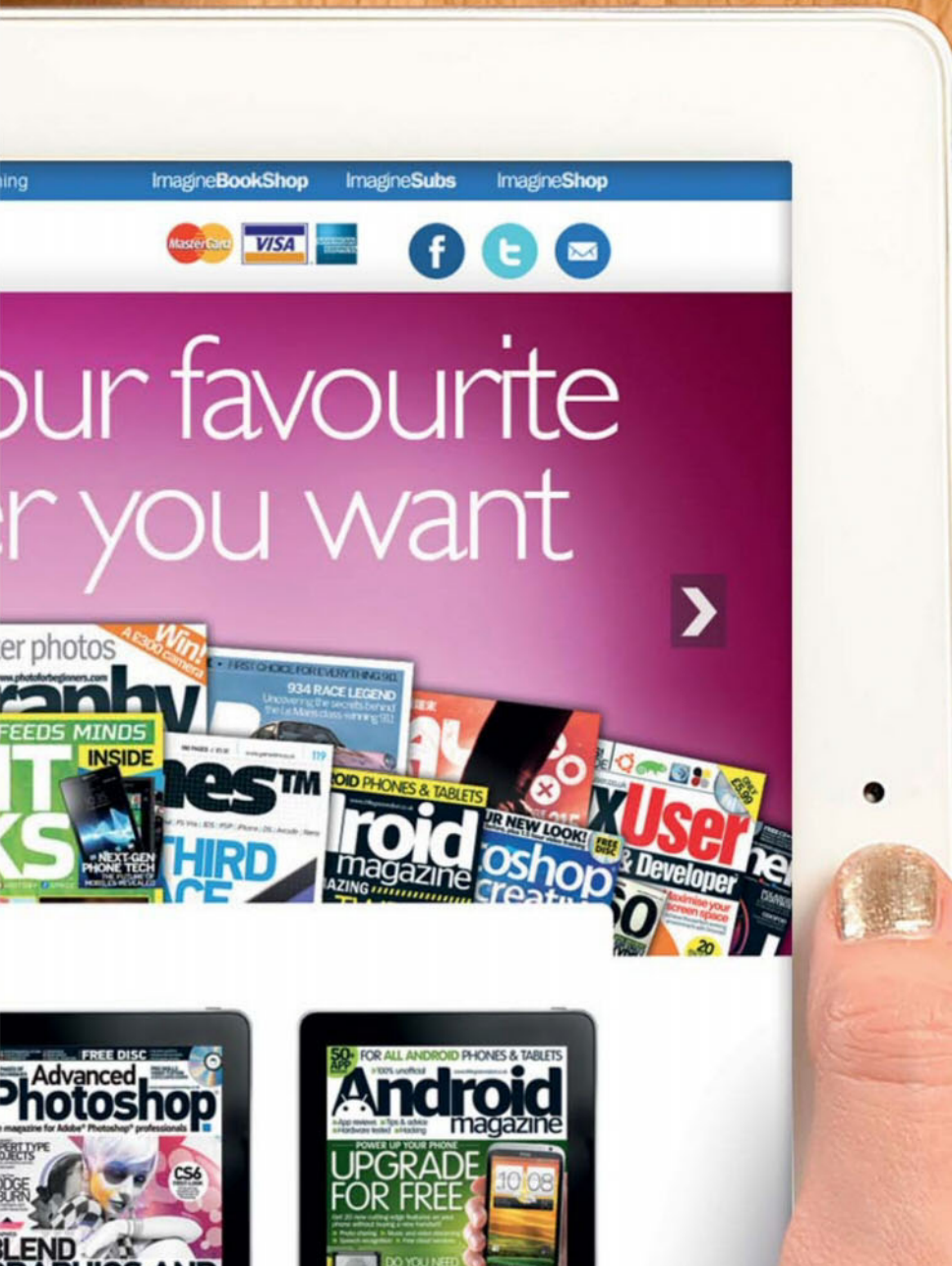
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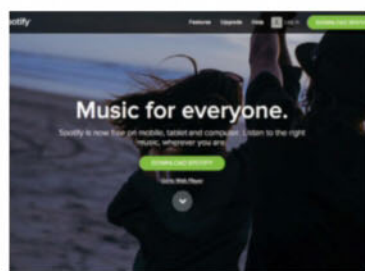
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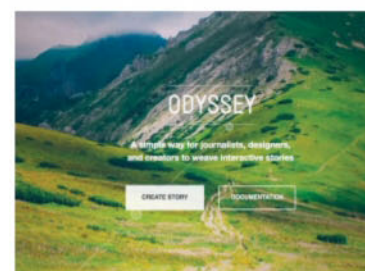
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