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*** PROJECT**

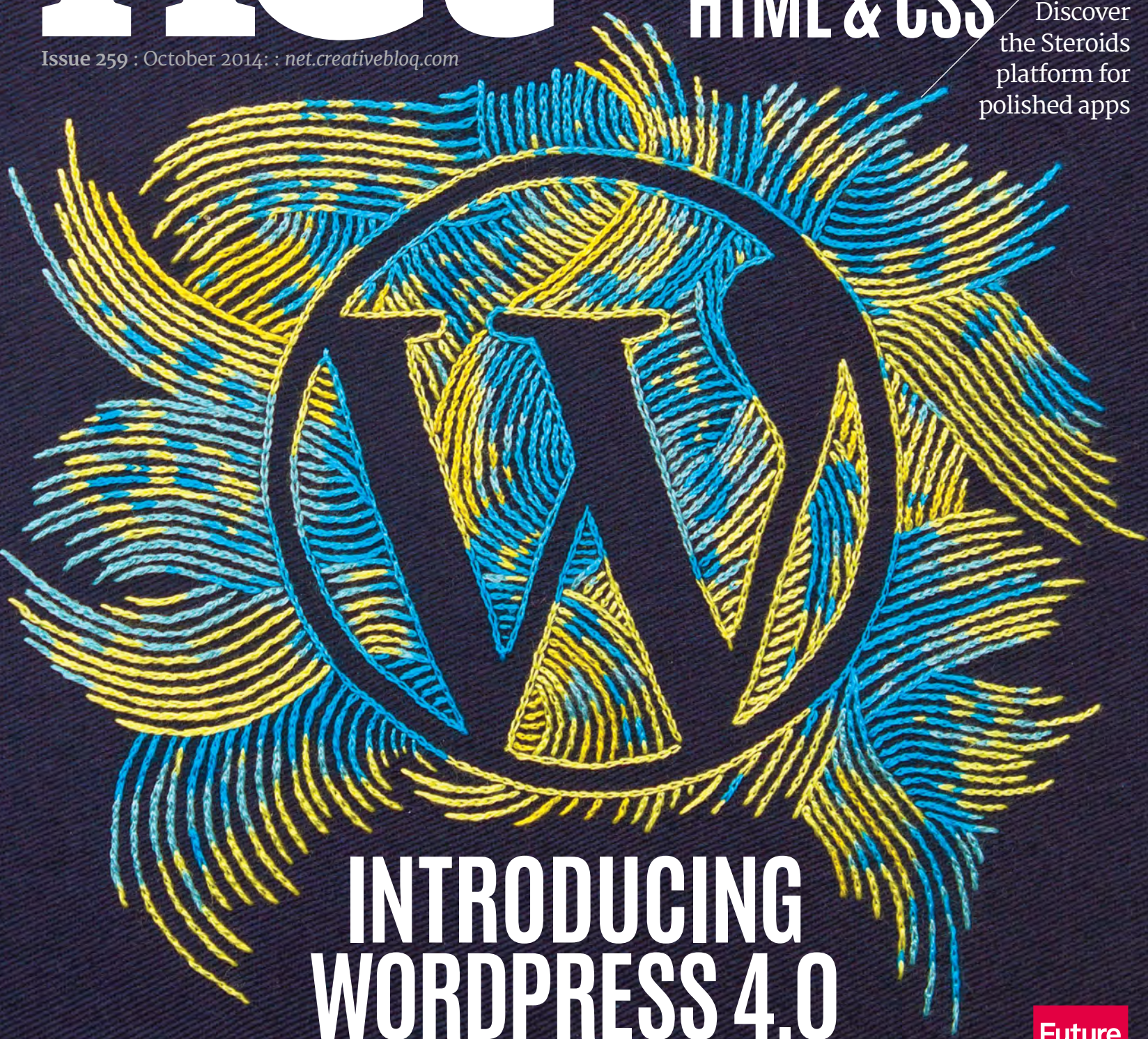
The voice of web design

net

BUILD NATIVE APPS WITH HTML & CSS

Issue 259 : October 2014 : net.creativebloq.com

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INTRODUCING WORDPRESS 4.0

Revealed! The exciting new features in the world's most popular CMS

Future





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* WELCOME

EDITOR'S NOTE

> Tens of thousands of new WordPress sites are created every day. Each month, over 409 million people view more than 15.5 billion pages, and users produce about 41.7 million new posts (for more mind-boggling stats, plus a live look at activity across *WordPress.com*, see en.wordpress.com/stats).

The final beta of WordPress' next major release has been out for a while, and if nothing has gone wrong, 4.0 will have launched by the time you read this. Can't wait to get started? Head to page 68 where Eric Mann reveals everything you need to know about the CMS' most exciting new features. Of course, WordPress is open source, so why not contribute yourself? Whether it's writing code, fixing bugs or

discussions about user experience and testing, there are many different ways to get involved. You can find some information on how to do this here: <http://make.wordpress.org/>.

If it's open source you're interested in, dive into Lorna Mitchell's guide on page 104 and discover how to use Git and GitHub to help out and give back to the projects you love. And that's the beauty of our industry. It's all about sharing the knowledge and making the web better!

Oliver Lindberg, editor
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 @oliverlindberg

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Eric is a WordPress fanatic from Portland, and a senior web engineer with consulting firm 10up. On page 68 he tells us why he's so excited about the WordPress 4.0 release
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t: @EricMann

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NETWORK

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BACK TO BLACK

I've been reading *net* for years, and first I would like to congratulate you for the great job! However I'm writing to kindly ask you to change the eye-burning black background of the 'Clients from Hell' section. I love this section but after two minutes reading it I'm like a blind man and I need at least few minutes to get better. Please could you change it to something more eye-friendly?

Rio Rioneld

Mike Brennan, *net*'s art editor says: "Cheers for the feedback, Rio. When I designed that page I wanted to add some variety into the editorial section – most of the previous and subsequent pages are, as you'd expect, black text on a white background. We tried out a whole range of colour

combinations, and found that white on black worked best from a legibility perspective. I realise it's not always the most comfortable colour combination for everyone, which is why I've used it sparingly, for a relatively short article."



APPLES AREN'T THE ONLY FRUIT

I've been a subscriber for nearly 10 years, but I have never noticed until today how terrible the magazine is for Apple bias. As a developer of games both in HTML5 and previously Flash, I have to develop my code (as you are well aware) to work with nearly all operating systems and browsers. So why is it that in a magazine aimed at 'technical' people – you constantly show devices made by Apple?

I am used to working with artists for the newspaper and magazine industry and while they mostly work exclusively on Apple devices, your publication should be more in line with what the world actually uses. Please, for the love of every developer who knows Apples are not the only fruit – inform your magazine artists to download new images of devices from the real world. Enough is

enough. Does Apple pay you for exclusive use?

Gavin Horricks, Blackburn, UK

We're certainly not biased towards Apple, and nor are we taking any backhanders! We will however concede that Apple kit does appear quite often in *net*. That's because the majority of our contributors use Apple products, and choose to supply their images in this format. It's not feasible to ask them to source a range of devices (or to design for a range of screens), just so they can provide us with an array of images. That said, we're sure you'll find text and code in *net* is as catholic as you'd expect. Here we have more control, and can commission pieces in keeping with the open web.



BUYING NET MAG IN GERMAN

Hi, I'm looking for the print issue. Do you know where to buy in Germany? Thanks in advance!

Jan Völker, Germany

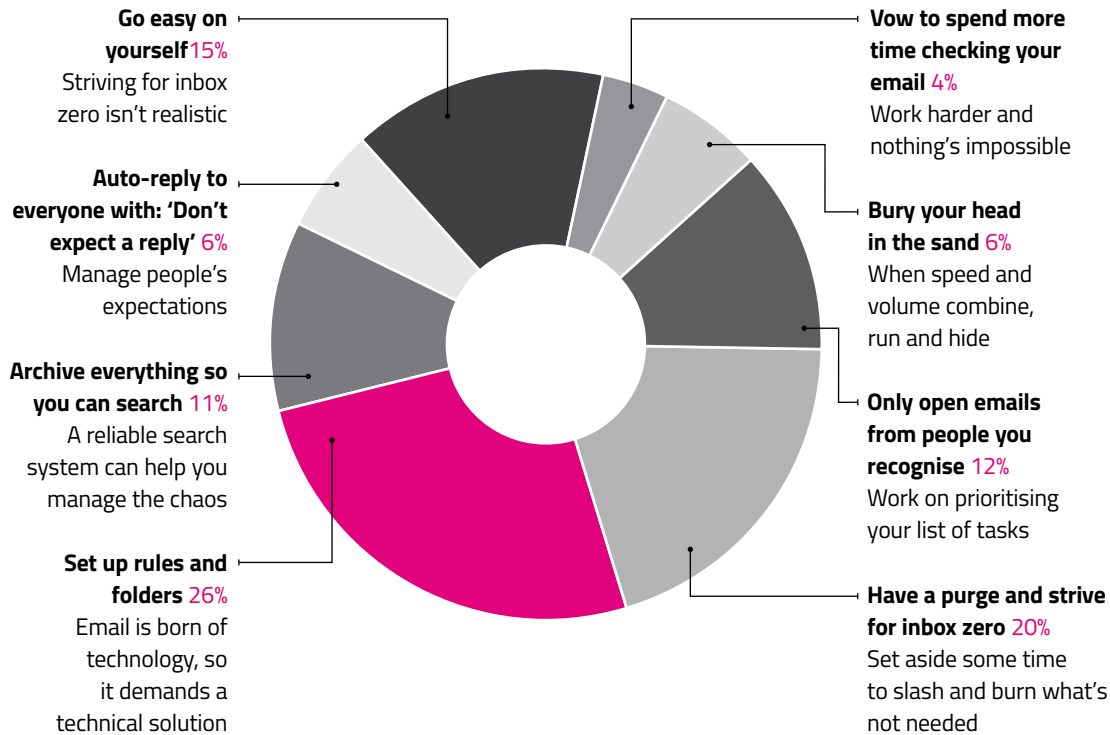
We certainly sell *net* in Germany. Oliver Lindberg can attest to the fact – he spotted a copy in Düsseldorf on his way back from Beyond Tellerrand. If you're struggling to find a copy in the newsagent, you can order print copies online at My Favourite Magazines (netm.ag/netsubs). Just select the 'Europe' option from the dropdown. You can buy single issues and have them delivered to your door, or opt for a subscription, so you'll never miss an issue.



Around the world *net* is available at selected stockists around Germany – editor Oliver Lindberg spotted this copy at Düsseldorf train station


* THE POLL


HOW DO YOU MANAGE A NIGHTMARE EMAIL INBOX?





From our timeline


What should you take with you to a web design or development job interview?

 A company-specific curated portfolio (in my case, on an iPad – digital design). And a little bit of personality.
@iamtomnewton


 Your lucky underpants!
@toniturner

 Something to leave behind to show your creative flair and make you memorable.
@OllieBrkr


 Obligatory designer scarf and a Mac. Then you're all set.
@DJB31st

 Pictures of yourself in a variety of different length shorts.
@GoodeveningLiam

 Designers should bring a few printed examples of their work. It's tactile and shows you think over the smallest detail when designing.
@LeagueOfModern

 An iPad(/tablet) that you can use your own internet connection with (don't rely on theirs), and have preloaded work on.
@TameGeek

 Commercial stats, not just 'nice design' examples. They'll be engaged by creativeness but they'll be impressed by commercial results.
@AttainDesign

 A copy of your work on flash drive in case the meeting room has no internet (has happened to me).
@whiteboxwebby

COOL STUFF WE LEARNED THIS MONTH

A HISTORY OF USB

+ It's hard to imagine life without the Universal Serial Bus. Before a consortium of grand tech firms voted it into life, we had to grapple with cantankerous serial and parallel ports. However, the USB's future isn't guaranteed, with Thunderbolt and the cloud threatening to steal its turf.
netm.ag/USB-259

ALL PRAISE THE UNICORN

+ Unicorns – those rare creatures that claim to be both crack designers and developers – are a subject of contention. The very notion, some argue, puts unfair pressure on web workers to be all things to all men. This blog takes a counter position: some people love doing it all and companies shouldn't be scared to ask for just that.
netm.ag/unicorn-259

QUELL YOUR FEARS

+ Failure, or fear thereof, can do terrible things to our souls. There are a 1,001 blog posts choring: what's the worst that can happen? This post is different. It poses six questions that just help you step up to the plate; try, (maybe) fail and get back up with a smile on your face.
netm.ag/fear-259

EXCHANGE

Practical
advice from
industry experts

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THIS MONTH FEATURING...

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t: [@almostexact](https://twitter.com/almostexact)

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DAN NEAME



Dan is a JS developer at Brandwatch and an HTML5 game developer
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t: [@cham](https://twitter.com/cham)

*QUESTION OF THE MONTH

Is there any value in using wireframes as a blueprint for everyone working on a project?

Dan Davies, Manchester, UK



Sharing time Wireframes can help everyone on a project: not just UX staff. Illustrations: Bonny Colville-Hyde

Bonny Colville-Hyde: Wireframes have value when used considerably within teams. Some technical detail can help everyone understand what's within scope – like links to pattern libraries or example code – but take care not to restrict the developers' options, and remember to update any notes when you make visual changes. However, wireframes cannot fix team dynamic problems: they aren't a replacement for good communication. The more interaction UX, design, content, and development teams have during a project, the better.

HTML5 GAMES

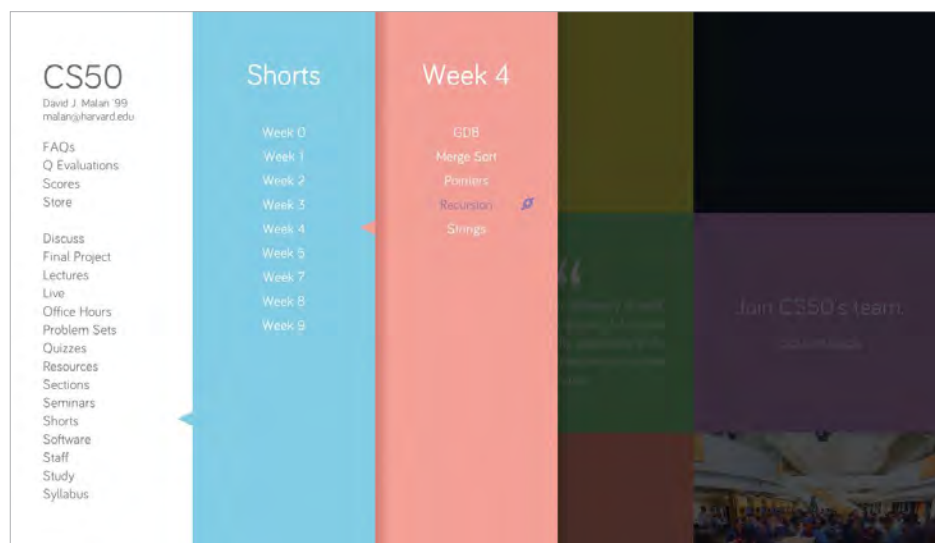
THE BEST GAMES AROUND

What's the best example of an HTML5 game that you have seen?

Jo Petty, Brighton, UK

Dan Neame: I've had a lot of fun playing Bombermine (bombermine.clay.io). In terms of best playable game, it's my personal favourite. As for most impressive use of technology, there's

a proof-of-concept FPS written in pure CSS3 by Keith Clark (keithclark.co.uk/labs/css3-fps-new), which won the 2014 Demo of the Year net award. There's not much to do other than run around, but what he's achieved with HTML5 and CSS3 transforms is amazing. Looking to the future, I've seen some great stuff done with WebGL, including a port of a Quake 3 level (media.tojicode.com/q3bsp).



Crash course The videos for Harvard's CS50 course give an overview of basic coding concepts like recursion

JAVASCRIPT

RECURSION EXPLAINED

Where's the best explanation of recursion in JavaScript for a designer with no programming background?

Duke Branding, Los Angeles, US

Jon Duckett: Harvard University made lots of interesting videos for its Introduction to Computer Science course (cs50.harvard.edu/shorts). They aren't all focused on JavaScript, but they contain some helpful descriptions of computer science concepts for those that are new to programming. Recursion is covered in Week 4.

CONTENT STRATEGY

TOP TOOLS

What content planning tools would you recommend?

Tom Preston, London, UK

Richard Prowse: One of my favourites is GatherContent (gathercontent.com). The ability to create a structured content format separate from design helps to focus authors. It's particularly useful if you'd like to track changes or the progress of content production for a particular project.

However, it's important to choose a tool that reflects the scale of the project and the skill set of the people you're working with. For smaller projects, we still use Excel for our content matrices and Word for page tables, with Track Changes enabled.

HTML5 GAMES

FREE RESOURCES

What are the best free resources for building an HTML5 game?

Liz Brown, Philadelphia, US

DN: While Impact (impactjs.com) is great, the fee is a bit off-putting. Fortunately there are some good alternatives, such as Crafty (craftyjs.com) and LimeJS (limejs.com). While they aren't as full-featured as Impact, either framework will be enough to get you started.

A common time sink when creating a game is making the graphics. The Spriters Resource (spriters-resource.com) has a whole load of sprites taken from older games for you to use – just be careful of copyright, since some of the characters will be licensed to Nintendo or similar companies.

USER EXPERIENCE

INFLUENCING INITIATORS

How can we influence project initiators to adopt an approach based on user experience, not their experience?

Darryl Godden, Lichfield, UK

BCH: Get stakeholders to watch user testing. Watching real people struggle, or even fail tasks, is hard to ignore. We may refer to UX as if it is a single process, but the truth is that it's a collection of approaches. Stakeholders need to be shown that there is no UX silver bullet, and users are empowered to go elsewhere. Failing to meet user

3 SIMPLE STEPS

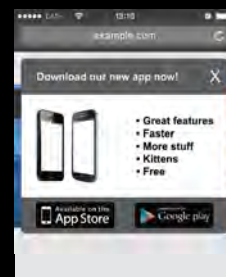
Should we use pop-ups to ask mobile users to download native apps instead of visiting a site?

Chris Bell, Belper, UK

BCH: Pop-ups are useful when the user is about to complete a destructive action, like closing a window before saving work. But pop-ups that disrupt user journeys are risky as they interrupt a process, potentially causing task abandonment. Informing a user there is an app that may offer a superior experience isn't in itself bad, but a pop-up is unlikely to be welcome.

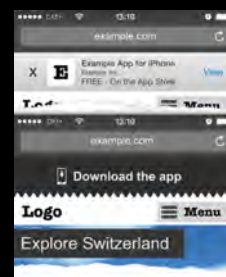
DISRUPTION

+ App pop-ups are disruptive to the user journey. They hide content the user is trying to access, and could cause them to forget what they are trying to do.



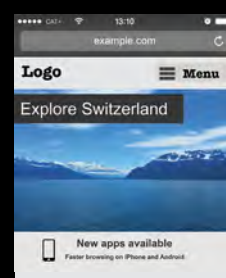
EMBEDDED MESSAGES

+ You can promote apps in ways that are less disruptive. Sites like eBay and Expedia highlight their apps using messages embedded at the top of their pages.



SHOWCASE

+ App promotion doesn't need to push content down the page. Sites like Amazon showcase apps as products within content, letting users browse freely.



► needs can mean failing to achieve business goals. When they see users failing, UX becomes real.

CONTENT STRATEGY
RETROFITTING STRATEGIES

How do you handle projects where design has started before the content?

Joshua Sortino, San Francisco, US

PR: In cases like this, starting again is rarely an option, so it's about working out where effort will have the most benefit. Personally I'd pair a frontend designer with an editor and get them to iterate on the design, using existing content to help inform the process. Pairing is a great way of getting different disciplines to work together, as it helps individuals to explain their thinking out loud and troubleshoot problems together. This should help deliver a better final product than if design had proceeded on its own.

JAVASCRIPT
MANAGING LOCAL SCRIPTS

What's the best way to manage running local JS scripts when you're loading library dependencies (in this case, jQuery)?

Simon R Jones, Cambridge, UK

JD: Personally, when I am starting a new project, I tend to use CodeKit (incident57.com/codekit) to download the latest versions of libraries I need in one click. CodeKit also helps make sure you are running the latest versions of the libraries, and has a whole bunch of helpful tools you can use from the UI, but it's Mac-only. As far as managing



Wake-up call Seeing real people struggle in user tests focuses stakeholders' attention on UX

and loading dependencies goes, I'm working on a couple of fairly large projects at the moment, using several complex custom scripts, for which I'm using RequireJS (requirejs.org).

CONTENT STRATEGY
SETTING CONTENT BRIEFS

What can we do to better communicate what is required per page to customers who are writing their own copy?

Code Blue Digital, Huddersfield, UK

RP: Create page tables. They help authors to understand the audience they are writing for and what the purpose of the page is. They're also a great starting point for feedback, as they allow you to talk to an author about why their copy potentially doesn't address user needs.

USER EXPERIENCE
WHEN ARE COMICS THE RIGHT CHOICE?

Is there a risk UX comics could be seen as too playful for more serious industries?

Charles Martin, South West England, UK

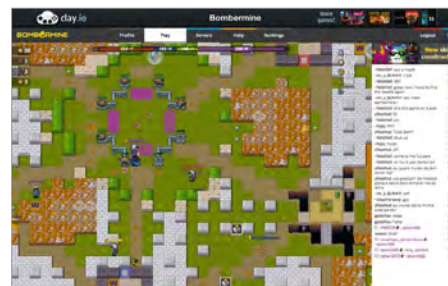
BCH: I've yet to find a project that I didn't think comics could help. The beauty of comics is how easily they are shared and understood. Sectors like financial services are crying out for more human-centred design. If we focus on the interface and not the human, we won't make financial services better for people. Comics give us the chance to explore the narrative of how, when and why people use services.

CONTENT STRATEGY
UNIVERSAL STRATEGIES

Projects have different scopes, but what content-related tasks should be applied to all projects, whatever the budget?

Robert Mills, Cardiff, UK

RP: Great question. There are three things. First, a content audit - this will not only help you suggest the best approach to the project but also improve conversations with clients, as you'll have an in-depth understanding of their website. Second, user stories. They'll help you and your clients work out who their audience is, what their needs are, and then prioritise them. When used alongside a content audit, they can also



Da bomb Other HTML5 games push the technology harder, but for raw fun, Bomberman is hard to beat

help to identify gaps in existing content. Finally, a style guide. This helps make sure that authors maintain a consistent tone when creating or editing existing content, long after the project is over.

HTML5 GAMES
MULTIPLAYER TOOLS

I am looking to create a multiplayer game. Are there any good tools or frameworks that I can use to get me started?

J. Edgar Montes, Michigan, US

DN: For a multiplayer game, you need a server technology that provides fast I/O and allows for multiple concurrent socket connections. With this in mind, Node.js (nodejs.org) is a pretty good choice for something that needs to hold a simple game state and update players on each other's moves. It's certainly fast enough and can handle a large number of simple requests - just try to avoid any heavy number crunching.

CONTENT STRATEGY
WHOSE JOB IS IT?

Can you have independent UX and content strategies, or should your UX strategy cover content?

Charles Martin, South West England, UK

RP: Content and content structure play an important role in creating a great user experience. But content strategy also considers the role of governance and workflow, which doesn't neatly fit within the definition of user experience.

Ultimately, I think it depends. For smaller pieces of work, you'd probably benefit from using a copywriter with a good understanding of UX. For larger projects involving the development of editorial processes, you'll probably need a content strategist. **m**

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FEED

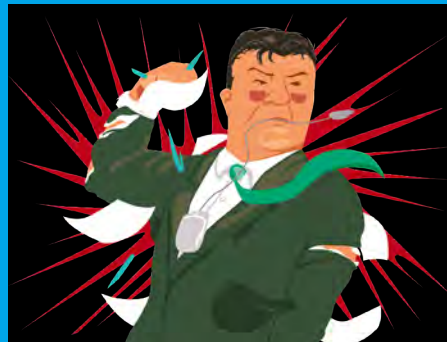
People, projects
& paraphernalia

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A look at NY Train Project, the endeavour that saw **Adam Chang** illustrate all the station signs in the borough of Manhattan



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A monumental case of mistaken identity plays havoc with one designer's startup branding project



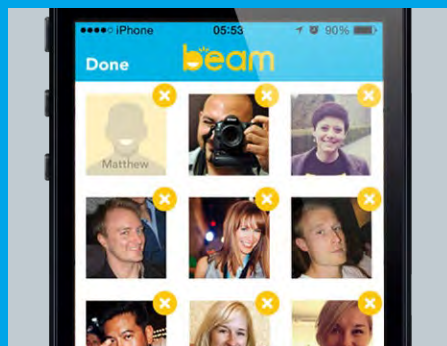
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Gavin Becker shows us round the New York office which was once an artist's studio but now hosts the Made By Many team



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NY TRAIN Project



NY TRAIN PROJECT

A routine train ride inspired Adam Chang to illustrate all the station signs in Manhattan

★ SIDE PROJECT OF THE MONTH



INFO

job: Art director and designer

company: Same Tomorrow

w: sametomorrow.com

t: @sametomorrow

net: Who are you and what do you do?

AC: I'm an art director and designer based out of Brooklyn, New York. I've been fortunate enough to freelance full-time over the past five years.

net: Please tell us about NY Train Project ...

AC: One day while waiting for the 6 train at Bleeker Street, I spotted a striking station sign. It was made from faience ceramic and resembled an ornate plaque. From there, I started noticing how varied the other signs were, and decided I wanted to document them all (nytrainproject.com). I rode the train to every station in Manhattan – 118 stops – to photograph the signs, then spent countless hours illustrating them all.

net: What's the community reaction been like?

AC: Humbling and overwhelming. When I launched this project, I really didn't know who would be interested in it outside of the design community.

But I've received responses from a range of people, from locals to visitors, hotels and even council members. I've also received emails from people asking if they can help out on the other boroughs.


net: Do you have a favourite station sign?

AC: I'm really drawn to the 28th Street sign on the 6 train. I'm not sure what it is about this particular one, but it's definitely my favourite.

net: Why are side projects important for designers?

AC: As a designer, it's easy to get bogged down in everyday client work. For whatever reason, at the end of a project your designs may not be exactly how you pictured them. But with side projects, you are the one making all the decisions and you can essentially do whatever you want. It can help push creativity and ideas that you may not be able to get away with otherwise. More importantly, it's just fun to do.

net: Are you planning any future side projects?

AC: I plan on starting the other boroughs soon, so that will be another long process. Brooklyn has almost twice as many stops as Manhattan. I would also like to explore other mediums and formats, such as an illustrated book, gallery, app ... Wishful thinking, maybe, but who knows? 



* HOW TO

REBUILD AFTER A HACKER ATTACK

You arrive at work, check your site and discover hackers have broken down your electronic doors and done their worst. How do you start picking up the pieces?

FIND THE ENTRY POINT

@jearle offers some excellent advice: "As a sysadmin, the very first thing, before deleting anything, is to determine the entry point. Fixing the site wipes evidence."

@MartinDarksnow agrees, and points out that restoring from backups without working out how the bad guys broke in leaves the site wide open to the very same exploit.

DELETE AND REBUILD

The next step, according to developer @StephenFirthUK, is: "Take [the site] down. You don't know if security has been compromised". And remember, it's not just your security you're dealing with here, it's your users' too.

CHANGING PASSWORDS

Moving on, @rocketeddy says: "Change all the admin passwords, and suspend any FTP accounts". Indeed, changing and enhancing passwords was the most common piece of advice recommended by our Twitter followers.

MAKE A PLAN

Finally, if you don't have one, now is the perfect time to write a disaster recovery plan.



DOUBLE TROUBLE

Exclusively for net: the latest in a series of anonymous accounts of nightmare clients

* CLIENTS FROM HELL

> A friend of a friend referred a startup to me so I could handle its branding. It was being spearheaded by two people. One was referred to as John, the other Johnson. When I met John in person, he explained that they're both technically Mr. Johnson, but everyone refers to Johnson by his last name because he's former military. John joked that he wasn't going to argue the matter with someone whose previous work experience involved killing people.

All went well until we approached our product launch. I participated in a work-share where I had a desk permanently rented out. One day, I got a call from the space while I was away. Apparently, a client of mine had come to the office and, mistaking it for my company, started yelling at the other people who rented desks there.

When I returned, the space was a mess. There was a clear path of stuff knocked over from the entrance all the way to my desk. The people who ran the space were understanding and offered to call the police to escort me to my car. They also provided security footage of what happened.

What I saw was perplexing. John, the polite and professional man I had met a month earlier, now looked to be packing far more muscle – and, judging from the way carried himself, had hit the bottle quite heavily in the interim.

I called John, but all I got was his voicemail. I tried all our shared contacts. All I learned was that "something" had come up. Time passed.

Finally, I got a call from John. He explained that their original investor had backed out and, though I would be paid in full for all my work, there might be a delay in getting the money to me. I did my best to communicate what I had seen via the security footage. I could practically hear the pieces falling into place in John's head.

It turned out that John and Johnson are twins. Though they're not identical, they look very similar on grainy security footage, though Johnson, having spent years in the military, is more physically imposing.

And in addition to the muscle, Johnson picked up a drinking problem from his service. After the investor pulled out, he went on a week-long bender, with my office being a minor stop on it.

But the reason Johnson came to my workspace is the real kicker. Apparently, my name is quite similar to the original investor's and he got the pair of us confused. If nothing else, I appreciate how that could happen. [1](#)

CLIENTS FROM HELL
clientsfromhell.net



A HUB OF INVENTION

Gavin Becker gives a tour of Made by Many's New York office, which boasts with a century's worth of creative history

* WORKSPACE

➤ Made by Many's New York studio is located on Greene Street – an iconic brick street in SoHo. Built in 1900, it originally served as a factory and warehouse until the 1970s when it became home to an artist and his studio for the next 40 years. It's a classic makers' space – perfect for digital product craftspeople like us.

We made a point of preserving the incredible details hidden under a century's worth of wear and paint splatters, including refinishing and levelling the 115-year-old wood floor and stripping decades of paint off the original steel fire door (1).

Honouring our studio's history gives the space a workshop vibe

where we can focus on designing, developing and building great next-generation products like our own Hackaball (2), a connected device that teaches kids to code through game creation and play.

At Made by Many, we make new stuff for the internet: products and services that are used habitually by millions of people; things that last and grow and become indispensable. In doing so, we've adopted a range of methods that let us rapidly get to product ideas that can be pressure-tested out in the world, with users.

In almost all cases, these journeys begin with sketching our ideas by hand. We have custom

Made by Many sketch pads pre-printed with various screens – smartphone, tablet and computer (3) – so we can get lots of visual ideas down quickly and efficiently.

Our sketching is the output of lots of different inputs – including a voracious appetite for books ranging from business strategy to startups, software development, design and even science fiction. We don't have the physical space to spare for a library, so we created a shared digital library and give everyone in our studio his or her own Kindle e-reader (4) to access it and add to it anytime, anywhere.

And what studio wouldn't be complete with its very own Design Dog? We're lucky to have Klein (5) around – keeping us grounded with his honest and somehow oddly insightful input. 🐕

* PROFILE

Gavin (pictured above, far left) is a managing partner at the New York office of product innovation studio Made by Many (madebymany.com)

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STUFF I LIKE



ANDY BEAUMONT

Co-founder and CTO, Hactar
hactar.is

TRELLO

You can use Trello for almost anything – Kanban, mood boards, client approval, competitor analysis, UAT and even a CRM. The real-time aspect makes it an incredible tool for remote working. I'd even suggest it's better than being in the same room.

trello.com

SKETCH

This is not a photo-editing tool with some screen design features bolted on as an afterthought. It's not made by Adobe so it doesn't fill your computer with crap you never asked for. It is a tool designed from the ground up for screen design, and it's wonderful.

bohemiancoding.com/sketch

MARKED 2

We do all our document creation in Markdown – lightweight text files, readable to humans and computers. Clients, however, often like to have PDFs, so we use the magnificent Marked 2 to generate client docs from our Markdown files.

marked2app.com



LUTHERIE

This month... on his days off, Wayde Christie is learning to love the slow, intricate business of guitar building

★ BEYOND PIXELS

➤ I've been playing acoustic guitar since I first heard the great Tommy Emmanuel 20 years ago, but it was always just a bit of fun for me, while building websites paid the bills. After 15 years working as a web developer, however, I decided I needed a new creative challenge.

A friend told me about a guitar building – or 'lutherie' – school near where I live, and since enrolling a couple of years ago I'm close to completing my second classical guitar. The experience has been fantastic, to say the least.

I've lusted after high-end guitars forever, and without really thinking about it I'd been obsessing over their design and the materials they were crafted with. What made one guitar better than another? Was it the design? The wood? The sound? To me it was all of those things, and with so much scope for combining them in creative ways, building guitars has become my new obsession.

I'm certainly not prolific – a guitar takes me around 100 hours to build. As you can imagine, there's a ton of tools and equipment required to consistently produce anything of quality, which is one of the most enjoyable parts of lutherie: so much gear! We're talking hand planes, chisels, saws, rasps – the list goes on. It's enough to give a handcrafted-loving, hipster artisan a froth beard.

Guitars, unlike websites, are seductively tangible. In expert hands they transform air and vibrations

into wonderful music. Their aesthetic beauty can be admired by guitarists and non-guitarists alike, but unlike a website, which can hide its flaws, a guitar's imperfections are obvious. Both things require a solid foundation, and once that foundation is in place then the opportunity to experiment and get creative presents itself.

Something that surprised me about lutherie was that I often found the fragility of the work quite stressful. Most aspects of building a website are immediately interactive and there are many small wins along the way, but I didn't feel that way about guitar building at first. I was impatient and just wanted to get the guitar finished and play the damn thing. I've calmed down a bit now.

While lutherie has given me a new creative outlet that combines my love of design and guitars, it was web development that taught me to slow down and enjoy each process. Now I'm much more conscious of just how enjoyable it is to design and hand-build your own guitar, even if I don't get to interact with it until the strings are finally tuned up for the first time, after six months of work. 🎸



★ PROFILE

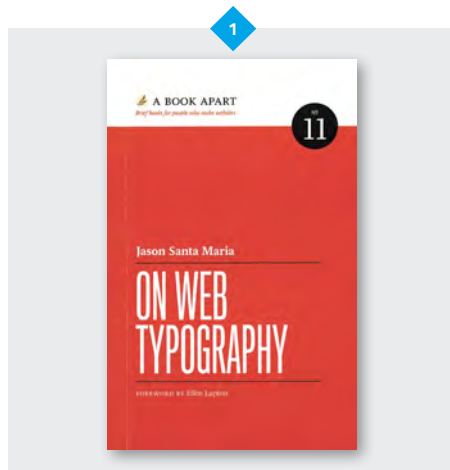
Wayde is the founder of Australian web development studio Newism (*newism.com.au*) and Malu Guitars (*facebook.com/maluguitars*)



*NEED LIST

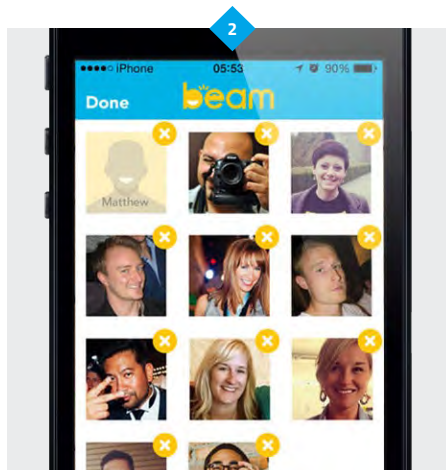
STUFF WE WANT

Small objects of web design desire: from a handy video conferencing app to a book that injects some fun into web design for kids



ON WEB TYPOGRAPHY

\$18



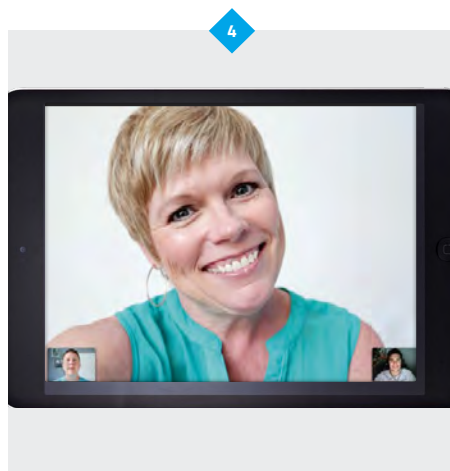
THE BEAM APP

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What we think

- (1) For a smart guide to understanding and making web type, check out Jason Santa Maria's *On Web Typography* (netm.ag/ontype-259).
 (2) nGen Works' Beam App makes connecting simple by remembering whether your friends like to be reached via email, Twitter or Facebook (netm.ag/Beam-259) (3) *Design for Kids* is a fantastic tool for anyone involved in creating engaging digital experiences for children (netm.ag/kids-259). (4) Talky from &yet is a simple video conferencing app for groups and teams – it's free, too (netm.ag/talky-259).
 (5) *Eloquent JavaScript* teaches how to write beautiful and efficient code. It's a delight, and free to read online (eloquentjavascript.net)
 (6) Dotgrid.co makes a range of delectable note and dot grid books for designers and illustrators (dotgrid.co)

**NEXT
MONTH**

ADVANCED RESPONSIVE DESIGN

The world's leading experts reveal their top techniques to help you build better responsive sites

PLUS

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mobile apps with
Ionic and HTML5**

**Discover the power
of new JavaScript
framework Famo.us**

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EVENT GUIDE

FUTURE OF WEB APPS

DATE: 29 SEPT-1 OCT 2014

LOCATION: LONDON, UK

FOWA is back, this time with a focus on APIs and toolkits. The top speaker line-up includes Bruce Lawson and Yehuda Katz. futureofwebapps.com/london-2014

PUSH.CONFERENCE

DATE: 10-11 OCT 2014

LOCATION: MUNICH, DE

User interface design and creative coding come together for this two-day event aimed at helping people to create outstanding user experiences. push-conference.com/2014

BORDER.NONE

DATE: 17-18 OCT 2014

LOCATION: NUREMBERG, DE

All the best people are interested decentralising the web, and many of them will be attending this event. It's a "creator conference", so attendees will build something as well as listening to talks. border-none.net/2014

NG-EUROPE

DATE: 22-23 OCT 2014

LOCATION: PARIS, FR

Love AngularJS? Then this is your happy place. Over 40 great speakers will deliver short talks covering every aspect of this 'superherioc' framework. ngeurope.org

BEYOND TELLERRAND

DATE: 3-5 NOV 2014

LOCATION: BERLIN, DE

Demand was so high this year that Marc Thiele had to hold his conference twice. Stefan Sagmeister and Mike Kus will speak at this second instalment. beyondtellerrand.com



INDIE TECH SUMMIT

Tanya Combrinck reports on the first conference held by Aral Balkan's Indie Tech foundation

* EVENT REPORT

DATE: 4 JULY 2014

LOCATION: BRIGHTON, UK

URL: ind.ie/summit

“Your tools shouldn't spy on you.” That's the principle behind Aral Balkan's new venture, Indie (ind.ie), which seeks to empower individuals to retain ownership of their data by providing alternatives to the products of companies such as Google and Facebook. The business models of these organisations are based upon making money out of the data we give them, which, Balkan argues, is a threat to democracy and to our fundamental freedoms. Indie's mission is to create design-led organisations that will build viable alternatives that do not rely on corporate surveillance, and Brighton's Indie Tech Summit in July was one of the first steps towards that goal.

The summit provided an opportunity for an eager crowd of passionate individuals to assemble, make connections and explore ideas. The day consisted of a series of 10-minute lightning talks from over 30 speakers, interspersed with lively panel sessions. This format kept everyone excited and engaged, and there was ample opportunity to exchange ideas with fellow attendees and learn about each other's projects.

Speakers were arranged into four broad categories which explored inclusive and open design, strategies we can implement today to protect our privacy, how the Indie Tech ideas can be brought to the mainstream, and what the future might look like. We heard from the inimitable Richard Stallman on the nature of freedom and its relation to technology; Jeremy Keith presented the idea that the most disruptive act for a startup today would be to help people to publish on their own websites; and Pernille Tranberg gave us the lowdown on methods for digital self-defence. Watch all the talks online at ind.ie/summit/videos.

There was also plenty of discussion around the Indie foundation's first project: Indie Phone, a phone that enables you to stay in control of your privacy and data, with a user experience to rival that of the iPhone. Indie's first summit was a vibrant day packed with people running interesting, progressive projects, and we'll be first in line to attend if it takes place again next year. [1](#)



* PROFILE

Tanya Combrinck is net's Digital editor. Since 1995, the internet has been her preferred method of interacting with humanity. Please do not call her.

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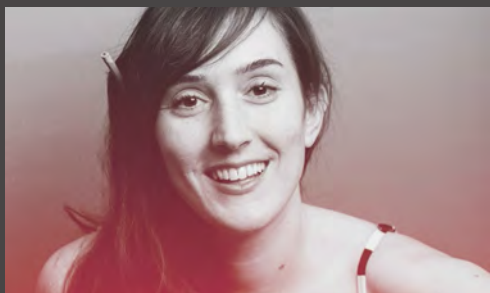
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Daniel Burka explores how prototyping and user studies can improve on the old product launch philosophy of 'ship early, ship often'



INTERVIEW 32

Mule co-founder Mike Monteiro tells us why we should act like doctors, diagnosing clients' design problems – not mere hands for hire



LEAVE YOUR JOB 42

Mozilla's Cassie McDaniel explores when you should question your job, and why leaving an imperfect job can be a blessing in disguise

*RESPONSIVE WEB DESIGN

NEW WAYS TO BE FLEXIBLE

Dan Donald explores why it may be better to create responsive designs in which each element refers to the width of its container, not the viewport itself

> We've all been figuring out what responsive design really means to us as we work through all kinds of projects, coming across new challenges on each. Often, the current thinking on a topic will have moved on between one project and the next. One such area of rapid change is the basis on which the dimensions of each element on a page should be calculated.

BEYOND THE VIEWPORT

While working on a hack with Al Jones (@itasljones) a year and a half ago, we got to talking about the fact that all we seemed to do was refer to the width of the viewport. What we wanted to achieve was something very flexible and reusable, but conventional approaches to responsive design didn't lend themselves to working this way. Instead, we wanted to create modules that would refer to their parent/containing element, treating it much like a miniature viewport.

At the time, there were a few other people talking about similar things. In 2011, Andy Hume had produced some example code for what he termed Responsive Containers (blog.andyhume.net/responsive-containers). That set the cogs turning in our minds. Maybe there really was something worthwhile in this idea of an element or module referring to its parent or containing element?

ENTER ELEMENT QUERIES

We produced a rough-and-ready demo (find part of it at netm.ag/259-responsivemodules) to explore how this process might work. What we found was that although it initially appeared to complicate things, it actually provided us with a lot of freedom. You have the choice of when you refer to the parent element and when you refer to the viewport. You could even nest what I called ‘trigger points’ (the equivalent of media queries in our demo for change relating to the parent element) within media queries, allowing for quite precise control.

This notion of relating to the parent element has become known as ‘element queries’ and since the time of Andy’s demo and our hack, many other people have written about them and the ways in which they might be employed, and created new demos and polyfills.

In some ways, it feels like element queries are in the same place responsive images were a few years ago. We have an idea about what we want to achieve and ways to simulate this behaviour, predominantly through JavaScript, but no standardised syntax or native implementation. Can we get to a point at which this ability is available to us natively? It’s hard to know, but Tab Atkins has a blog post entitled ‘2014 State of Element Queries’ (xanthir.com/b4VG0) that summarises the current thinking.

THE DEBATE NEEDS YOU

One thing we can all do to help is play. Maybe you have a project on which element queries could work well. Spend time trying some of the existing code, or find your own solution. Let’s find some clear use cases where element queries really work. In doing so, we may also help to resolve problems of implementation, such as the ‘circular dependency issues’ discussed in Tab’s post.



Let’s hack around with the idea of element queries. Between us, we may learn enough from our experiments to make them a browser-native reality

To me, the ideal candidate for element queries is responsive images. An image should refer to the space available to it rather than the entire viewport in many use cases, shouldn’t it? Of course, knowing what an image should do and actually making it do it are two different things. I’m sure that if this were easy to implement, it would be part of the solution already. On top of that, we have more than one problem to solve in regards to responsive images!

Reading through blogs posts on the topic, I get the feeling we may need to discuss how to divide the work between HTML and CSS. I’d prefer that no description of how a module I’ve created should behave appeared in my markup, as with media queries – but I get the sense that it may not be so clear cut in this case.

I encourage you to find time to hack around with the idea of element queries, creating a module that adapts not just to the viewport but to the dimensions of its containing element. Between us, we may be able to learn enough from our experiments to make element queries a browser-native reality.

As designers, this process will give us the opportunity to expand how we perceive flexibility on the web. And as developers, it will enable us to guide the evolution of the modules and elements we create. Together, we may be able to build a web that works better for us all. ■

* PROFILE

Dan is frontend and interaction lead at McCann Manchester. Sometimes he runs @speaktheweb. When not doing web stuff, he makes ‘rough alt-rock noise/music’ in @markof1000evils



★STARTUPS

LEARN EARLY, LEARN OFTEN

Illustration by Ben Mounsey

‘Ship early, ship often’ is a mantra for startups – but be smart about what you ship. Google Ventures’ **Daniel Burka** explains how prototyping and user studies can streamline your product launch

➤ In the startup community, it’s common to hear variations of the mantra, ‘Ship early, ship often!’ Startups come up with a new idea, slim it down to a minimum shippable product, launch it, analyse the data, and then iterate. On the surface, this seems like an excellent way to build great products. But, having worked with many startups at Google Ventures, it has become clear that this methodology is riddled with problems:

- Testing hypotheses by shipping products is time-consuming and expensive. Even at a nimble startup, shipping a major product in a month is considered really fast. And inevitably, some will then fail.
- Launches are hard to abort. Once you invest time in engineering a solution, it is difficult to step back to reconsider a risky product rationally.
- Analysing post-launch data is a messy business. Even if you can decipher if a product is successful or not, it’s very difficult to interpret why that’s the case.
- Bad features are hard to roll back – at least a few users will embrace them. Even if you successfully remove them, code remnants will litter your work for years.
- Iteration is often de-prioritised in the face of new challenges, so people frequently leave products to fester instead of improving them.

At Google Ventures, we shortcut the typical ‘ship early, ship often’ cycle in a way that keeps the benefits and mitigates the problems: we skip over the build and launch phases and rely on prototyping with user research.

In five days or less, a small team ideates, prototypes and tests significant hypotheses. At the end of a week, it is clear which ideas work, which need improvement, and which are a waste of design time. We call this a ‘design sprint’, and there are few keys to the process.

GET THE RIGHT PEOPLE

We try to get between five and 12 people in the room. They’re a combination of the people you’d expect (design, product, engineering) and people you might not, like your CEO, business development and customer service reps. Your business development person knows what it takes to close a deal, your frontline customer service people hear about inefficiencies in your product, and your CEO can see the big picture in the marketplace. If possible, we gather everyone in a secluded war room for the duration of the sprint so we can avoid distractions.

CREATE TIME PRESSURE

One of the reasons that startups establish a shipping culture is to create time pressure – it’s easier for people to rally towards a date. In a design sprint we try to create the same sense of urgency ... on steroids. On Monday, we schedule five user studies to take place on Friday. At this point, we don’t even know what problem we’re going

- ▶ to tackle but a bomb is going to go off on Friday and the fuse is lit, so we have to hustle.

CHOOSE A SMART PROBLEM

With the fuse lit, it's time to choose what problem to solve. We sketch out the user story like a comic strip that illustrates the product flow and look for big question marks like, 'People will probably be confused by X'. Areas of great risk are also excellent ones to prototype – for example, 'If people don't comprehend our pricing structure, we'll go out of business'. By the end of the first day, we have a nice meaty problem in hand.

SKETCH THE RIGHT WAY

Now that we've identified a problem, we want to explore as many solutions as possible. We start on paper, since it's a medium anyone can use. Everyone, including the non-designers, quietly sketches possible solutions. There is no group brainstorming. Loud voices do not prevail, and we avoid compromised groupthink solutions.

can easily fake interactions, and because it's at a level of detail where you won't waste time polishing the visual style to perfection. For mobile, we frequently use Flinto (flinto.com) or similar storyboarding-like tools. By the end of the day, we will often have created 10 to 20 screen 'apps'. Always keep in mind you're trying to suspend disbelief, so users are reacting, not commenting.

USER STUDIES

The user studies are the most critical component of the sprint process – but they aren't sophisticated. You don't need fancy equipment or a professional researcher to get a lot of value from a study. We schedule four to five people who fit the profile of potential customers, bring them to a quiet room at our office that is outfitted with a simple webcam, and have them click or tap through the prototype while talking out loud. At the same time, the other design sprinters observe from another room and take detailed notes. At the end of the day, we analyse our notes and look for patterns.

Shortcut the typical 'ship early, ship often' cycle in a way that keeps the benefits and mitigates the problems: skip over the build and launch phases of the process, and rely on prototyping with user research instead

We start with very rough private sketching to keep people from zeroing in on their first idea. The final sketches are still rough, but detailed: no one draws like Da Vinci, but copywriting is realistic, user interfaces are plausible, and graphics are indicative. Multi-step sketches are encouraged. Drawing flows ('The user does this, then that happens') are better than isolated screens.

DECIDE THE RIGHT WAY

Teams commonly make decisions by arguing over the best solution. We avoid this because loud voices often win. Instead, each person considers each sketch and then votes by placing a small sticker next to the ideas they think are worth exploring in a prototype. After a couple of rounds of voting we have a heat map of the best ideas.

MEDIUM-FIDELITY PROTOTYPING

By this point, we have spent three days ideating and sketching, and now have only a single day to build a prototype. But because we weren't faking it earlier, we have most of the copy written, realistic navigation, and plausible UI. Now we just need to up the fidelity.

For this, we choose appropriate tools. We often work in Keynote, because non-designers can contribute, you

With the prototype and user study done, it is possible to take the lessons learned and build the minimum shippable product with clarity. Alternatively, if the sprint revealed large holes in the product direction we can cut our losses early and start over with a new hypothesis.

A LOWER-RISK PATH TO LAUNCH

Employing a prototyping mentality is all about mitigating risk. At small startups, building the wrong product wastes time on a short runway. At large companies, it costs money and can harm a brand. In both cases, it incurs significant opportunity cost.

As a side effect, teams are happier working this way. More people get involved in the ideation phase, everyone gets exposure to real customers, and the team gets a rush from achieving an extraordinary amount in just a week.

If you're interested in running a design sprint within your business, our handbook should give you enough detail to try one yourself: gv.com/design-sprint. ■

* PROFILE



Daniel Burka (@dburka) is a design partner at Google Ventures, working with the investment firm's 200-plus portfolio companies on their design challenges



MIKE MONTEIRO

Words by Martin Cooper Photography by Bryan Tan

Taking care of your clients doesn't mean doing exactly what they want. Truly great design happens when clients trust the experts and the experts stick to their guns, says Mule co-founder Mike Monteiro



INFO

job: design director

company: Mule

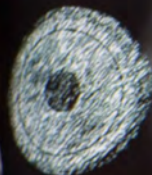
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What's in a name?

"Did you know you can take mule rides to the bottom of the Grand Canyon? They use mules because they won't do anything to harm themselves or their rider. If you trust your mule, you're safe. I thought, you know, that's a pretty good name for a design company"

➤ "‘Fuck’? I say it to get people’s attention," announces Mike Monteiro. "There’s method to this madness. Web conferences are the most boring events in the world. We’re all sitting there, checking our email and looking at Twitter, and there’s this poor schmuck on stage. They’re probably scared shitless ... That’s great, because nobody is paying attention."

Standing on stage and feeling the audience’s enveloping ambivalence, Monteiro one day let the f-bomb slip. The audience stopped typing and looked up. He was clearly on to something.

When he’s not delivering expletive-ridden polemics such as ‘Fuck You. Pay me’ (*netm.ag/payme-259*) at conferences, Monteiro also pens design books – including *Design is a Job* and, out soon, *You’re My Favorite Client* (*abookapart.com*). Day-to-day he runs the curiously titled Mule Design Studio, which he launched with Erika Hall in 2001.

FINE ART AND MACS

So how did it all begin? "Accidentally," Monteiro says. "I was one of those misguided humans that went to art school to get a worthless art degree. I was also stupid enough to get a master’s degree in Fine Arts. While I was doing that, I came across a part of the art building filled with Macintoshes."

"I started playing with the Macintoshes and found them great fun," he continues. "That’s how I stepped into design. I graduated with a minor in Design and that’s how I’ve earned my living since."

The web came into Monteiro’s life some time later, mainly because it hadn’t broken the surface yet. "First there was AOL, but that was a walled garden. Then, one day I logged on and there was this icon that said World Wide Web. I went kind of crazy. Anybody could do anything they wanted to do [on the web], as long as they could figure out how. So, I started figuring out how. It was like discovering punk rock. There was this whole ethos of ‘we’re not sure how to do this, but let’s do it anyway ... and we’ll figure out what’s good later’. There was no middleman and you didn’t need anybody’s permission. You made it and it existed and that was fantastic. I thought: ‘This is for me!’"

From that spark, Monteiro sums up his career path as a series of fantastic accidents, mistakes and misguided assumptions. "I



Office culture Mule Design Studio is based in San Francisco. "It's a boring, big white concrete slab of an office which we've had to fill with interesting things to keep us from crying," says Monteiro

applied for a job and basically lied through the interview and got the job. I then went home and figured out how to do [the job] before I started." From there he started climbing the design studio career ladder.

"Then, one day, I found myself thinking: 'I can run a design studio better than this', which was the dumbest thought that's ever entered my head. 15 years later, I have more empathy for the person that was running that studio than I've had for anyone in my entire life. I understand the pressure that person was under. I was also dumb enough to think that I could avoid bureaucracy. Nothing has ever been further from the truth."

FOUR-LEGGED FRIENDS

So, having decided to set up his own shop, Monteiro needed the right name. "Did you know you can take mule rides to the bottom of the Grand Canyon?" he begins. "They put you on a mule and take you down a little trail. The first time they tried it, they used horses. Horses are beautiful, but also stupid and they jumped ... It was a terrible day. They eventually realised that they could use mules because mules won't do anything to harm themselves or their rider."

Mules, Monteiro explains, have a reputation for being stubborn because they measure every step very carefully before finally deciding to take it, and if the step looks risky, they'll stop. "So, if you're a rider and you trust your mule, you're safe. If you

don't trust your mule you'll die. I thought, you know, that's a pretty good name for a design company. Today, we pride ourselves on taking care of our clients."

Monteiro is, however, quick to point out that taking care of a client isn't the same as giving the client what they want. In his experience, clients often arrive in his office with a goal in mind, and then spend the rest of the project somehow trying to avoid the goal. For that reason, he says, he's happy to argue with clients and even refuse to design

something he knows will only work a sticking-plaster. "I want to design something that is right and something that will last," he says.

This begs the question, how exactly do you define design and the role of the designer? Quick-fire, he replies: "Design is the solution to a problem with a set of constraints, and a designer is somebody who solves problems, given a set of constraints. That sounds so boring, but that's the job!"

SPEAKING UP

Our conversation moves to discussing how bad design makes it into the world. Monteiro is unequivocal: fear is the father of bad design. He explains that, in his experience, people's reluctance to speak up leads to bad decisions, which in turn becomes bad products. "Designers need to remember they are the experts," he explains. "If I need something designed and I don't have any expertise, I hire a designer. I tell the de-

"The reason the client decided to hire you is because they've decided they don't have any design expertise"



signer what I need to happen and they figure out how to make it happen."

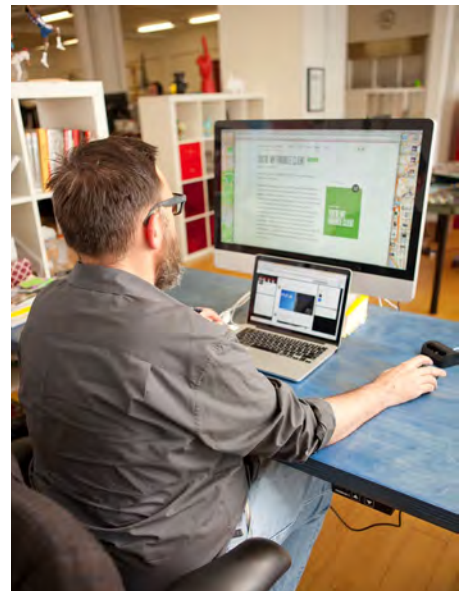
The issue, Monteiro explains, is that designers don't present themselves as the expert and clients don't treat them as such. Rather, designers view themselves as a pair of hands that are willing to do whatever the client wants.

"In essence, they're asking the client to be the designer, and to make the design decisions. The problem is, the reason the client decided to hire you is because they've decided they don't have any design expertise. Imagine you go to the doctor, and the doctor asks you how you want to be operated on or what kind of medicine you'd like."

Continuing his medical analogy, Monteiro explains that a doctor will go through a process of discovery, asking the patient about their problems. With that information, the doctor will use their knowledge and experience to diagnose the problem, and prescribe a cure. Monteiro says he's trying to get designers to act more like doctors as opposed to butlers, who simply do as they're told.

SELLING YOURSELF

Putting all your trust in a designer means it's especially important to ensure you've hired a good one. There is much attention



Left Monteiro's inflatable Jerry doll was a gift from one of his first clients, Brian Credus. "The minute I saw it in his office I said, 'I want that'. He replied, 'I'll give it to you when you get me to change my mind about something,'" he recalls. "I took it home by the end of the day."

► paid to the role of the portfolio in the design world, and it's something Monteiro has to deal with himself when recruiting for Mule. "You don't interrogate a portfolio," Monteiro says. "A portfolio gets you through the door. You should never hire anybody based on their portfolio. It's the same when I'm hiring a designer to work here. All the portfolio shows me is history. From there I get a gut reaction and I talk to the designer."

Rather than being seduced by the cleverness, beauty and the presentation of work, Monteiro is much more interested in the constraints foisted on the designer. "Looking at a portfolio shows me that design happened. I can see a good-looking thing but I don't know if the designer's solution [to the client's problem] worked. That's when I start reading the portfolio. I want to know what you were trying to solve, I want to know what constraints you were up against ... budget, timeline, the number of client stakeholders in the room. I need to know all of that stuff and whether you went back in six months and checked if the initial project goals were met. Until I see all of this stuff, all I know is you can make pretty pictures."

TELL ME YOUR PROBLEMS

So, how should a designer handle a client? How should they go about drawing out the goals and restrictions from their new paymaster? "I don't want to say it's like putting the client on the psychiatrist's chair, but it's very similar. I want designers to understand

this [process of discovery] is part of their job. Making things on the screen is maybe 10 per cent of being a designer. I tell all my designers: 'Until you know exactly what it is you're trying to design, until you have an idea for a solution, until you're trying to test something out, do not sit down at your desk and start putting pixels and lines anywhere.'"

The discovery process is difficult, and Monteiro warns against letting clients dump information on designers. It's great, he says, if a client has done lots of research before hiring a designer – but for him, it's more important to do the research himself. To, in effect, know exactly what the client knows, but first hand. Received wisdom is, sadly, second-rate wisdom.

Being a mercenary soul, I ask Monteiro how a client can ensure they're getting the best value for money from their designer. "You need to ask them as many questions as possible. Ask them why they're making the decisions they're making, ask them to tie those decisions back to goals and problems that they set up. The sentence I hear most from clients is 'I don't know anything about design'. The way I respond is: 'Yes. But you know way more about your business than I ever will. Thankfully, you've hired somebody who knows a lot about design, so let's put the two together.'"

"I don't want to say it's like putting the client on the psychiatrist's chair, but it is very similar"

Finally we discuss how clients should give feedback to their designer. Here, again, Monteiro has some sharp opinions – based on bitter experience – about how to best demotivate your hired pixel-pusher. "My favourite question is. 'Did you mean to use that typeface?' No, it just fell out of the bag. But it's easy to talk about the things clients do that make us bang our heads on the wall. The thing we need to remember is – as a craft – we're professionals who are trained to do this job and we do it every day."

Clients, by comparison, may never have been through a site redesign before and just don't know the process that needs to be followed. To a degree, Monteiro explains, the often complex world of client and designer relationships comes down to communication, patience and salesmanship.

"Look," he says. "It doesn't matter how good you are at making beautiful, usable, modern websites if you can't explain to a client why this is a good solution. All of that stuff is going into the trash if you can't sell it. A designer that knows how to sell mediocre work is more valuable to me than a designer that can't sell fantastic work." ■

Next month: We chat to New York-based designer Jason Santa Maria

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* INDUSTRY

HOW DO YOU IDENTIFY A BROWSER BUG?

Your new site is not behaving how you'd expect – but how do you know if the bug is hidden in your code, or if it's a browser issue? We asked the experts

**BRUCE LAWSON**

Open standards advocate, Opera
brucelawson.co.uk

If you're seeing a bug in every browser, it's probably your code. Make sure you're testing across the full range, because different browsers can share the same rendering engine. To narrow things down, validate your code with validator.w3.org, check your CSS at jigsaw.w3.org/css-validator and look in your DevTools console to catch any JS errors. If only one rendering engine is misbehaving, please, please report the bug to the browser. Steve Faulkner has a great guide to reporting bugs at netm.ag/filingbugs-259.

**FRANCES BERRIMAN**

Senior designer and
frontend engineer
fberriman.com

If you think it's a browser bug, create a test case – this is an example of the bug using the least amount of code it takes to trigger the error. Almost always, the process of stripping back your code will help you identify that the mistake is your own, and if not, you've got an example case to report to the browser developers.


**CHRIS HEILMANN**

Principal evangelist, Mozilla
christianheilmann.com

First, test your assumptions. Is what you're experiencing really a 'bug' or just 'not what you expected'? Often a browser does something different because this is how it was defined in the standard. If you think there is a bug, search the browser's bug-tracking tool for a bug listing and a workaround, or check the error log of the browser console – most browsers now have human-readable errors. Use developer tools to track down what's really happening. Browsers aren't perfect, but it is much more likely that something went wrong somewhere in your code, than that the browser is genuinely broken.


**LEA VEROU**

CSS WG invited expert
lea.verou.me

 If you get a different result in every browser, you've stumbled upon a browser bug! To file it, isolate the issue as much as possible, then read the specification and compare the expected result with what you're getting. Don't rule out the possibility that the specification itself is buggy. In that case, report the issue to the appropriate W3C mailing list (www-style for CSS). Standards folks love getting comments about how these specs are used in the wild.


**REY BANGO**

Developer advocate, Microsoft
blog.reybango.com

 I always blame the browser makers because I never write buggy code! In all seriousness, 99 per cent of the time I'll assume that an error is in the code, because browser makers do a fairly good job of capturing issues ahead of time. They're certainly not perfect but they do pretty well. Browser-based debugging tools have evolved tremendously, allowing you to drill down into issues fairly easily. Couple that with a good linting tool like JSHint and in most cases you can easily identify developer-caused issues.


**PAUL LEWIS**

Developer advocate, Google
aerotwist.com

 Always make a reduced test case. That way you're eliminating the possibility that the bug is in your code or a framework. It will also help you define the triggers for the bug appearing. Once you've done that, have someone else check the code. We all make mistakes because we're too familiar with our code. Never be afraid to file a bug that includes your test case – that's the best way to get fixes prioritised by vendors.

**ANNA DEBENHAM**

Frontend developer
maban.co.uk


 This happened to me recently. I isolated the code into a demo on JS Bin to make sure nothing else I'd written was causing the issue, and narrowed it down to a couple of lines of CSS. I tested the demo on different browsers and devices, and realised the bug only appeared in the latest version of WebKit for elements with repeating background images, a background colour and a CSS transform. Finally, I submitted a bug report.

FURTHER READING


DO THE RIGHT THING

 In her *Smashing Magazine* article, 'Help the community: report browser bugs', (netm.ag/reportingbugs-259) Lea Verou presents a compelling case for stepping up and filing bug reports with browser vendors, as well as sharing her views on how you can identify bugs. It's a great technical read.

QUALITY ASSURANCE

 It's understandable that teams feel quality can be compromised when deadlines start to loom. The makers of bug-tracking app Sifter have put together a series of lessons that cover ways to analyse and review software, and are designed to help you avoid fire-fighting: netm.ag/Sifter-259.

THE CSS DETECTIVE GUIDE

 Denise Jacobs' *The CSS Detective Guide* (netm.ag/detective-259) tackles the familiar situation in which your seemingly perfect code just doesn't render properly.

Read the extended version of this month's Big Question at netm.ag/question-259



* Q&A

ADDA BIRNIR

The Skillcrush founder on why her company could have been a chick-lit novel, and the first time coding truly blew her mind



job: CEO and founder
company: Skillcrush
w: skillcrush.com
t: @addabjork

net: How did Skillcrush come about?

AB: I had a germ of an idea, which snowballed and was brought to life by an incredible community of people all working together. It really began about a year after I started learning to code, when I was working as a technical producer at MTV. The company was in the midst of a huge transition to become more digitally focused, and many non-technical people were increasingly being asked to shift into roles requiring technical skills.

It was distressing to see how many people held on to misconceptions about what it meant to be 'technical', and how much that held them back. I had just gone through my own process of learning technical skills, so I knew first hand that all this technology stuff wasn't nearly as confusing or complex as everyone seemed to believe.

I started to think: what would it take for these people I was working with to feel like technology was something they could do? How could technology education be made more accessible? More for the rest of us? More practical? More – gasp – fun? But my original idea was a chick-lit book. Skillcrush has come a long way since those days!

net: What's most intimidating about code – is it all the symbols, or the culture that exists around it?

AB: Both. Except I would argue that it's not so much the culture as it is the misunderstanding of the culture and what 'techy' people are like. I had someone recently ask me how I deal with isolated people in tech who don't network with each other. I was stunned because that couldn't be further from the truth. Techies love to come together and work together and make things happen. The only reason the internet is as big and powerful and bodacious as it is, is because techies love to connect. Also, how many other people do you know that spend their down-time doing the work they do during the week, for fun?

That said, I think there are legitimate reasons why women, minorities and some beginners feel alienated by aspects of the tech community. All I can say is that that behaviour is inexcusable, and for every one of those people, there are 10 people doing everything they can to make everyone feel welcome.

net: How do you go about describing programming to a true beginner?

AB: Automation and scale. I think the most important concept for beginners to wrap their heads around is the idea of creating systems (or programs, if you will) that will work whether they have one piece of data or one million. That is the magic of programming! But it's a very foreign, abstract concept if you have never encountered it before.

net: At what point in your career did the penny drop? At what point did you think: 'I get it!'?

AB: If I had to choose a watershed moment, I would say when I first installed and used the Nokogiri gem. Basically this is a Ruby gem that allows you to scrape any website in the world using only three to five lines of code. There was something about the combination of utter simplicity and insane power (scrape *any* website in the *world*) that totally blew my mind.

net: Thinking about Skillcrush as a startup – what advice would you give to somebody with a great idea and no idea how to get started?

AB: You have to start. Tomorrow! Seriously, figure out something small to do and just get to it. No big deal, right? I think the most important thing when it comes to entrepreneurship is to approach everything with an open mind and remember two things. Firstly, in the early stages of your company, the only goal should be to learn about your customer and understand their pain. Secondly, in the long run your only goal will be to solve your customer's pain. Do that and you will never fail. 📌

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* CAREERS

LEAVE YOUR JOB

Cassie McDaniel explores why leaving your job can be a blessing in disguise

> I first wrote about leaving my job a few years ago for a blog that paid me \$75 (75 dollars!) for my efforts. It was the first article I ever published. In addition, the act of leaving my job launched me into a space where I became more comfortable asking for something more, or different, as well as admitting defeat when I could not get what I wanted. These skills have proven valuable time and time again.

THE FIRST TIME I QUIT

I have spent months, and sometimes even years, in jobs that were not well-suited to me, which affected not just my happiness at work but my relationships and general well-being. The more unhappy I became at work, the less sure I was of what was making me unhappy, which made everything that was great in my life vulnerable to critical scrutiny. It is not a pretty cycle. What I know now, but which I didn't know then, is that leaving your job can give you more than it takes away.

In 2009 I left a job where six people were fired in a day. Six may not sound like a lot,

but we were a small team. The company blamed the layoffs on the economy, but the truth was they were eliminating 'dead weight' and correcting bad hiring decisions. It seemed cruel that employees who had been there for years were not allowed to pack their belongings before they were walked out. Meanwhile I, who was hired a few months prior, remained.

What stood out to me was how many colleagues complained behind closed doors about the management's decision but ultimately chose to stay with the company. Why? I realised then that change is something that happens to most people. But change is inevitable, no matter who you are or what you are doing – and I found that I wanted to own the change in my life instead of letting it own me.

QUITTING TO WIN

The next job, and the job after, were harder for me to leave. These companies had qualities I adored – like the work culture, the work itself, great managers or colleagues, but never all of them at once. I could compromise for a little while, but since I had already jumped ship once, it seemed odd to have inched closer to my ideal position, only to stop short of a quality or two that would have allowed me to really love what I was doing.

I regularly think of an article on The Pastry Box Project by Karen McGrane (netm.ag/259-mcgrane) about how it's inevitable that you will hate your job sometimes, and that if you're doing

work you love more than 25 per cent of the time then you're doing A-OK. Some days I agree with her, especially on the point that no job is enjoyable all the time, and that tolerance of down-sides will help improve your job satisfaction. But other days I wonder why we endure work, people or practices that don't align with our values. It seems hard to imagine that if you make a bad decision now

you can't correct your course later, or that more opportunities won't arise if you let go of this one.

The desire to enhance one's career is not an anomaly. A study at the University of Phoenix found that 80 per cent of people in their 20s wanted to change career, as opposed to 64 per cent

of people in their 30s, and 54 per cent in their 40s (netm.ag/study-259). Changing careers is symptomatic of the modern day worker's attempt to find fulfilment in their day job.

The only way to find a job you love is to take risks in your career – and sometimes that does mean saying no

A WORTHWHILE RISK

There are consequences to consider: how will this look on my résumé? How will I pay my rent? Will I be able to find something else? But I have come to the conclusion that the only way to find a job you love is to take risks in your career, and sometimes that does mean saying no, or leaving a job. However, when doors close, windows open. Getting rid of things allows you to fill spaces with something different. And almost certainly you find that when you have nothing, you have no choice but to be resourceful. ■

* PROFILE

Cassie (cassiemcdaniel.com) leads the design team for the Mozilla Webmaker project, a dream job that took a decade to find. She speaks and publishes regularly about using design for good



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GALLERY

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Ryan is the founder of design and development studio Havoc Inspired, and one half of oozled (oozled.com) – an online directory of creative resources
w: havocinspired.co.uk
t: @ryanhavoc



★HTML5 VIDEO, GOOGLE MAPS, GOOGLE STREET VIEW

STREETART.WITHGOOGLE.COM

Google Cultural Institute google.com/culturalinstitute

➤ The latest offering from the Google Cultural Institute is the Street Art Project: an ongoing collection of art from the streets. Google has partnered with hundreds of museums and cultural institutions to host the world's cultural treasures online.

What I particularly enjoy is that street art has typically been an art form that you could only see and enjoy if you were visiting that particular place, and often you had no idea who had created it. This changes all that.

The project takes advantage of Google Maps' Street View – going beyond looking up your own house. Here you can travel the world, viewing work from artists with all kinds of backgrounds and motivations.

It also uses the street view technology to give complete, 360-degree views of work like London's Bestiary and Tour Paris 13. Interviews with the artists are another nice addition. Seeing how it builds up the pieces over such a large space is fascinating.

“A perfect example of what can be done with Google Maps, with a great use of imagery and typography”

DAN EDWARDS @DE



*RWD, CSS TRANSITIONS

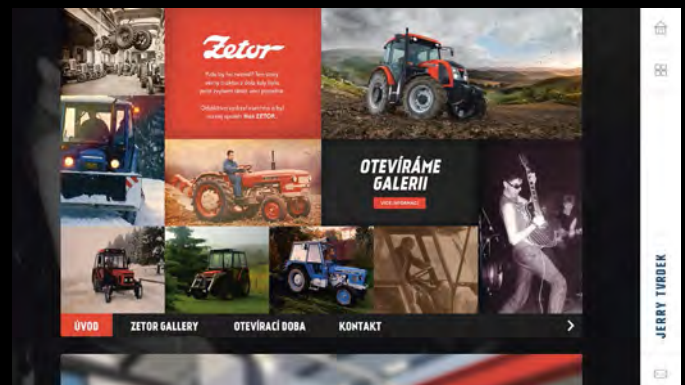
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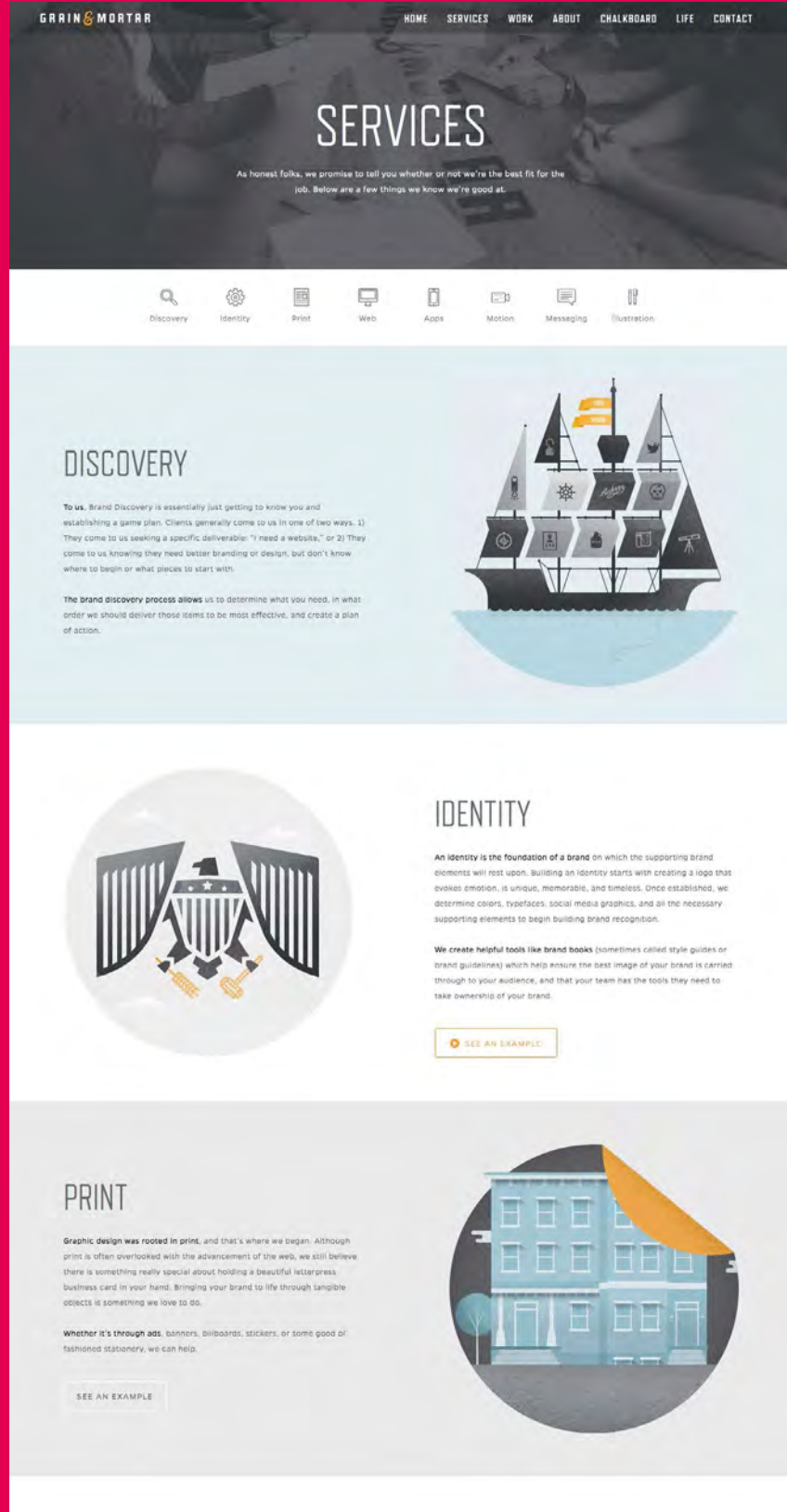
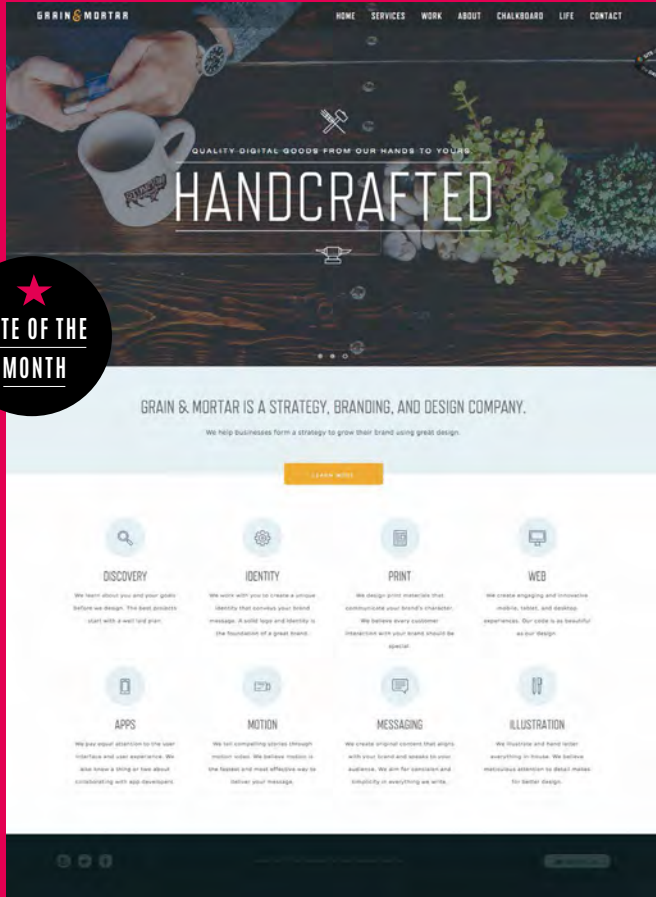
Jerry Tvrdek jerrytvrdek.com

> Jerry Tvrdek is a Montréal-based designer and creative director. For his recent portfolio redesign he wanted to put his work centre-stage, and he's achieved this in spades. Examples of his creations fill the entire space, and a side-navigation bar allows you to quickly jump to specific areas of the site.

Jerry has taken a super-minimal approach here, stripping away any superfluous information that ultimately new clients don't care about, and instead showcasing exactly what they want to see. "My biggest priority was featuring my work 1:1. I wanted to present it in a 'what you see here is what you get' kind of way and allow the visitors to see all the details," says Jerry.

There are some nice, subtle touches throughout, from the About information (which, like the rest of the site, is minimal and concise) that slides out from the navigation bar, to the little spaceship on the homepage that flies off when you hover near it before later reappearing above a particular project's details if the viewer decides to explore a specific piece of work. The complimentary typography choices and colours are also spot-on.





★
SITE OF THE MONTH

*ILLUSTRATIONS, RWD, WORDPRESS, HTML5 VIDEO

GRAINANDMORTAR.COM

Grain & Mortar grainandmortar.com

➤ Grain & Mortar is a strategy, branding and design company based in Omaha, Nebraska. For its recent redesign it has aimed for a gritty versus polished-and-perfect look, with clean typeface and strong lines contrasting with fun, textured illustrations and ornate headings. The studio members are featured throughout the site, so you get a real feel for the company and the people just by navigating through the pages.

“We wanted to use photography and illustration to create more of a lifestyle feel,” explains the company’s operations editor Kristin DeKay. “One of our favourite new pages – grainandmortar.com/life – is an aggregator of all our posts from Instagram and Dribbble, so visitors can see what we’ve been up to recently.”

The site uses WordPress as the CMS and takes advantage of HTML5 video and subtle CSS3 animations to enhance the user experience. It’s also beautifully responsive with attention being paid to every detail. Go on, shrink that browser! Finally if (like me) you’re a sucker for a trendy office space, make sure you check out the About page.

“Illustrations take it up a notch. I love the textures and details – gritty and handmade, like the name implies”

GERI COADY
@HELLOGERI

*JAVASCRIPT PLUGIN, CSS TRANSITIONS, BROWSER STATS

OUTDATEDBROWSER.COM

Bürocratik burocratik.com

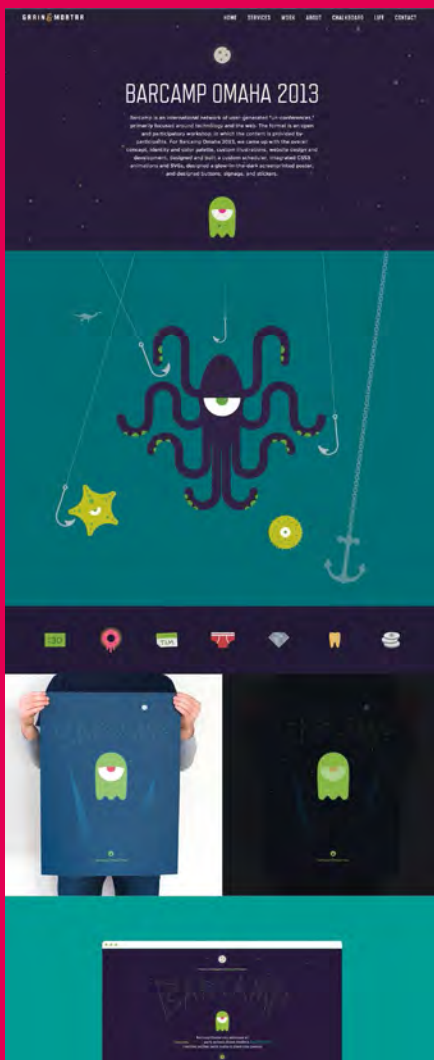
➤ Outdated Browser is the best solution I’ve seen for solving the issue of supporting users on older browsers. Adriano Esteves from Bürocratik, the studio behind the site, explains the problem developers face: “In a perfect world, we’d stop making sites compatible for outdated browsers. In real life we can’t. We all have to do magic tricks to get our sites working on every browser.”

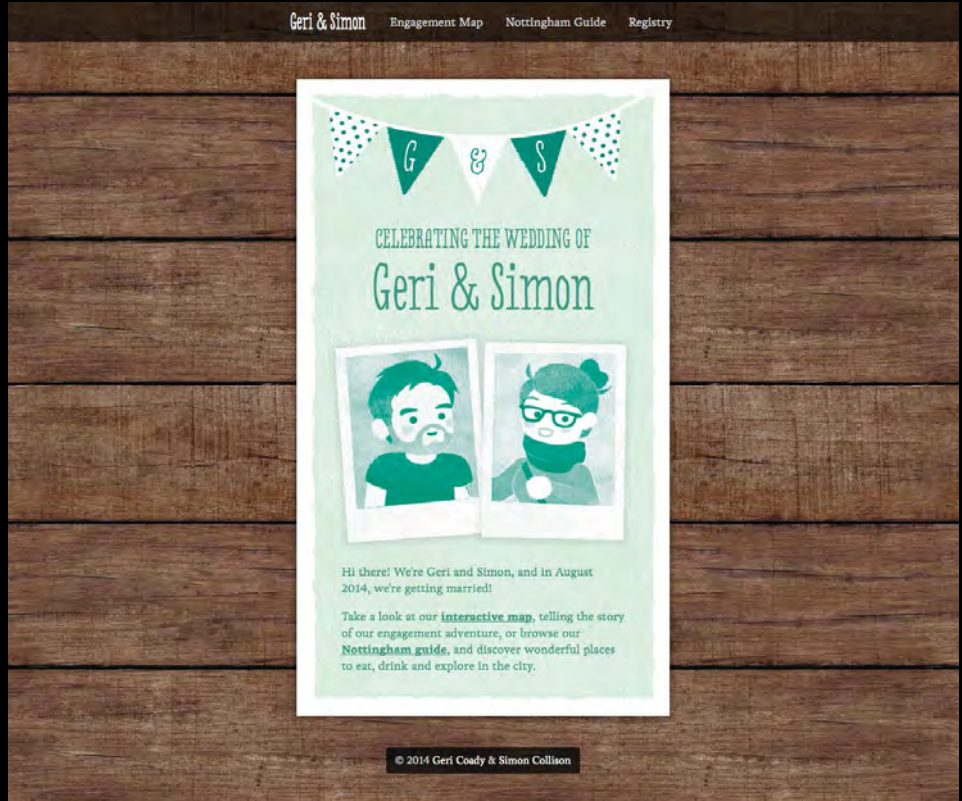
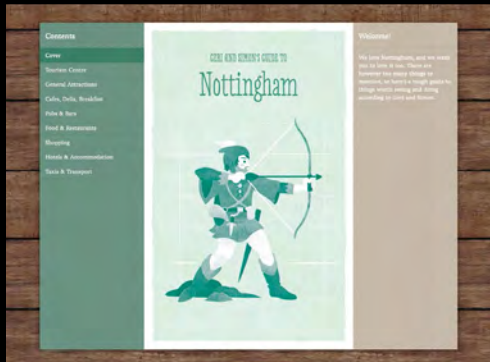
To have the best experience, keeping up-to-date is vital. “Developers know this, right?” Esteves continues. “But some users don’t. They don’t have the slightest idea of even which browser they are using.”

Outdated Browser tackles these issues in two forms: the website for standard users, and a plugin for developers. The plugin can be configured to be detected when certain features aren’t supported, in which case it presents a non-obtrusive message at the top of the page encouraging users to upgrade. Not only is this process straightforward and tackled well from a visual point of view, it’s also non-biased. All the major browsers are listed, along with platform support and usage statistics – it’s up to the user which they choose. Future updates will include multilingual support and mobile browser detection.

“Outdated Browser finally offers an elegant, standardised solution for internet dinosaurs”

DAVID CLARKE
@DAVIDCLARKEAU





* RWD, SALVATORE, PICTUREFILL

GERIANDSIMON.COM

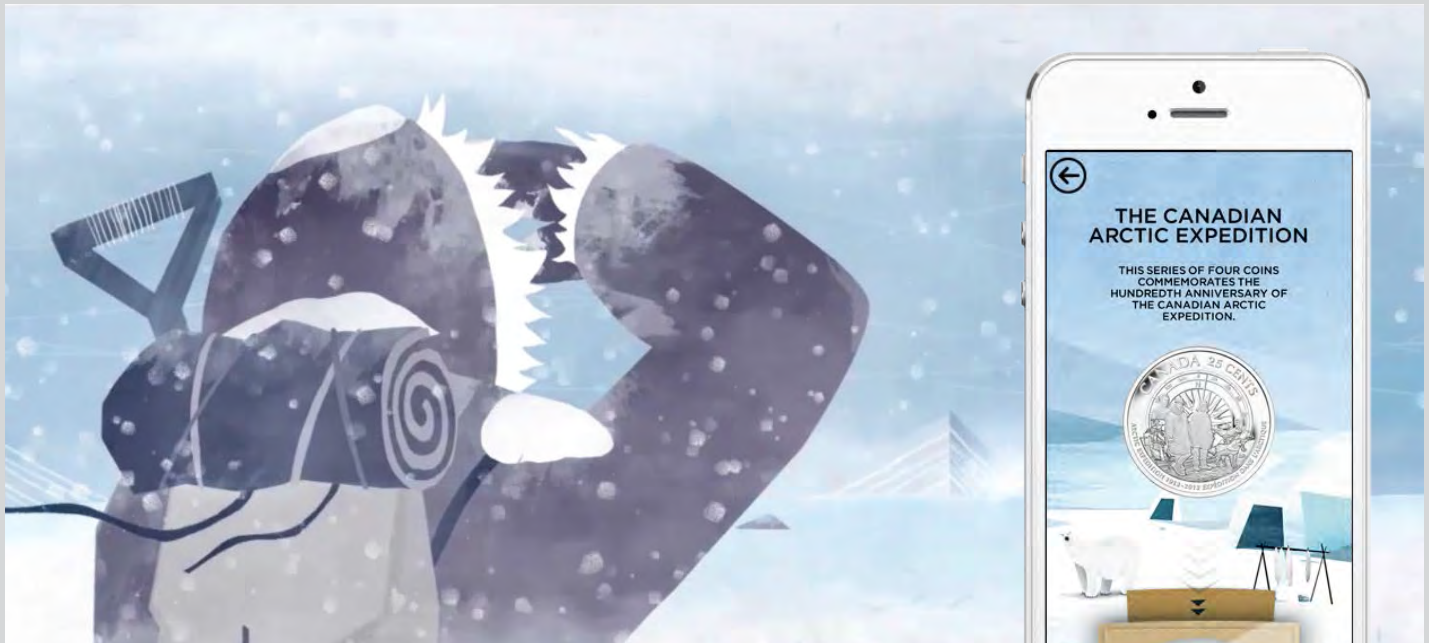
Ceri Coady hellogeri.com, Simon Collison colly.com

In August 2014 web designers Simon Collison and Geri Coady got married. "With me living in Canada and Simon living in England, travel has been a necessary part of our relationship," Coady explains.

They've translated this idea into an interactive engagement map. Much to the chagrin of us regular, romantically challenged menfolk, Collison wooed Coady all over the world. Here, you can read their story, and enjoy Coady's wonderful illustration work, from meeting to proposal. Collison used Salvatore (salvatore.com) for the reflow of the country illustrations and responsive image polyfill Picturefill (github.com/scottjehl/picturefill) for all the images.

With wedding guests travelling from far and wide, the couple also produced a helpful guide to Nottingham so visitors could easily find their way around. This is a wonderful piece of content on the historic city, but of course being the designers that they are, it looks great, too.





*CSS ANIMATIONS, HTML5 CANVAS, JAVASCRIPT

HEARTOFTHEARCTIC.CA

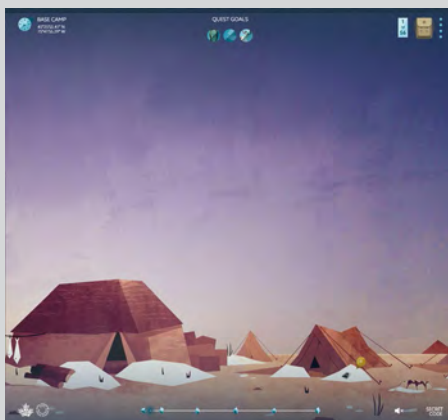
Cossette cossette.com, Jam3 jam3.com, Tendril tendril.ca

➤ The spectacular Heart of the Arctic is a game built using HTML5 Canvas, CSS3 transforms and transitions, along with beautifully illustrated graphics. Players follow in the footsteps of the Canadian explorers, travelling through the Arctic, uncovering hidden items and unlocking lost coins. Each item has historical information associated with it so this is an educational game as well.

Created to celebrate the 100th anniversary of the Canadian Arctic Expedition, the site is a project by the Royal Canadian Mint (mint.ca), and Montréal-based communications agency Cossette, in collaboration with Jam3 and Tendril.

“We worked together to concept the whole timeline in order to identify different points of interaction, how people would discover the games, and the overall game logic,” says Pablo Vio, creative director at Jam3, the studio responsible for production and site design. “This visualisation helped us to identify how the storyline would play out and flow during use, from a macro standpoint.”

“We loved creating all the intricate flora and fauna,” adds Tendril’s Alexandre Torres, who worked on the game’s art direction and animation. “It was magic to make literally an entire whimsical world from scratch.”





*HTML5 VIDEO, CSS ANIMATIONS AND TRANSITIONS

DIGITAL-DEADLY-SINS. THEGUARDIAN.COM

NFB Digital Studio Vancouver nfb.gc.ca, the Guardian theguardian.com, Jam3 jam3.com

➤ Digital Deadly Sins is a documentary born out of the collaboration between the Nation Film Board of Canada (nfb.ca) and the Guardian (theguardian.com). The seven deadly sins – pride, lust, greed, gluttony, envy, wrath and sloth – have been with us for hundreds of years, and the modern world offers a whole host of new vices and distractions. This documentary looks at how technology is reshaping our beliefs and everyday lives. Not only that, but the team that put it together has used every modern development trick available.

“We built a custom 3D rendering engine that uses CSS3 3D transforms, rendering entirely in the DOM. And to maximise performance all the infographics were custom-built on canvas,” says Jam3’s Pablo Vio, creative director on the project. “Today’s digital world brings a whole new set of moral dilemmas. Our mandate and challenge was to identify these behaviours and uncover any hypocrisy within users’ day-to-day digital interactions.”

Easy to explore and digest, it includes interviews with people like comedians Bill Bailey and Ophira Eisenberg. This is a fun, truly modern way of making documentaries.



beyond
tellerrand
3RD - 5TH NOV
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2014

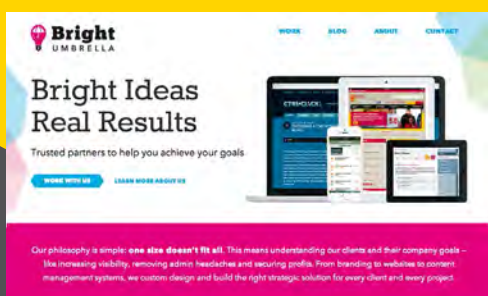
JOHN ALLSOPP
ANDREW CLARKE
JONATHAN HOEFLER
JON HICKS
TIM KADLEC
STACEY MULCAHY
STEFAN SAGMEISTER
AND MANY MORE...
BEYONDTELLERRAND.COM
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SHOWCASE

Sublime design
& creative advice

THIS MONTH FEATURING...



FOCUS ON 56

Your users may not always view your main navigation. **Gene Crawford** shows you how to ensure your site still makes sense without it



PROFILE 58

We chat to web designer **Meagan Fisher** about her nocturnal work schedule, why coders make better designers and her owl obsession



HOW WE BUILT 64

The team at **Code and Theory** walks through how it put together a future-proof, responsive new site for the *Los Angeles Times*

DESIGN CHALLENGE

This month...

COCKTAIL BAR WEBSITES

* PROFILES



CHRISTOPHER DOWSON

Christopher is a senior designer at Distinction's Nottingham office
w: distinction.co.uk **t:** [@myfirststraygun](https://twitter.com/myfirststraygun)



PAUL MCKAY

Paul is a frontend developer and designer for multidisciplinary agency Three Thinking
w: iampaulmckay.co.uk **t:** [@McKay_1988](https://twitter.com/McKay_1988)

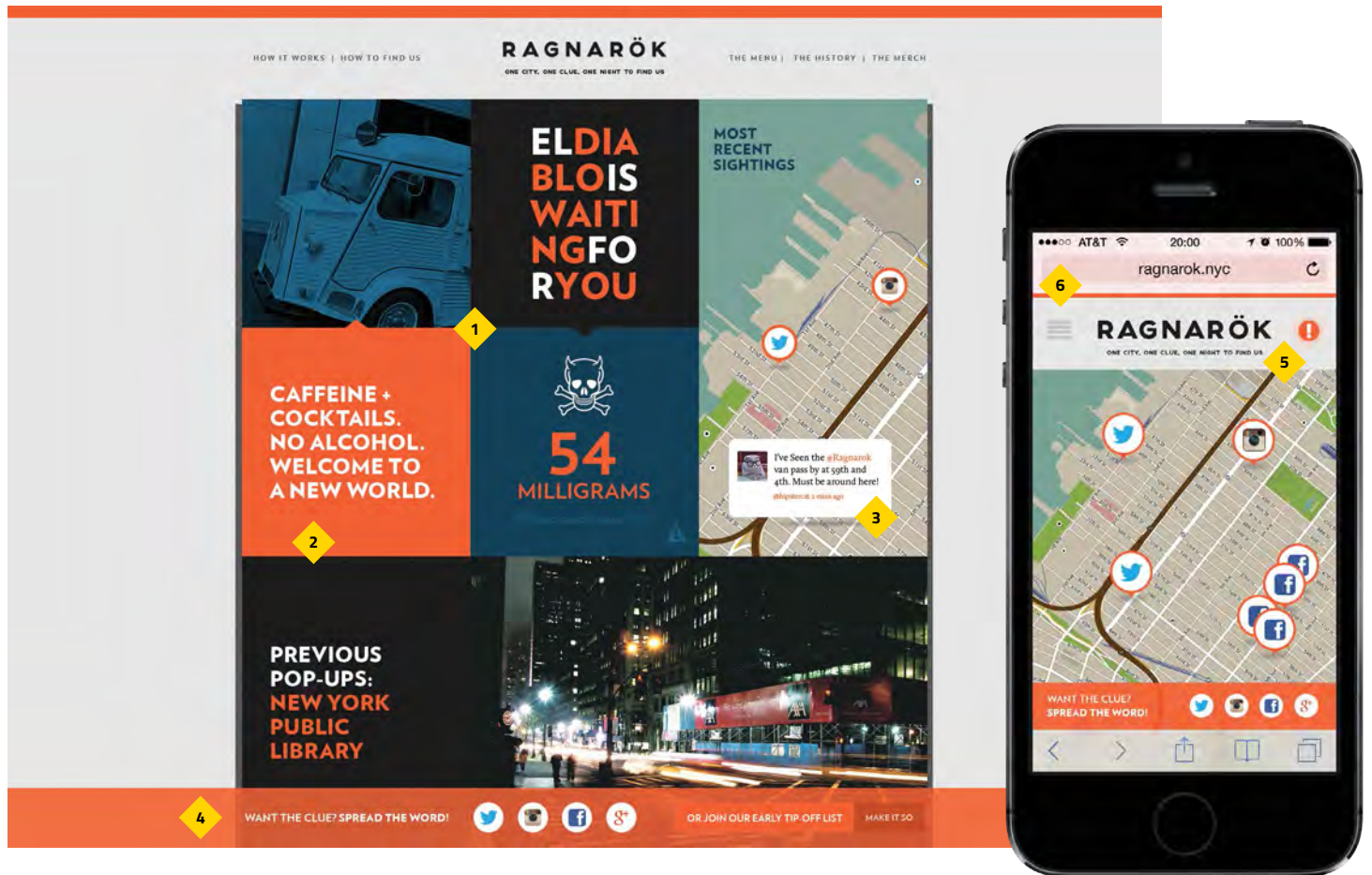


IAN GAIE

Designer Ian runs Aberdeen-based graphic and web design company Hacami
w: hacamidesign.co.uk **t:** [@hacamiart](https://twitter.com/hacamiart)

BRIEF

We'd like you to design a website for a cocktail bar. It could be a pop-up shop that sells organic spirits, a food-truck style mobile bar, a retro speakeasy, or some kind of achingly cool hipster joint that serves drinks in jam jars. The choice is yours.



* CHRISTOPHER DOWSON

RAGNARÖK

Customers find this mobile bar by following a social media treasure trail (full-size image at netm.ag/dowson-259)

> New York is my favourite place in the world. Whatever you can think of can usually be found there, and so it's not hard to imagine a mobile cocktail bar that a) is purposefully very hard to find, b) serves caffeine-based cocktails instead of alcohol, and c) has a pretentious name that's totally unrelated to what it is or does.

Ragnarök's location isn't announced beforehand, instead you are given a clue and have to monitor social media to work it out. This is why the mobile end of the site has the map front-and-centre. The site is a heavily social experience, and Ragnarök is much easier to find when you have friends.

This site would be easily implemented with the framework I've developed for work, which allows mobile-first development but a fixed grid for IE8 and below. As Brooklyn is hipster central, you can bet someone will be on Windows 2000.

Q CLOSE UP

(1) The simple block structure will scale and collapse nicely for all viewport sizes. (2) Typography is bold and geometric (using Verlag as the main typeface) but simple, much like the colour scheme. (3) Pinned to the map are geolocated tweets, Instagram posts and public Facebook statuses that use the right hashtag or keywords. After a few minutes they fade, and the map is always centred on the most recent entries. (4) Social shares earn you the night's clue, maximising exposure at minimal cost to the user. (5) The attention symbol begins to pulse if you are in the area of the truck – this is powered by pretty straightforward geofencing and geolocation. (6) The mobile menu updates with the number of sightings in the user's current area, as well as giving them the option of checking the current timeline of tweets and shares, or even snapping a picture of the van if it's passing by.

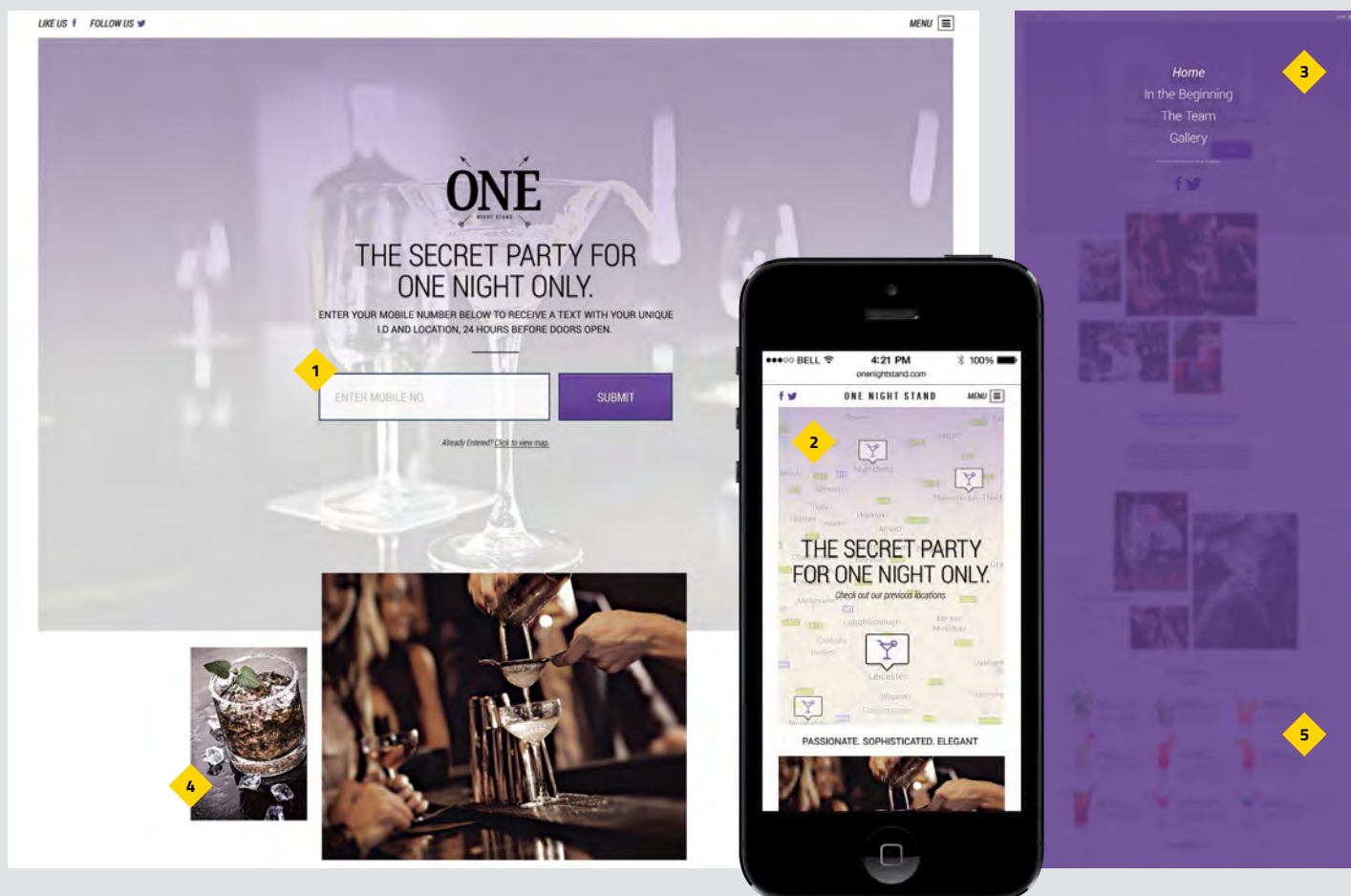
MY MONTH

What have I been doing this month?
Putting the finishing touches to two very large websites for two very large clients, working on a brochure site for a small, local glazing company and painting a dining room.

Which websites have I visited for inspiration?
Useful stuff that pops up on Twitter.

What have I been watching?
Orange is the new Black.

What have I been listening to?
Josh Garrels, Rival Schools, Ben Folds, Godsmack.



* PAUL MCKAY

ONE NIGHT STAND

Users must sign up to a messaging service for info and access to this bar (full-size image at netm.ag/mckay-259)

MY MONTH

What have I been doing this month?
Freshening up my portfolio, getting to grips with AngularJS and working on a site for a home-builder.

Which websites have I visited for inspiration?
Web Design Ledger (webdesignledger.com), siteInspire (siteinspire.com).

What have I been watching?
Game of Thrones, the *Justice League* animated series and *Batman of the Future*.

What have I been listening to?
Michael Jackson, Morcheeba, blink-182.

> The concept behind One Night Stand is to take the best cocktail bar and make it available UK-wide. Customers subscribe to the site through a messaging service, then 24 hours before the doors open, a text message would be sent with a unique entry code and details of the bar's location for one night only. The site would be driven through social media, which would not only populate the site with imagery but also help create a viral effect.

The design uses a mix of structure and random placement of imagery to signify the unplanned route that the bar would take though the UK, whilst emphasising its subscriber-only basis. Utilising percentage-based widths in CSS and adaptive media queries, the site would be fully responsive and have the potential to become an app. The mix of HTML5 and AngularJS throughout this build would ensure the site is future-proof and allow it to evolve gracefully over the years.

CLOSE UP

(1) On the homepage, users will be prompted to enter their mobile number. They will receive a text with the bar's location and their unique entry code 24 hours before the doors open. (2) Google Maps provides a backdrop, showing previous locations and an Instagram feed of photos taken by customers. (3) The navigation allows customers to explore the history of One Night Stand (how it came about, more about the founders and so on), as well as allowing them to unsubscribe from the text service and see the full gallery of previous nights. (4) Feeds from Twitter, Instagram and Facebook will be brought in to show the atmosphere at by One Night Stand. (5) A menu of available cocktails finishes off the design and gives customers a taster of what's to come.



* IAN CAIE

66 BAR

A summery pop-up bar site with a jQuery-powered sundial-effect homepage (full image at netm.ag/caie-259)

> 66 Bar is a pop-up cocktail experience that travels all over the UK via a fleet of branded trucks. By creating an outdoor feel with the use of outdoor heaters, sheltered areas and beach-themed decoration, 66 Bar will give customers a relaxing holiday experience in their very own city. The name comes from the 66 different organic ingredients used in the cocktails, sourced from each location, making all cocktails unique to each city. The mobile structure means that customers are able to follow the 'sun' wherever 66 Bar goes.

Users can interact with the team or other users on the blog in order to see what is going on in all the cities where the bar is based. There's a page that lists the cocktails on offer, and another that includes information on the team and what it offers to each city.

The content structure is built on the views and opinions of the customers. The aim is to develop a following within the site as well as on social media platforms. **n**

Q CLOSE UP

(1) In the CSS, the shaker and glasses would be set as two background images. The shadow image will be a transparent PNG, and a jQuery script will get the time from the user's local machine telling the CSS to swap out the shadow, depending on the time of the day, giving a sundial effect. (2) Using an open source font will ensure consistency throughout the site. (3) The main menu bar appears in the footer. A lemon slice icon is used as the popup button to engage the slide-up effect. I'd utilise CSS3 and use the WebKit animation ease-in-out feature to create a smooth transition. This would reveal the cocktail of the week and a list of locations for the next event. (4) SVGs will be in use for the menu bar to give a crisp image on retina displays. (5) Using media queries I'd swap out the cocktail glasses and replace them with a simpler image such as the cocktail stirrer when appropriate, to allow the content to breathe.

MY MONTH

What have I been doing this month?
Working on a few frontend web designs for two local companies.

Which websites have I visited for inspiration?
Webdesign Inspiration (webdesign-inspiration.com) and One Page Love (onepage.com).

What have I been watching?
I have finally started on *Breaking Bad* and catching up on series three of *Suits*.

What have I been listening to?
Milky Chance, Luke Sital-Singh, Sun Kil Moon and Jungle.

* FOCUS ON

NO-NAV NAVIGATION

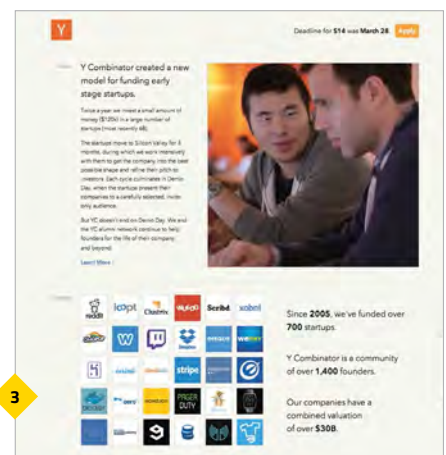
Users may not always view your main navigation, so it's worth ensuring they can still find their way around, says Gene Crawford

I was recently talking with a friend of mine at Sparkbox who was telling me about a technique they use to keep the idea of 'content-first' alive throughout the new website design process in the company. The team will routinely test new designs to see if it's possible to navigate them without using the primary navigation. I challenge you to try this on your own website, or on any new website design project.

Testing like this is not a foolproof way of ensuring you're working content-first, or of validating your information architecture scheme. What it will do is help you make sure people can make their way around the site in non-optimal situations – on mobile devices, for example.

What happens if your navigation design falls apart because of something technical, if that fancy dropdown you designed breaks, or if the user has JavaScript turned off (we can debate the reality of this later)? How about if the user doesn't understand what the hamburger icon means and never actually sees the navigation? There are quite a lot of situations where someone may not engage with your navigation schema, and need to make their way around simply by using the text or images that make up the design of the page.

This ingenious test is simple and effective. Just ask yourself or your team: 'Can I find my way around this website without using the navigation?' and you'll see very quickly if you've got some foolproof queues in place or not. **n**



(1) The website for Sparkbox (seesparkbox.com) reflects the company's ethos of navigating websites without using the main navigation. (2) Web design shop Bright Umbrella's site (abrightumbrella.com) keeps things content-first as the user scrolls down the homepage, allowing them to find

sub-content without the aid of the main navigation. (3) The website for the startup accelerator program Y Combinator (ycombinator.com) blends in content about the program and sections from other websites it manages, all before displaying the main navigation (which is in the footer).

* PROFILE



Gene's mission is to work tirelessly at providing inspiration and insight for developers. His recent projects include unmatchedstyle.com

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* PROFILE

MEAGAN FISHER

owltastic.com

The nocturnal designer on the importance of analytics, having a style that's not a style and grappling with the business of design

> Having spent her childhood visiting galleries with her grandfather and being taught the subtleties of good craftsmanship by her father, it seems that Meagan Fisher (for the record, it's M-ee-gan, but she won't correct you if you get it wrong) was always destined for a high-flying creative career. Her journey has seen her flitting between studio jobs and freelance work, switching between cities and keeping night-owl hours. We caught up with her ahead of her talk at Generate London on 26 September, to find out about her decade in design so far ...

net: Hello! Why don't you introduce yourself and your work?

MF: Hi! I'm Meagan Fisher, a freelance web designer working in Brooklyn, New York. I've been designing since 2004 – a whole 10 years! I've done work for a wide range of companies – nonprofits, agencies, big brands, you name it. Lately I've been doing a lot of marketing work for startups, and some frontend work creating responsive and Sass-based sites.

net: You seem to have a thing for owls ...

MF: I do, it's true. The owl obsession developed slowly from several directions. I used to do most of my design work from 10pm to about 6am, because that's really my most productive period of the day. So I identify with nocturnal creatures on that level. Also, when I left for college my father told me an owl had moved into the big tree in their backyard, and it reminded him of me because it kept him up half the night





 INFO

location: Brooklyn, New York

designing since: 2004

URL: owltastic.com

expertise: Marketing web design, app design, responsive design, web typography

clients: Twitter, The National Audubon Society, Chartbeat

▶ and made a lot of noise. It seemed like a sign that the owl was meant to be my symbol. Plus, I aspire to be more wise, and owls are a great reminder of that.

net: How and when did you first become interested in design?

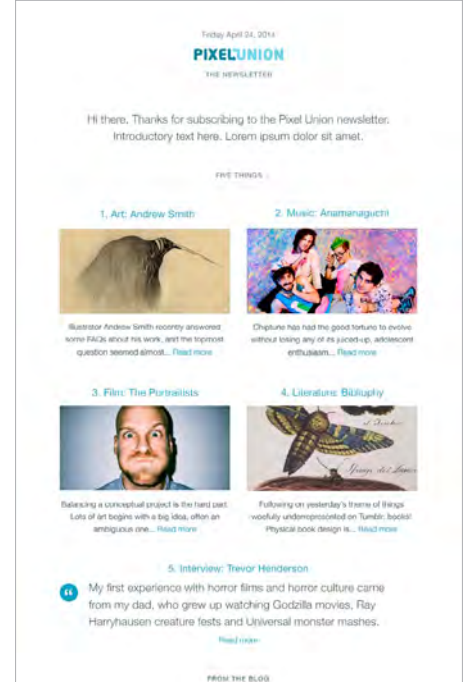
MF: When I learned how to write, probably. One of the earliest memories I have of ‘designing’ is sitting in church services and sketching on the backs of the programmes, trying to mimic the different font styles I could see in the chapel. Also, when I was young my grandfather – who was a New York City advertising designer in the 60s and 70s – would take me to art museums around the city. My father, who collected antiques, taught me to note the lettering, patina, finish and craftsmanship that went into making his treasures. These things shaped my appreciation of the details that make something beautiful, so I think I was trained to look for the design in everything from an early age.

net: And the web – when did you start thinking that technology might become your chosen medium?

MF: I never thought I could make a living from my love of design. I’d considered studying graphic design in college, but I thought it’d mean a career creating billboards and magazine ads, which I wasn’t much interested in. So I majored in English Literature instead, but I also started doing



Chartbeat Fisher rebuilt Chartbeat’s support site, with the aim of making it “elegant, fun and useful”



Pixel Union An HTML email for Pixel Union that echoes its new style as it continues its redesign

Flash tutorials for fun (when I was meant to be doing homework). A few friends asked me to make Flash websites for them, and I realised I enjoyed making websites more than studying, so I dropped out of school and found a job. During my internship at a software development company, I was introduced to web standards and Photoshop (thank God!), so I moved away from Flash.

net: Do you code?

MF: I ‘code’ in that I work in HTML, CSS and sometimes Sass or Less to create in-browser prototypes of my designs. Sometimes these markup-based design prototypes end up being the finished product that gets launched, other times

a ‘real’ developer will use them as a jumping-off point.

I think I’m a better designer because I know how to do most of the frontend development for my work. I understand the medium I’m designing for (browsers), and I don’t have to rely on other people to see my ideas come to life. When I’m making a site that’s responsive, I don’t have to create 12 different PSDs per page to show how a design should adapt to different screens. I can simply make the design responsive in the browser, and test my ideas live on different devices. I’ll always consult and defer to a specialist when it comes to development work, I just think it helps that I can speak their language.

net: How do you think your style changed over the years?

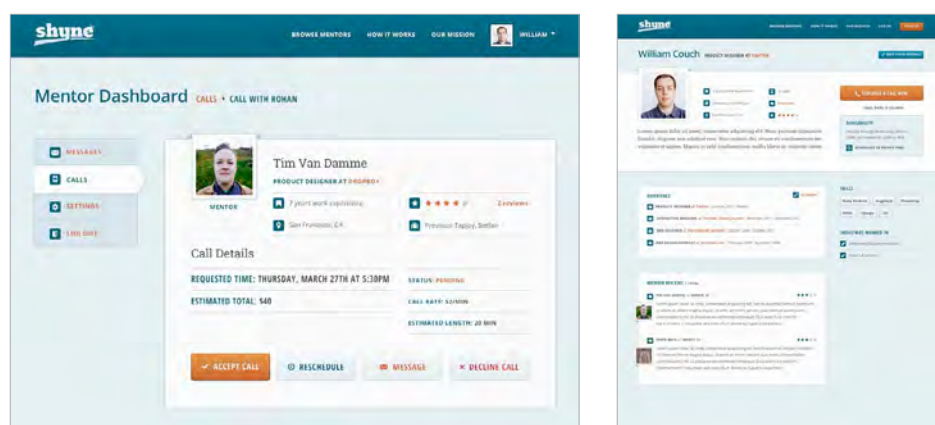
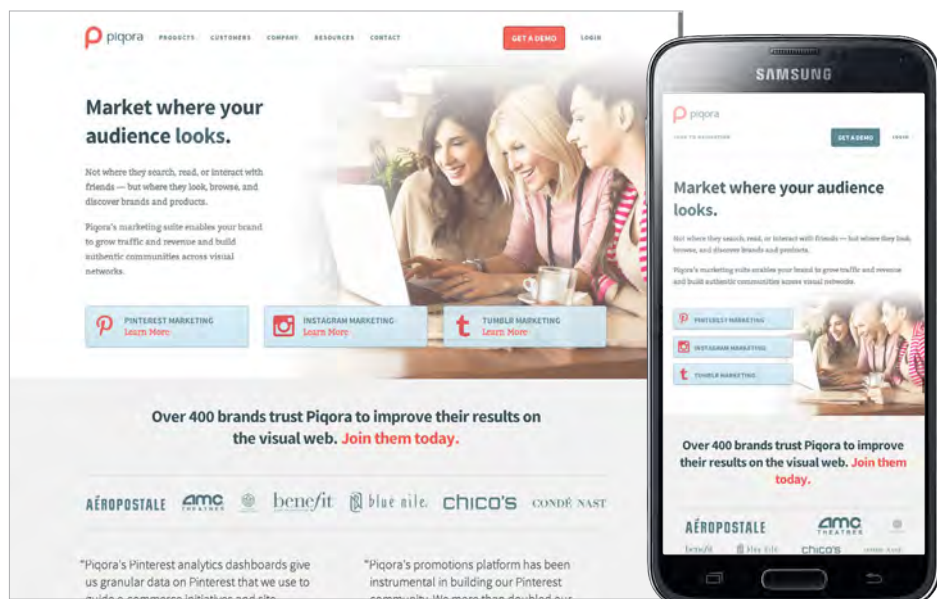
MF: I think ‘style’ is a largely superfluous thing, at least in the way the term gets used today (as in “We want the site to have a flat/textured/big-photo-based style”). I focus on having a more intimate understanding of the timeless principles of good design, and be thoughtful about how they can be applied to each new project.

But maybe that’s a bit of a cop-out answer. I’d say I certainly have a better developed sense of white space than I used to. Initially my work had small fonts and I filled every available pixel, now I take away more ‘stuff’ and give the meatiest content plenty of breathing room.

There are also aspects of my ‘style’ that have remained consistent for much of my



Badass designer Fisher’s walls are adorned with collections of “weird stuff”, including floral letter banners that spell out ‘badass’ and ‘hustle’, which hang on the walls of the living room and office respectively



Top Fisher completed a total redesign of Piqora's marketing site, including responsive, Sass-based markup
Bottom Some of Fisher's work for Shyne – a startup that pairs college students with subject mentors

career: I'll always love a bit of detailed ornamentation to draw the eye to key elements. I've always focused on typography first, and let that guide the design. I lean towards muted, earthy tones or deep, bold blues in general, just because that's a palette I've developed a feel for, and can easily create colour magic with.

net: And do you feel your approach to your career has changed?

MF: Starting out, work was perhaps the most important thing in my life. For the first six years or so I was happy to sacrifice my personal health and sanity for design, because proving I could 'make it' as a designer made up much of my self-worth. Naturally this led to burnout, especially once I moved to New York and was so overwhelmed by the city's possibilities.

The two years I spent at Chartbeat provided a wonderful space for me to focus on one product and continue to learn about design, but also to develop other interests

(including a perhaps unfortunate proclivity for wine and karaoke). Now I'm in a place where I'm craving the challenges of freelance work again, but hopefully this time around it'll be with a more mature eye towards living a balanced life.

net: What's your workflow? Do you start with ink on paper and arrive at pixels or is it digital all the way?

MF: My process is a fluid, project-by-project thing. I usually start by creating an HTML and CSS wireframe with as much real content as is available. The goal in this phase is to see the content laid out in the browser, and to get a feel of the structure. Once we're comfortable with the hierarchy and flow, I use Photoshop to create rough mockups and style tiles. I see Photoshop as a sketching tool, and I test things out for real in the markup. Some clients struggle with wanting to see pixel-perfect mockups, but most are excited to see their site coming to life directly in the browser.



* OFFICE CULTURE



MEAGAN FISHER

What's on your desktop?

Well, my cat is sitting between me and my little MacBook Pro. Otherwise I have a sketchbook, some owl salt and pepper shakers, a coffee cup, an antique phone, a half-empty bottle of wine and a lamp.

What little things make your life worthwhile?

Websites: A List Apart (alistapart.com), Dribbble (dribbble.com), Ffffound! (fffound.com), Happy Cog's Cognition blog (cognition.happycog.com).

Apps: Instagram, Foursquare, iBooks, Balanced, Simplenote, Sleep Cycle
 Reading: Every A Book Apart book, and lots of Anne Lamott and Alice Munro

What's on the walls?

Oh man, so much weird stuff. I collect souvenir Florida pennant flags, owl paintings (of course!), and unwanted photographs of strangers' families from yard sales.

What will you have for lunch?

Whatever leftovers are hanging around the fridge, with a fried egg thrown on top to make it seem new.

What hours do you work?

I don't have a strict schedule, but usually it's about 1pm to 8pm. Since a lot of my clients have been on the West Coast, this works out nicely for them.

What else do you do in the office?

The office is my house, and even though I have an 'office' space, I work in every room. I get the most done in the kitchen and in bed, because these rooms have the best light and the comfiest seating.



★ TIMELINE

How Meagan Fisher got to where she is today

NOVEMBER 2004

Begins creating Flash websites



SEPTEMBER 2006

Accepts full-time job at software development company



OCTOBER 2007

Quits full-time job, begins doing freelance work and working remotely for first startup



JUNE 2008

Realises startup is doomed; quits



JULY 2008

Moves to Salem, Massachusetts



APRIL 2009

First speaking gig at FOWD London, talking about mobile design



DECEMBER 2011

Moves to New York City



JANUARY 2011

Works with Hoefler & Frere-Jones on its web typography service



JANUARY 2012

Works with Chartbeat; is talked into joining full-time as art director



JUNE 2012

Moves from Brooklyn to Harlem



FEBRUARY 2014

Returns to original dream of running a design studio



Home comforts Theo the cat, and plenty of owl pictures, keep Fisher company as she runs her design studio from her home in Brooklyn, New York

► **net:** Do you feel design is being reduced to science by analytics, data and research? Is there any room left for gut feeling?

MF: I mostly look at analytics and data before beginning a project to get an idea of where most of a site's current users live: on their phones, their tablets, in Internet Explorer, and so on. It helps me think about creating the best experience possible for users across the spectrum of the web, and I think that's a key component of design. I also use analytics tools after a design change, to see how it's resonating with people. I view data and analytics as a tool for getting a sense of who the users are, and then as a way to evaluate my ideas. I can't see anything reductive about that.

As far as 'research' ... I do think spending too much time researching can get in the way of rapidly iterating on a design. That said, it's vital that every project begins by clearly defining the problem, knowing who you're designing for and understanding how you can make their lives better. Once we are mindful of the landscape of our designs – who the users are, what their interaction with our sites are like, and what they need – then we can let the "gut feel" have its fun, within those constraints.

net: You're a designer. How easily does the business side of things come to you?

MF: The business part is the hardest part, by far. Finding clients who are a good fit, managing proposals and contracts, figuring out how to keep consistent pay coming in – these things are huge challenges for me. I often wish I could hire a person to manage the business side of things for me, and

maybe eventually I will. For now it's still a skill I'd like to continue developing, so I read a lot about running a business and try to think through the lessons I can take from every mistake or success.

net: What's the biggest mistake you've made as a businessperson? And what's been your biggest success?

MF: The biggest mistakes are not clearly defining the parameters of a project, and not insisting on regular payment for my work throughout the project. It's taken some time to build up the confidence to say: "Here's exactly what I will and won't do, and here's how often I have to be paid for it". Anyone who's also struggling with this should read Mike Monteiro's *Design is a Job* (abookapart.com/products/design-is-a-job). Read an interview with Monteiro on page 32).

The biggest success I've had is probably just that I'm still running my own studio, even though I've thought about going back to being a full-time employee at least once a week. Simply persevering and following through with my dream is a big success.

net: Surely the web is right: kittens are cuter than owlets ...

MF: That's maybe the hardest question so far! Owlets are adorable, but since my primary work companion is my cat Theo, I might have to say kittens win out in the cute department. Otherwise Theo will probably throw up on my pillow. **n**

Meagan Fisher will present her 'Be Less Terrible at the Business of Design' talk at Generate London on 26 September (generateconf.com)

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† Monitoring Report of the European Recovered Paper Council, (ERPC), 2010

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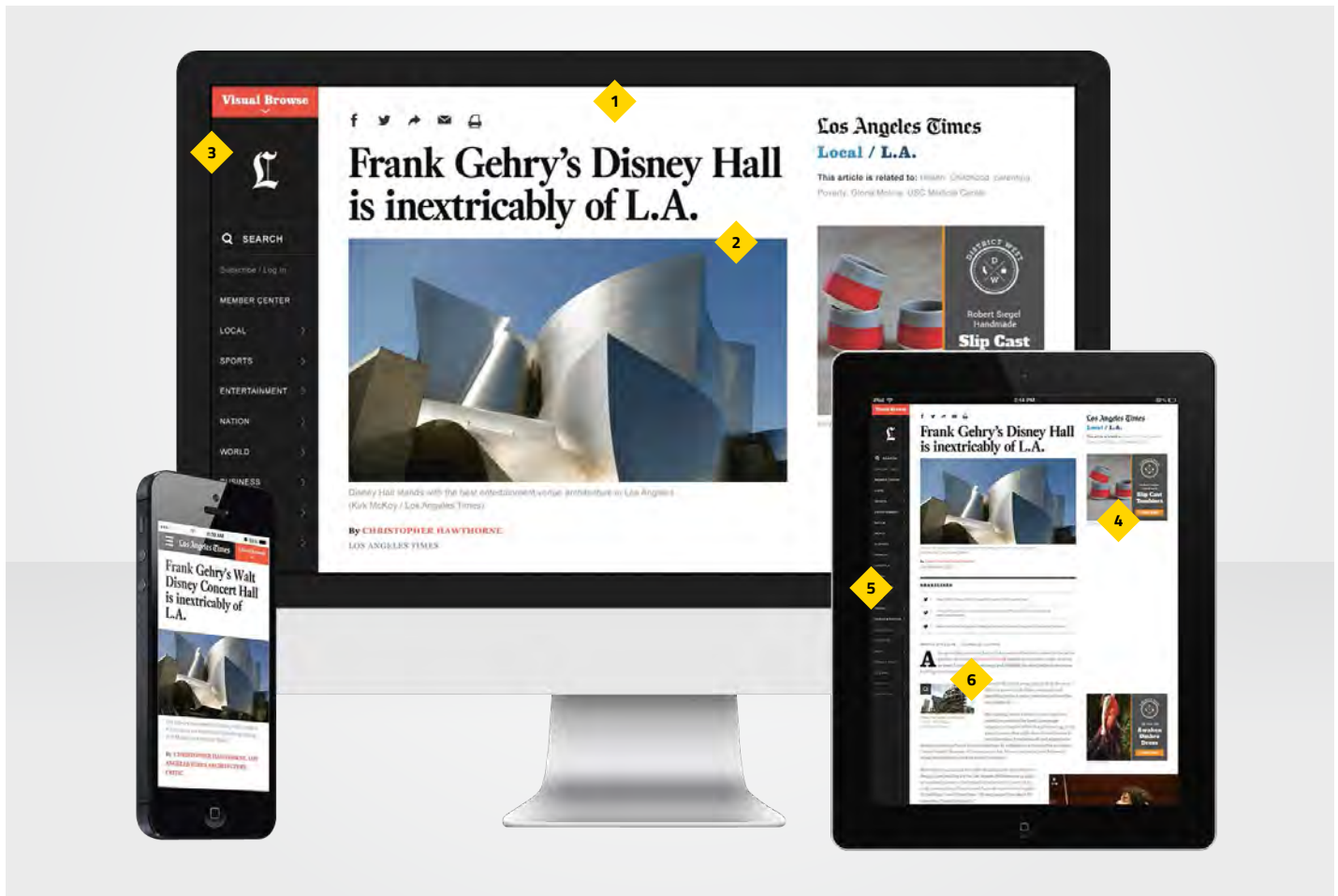
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*HOW WE BUILT

LATIMES.COM

How Code and Theory partnered with the *LA Times* to create a new, responsive site for one of the USA's biggest newspapers



BRIEF

Los Angeles Times enlisted Code and Theory to stimulate its thinking about how design and technology can best engage contemporary audiences and serve advertisers, leading to an overhaul of *latimes.com*.

CLOSE UP

(1) The new *latimes.com* was designed and developed to create a singular experience that is visually stunning, easy to read on all devices, future-proofed to accommodate new operating systems and devices, and that helps advertisers reach the *Los Angeles Times'* large and influential audience. (2) The 'design API' that powers the new *latimes.com* was designed to manage complexity and amplify creativity within a high-volume,

high-velocity news cycle. (3) The Visual Browse feature is anchored at the top, providing a photo-centric, section-level way to discover new content. (4) The homepage and all section fronts were designed in a flexible format to accommodate the flow of news. (5) Slide-out panels offer content discovery and commenting capabilities. (6) The Transporter feature introduces a way to path users from one section or piece of content to the next.

DAN GARDNER



Dan is the co-founder and executive creative director at Code and Theory with a focus on user experience
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t: @danjgardner

MIKE TREFF



Mike is managing partner of the Product Design Group at Code and Theory. He previously worked at Soundscreen Design
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RON PARSONS



Ron is *Los Angeles Times*' vice president of digital product development and a veteran of Buzzmedia and Yahoo
w: latimes.com
t: @latimes

> With their huge range of editorial coverage, sophistication of ad products and high frequency of updates, newspaper sites pose huge technical challenges for designers and developers – particularly when the paper in question is one of the largest in the United States. Code and Theory and the *LA Times* explain how the fully responsive redesign of *latimes.com* aims to make the newspaper's content accessible on a full range of browsers and devices: past, present and future.

net: Why don't introduce our non-US readers to the *Los Angeles Times*?

DG: The *LA Times* has an incredibly rich 130-year history. It's a leading source of news and information for Southern California, has won 41 Pulitzer Prizes, and is read all over the world. It's the largest metropolitan daily newspaper in the country – *latimes.com* gets more than 22 million monthly uniques – and has a combined print and online local weekly audience of 4 million. It's a powerful player in the digital news landscape.

net: What was the redesign brief?

MT: We were tasked to deliver a fully responsive experience for *latimes.com* that not only looked great in any viewport, but worked hard for users regardless of their device and/or circumstance.

Our creative brief was to design an experience that was visually stunning, easy to read and use on all devices, flexible enough to accommodate whatever new

devices and storytelling experiences would be needed over time, and would help advertisers better connect with the *Times*' large and influential audience.

The KPIs in the brief were the usual suspects, but upon kickoff we worked together to define many non-traditional KPIs to measure success in potentially more meaningful ways – metrics more aligned to efficiency, user retention, engagement and repeat visitations.

net: What makes the final site special?

DG: It's one of the largest fully responsive news sites ever built, and it's far more than just a bold new design – it's an entirely new system that better highlights the *Times*' journalism, eliminates clutter, and puts the focus on its unique voices and differentiated coverage. It's flexible enough to adapt to continually evolving news and advertising scenarios and consumption behaviours.

Features like the Transporter, which seamlessly paths users from one piece of content to the next, and Visual Browse, which provides a photo-centric way to discover new content, are just a few of the features that make it so disruptive.

net: How involved were the journalists?

MT: Very. We embedded ourselves in the newsroom, where we met with key editorial staff, from the managing editor to the *LA Now* editor. The velocity of content they produce every day – breaking news items, long-form investigative pieces, live event coverage, opinion



* LIBRARIES

The team talks though the libraries it used to power the new *LA Times* site

SITEMESH

A decorator-based framework used to rearrange and combine individual component output in a post-processing step to build the final web page output. It maximises web page performance on dynamic pages by only including code and references to assets needed for the current set of components.

BING MAPS SDK

Provides access by API to the Bing Maps mapping service and map controls. This mapping service is used to display maps of LA neighbourhoods and show points of interest, such as local restaurants, that users can interact with to learn more.

JQUERY

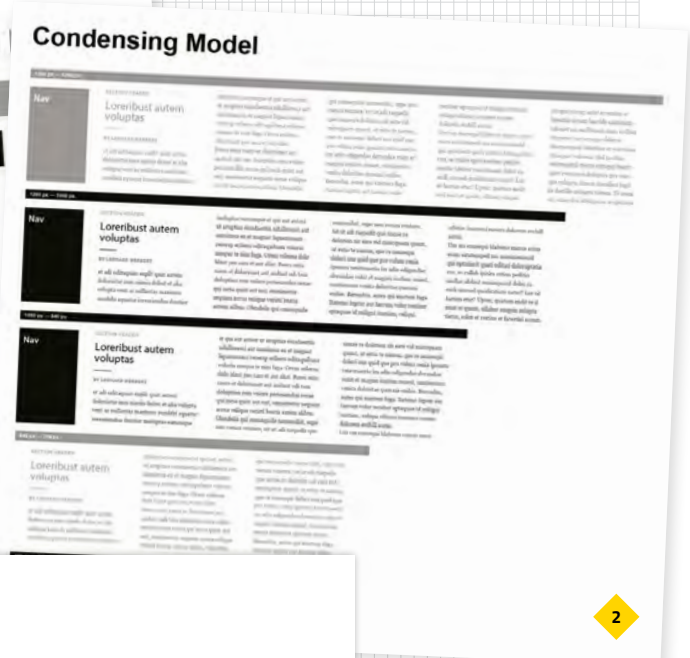
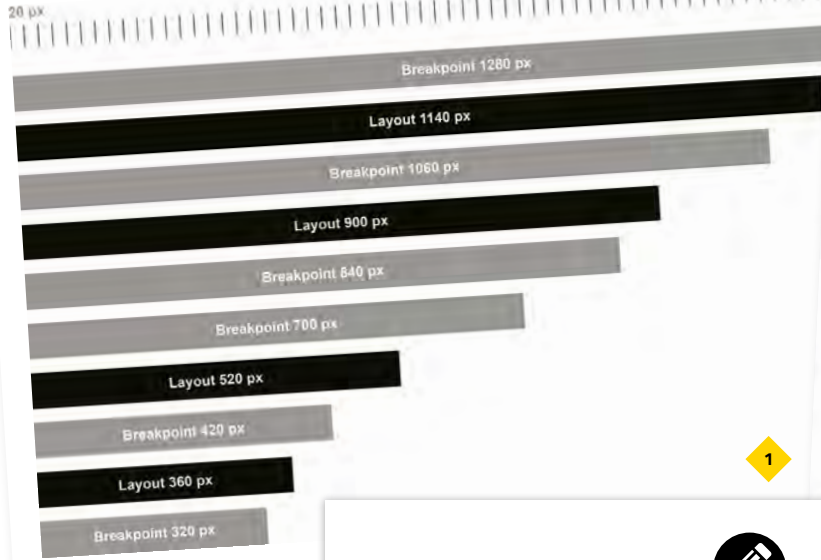
Provides a cross-browser eventing framework and AJAX support. An internal framework builds on event delegation provided by jQuery to power all event-driven functionality throughout the application.

JSTL

A collection of custom tag libraries that implement general-purpose functionality common to web applications, including iteration, manipulation of XML, date formatting and localisation. The main purpose for developing JSTL is to achieve scriptlet free JSP.

MEMCACHED

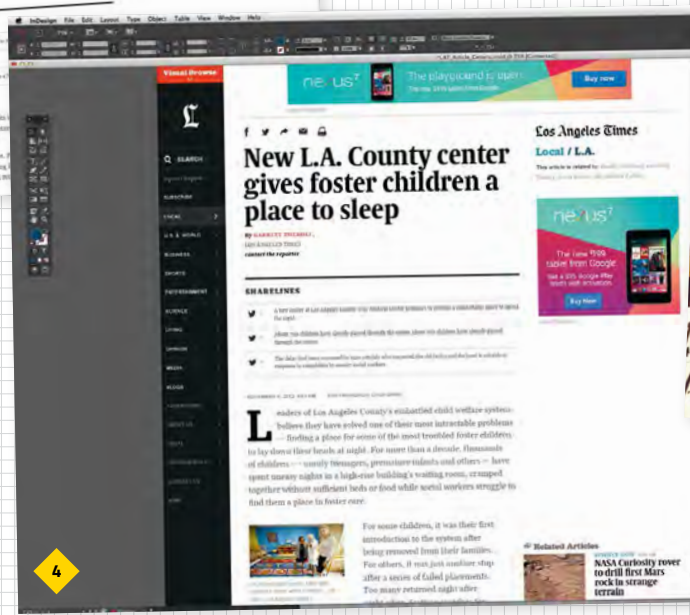
Provides a shared, distributed memory cache for arbitrary information. This allows static or immutable content to be retrieved from the database or expensive web service calls once, and then requested many times without incurring additional overhead.



* EVOLUTION

Code and Theory explains the stages of its design process during the responsive redesign of *latimes.com*

- (1) Rather than using breakpoints targeted to the screen sizes of specific devices, the site was designed to midpoints. This grid can expand or shrink to every screen size, even for devices that haven't launched yet.
- (2) The starting point was the smallest, most condensed version of the page. When screen size increases, the layout expands in wider blocks.
- (3) Initial designs focused on the article page.
- (4) InDesign is known as a print design platform, but is also equipped for scalable responsive web design.
- (5) To test the new system, paper prototypes of every possible outfit were spread out on four tables in the Code and Theory library.



► columns, reviews, photojournalism and video – is mind-boggling.

net: What about advertising?

MT: The *Times* knew its advertisers needed a more appealing visual landscape that would draw more readers to the page. It had to be less cluttered to make ads more noticeable and effective.

We broke apart the traditional page grid to solve for ‘right-rail blindness’, and designed new fully responsive, large-format ad units that would offer advertisers an execution as technologically advanced and visually arresting as the rest of the new site.

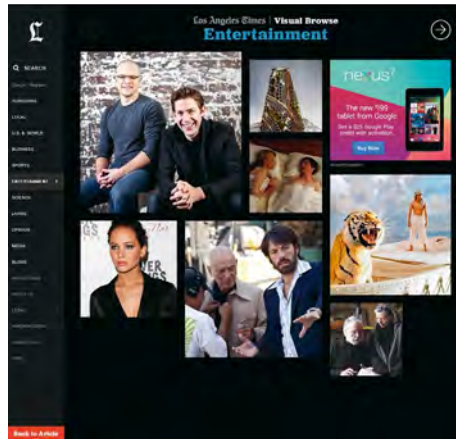
When building the grid system, we considered every possible scenario – for instance, how the system would respond if a homepage takeover was in place while a breaking news event was occurring.

net: What was the biggest technical challenge you encountered?

RP: Coding the Transporter (our version of the endless scroll). Getting it to perform well across different browsers and mobile devices was a very big challenge. Working with browser history APIs – which we had to – in order to enable the type of forward and backward scrolling the spec called for posed a unique set of challenges.

net: The site looks lovely on new phones. But what about legacy devices?

MT: Given the size and breadth of the user base, performance was at the heart



Left The Visual Browse feature provides a photo-centric way to discover new content **Right** Neighborhoods is a ‘hyperlocal’ feature pulling in neighbourhood-level geocoded news and information

of many of our design decisions. We wanted an experience that didn’t require degradation, but that would be utilitarian. In addition to making sure legacy devices were accounted for, we tried very hard to future-proof the experience.

We built a flexible grid that adapts a wide variety of currently unforeseen viewport spans. Rather than creating a responsive design with specific breakpoints targeted to the screen sizes of certain devices, we designed the grid around this question: “What is the smallest unit of legible text and how is it laid out on the page?”

Our design methodology allows for easy development of new responsive modules to meet evolving storytelling, content promotion and advertiser needs.

net: What about users with slow or intermittent internet connections?

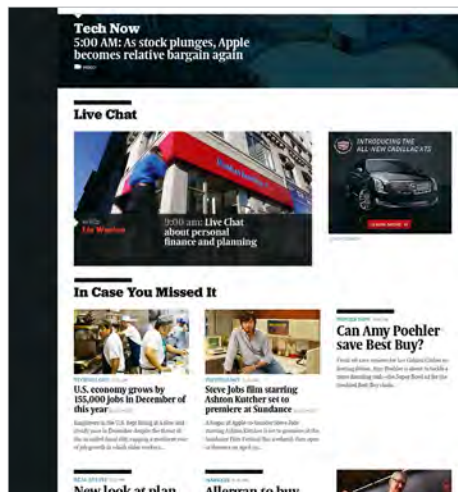
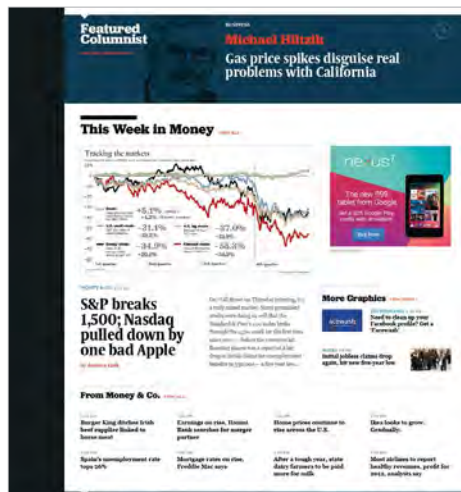
RP: We didn’t design for offline per se, but we did focus on page speed and overall performance by employing heavy caching and delayed loading techniques in our JavaScript frontend rendering framework. We cut homepage load times significantly and sped up rendering across the board.

net: What’s the public reaction been like?

DG: The industry response has been great. The famous publication designer Dr. Mario Garcia called it “exquisite”, and even journalists like Neela Banerjee (a self-proclaimed cynic) said that it rocked. And it’s clear that readers are engaging more with the site: Just one month after launch, the *Times* saw a 66 per cent increase in page views per visit.

net: What was the biggest lesson you learned along the way?

RP: Supporting sophisticated interactions in a responsive framework, across as many browsers and devices as we did, is a gigantic task and requires compromises on design, product, and technology. But the reward can be worth the risk. **MT:** We realised early on that the print product – which features different layouts almost every day to reflect the news cycle – was actually more flexible than most digital news experiences. That was shocking to us: the physical edition was more flexible than the digital, which is nothing but code. **■**



Clutter-free The design of the site is intended to allow users to consume content with minimal distraction

INTRODUCING WORDPRESS 4.0

The upcoming release of WordPress 4.0 is a major milestone for the wildly popular open source project. **Eric Mann** shares some of the platform's most exciting new features

ILLUSTRATION

MARICORMARICAR is a Sydney-based creative partnership made up of twins Maricor and Maricar Manalo. The pair is known for its handcrafted illustrations that use embroidery and paper cutouts.

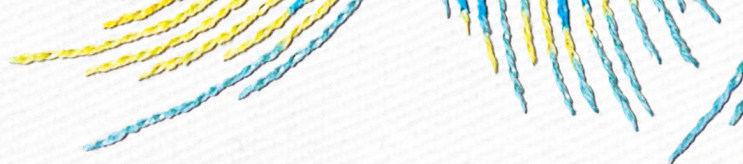
maricormaricar.com

AUTHOR

ERIC MANN is a web developer, storyteller and 'outdoorsman' living in the Pacific Northwest, who spends his time working with new tech in web development.

eamann.com





Back in 2007 I started writing a blog on WordPress. I’ve been working professionally with the platform, and contributing code, since 2010. In this time, I’ve seen 17 major releases come and go. Still, nothing excites me more, as a writer and as a developer, than the feature set being prepared for WordPress 4.0.

The core team announced the start of WordPress 4.0’s development at the end of April 2014. The 23rd release in its history, WordPress 4.0 is expected to be a landmark ‘o’ release. It’s being led by a talented, UX-focused engineer and backed by hundreds of savvy developers across the globe. The initial slate of feature proposals was enough to excite every WordPress fan, and watching the update being narrowed down to a set of well-coded, well-tested, well-vetted features has been incredible.

As with any new release, there are features all users love and those we’re less than excited about. For the first time I can remember, every one of the features scheduled for version 4.0 is something to talk about. I have, though, whittled down my list of “I can’t believe we finally have this” to what I believe are the most important new features.

1 INSTALL IN YOUR LANGUAGE

One of the overarching goals of the WordPress platform is to “democratise publishing”. Features ship in every version to make it easier for writers to put their voice online under their own terms. As the majority of the world communicates in languages other than English, this means the WordPress admin needs to present content in a non-English format.

There is a large contingent of volunteers that works tirelessly to translate text in WordPress to various languages. Many themes and plugins also tie in to WordPress’ translation features, making it possible for non-English speakers to use the entire platform, including optional extensions.

Up until now, though, the installation and setup process for WordPress has been English-only. New users have either had to use English throughout the installation, or find someone to walk them through the process. As you can imagine, this is a major barrier to entry for non-native English speakers.

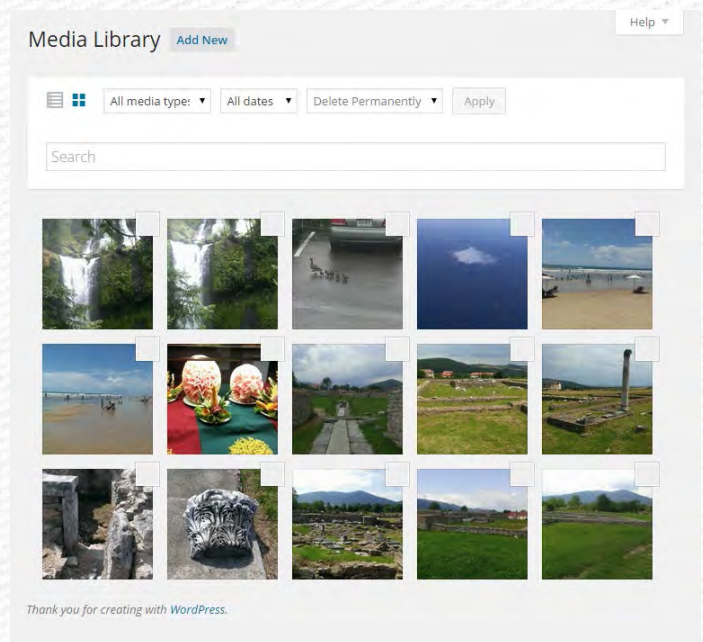
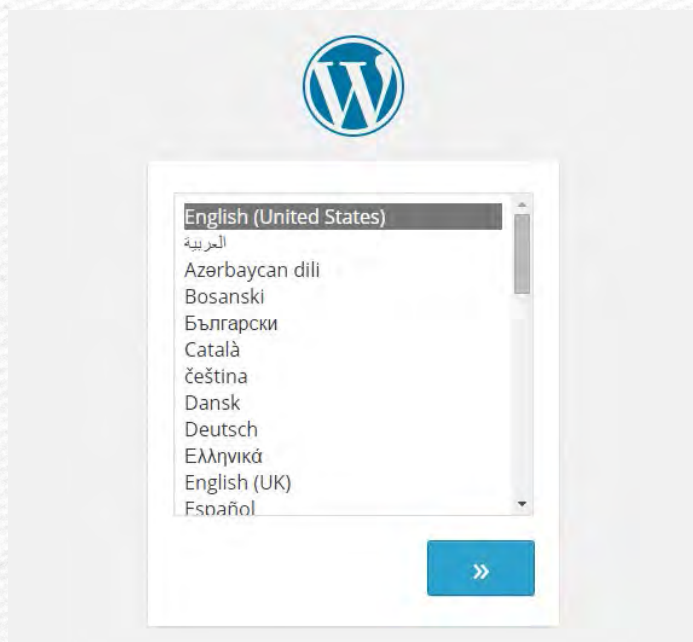
Nothing excites me more than the feature set being prepared for WordPress 4.0

WordPress 4.0 aims to change this. During initial setup and installation, the platform will now allow users to specify their primary language. Selecting a language other than English will trigger the download of a language pack, automatically converting instructions throughout the rest of the installation screens – and the WordPress admin itself. For the first time, users will also be able to choose their site’s language on the general settings screen. As with the initial setup, this selection will also load a new language pack to translate the WordPress UI.

Below left The first screen presented by WordPress 4.0’s installer allows for language selection, automatically translating the rest of the installer

Below right The new Media Library grid view includes larger thumbnails, making it easier to manage assets in the admin

Far right The Media Library’s grid view displays media details in a convenient modal window



These changes make WordPress more accessible to more users than ever before. As May of this year marked the first time non-English downloads of the platform exceeded English downloads, we can only expect further international adoption for WordPress from this point forward.

2 MEDIA MANAGEMENT

WordPress 3.5 introduced a completely reimagined media gallery that made it far easier to both import and work with images inside of posts and in the admin itself. WordPress continues to optimise the media experience in version 4.0 by introducing a new media grid to the gallery.

In the past, editors only had one option for viewing items in the Media Library – the list view. This presented a paginated list of items, each with relatively small thumbnails. Managing media on a large site meant navigating a somewhat boring list of images spanning several pages. If you use WordPress, you’d probably agree the media list view is a less than ideal experience.

The updated Media Library enables the new grid view by default. This view presents a rich grid of larger image thumbnails that pulls in subsequent pages of content using the same approaches we employ for infinite scroll. Clicking any particular thumbnail loads the attachment’s meta information in a modal window. This further empowers rapid editorial changes without the need to navigate within WordPress to different pages.

Without this meta information modal, managing individual assets in bulk was tedious and time-consuming. Even viewing asset captions and



INSIDER'S VIEW: Helen Hou-Sandi

After the second beta release, I had the opportunity to sit down with Helen Hou-Sandi, the release lead for WordPress 4.0, to learn a little how she’d seen the project evolve over the past few months. Past versions of WordPress often had themes for the release to guide the overall development of the project. Version 4.0, however, had less of a central theme.

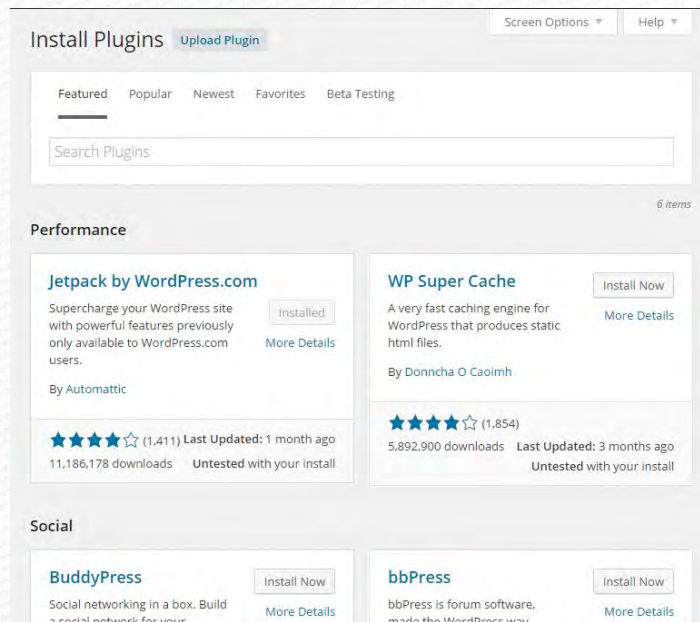
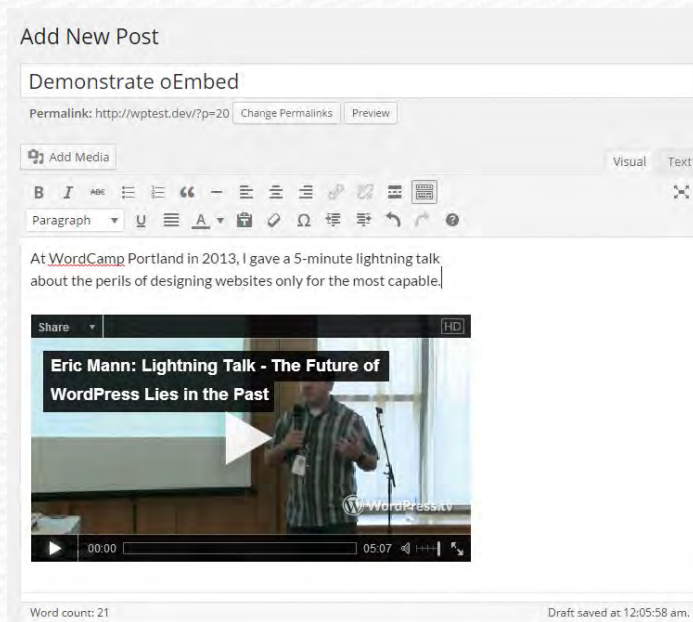
“We’ve been better at iterating on what we’ve already got,” Hou-Sandi explains. As a result, most features scheduled for the release build on past successes, or focus on refreshing elements.

An example of the latter is WordPress’ plugin interface. According to Hou-Sandi, plugins are “central to what WordPress can do”, but the interface has remained relatively untouched since 2009.

She explains that one of the biggest focuses of 4.0 has been to improve the experience for new users, and that revamping the way plugins are both discovered and managed within WordPress has been high on the development team’s list.

Ultimately, Hou-Sandi says, the objective of 4.0 has been to “do small things continually on all fronts” rather than focusing exclusively on any one area. She hopes the final product will benefit multiple groups – making WordPress simpler for newer users while also extending powerful new APIs for developers.

WordPress is very much a living project, making continued progress on various fronts with each new release. The goal for 4.0 is the same as every version: to make WordPress better.



HOW TO GET INVOLVED

WordPress has a gruelling release cycle, targeting a new version every four months. Getting stellar new features into WordPress core on such a limited timetable takes a lot of work, and requires a lot of community involvement.

Want to get involved in the development of code for WordPress? The best way to get started is by following the core development blogs:

- WordPress Core (make.wordpress.org/core)
- WordPress UI Group (make.wordpress.org/ui)
- WordPress Accessibility Group (make.wordpress.org/accessibility)

Even non-developers can contribute to ongoing development. Features need to be tested, bugs need to be reported and systems need to be documented. You can help build the next version of WordPress, even if you never write a single line of code.

Want to help keep WordPress rolling? Start by contributing in some of the following places:

- WordPress Support Forum (wordpress.org/support)
- WordPress Code Reference (developer.wordpress.org/reference)
- Get involved with your local Meetup group (wordpress.meetup.com)
- Attend or volunteer at a WordCamp near you (central.wordcamp.org)

- ▶ descriptions forced a separate page load. The refined experience presents all attachment details in an easy-to-access location that saves time and effort.

Even non-image attachments like documents and Zip archives benefit from the new grid treatment. While they lack individual thumbnails, presenting MIME-type icons in the same format as the larger image thumbnails definitely makes the Media Library as a whole feel more unified.

3 EDITOR UPGRADES

The most-used feature of WordPress by far is the WYSIWYG content editor. Whether you use WordPress for casual blogging, professional news media, or merely to curate a static body of content, you'll at some point have used the editor itself.

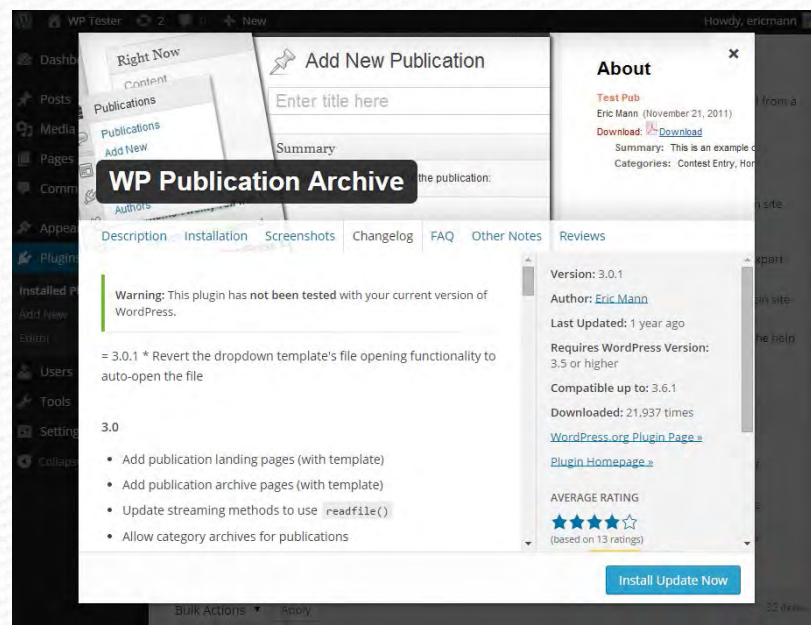
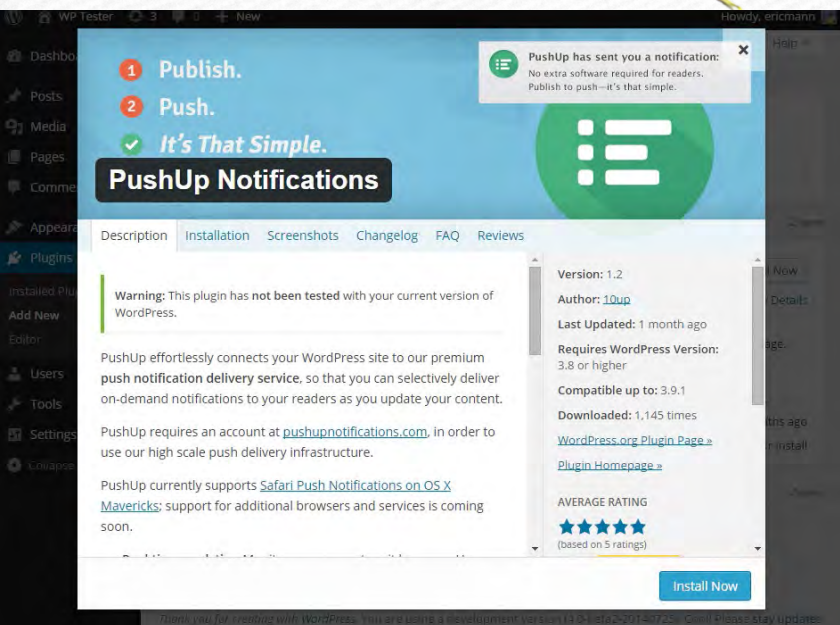
As the most recognisable element of the platform, you'd expect the editor to receive a fair amount of polish. WordPress 4.0 brings several updates to the editorial experience and the editor itself. There are two exciting changes to keep an eye on.

oEmbed previews

WordPress has long been a champion of using oEmbed to easily share content from one site or platform to another. The 4.0 release will iterate on existing support to add new oEmbed providers for sites like *ted.com* and *collegehumor.com*. It will also drastically evolve the way we experience oEmbed within the content editor.

In the past, editors could merely copy and paste the URL of an oEmbed-read resource (like a YouTube video or Twitter message) directly into the post editor. When viewed on the frontend, this raw





URL would be dynamically converted to a richer representation of the linked material. The feature was a huge value-add for editors linking to external content, but also made it a bit tricky to optimise body content around an embedded resource.

WordPress 4.0 changes this feature up by enabling live previews of the embedded content. Once the link is pasted into the editor, WordPress automatically scans the link, fetches the associated resource

The top toolbar will pin itself to the top of the page even as your content flows on

through oEmbed, creates a representative preview and displays that preview in the editor.

It's an actual implementation of WYSIWYG for the WordPress editor that eliminates the pain of using oEmbed to extend post content. The original URL for the embedded asset will always be available on the Text view; but once you've seen the inline preview, you'll never want to leave the Visual editor.

Sticky toolbar

My favourite new feature in WordPress isn't so much an addition as a refinement of existing behaviour. In WordPress 4.0, the toolbars for the visual editor – both at the top and the bottom of the content editor – will stick to the browser window when you scroll the page. As you write and your article grows

longer, the content area will automatically expand to contain every word. The top toolbar – with rich text formatting options and media embed features – will pin itself to the top of the page as your content flows on. No more scrolling in the window to change paragraph formatting or insert links.

While scrolling back to the top of the article, the footer of the content editor will pin itself to the bottom of the browser window. Whether you're editing content in the beginning of the post, the end of the post or somewhere in-between, you'll retain access to both your formatting tools and after-the-post meta information like word counts.

This is a somewhat minor change in the editorial experience that has major benefits for the writers of long-form content. Once you use the new 'sticky' editor, you'll question why it took this long for the feature to evolve.

4 ENHANCED PLUGIN EXPERIENCE

I started my career with WordPress as a plugin developer, so the end-user plugin experience has always been a key point of interest for me. Plugins are central to making WordPress function as a customisable platform, and as a contractor I spent a large number of hours teaching clients how to work with plugins. Unfortunately, the plugin screens in WordPress have not been the most user-friendly in the past. Worse still, they haven't received much more than a new paint job in the past five years.

WordPress 4.0 introduces a number of changes to the way new users experience plugins, both in terms of discovery and management. The plugin installer used to attempt to aid feature discovery

Opposite left When oEmbed-capable links are present within post content, WordPress will generate a preview of the linked resource

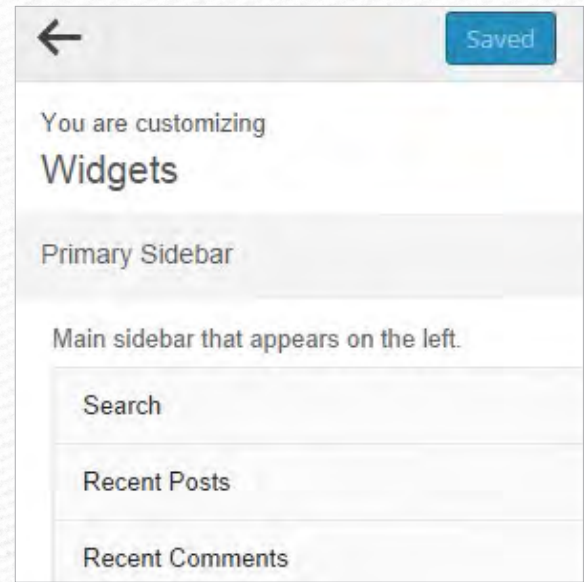
Opposite right The new plugin installation page presents more streamlined discovery tools – starting with better categorisation of available plugins

Above left The details modals for plugins display richer information than in previously – including the plugins' graphical banners

Above right When plugins are ready for upgrading, a More Details link exposes the plugin's changelog, ratings and compatibility information

Results (1 - 100 of 466)

Ticket	Summary	Status	Owner	Type	Priority	Milestone
#10041	like_escape() should escape backslashes too	closed	wonderboymusic	defect (bug)	high	4.0
#17689	Terms should not be sanitized inside term_exists()	closed	wonderboymusic	defect (bug)	high	4.0
#26469	Twenty Fourteen: Better Audio/Video Player Styling with Genericons	closed	lancewillett	enhancement	high	4.0
#28293	Twenty Thirteen: Menu not accessible in "mobile" size	closed	lancewillett	defect (bug)	high	4.0
#28353	Changes are not saved in Visual editor until autosave runs	closed	azaozz	defect (bug)	high	4.0
#28564	Shortcode Attributes with HTML Tags no longer working	closed	wonderboymusic	defect (bug)	high	4.0
#28817	WP4.0-beta1 - string concatenation for \$page_title in add_submenu_page() is broken	closed	SergeyBiryukov	defect (bug)	high	4.0
#28943	Fatal error: Call to protected method ... on PHP 5.2.5	closed	wonderboymusic	defect (bug)	high	4.0
#5310	XMLRPC interface should expose mechanism for listing and deleting media resources.	closed	SergeyBiryukov	enhancement	normal	4.0
#6775	Numbers in quotation marks get wrong smart quotes	closed	wonderboymusic	defect (bug)	normal	4.0
#8912	wptexturize malforms HTML comments that contain HTML tags	closed	wonderboymusic	defect (bug)	normal	4.0
#10477	get_version of comments_number()	closed	wonderboymusic	enhancement	normal	4.0
#11003	wp_get_object_terms Returns Duplicate Terms	closed	ryan	defect (bug)	normal	4.0
#11325	Image cropping doesn't work for small areas	closed	SergeyBiryukov	defect (bug)	normal	4.0
#11338	Custom Walker initialize error	closed	DrewAPicture	defect (bug)	normal	4.0
#12669	Enabling FORCE_SSL_ADMIN breaks wp-cron.php	closed	johnbillion	defect (bug)	normal	4.0
#13560	Ajax Tag Search crashes browsers on databases with large tag lists or slow connections	closed	johnbillion	enhancement	normal	4.0
#14041	Ensure a 'has_children' parameter is given to start_el	closed	wonderboymusic	enhancement	normal	4.0
#14639	Posts in the Trash drag attachment pages down with them	closed	wonderboymusic	defect (bug)	normal	4.0
#14759	Improve the way oEmbed deals with caching	closed	helen	enhancement	normal	4.0
#15490	Preview oEmbed results when using the media modal to insert from URL	closed		enhancement	normal	4.0
#15567	File upload support for OpenXPS / Microsoft XPS filetype (xps / xps, alternative to PDF)	closed	kapeels	enhancement	normal	4.0
#15860	White icon visibility in Media Library	closed	wonderboymusic	defect (bug)	normal	4.0
#16330	media_sideload_image() broken with filenames containing strange	closed	wonderboymusic	defect (bug)	normal	4.0



- ▶ with a basic search field and essentially meaningless tag cloud. Unless you already knew what to look for, the chances of finding something new for your site were limited. The new installer highlights ‘featured’, ‘popular’ and ‘new’ plugins, with the featured plugins further broken down into categories like ‘performance’ and ‘social’.

On the installation pages, plugins are now displayed in detailed tiles presenting their title, a brief description and the plugin author, as before. These tiles also highlight the number of downloads and average plugin rating. A clever More Details link launches an overlay displaying the plugin’s full information as pulled from *WordPress.org* – including the plugin’s graphical banner.

This details screen is also presented when plugin updates are available, making the plugin’s changelog, ratings and compatibility information readily accessible to administrators.

5 CUSTOMIZER IMPROVEMENTS

The Theme Customizer is undergoing a strong set of changes with 4.0. It is being rebranded as just the ‘Customizer’ and dropping the emphasis on

theme customisation. According to the WordPress 4.0 Customizer Improvements information (netm.ag/improvements-259):

“Customize’ could refer to anything. That’s the point ... the Customizer can be used for anything, and we’d like to encourage more experimentation with different uses of the Customizer.”

Widgets panel

Widget support was added to the Customizer in the previous version of WordPress, allowing site owners to see live previews of changes to sidebar widgets as they were made. Expanding the scope of the Customizer means we’ll be adding more to the tool in coming releases, so widgets have earned their own Panel within the Customizer UI.

Panels are a way to group Customizer sections, allowing both cognitive and visual separation between different elements that are meant to be managed separately. Site administrators can dig into their theme to customise just the colours, banner imagery and content layout on one panel. Then they can delve deeper to manage the content

NOTE: A DYNAMIC PROJECT

More than 20 per cent of the most popular sites on the internet run on WordPress. As such, the development team has to be very careful to preserve backwards compatibility and release only well-tested, reliable code. Every potential feature addition is subject to multiple levels of review and ongoing user testing.

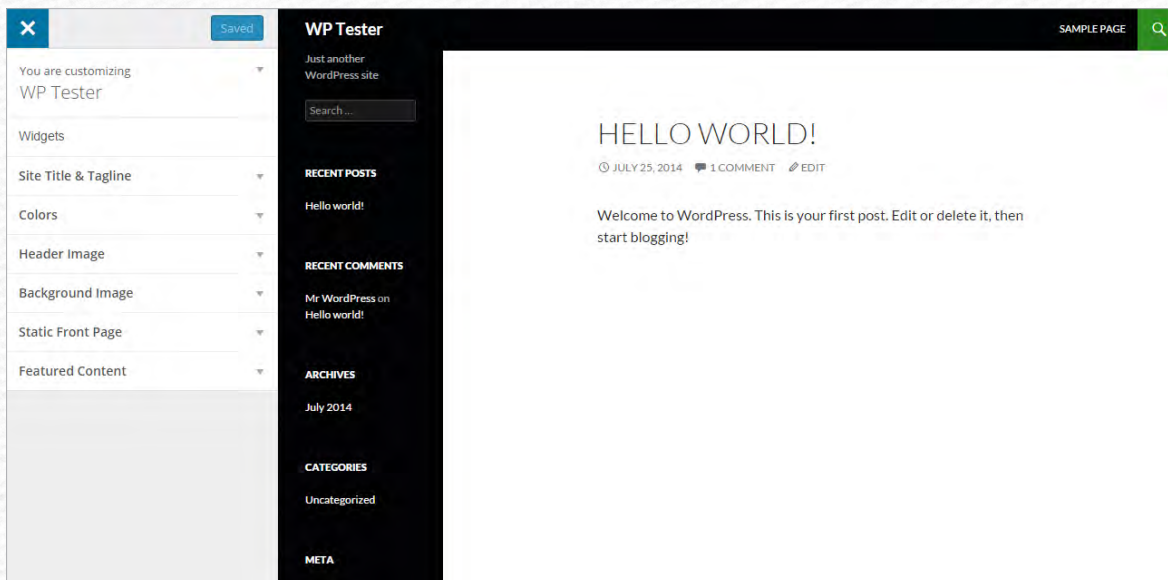
There are times where flagship features make it to the beta testing stage only to be pulled

back before the final release ships. There might be unresolved edge case issues, major bugs blocking the smooth functionality of a feature. Or, the feature may just need more time to polish than the release cycle allows.

A new UI was planned for the WordPress’ post formats feature in version 3.6. It was widely heralded as one of the flagship features of the version. Unfortunately, there were issues

with the feature that meant it wouldn’t be ready in time for 3.6 to ship, and it was pulled between the fourth beta release and the first release candidate.

At the time of writing, WordPress 4.0 was still in the beta stage. While I’ve done my best to cover features slated for release, the final feature list is always in flux and might have changed before the release officially ships.



Far left As with all new versions, WordPress 4.0 improves upon the past by fixing hundreds of minor user-reported issues

Middle The Customizer's new Widgets panel allows for quick and easy management of sidebars and widgets – complete with live previews

Left The rebranded and redesigned Customizer allows theme developers to control every aspect of the frontend of their site

and arrangements of widgets on another. Widgets are just the first of a promising series of changes to the Customizer system.

Developer API

While it seems like a minor refinement to the Customizer tool itself, the addition of a Panels API opens the door for developers to make future themes even more flexible. Every site owner wants a unique design, but not everyone has the time to build a custom theme – or the budget to hire a developer.

Every new feature speaks to the power and ingenuity of the WordPress community

Flexible themes that support the Customizer are the easiest way for the majority of non-technical users to reach into their WordPress site and truly make it their own. Editors – and writers – can modify the design of their homepage, About page, content archives, and even more through the Customizer. The Customizer API adds visual finesse to the existing theme options API, empowering developers to truly enable customers to lift the hood on their site.

Being able to nest certain features under one or more Panels makes it easy to separate one type of customisation from others. For example, global theme features can live on one screen, contextual features that only present data to logged-in viewers

can live on another. The changes introduced by WordPress 4.0 mean the only limitation on what the Customizer can do is the imagination of the theme developer. Thankfully, theme designers tend to be on the creative side.

BOTTOM LINE

Most development communities place a lot of weight on '.0' releases. WordPress 2.0 saw a completely redesigned backend that introduced Ajax for a snappier administrative interface, and the WYSIWYG post editor we still use today. WordPress 3.0 saw the merger of the WordPress and WordPress MU (multi-user) code bases to present an improved platform capable of hosting multiple sites on one installation.

Some have argued that WordPress 4.0 isn't as significant a change as its '.0' predecessors. In truth, the core WordPress community never intended for any of its '.0' releases to be landslide events in the first place. Instead, WordPress focuses on small, rapid iterations of a large collection of features, releasing a new version every four months to maintain forward momentum on development.

This release happened to coincide with the number 4 – but that version number doesn't require any special requirements on the feature set. However, given the features outlined in this article, and the countless minor fixes and optimisations under the hood, WordPress 4.0 proves to be no smaller a milestone than any '.0' that's come before.

Every feature in this release speaks to the power and ingenuity of the community that maintains WordPress. These features also demonstrate just how much momentum WordPress will continue to carry into future versions to come. **■**

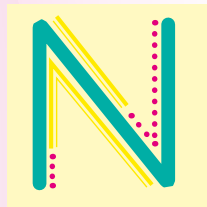
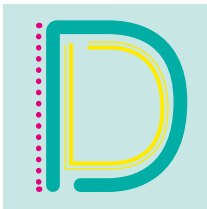
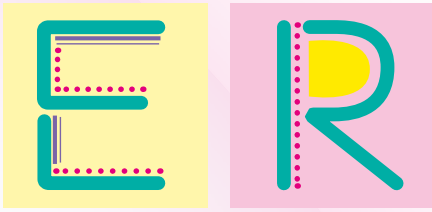


 AUTHORS

SAMUEL HULICK (@SamuelHulick) is a UX designer and consultant, and the author of *The Elements of User Onboarding*. He critiques the onboarding experiences of popular web apps at UserOnboard.com

CREATE A KILLER FIRST IMPRESSION

If you've built an exceptional product, you'll want your signups to stick around to fully experience it. **Samuel Hulick** shows you how to design your product to improve your user onboarding



ow, I'm neither a psychic nor a gambling man, but without even looking at your product's user adoption metrics, I'd be willing to place a pretty significant

wager that there's clear room for improvement. While product companies often invest heavily in marketing efforts that drive signups, and product efforts that drive ongoing use, it's rare to see similar investments made in ensuring the latter actually become the former.

This is a shame, as people tend to dislike change, and whenever they decide to sign up for a product, they're risking their time (and possibly money) on it being worthwhile in the long run. Being inattentive to your new signups' immediate needs right from the very beginning makes your product look like a really bad bet.

It's no wonder, then, that some products have been found to have up to 60 per cent of their new trial signups never even logging back in a second time (netm.ag/signupstats-259). Bleeding

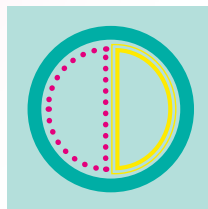
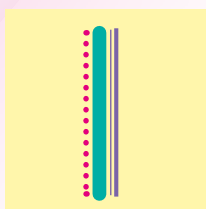
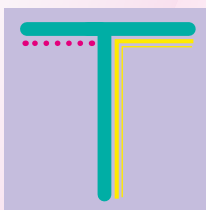
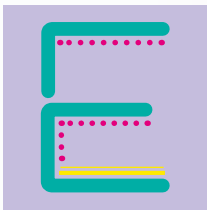
signups out of any part of your user adoption funnel can seriously impact your company's ability to grow, and your product's ability to flourish.

If boosting your company's growth rate, stretching your marketing dollars further and getting the most out of your product team's blood, sweat and tears are priorities for you, then exploring your options for better user onboarding is going to be very worth your while. Join me while I break down some of the top user interface patterns for turning curious visitors into highly-engaged users!

SETUP WIZARDS

When a visitor on your marketing site clicks the 'Sign up' button, they're taking a leap from the known (the site they've been on) into the unknown. What will things be like inside your product? How will they be greeted? How quickly can they get up and running?

Interestingly, many products answer those questions by not sending signups directly into the product at all, but instead opting to first drop them into a setup wizard. These are often stripped-down pages without much in the way of external navigation, or usual points of orientation like headers or footers. Much like Amazon's checkout page, they pare back everything that could distract the user from focusing on the task at hand:



CASE STUDY CONCIERGE ONBOARDING

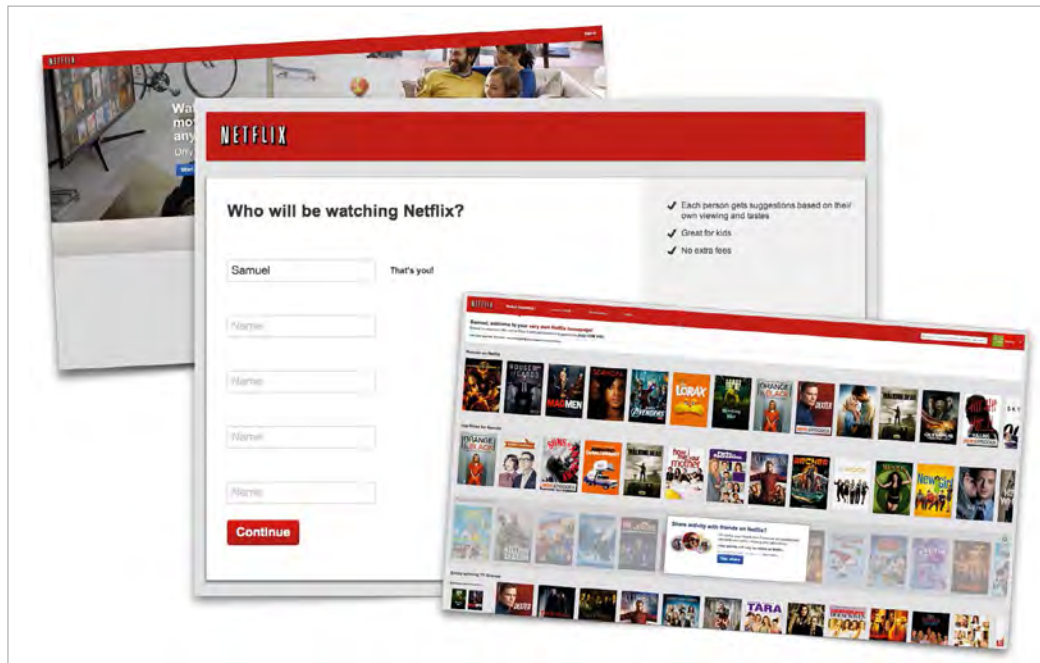
Want to significantly improve your trial-to-paid conversion rate without touching a line of code or signing up for outside services? A new trend in SaaS user adoption called concierge onboarding may be what you're looking for.

The premise is simple: instead of (or in addition to) providing a fully-automated onboarding experience within your product, you help get signups over any opening hurdles by personally assisting with their account setup.

Colin Nederkoorn, CEO of Customer.io (customer.io), ran an experimental concierge onboarding offering throughout July 2014, wherein half of his signups received a personal invitation for setup help, while the other half followed the product's normal onboarding flow. The users in the concierge batch converted at nearly twice the rate of the regular batch, and became customers more quickly overall. In fact, they signed up for more expensive plans, as well.

Nederkoorn attributes this effect to not only guiding new users to value more quickly, but establishing trust from the very beginning. This goes beyond selling products – it builds relationships. In that sense, it may even lead to longer retention rates, as well.

Taking this approach requires human effort, of course, but if your customer lifetime value (CLV) is in quadruple digits (e.g. \$50 per month over 20 months), investing 15 minutes of labour in fast-tracking someone to success makes plenty of economic sense.



Disjointed setup Netflix has a setup wizard that only slightly resembles the public-facing homepage and the inner browsing experience

- ▶ entering in required setup information before moving forward, often in the exact sequence they determine.

However, what these pages gain in focus, they lose in familiarity. Interstitial screens are neither the site where the user chose to take the leap, nor the product they thought they were leaping into. The longer you keep them hanging in limbo with 'in-between screens', the longer you stop the user from hitting the ground running.

One way to attain the focus without sacrificing the familiarity is to place setup wizard forms inside an overlay above the ensuing product, rather than in empty screens of their own. This way, the user can see exactly where they're headed from the very beginning, even if they have to work through some immediate business before getting there. I call it the 'Emerald City in the distance approach', after the ever-visible destination in *The Wizard of Oz*.

Pros

- Harnesses the user's full attention by removing all distractions
- Guarantees required information is entered, in the sequence you determine, before proceeding

Cons

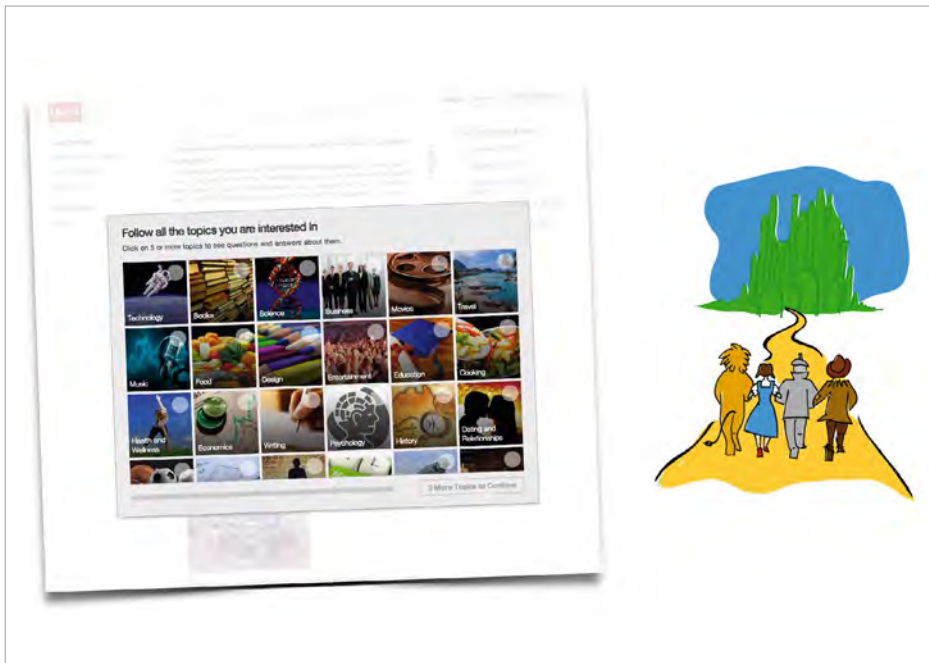
- Creates a delay before landing the user into the 'real' interface
- Slows down the momentum that builds up whilst getting started
- Since actions are being taken outside the normal interface, it doesn't let the user 'map' where to go to change things in the future – making it a poor choice for kicking off high-frequency actions

Recommendation

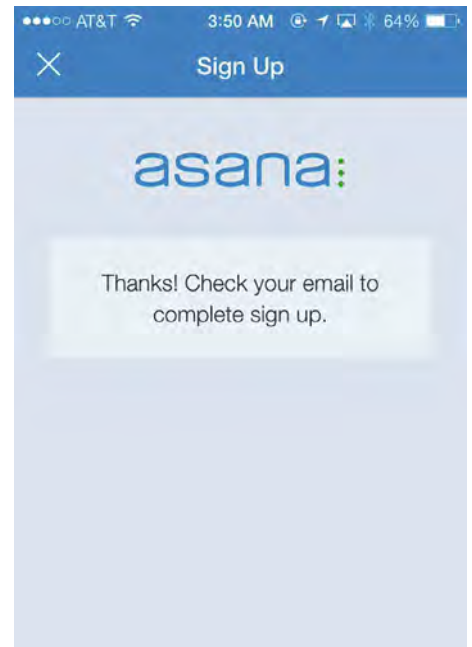
Use setup wizards sparingly. Focus on landing users into their new home as quickly as possible. Skew towards only asking for things you absolutely need to improve their immediate experience, and kick requests for optional information further down the line when you've earned more of their trust.

EMAIL CONFIRMATION

As soon as an account is fully set up, many products make the curious choice to throw up a wall and tell the new user to go away. Specifically, to go away and confirm their email address. This is a risky strategy, as it freezes the new user's momentum and sends them into the Pandora's box of distractions known as their inbox.



Product preview Quora's setup workflow takes place in an overlay that previews the product the user is about to enter



Address checking Asana requires new users to confirm their address before continuing in their native app experience

Is confirming their address necessary for a user to advance, or is this a pattern being followed blindly? While having a confirmed address on file may help you sleep easier at night, strongly consider at a minimum letting new users in on a probationary period, to at least get a sample of what your product provides.

Pros

- Confidence that the address on file can be used for secure actions (for example recovering a password)
- Reduced likelihood of spam or fraud accounts infiltrating your system

Cons

- Brings the momentum of the first-run experience to a screeching halt
- Increases the odds of some users leaving and never coming back

Recommendation

Defer, defer, defer. Keep the user's momentum going (and their attention intact) by letting them as far as humanly possible into your application before asking them to go away and come back later. Also, note that clicking *any* link in *any* follow-up email can confirm a user's address, so consider getting more creative

than the typical 'You need to confirm your address' template.

PRODUCT TOURS

Even once new users have finally reached a product's actual interface, they still tend to be presented with another layer of intervention: tooltip tours, and their spiritual sister on mobile apps – intro screens. What these have in common is that they preempt the actual product

LAND USERS IN THEIR NEW HOME AS QUICKLY AS POSSIBLE

experience with a quick showcase of what the product can offer. What they also have in common is the tendency to be skipped over.

Both kinds of tours are frequent victims of the 'next-next-next' phenomenon, in which impatient users breeze through a series of blurbs, preferring to get directly to the product itself (you've probably done this as a user – I know I have).

This becomes a big issue when the ensuing interface relies upon the user knowing the information provided in the introduction that led up to it. Ironically, when interfaces aren't reliant upon intro material, it renders that material somewhat irrelevant. Product tours can't seem to win either way.

Still, tours do have their place. They are great at pointing out interface elements that, for whatever reason, weren't designed to be prominently featured on their own. Tooltips work especially well when they're shown one at a time, to best guide the user's attention; and when they use that attention to encourage users to take a specific action – teaching by action over memorisation.

Pros

- Highlights most important elements of your interface (though your 'real' interface needs to do that, as well)
- Can serve as a stopgap for known points of confusion between redesigns

Cons

- Interrupts the current workflow to lead users by the ear through a predefined one
- Multi-step tooltip tours can often break down or encounter usability glitches

BEST IN CLASS

UserOnboard.com is a website dedicated to analysing popular web apps' signup experiences. It does this by creating detailed slideshows considering each app's process. Here's my hand-picked list of the best examples of each pattern covered here.

1. Setup wizard: InVision (useronboard.com/invision)

InVision makes great use of the 'Emerald City in the distance' technique in its setup flow. Notice how it uses this technique not just once, but twice – perhaps to ramp up the feeling on suspense.

2. Email confirmation: Tumblr (useronboard.com/tumblr)

Tumblr is a great example for what it *doesn't* do: namely, let something like an unconfirmed email prevent new users from exploring its product. Check out how minimal the nag banner is, when even shown at all.

3. Product tour: Optimizely (useronboard.com/optimizely)

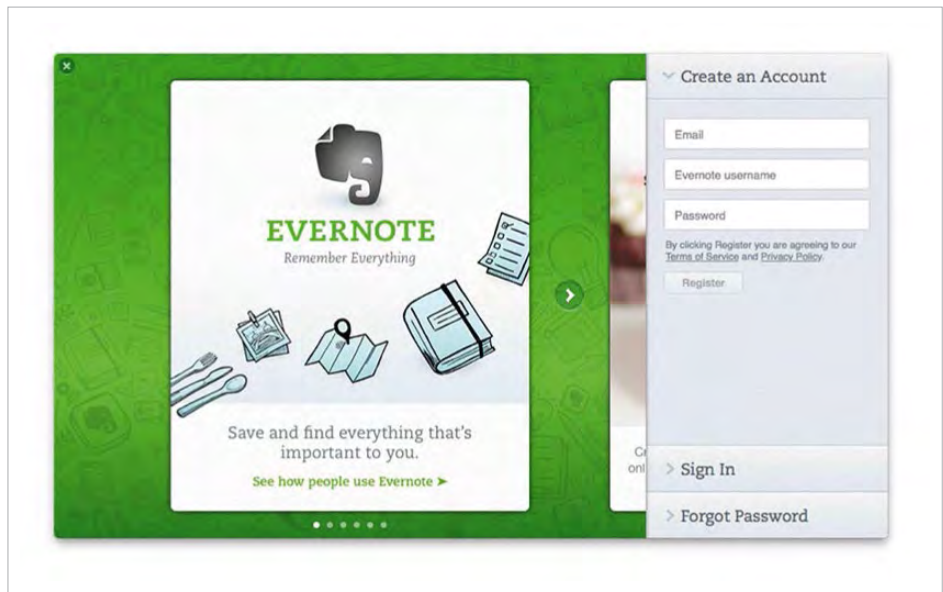
Optimizely is a website testing tool, and as you'd expect, its tooltip tour UX has been honed to perfection (it all kicks off on slide 40).

4. Blank states: Basecamp (useronboard.com/basecamp)

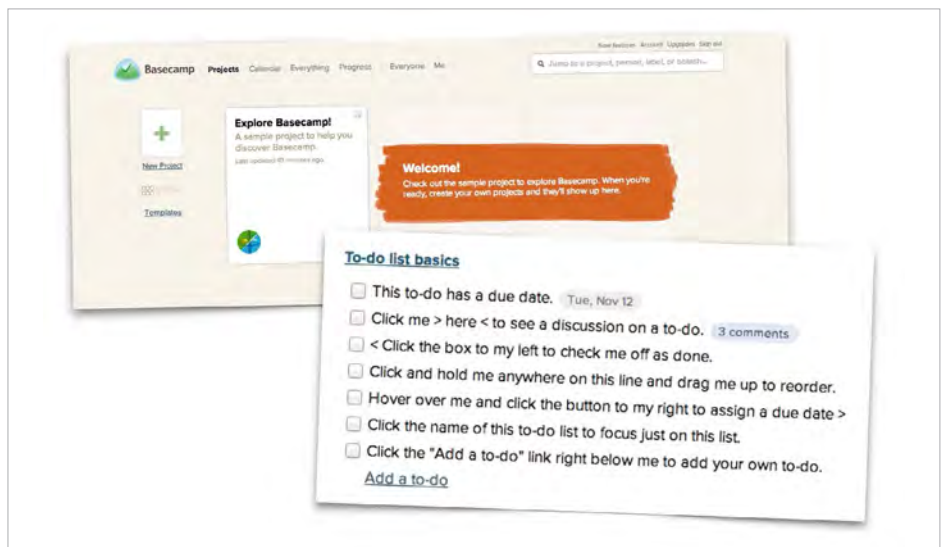
Basecamp is the gold standard in blank state design. Look at how it not only goes out of its way to welcome you, but also tees you up with a detailed example project. I particularly like the 'Do X with me' to-do list items.

5. Completion meter: Quora (useronboard.com/quora)

Quora nails many onboarding patterns at an eerily high level (really, it was a candidate for any of these five patterns), but its approach to quest lists is an example I bring up all the time. Pay close attention for the 'endowed progress effect' breakdown on slide 49.



Intro story Evernote's six-step intro story is unlikely to really be read by many of the signups it's shown to



Containers Basecamp has filled its empty containers with sample content, which in turn have their own sample content



Tracking progress Dropbox and LinkedIn serve as great examples of quest lists and progress trackers, respectively

- ▶ ● Layering one interface on top of another often leads to frontend maintenance issues

Recommendation

Use product tours as an exception, not as the rule. Propping up a poorly-performing UI with introductory crutches isn't an ideal or sustainable strategy. When you do use tours, it's recommended to still allow free exploration (i.e. don't force it to be followed), and to ensure it's easy to re-enter the tour after it has been dismissed.

BLANK STATES

With all the preceding steps out of the way, the user is finally able to explore the real-deal interface. What that interface will look like in its 'naked' state, though, will vary from one product to another.

Many product teams underestimate the importance of designing an interface for all its states: blank, filled, broken and everywhere in-between. This is especially evident when the very first screen a new user encounters is seemingly filled with nothing but empty containers. In blank states it's important to pay extra attention to copy. For example, social apps should be careful to not welcome their newest users with an off-tone 'You have no friends'.

Instead of admonishing new users for lacking content they couldn't possibly have produced yet, view this as a chance for your product to use itself to introduce itself. By filling an otherwise-empty container with supporting info or example content, blank states are a wonderful opportunity to acquaint the user with what they can expect to see once they've taken the necessary actions to fill them up. When blank states include a call-to-action, they can even single-handedly provide a boost in the right direction.

Lastly, don't forget to design your product to behave like a person would in a first-impression situation – a simple 'Welcome' can go a long way.

Pros

- Starts the first real activity within the product on a positive, helpful note

- Provides persistent, non-invasive context around which actions should be taken
- Acquaints the user with the exact process that they need to follow to repeat or change the current action (as opposed to actions taken inside a setup wizard, for example)

Cons

- Very likely to require engineering assistance if adding to an interface after it's 'fully baked' and live (which is not necessarily the case for third party tooltip software, for example)
- Can be difficult to squeeze effective blank states into very small (but important) UI elements

Recommendation

Use as fully and as comprehensively as possible. In fact, you could make the argument that designing for multiple usage states is simply a prerequisite for quality product design, full stop. I give this my highest recommendation.

.....

**IT'S VITAL TO PAY
EXTRA ATTENTION
TO COPY IN
BLANK STATES**

COMPLETION METER

Once the user is up and running inside the interface, let's make sure they actually get something significant accomplished. Quest lists and progress trackers are both excellent examples of UI patterns that serve the exact same purpose: chopping large, complex actions into smaller, more manageable tasks, and showing the user how close they are to completing them at every turn.

Quest lists provide the user with a persistent view of everything they've done and still have to do. They also create that oh-so-satisfying feeling of crossing something off a list. Progress trackers, on the other hand, typically use a percentage to represent completion and only show a single recommended next step.

Either way, once the completion meter is full, do both yourself and your new user a favour by calling out and celebrating their success. It's a great opportunity to provide them with timely encouragement and build affinity at the same time. After everything you've been through together, it makes sense!

Pros

- Makes goals more achievable by chopping them up into smaller, more consumable pieces
- Provides extra motivation by showing users their progress as they go
- Orients users around which follow-up actions are most important
- Provides ongoing guidance in a non-interruptive manner

Cons

- Requires engineering resources dedicated to something that doesn't directly facilitate action
- Will not ensure all steps get done, especially in the order outlined – as such, a bad fit for required or highly-sequential actions (see setup wizards)

Recommendation

Two big thumbs up for quest lists. They provide an excellent opportunity to get very serious about what you want people to do first, and track how well those actions correlate with a user's ultimate success and ongoing engagement. When complete, use success states to chain one major workflow to the next.

SUMMING UP

Of course, user onboarding is much more than a collection of interface patterns – it's the overall process of turning new signups into thriving, highly engaged users. In that sense, onboarding really touches on every department in the company, since it involves every point of the customer experience. That's quite an undertaking.

Still, by paying close attention to the first few interactions your signups have with your product, and crafting an experience to showcase what a wonderful fit the two of you will be, you'll both be well on your way to flourishing! **■**



AWARDS 2014

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it's time to pick the
best tech of 2014

Vote for your
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and you could
win an iPad Air
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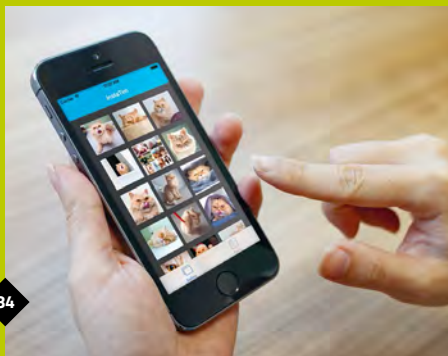


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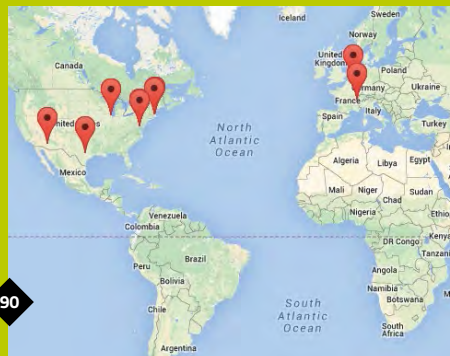
PROJECTS

Tips, tricks
& techniques

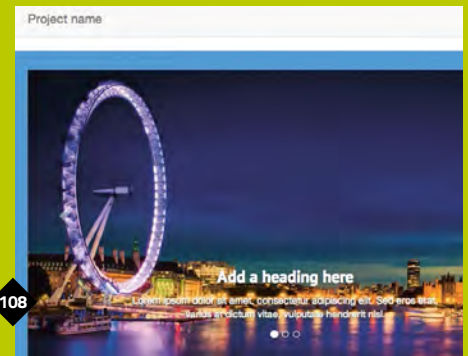
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BROWSER SUPPORT

We feel it's important to inform our readers which browsers the technologies covered in our tutorials work with. Our browser support info is inspired by @andismith's excellent *When Can I Use* web widget (andismith.github.io/caniuse-widget). It explains from which version of each browser the features discussed are supported.



EXCLUSIVE VIDEOS

Look out for the video icon throughout our tutorials. This issue, four authors have created exclusive screencasts to complement their articles and enhance your learning, including Alex Newman's guide to building native apps with Steroids, and Steven Wu's tutorial on building a sign-up page with Bootstrap.



ABOUT THE AUTHOR
ALEX NEWMAN

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areas of expertise:

Web and app design and development, creative consulting

q: what's your opinion on Marmite?

a: Being from the USA, I have no idea what marmite is! I had to Google it. Is it some sort of a spread? To be honest I'd probably prefer a basil pesto



* MOBILE

BUILD SMOOTH, NATIVE APPS WITH STEROIDS

With AppGyver's Steroids platform, you can build native iOS and Android apps with HTML and CSS. **Alex Newman** shows you how

> Most HTML, CSS or JavaScript-based mobile frameworks try to mimic the native app experience. However, they tend to fall short because of performance issues, rendering issues, and bloated JavaScript designed to replicate some of the mobile device's native features. AppGyver's Steroids platform takes a different approach.

The most popular way to create a 'native' mobile app has been with Apache Cordova (formerly PhoneGap). Cordova allows you to create a native app with a single `CordovaWebView`, an in-app browser with all the capabilities of the device's mobile browser. In this app 'wrapper', you can build a mobile website however you prefer. This gets tricky when adding page transitions, a title bar, a button footer, off-the-page drawer navigation, and so on.

Steroids actually uses Cordova, but comes with a few key differences:

- Steroids allows you to create multiple WebViews that you can switch between using native transitions, creating a much smoother app experience
- Steroids doesn't require you to use any other software to compile, test and deploy your apps. It's all handled by Steroids' command-line interface
- Apps built with Steroids work on iOS and Android from the get-go. Through a single codebase you'll be able to test and deploy on multiple platforms

INSTALLING STEROIDS

AppGyver offers a web-based wizard to help you install Steroids (go to netm.ag/AppGyverInstall-259).

 VIDEO

See this tutorial in action in Alex Newman's exclusive accompanying video at: netm.ag/steroidsvid-259

Registering for an account with AppGyver gives you access to the free platform and its cloud deployment services. Follow the instructions for your platform to install the prerequisite libraries.

Next, type this into your terminal window:

```
$ npm install steroids -g
```

If npm fails to install because of a third-party library, it can typically be fixed by running `npm install steroids -g` again.

To check that everything is working correctly, type the following into your terminal:

```
$ steroids login
```

This opens a browser window to handle the login process. Once logged in, switch back to your terminal window. It should say the login was successful.

CREATING YOUR APP

Steroids comes packed with some nifty command-line tools that make app development a breeze. During development you'll primarily use `steroids create`, `steroids connect` and `steroids deploy`.

Through a single codebase you'll be able to test and deploy on multiple platforms

To create your base Steroids app, type the following into your terminal window:

```
$ steroids create projectName
```

This creates a new folder called `projectName` with your base app inside. Next type:

```
$ cd projectName
$ steroids connect
```

The Steroids server will start running, and a browser window will open a page displaying a QR code that allows you to test your app using the free Scanner app available in the App Store or Google Play store. Download one or both of the following:

- AppGyver Scanner for iOS: netm.ag/AppGyverScanner-259
- AppGyver Legacy Scanner for Android: netm.ag/ScannerAndroid-259

★ FOCUS ON

USE THE FRAMEWORKS YOU KNOW

+ The great thing about the Steroids platform is that you're not locked into a specific way of developing the design and interactivity of your app. Because you're working with different WebViews (simple browser instances), you can build your app however you like.

The app in this tutorial is being built with the following:

Ionic framework

ionicframework.com

Ionic is an absolutely stunning open source frontend framework for developing hybrid mobile apps with HTML5. It comes bundled with blank steroids projects created with `steroids create app_name`. If you decide to use Ionic to lay out your app, be careful to not replicate native functionality using Ionic's JavaScript tools – it's not necessary when working with Steroids. *(For more on Ionic, check out an in-depth tutorial in next month's net.)*

SASS

sass-lang.com

An advanced CSS preprocessor: Steroids automatically compiles Sass files saved in your project's `www/stylesheets` folder.

jQuery

jquery.com

Everyone's favourite fun-loving JavaScript framework.

Because one of Steroids' dependencies is a package manager called Bower (bower.io), you can use it to install tons of awesome packages in your app.

Other popular packages and frameworks include:

- AngularJS
- Bootstrap
- LESS
- HTML5 Boilerplate
- Font Awesome
- Backbone.js
- Animate.css
- Hammer.js

Steroids also comes with a tool called `weinre` that allows you to monitor and debug your app while it's running on an actual device. You can access `weinre` while the Steroids server is running by typing `steroids weinre` into a terminal window at your project's root.

* RESOURCES

MORE RESOURCES

+ **AppGyver Academy** (*academy.appgyver.com*)

The AppGyver Academy is your one-stop shop for all things Steroids. Learn about all the tooling that Steroids has to offer, advanced native user-interface options and design, app architecture, utilising device capabilities and more.

Steroids Add-ons (*addons.appgyver.com*)

Dead simple add-ons for your Steroids projects. Native Facebook integration, push notifications, OAuth, GPS integration, and more on the way.

AngularJS (*angularjs.org*)

This is the hottest way to build JavaScript-based web apps. Developed by Google.

Hammer.js (*hammerjs.github.io*)

Hammer is a open-source library allows you to do really cool things with touch, pinch and swipe events via JavaScript. It doesn't have any dependencies, and it's small – only 3.71 kB when minified and gzipped. I highly recommend you it out.

300ms tap delay, gone away (*netm.ag/300ms-259*)

Get rid of that pesky 300ms delay when tapping buttons and links on mobile browsers.



AppGyver Academy Your one-stop shop for everything to do with Steroids

- ▶ Connect your device to the same network as your computer, scan the QR code with the AppGyver Scanner app, and voilà! Your app is now running on your device.

Steroids handles the building and testing from its own server. You can refresh your app on the device simply by hitting Return in the terminal window that's running the Steroids server.

DEVELOPING YOUR APP

Now that everything is set up, let's create a simple photo gallery app. The beauty of the Steroids platform is that you can build your app however you want, using the tools you're already comfortable with. You can opt to build in HTML and CSS, just like a standard website.

Install `jQuery` using Bower. Go to your project's root folder in a terminal window, and type:

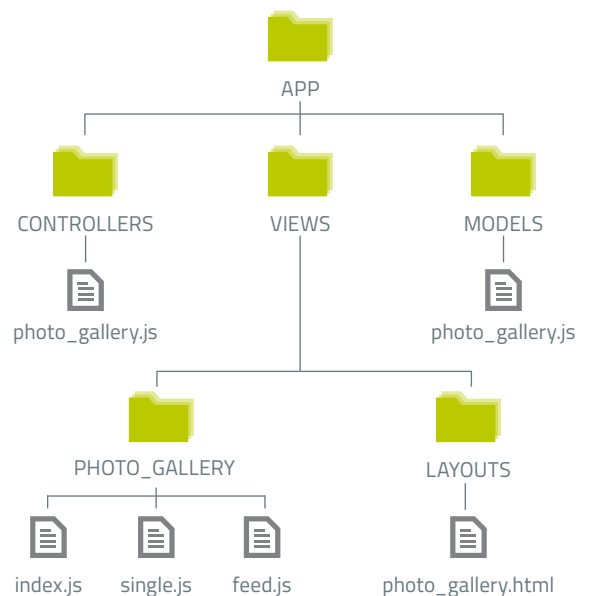
```
$ bower install jquery --save
```

You can build your app however you want, using the tools you're comfortable with

SETTING UP FILES

Steroids comes with great build tools to help you write MVC-style JavaScript applications. By following this suggested file structure, you can keep things DRY and well-organised.

In the project folder's root, create the following files and folders:



Let's break this down:

- 1 We've created a file in `views > layouts` called `photo_gallery.html` which will serve as the HTML wrapper for our app's different screens
- 2 We've created a folder called `photo_gallery` within `views` to store the various screens we're going to have in our app. It's important that the name of this folder matches the name of the file we created in the previous step
- 3 Within the `photo_gallery` folder, we've created three HTML files that will serve as the actual screens for our app
- 4 We've created two files named `photo_gallery.js`. One sits in the `controllers` folder, and the other in the `models` folder. These files contain the logic for our app

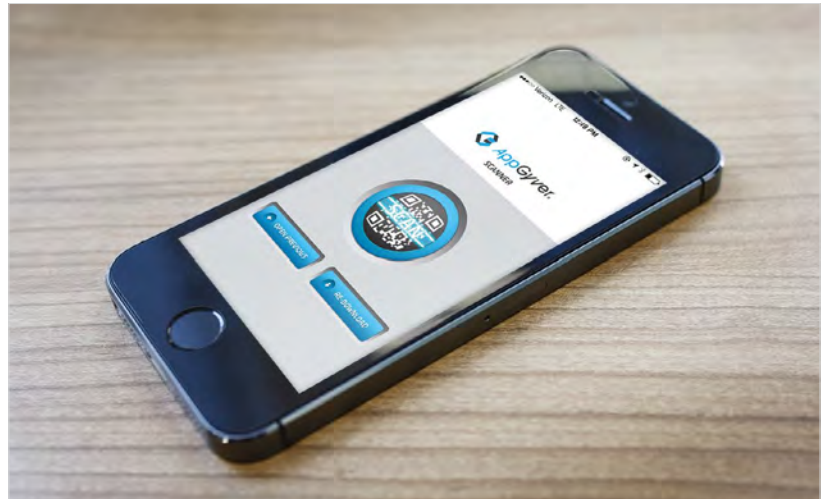
STRUCTURING YOUR APP

Put the following HTML into your `views/layouts/photo_gallery.html` base template:

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf8">
  <meta name="viewport" content="width=device-width">
  <title>Photo Gallery</title>
  <link rel="stylesheet" href="/vendor/ionic/css/ionic.css" />
  <link rel="stylesheet" href="/stylesheets/application.css" />
</head>
<script src="/JavaScripts/onerror.js"></script>
<script src="/JavaScripts/console.log.js"></script>
<script src="http://localhost/cordova.js"></script>
<script src="/components/steroids-js/steroids.js"></script>
<script src="/components/jquery/dist/jquery.min.js"></script>
<script src="/models/models.js"></script>
<script src="/controllers/<%= yield.controller %>.js"></script>
</head>
<body class="content">
  <div class="padding">
    <%= yield.view %>
  </div>
</body>
</html>
```

Now edit `views/photo_gallery/index.html` and write the following HTML:

```
<div class="content-padded">
  <h1>Hello World!</h1>
</div>
```



Scanner app The AppGyver Scanner app, available on both iOS and Android, lets you test your app on mobile devices

When Steroids compiles your project, it's performing the following actions:

- 1 Steroids copies the contents of the `www/` folder into a new folder called `dist/`
- 2 Steroids builds the files in the `app/` folder and copies each of `app/`'s subfolders directly into `dist/`. This results in three new folders in `dist/`; `models`, `views` and `controllers`

The structure of the `dist/views/` folder differs from the `views/` folder in that it has fully built HTML files in it rather than a base template and partials. Be careful not to edit files in the `dist/` folder, because when Steroids builds your app it will overwrite those changes.

Next, open the `config/application.coffee` and look for the following:

```
### Start Location
steroids.config.location = "http://localhost/index.html"
```

Let's change our app's start location to the new view we created:

```
steroids.config.location = "http://localhost/views/photo_gallery/index.html"
```

If your Steroids server isn't already running, type `steroids connect` in a terminal window. Otherwise, hit return inside the Steroids server window to build your app. Use the AppGyver Scanner app to scan the QR code Steroids gave you when you started the server. A screen with "Hello World!" should appear. Do a happy dance (suggestion: Raise the roof).

Now add a selection of photos to `www/images/` and write some HTML for them in `app/views/photo_gallery/index.html`:



QR code When you start the Steroids server, a browser window opens displaying a QR code to scan

```
<div id="thumbnails" class="content-padded">
  <div class="row">
    <div class="col">
      
    </div><!-- Repeat to add more thumbnails -->
  </div><!-- Repeat to add more rows -->
</div>
```

Create a new file in `www/stylesheets/` called `application.scss`. Steroids automatically compiles Sass and SCSS files as part of its build process. Add the following SCSS to `application.scss`:

```
body { background-color: #444; }
.content-padded {
  img { max-width: 100%; height: auto; }
  h3, h4 { text-align: center; margin: 0; line-height: 1em;
padding: 10px; }
}
#thumbnails {
  .card { margin: 0; padding: 0; }
}
```

Hit Return in your Steroids server terminal window. Your app will refresh and your photos will appear as thumbnails on your screen. Do a happier dance (suggestion: Gangnam Style).

WORKING WITH WEBVIEWS

Now that we have our home view, let's create another view for our app.

Open `app/views/photo_gallery/single.html` and write some HTML for our single photo view:

```
<div id="single" class="content-padded">
  <div class="card"></div>
</div>
```

Navigating between WebViews

Rather than using standard links (`<a>`) to navigate in-between pages, we need to write some JavaScript that will enable us to switch between WebViews in our app. If we were to use standard links, the page would change inside the current screen, rather than using your device's native transitions to switch to a new WebView.

Open up `app/controllers/photo_gallery.js` and write the following JavaScript:

```
steroids.view.navigationBar.show("Photo Gallery");
steroids.view.setBackgroundColor("#444");
$(function() {
  $('#thumbnails img').on('click',function(){
    var webView = new steroids.views.WebView('/views/
photo_gallery/single.html');
    steroids.layers.push(webView);
  });
});
```

Anyone with the Scanner app can scan the QR code to test the app on their device

This sets the top navigation bar title of our initial view to "Photo Gallery", sets the project's background colour for iOS (in Android, the background colour is set in the stylesheet) and adds a `click` event on our thumbnail images to load a new WebView containing `single.html`.

Build/refresh your app and tap one of the thumbnails; the `single.html` WebView will fly in from the right.

Sharing data between WebViews

Each of our WebViews is its own 'browser instance' with its own DOM and JavaScript runtime, you can't just set a JavaScript variable in one WebView and retrieve its data in another. To work around this, Steroids implements the `window.postMessage` API to send data from one WebView to another.

Now let's change the way we load our WebView containing `single.html`. Open `app/views/photo_gallery/`

`index.html` and add the following code at the end of the file:

```
<script>
  var singleView = new steroids.views.WebView({
    location: "/views/photo_gallery/single.html",
    id: "singleView"
  });
  singleView.preload();
</script>
```

This preloads `single.html` into a new `WebView` called `singleView` in our layer stack without showing it on the screen.

Then, in `app/controllers/photo_gallery.js`, change `$('#thumbnails img')` to the following:

```
$('#thumbnails img').on('click',function(){
  message = {
    recipient: 'singleView',
    src: $(this).attr('src'),
    title: $(this).attr('alt')
  }
  window.postMessage(message);
  steroids.layers.push(singleView);
});
```

Here, we're defining a message containing data from the HTML attributes of the thumbnail we tapped, sending that message to all the `WebViews` in our layer stack and pushing the `singleView` `WebView` onto the screen.

We now need to let `single.html` know that it should listen for the message that we're going to send to it. Add this to the bottom of `app/views/photo_gallery/single.html`:

```
<script>
  function messageReceived(event) {
    // check that the message is intended for us
    if (event.data.recipient == "singleView") {
      steroids.view.navigationBar.show('Photo');
      $('#single .card').html('<h3>' + event.data.title + '</h3>');
    }
  }
  window.addEventListener("message", messageReceived);
</script>
```

This changes the navigation bar title of `singleView` to 'Photo'. We're then setting up a function to see if the message being sent is for this `WebView` (based on the `event.data.recipient` value from our message), and that it creates an `img` and an `h3` from the data sent in our message.

Lastly, we're setting up an event to listen for messages being sent. Build/refresh your app and tap one of the photo thumbnails. The `singleView` `WebView` should slide in from the left and display a larger view of the photo you tapped on.

Tap the back button. Now tap on a different photo; it should display that different photo in your `singleView`.

Finally, do the happiest dance you know (suggestion: The Electric Slide or The Macarena).

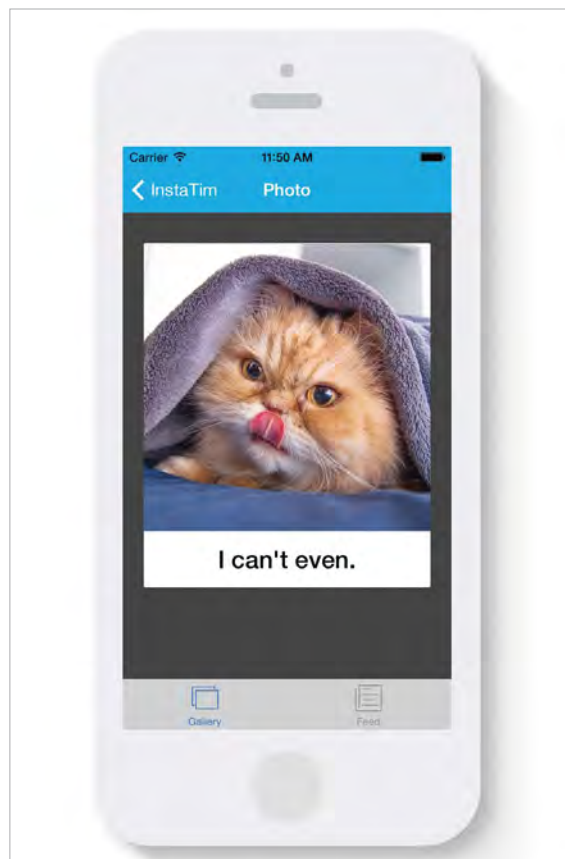
TESTING AND SHARING

Now that you've got a shiny new photo gallery app, you're going to want to share it with the world. Type the following into a terminal window in your project's root:

```
$ steroids deploy
```

A new QR code will open in your browser. Your app is now hosted on Steroids' Cloud Platform and anyone with the AppGyver Scanner app can scan the QR code to test the app on their device.

Boom – an app! So smooth and responsive, your app will be the envy of all your developer buddies. Try not to rub it in their faces. 📱



Finished product How our single `WebView` should look

RESOURCE

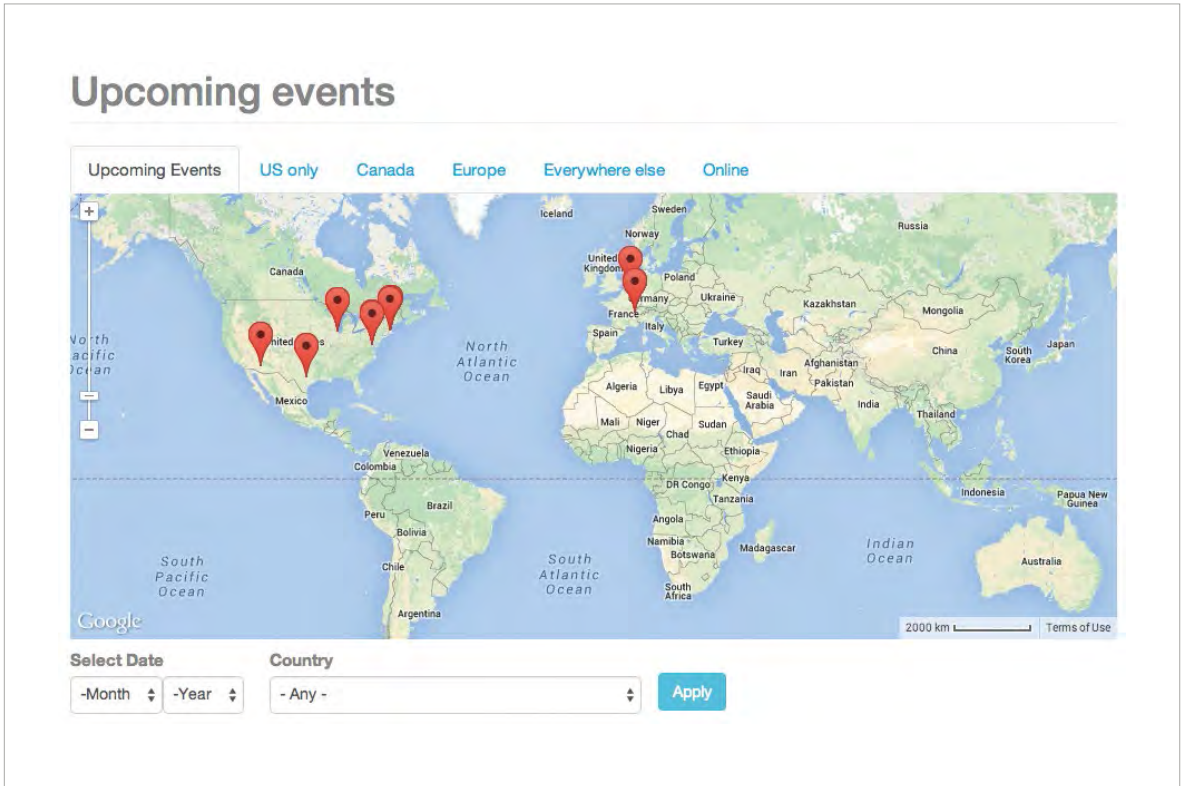
APPGYVER X COMMUNITY

For a plethora of resources on the AppGyver Steroids Platform, including guidance on how to prepare your app for submission to the App Store or Google Play store, go to x.appgyver.com.



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areas of expertise: HTML, CSS, PHP, Drupal
q: what's your opinion on Marmite?
a: I love it! Although I do seem to be in the minority on this side of the pond. I'm just sad it's hard to get here in Montréal



*** DRUPAL**

CREATE CUSTOM GOOGLE MAPS USING DRUPAL

Dave Myburgh shows you how to create a custom global event map from location data stored in Drupal

When we decided to update Acquia's training website to Drupal 7, we wanted to have a map on the event page showing the locations of all our upcoming courses, as well as a map for each course, so users can quickly get a feel of where events will be taking place. Visitors can also open up the maps in Google Maps to obtain directions.

In the past, it's been difficult to create maps from location data stored in Drupal. There are numerous modules and methods available to deal with this, but finding the right combination can be tricky. For the training site, we figured out how to make it all happen using the following three modules (along with any other modules they require):

- Location 7.x-3.2 (drupal.org/project/location)
- GMap 7.x-2.9 (drupal.org/project/gmap)
- IP Geolocation Views & Maps (IPGV&M) 7.x-1.25 (drupal.org/project/ip_geoloc)

In this walkthrough, I'll show you how we used these modules to generate custom event maps. I'll begin by configuring each module, using IP Geolocation Views & Maps to collect location data from the site's visitors, then creating a global map that shows the location of upcoming events along with a pin indicating the location of the viewer.

You can take a look at the results by visiting training.acquia.com/events.

RESOURCE

Visit the Event category of the Download & Extend section of the Drupal site for more useful modules: drupal.org/download

► **Dropdown** from the second menu), **Postal code**, and **Coordinate Chooser** (this allows the editor to enter a latitude and longitude if geocoding fails for some reason). In **Display Settings**, we ticked: **Coordinate Chooser**, **Province name**, **Country name** and **Coordinates**. The **GMap Macro** is simply set to **[gmap]** and our **GMap marker** is **Blue**.

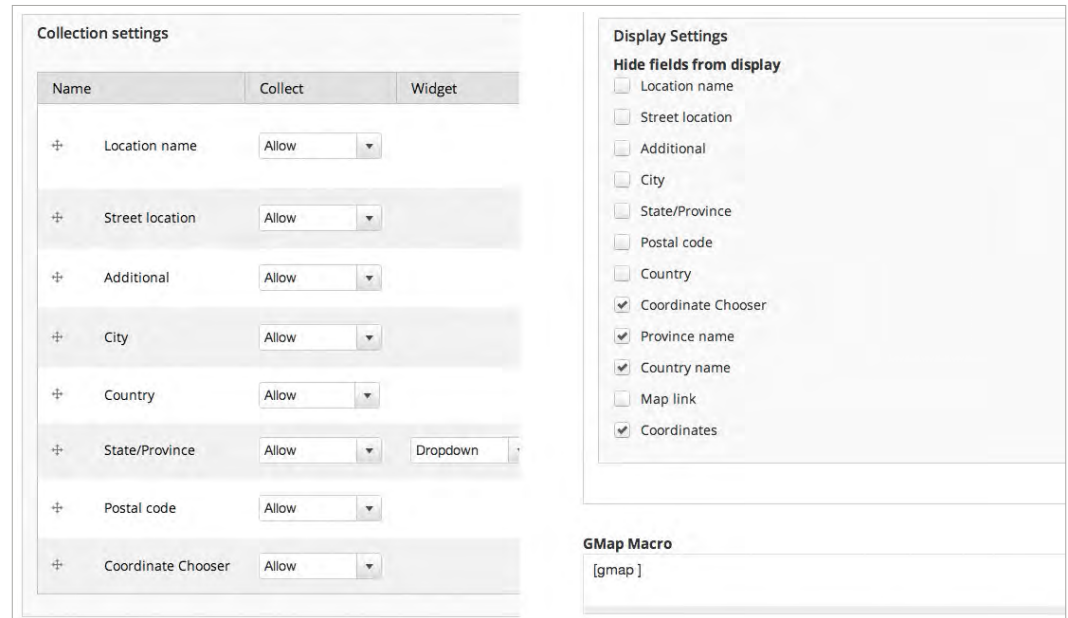
07 On the **Manage Display** tab for the event content type, select **Address with map** as the **Format** for the **Location** field. Now when viewing an event with an address, you will see the actual address as well as a map of the location. A link to Google Maps is provided below the map so users can interact with it – for example, to get directions from their location.

08 If a map does not appear after saving an event, go back and edit the node to ensure that a latitude and longitude are now visible below the location data. If not, you might need to enable geocoding for that country, or manually enter the latitude and longitude. If that doesn't work, double-check all the settings above. As a last resort, check the issues list for that particular module on the Drupal site (drupal.org/project/issues/gmap) to see if you can get some help there.

09 The last thing we need to do is create a display that shows all our events across a world map.



Step 9 The Views module creates a display



Step 6 Under Collection settings, select Allow for the elements of information you wish to be collected for a location

We can do this using the Views module, in conjunction with the IPGV&M module. Views is one of those ubiquitous modules that tends to be used on all but the very simplest websites. It is required by IPGV&M, so you should already have it enabled at this point.

10 Create a new View (**Admin > Structure > Views > Add**) and check **Create a block** with the **Display format** set to **Map (Google API, via IPGV&M)**. In the settings for this option, you'll see dropdown selects for the latitude and longitude fields. If you've already added those fields to your field list in the View, select them; otherwise leave them blank for now – you can add them after you've added the

fields. Leave the **Default location marker** set to default.

11 **Map options** is where the tricky stuff comes in. You really have to play around with the options in order to get your desired outcome. We used the following:

```
{ "mapTypeId": "roadmap",
  "disableDefaultUI": true, "zoom": 2,
  "zoomControl": true, "scaleControl": true, "centerLat": 20,
  "centerLng": -30 }
```

In **Map style (CSS attributes)** add CSS styles for the map itself: here, we're using **height: 400px; width: 100%**. Select **Center the map on the visitor's current location** from **Map centering options** and enter a hex

colour code (without the #) for the user's icon colour.

12 Add **Location: Latitude** and **Location: Longitude** fields to the View. Be sure to set these fields to **Exclude from display**. Then add whatever other fields you want to show in the pop-up when someone clicks on the marker on the map: for example, **Content: Title**, **Content: Date**, **Location: City** and so on. We added a filter to the View to show only event nodes that had a start date in the future (**Content: Date (start date) > now**).

13 Save the View and add the block where you want it to show on your site. You can see our map at training.acquia.com/events.

*** RESOURCE**

TRY THE GOOGLE MAPS JAVASCRIPT API

The Google Maps JavaScript API is an extremely powerful tool for creating interactive maps for your website. Luckily, Google provides excellent documentation to help you navigate its complexities. In many cases, the various Drupal modules that deal with the API allow you to use custom options – and the documentation is the best place to find and understand the numerous possibilities available. The IP Geolocation Views & Maps **Map options**, for example, can be found at netm.ag/259-mapoptions.

YOU
CAN
TAKE
HIM
AWAY
FROM
HERE



Sam's surrounded. By bullets. By screams. By bombs and blood. He's 10.

There are thousands of children like Sam in Syria right now. They're too young to understand what's happening. But they're old enough to be traumatised by every horrific thing they see.

Please help us take them to one of War Child's 'Safe Spaces' - a haven away from the violence. Somewhere they can feel protected and cared for, where they can just be children and play.

Text 'PROTECT' to 70444 and give £3 to help protect Syrian children like Sam.

warchild.org.uk/syria





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Sublime Text, PHP,
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q: what's your opinion
on Marmite?

a: I LOVE Marmite
on white toast!

* TOOLS

BOOST PRODUCTIVITY IN SUBLIME TEXT

James Brooks explores ways to improve your productivity in Sublime Text, using plugins, projects and custom key bindings

➤ Sublime Text is a sophisticated text editor for writing code or markup. In this article, I'll look at three ways to push it harder and boost your productivity: setting up and working with projects, extending Sublime Text's core functionality with plugins, and using custom key bindings. Everything should be broadly compatible with Sublime 2 and 3.

PROJECTS

Development projects can easily run to hundreds of lines of code in hundreds of files. Sublime Text includes an easy-to-use project-switching system, providing us with a simple way of managing projects.

Sublime will create two files for a project: `Project.sublime-project` and `Project.sublime-workspace`. The former contains the name of the project and the location of any directories within it, and can be used to override Sublime settings.

Let's take a look at the methods Sublime has to create projects:

- 1 Inside a blank Sublime window drop a directory (or multiple folders) onto the editor space
- 2 Click `Project > Add Folder to Project` and select your directory. Sublime Text will open it
- 3 Click `File > Open` and select your directory. This is the same as opening a file
- 4 Use the command line tool `subl` by running `subl .` or by specifying the path to your directory. The arguments we send to `subl` tell Sublime to open the folder from the current directory

Once your directory is open, save your project somewhere on your system – or if you want to share your Sublime Text configuration on a per-project

basis, save the project in your project folder. If you want to edit the title, go to `Project > Edit Project` and add `"name": "Project Name"` above the `path` line.

"But James, I have multiple projects and I need to switch between them," I hear you cry. No problem. Select `Project > Quick Switch Project...`. Type the project name, hit Enter and Sublime will open the project. Alternatively, use a keyboard shortcut: `Ctrl+Alt+P` for Windows or Linux, and `Cmd+Ctrl+P` for OS X.

Now let's look at how to configure projects. You can edit project preferences in the same way you changed the project name earlier. I'll use the example of displaying rulers at different widths. Underneath the `folders` key, we need to add a new `settings` object.

```
{
  "folders":
  [
    {
      "name": "My Awesome Project",
      "follow_symlinks": true,
      "path": "/Users/jamesbrooks/code/project"
    }
  ],
  "settings": {
    "rulers": [60, 80, 160]
  }
}
```

Any setting that you can add to your user preferences can be added in the `settings` object. If you switch to a different project or start a new one, Sublime will revert to your user preferences, or its defaults.

Finally, let's look at adding a custom build system to a project. In some cases, your project may be

VIDEO

James Brooks has created an exclusive screencast to go with this tutorial. Watch along at: netm.ag/sublimevid-259

**MORE ON KEYS**

Learn more about key bindings in the unofficial Sublime Text documentation: netm.ag/259-keybindings

using a customised build system which you may not need when using other projects. In Sublime, build systems can also be used to run shell commands. For instance, you can count the lines of code in a project, send an email, display notifications, or automatically push to production after running your test suite.

Underneath the `settings` object we just added, we'll need to add a `build_systems` array:

```
{
  "folders":
  [
    {
      "name": "My Awesome Project",
      "follow_symlinks": true,
      "path": "/Users/jamesbrooks/code/project"
    }
  ],
  "settings": {
    "rulers": [60, 80, 160]
  },
  "build_systems": [
    {
      "name": "Lines of code",
      "working_dir": "${folder}",
      "shell_cmd": "sloc ."
    }
  ]
}
```

Sublime's project switching system provides a simple way of managing projects

In this case, Sublime will output a breakdown of the project code, using `sloc` (npmjs.org/package/sloc).

PLUGINS

While Sublime comes with a great default set-up, it's also possible to install third-party plugins – and with Will Bond's Package Control (sublime.wbond.net), installing a plugin is as easy as knowing its name. Let's look at some of the best plugins around:

SublimeLinter

This is a framework for code linting – automatically reading through your source code looking for sections that may not work as intended. This will reduce the time you spend compiling, refreshing and running, as you'll see errors inline.

SublimeCodeIntel

SublimeCodeIntel is a port of a plugin from the Open Komodo editor (openkomodo.com), providing support for the majority of popular languages. Similar to SublimeLinter, this reads your code and allows you to jump to declarations for variables and methods.

SublimeGit (with GitGutter)

This provides you with a load of Command Palette integration, integration with Legit (git-legit.org) and gitflow (github.com/nvie/gitflow), and the ability to set custom Git commands. Installing GitGutter on top of SublimeGit displays per-line Git differences inline, making it easy to see your changes.

KEY BINDINGS

Sublime comes with loads of cool default key bindings which make interacting with it much easier. Key bindings can also be configured for particular operating systems, so you can set up key bindings to use `Cmd` in place of `Ctrl` on OS X, for example.

When adding custom key bindings, you should always add them to the user file. Click `Preferences` in the menu bar (part of the `Sublime Text` menu on OS X) then select `Key Bindings – User`. If you're unsure of the existing commands, open `Key Bindings – Default`.

Let's look at how to create a custom key binding for `Edit Project`. On OS X:

```
{ "keys": ["super+ctrl+e"], "command": "open_file", "args":
  { "file": "${project}" } }
```

On Windows and Linux:

```
{ "keys": ["ctrl+alt+e"], "command": "open_file", "args": { "file":
  "${project}" } }
```

The same `open_file` command can be called with different file parameters to make editing other files even faster too.

Ever find yourself with a file open but absolutely no idea where it lives? You need the `Reveal in Sidebar` command. Installing the `SideBarEnhancements` plugin with this key binding will make you a sidebar master in no time! In OS X:

```
{ "keys": ["super+ctrl+r"], "command": "refresh_folder_list" }
```

On Windows and Linux:

```
{ "keys": ["ctrl+alt+r"], "command": "refresh_folder_list" }
```

That concludes our look at how to boost your productivity enhancements in Sublime Text. Now you're on the path to Sublime mastery.



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a: I've never tried it

* HEAD TO HEAD

HIGHCHARTS VS D3.JS

Joanne Cheng assesses the relative merits and drawbacks of these two popular data-visualisation and graphing tools

HIGHCHARTS

Highcharts is an easy-to-use graphing library that lets developers create standard charts that are responsive, interactive, and supported on any browser.

BENEFITS

Has support for common data graphics such as bar charts, line graphs, pie charts and so on. Its simple API allows developers to configure chart features. Highcharts graphs are responsive by default, and include built-in support for tooltips and mouse events.

DRAWBACKS

Produces a limited range of graph types, and custom styles and user interactions are limited. Styles must be done with JavaScript. Graphs tend to be recognisable as Highcharts, which can clash with a designer's vision. Free for non-commercial use only.

BROWSER SUPPORT

Supports nearly every browser in use, including IE6 and mobile browsers. Multi-touch support for mobile browsers. Standard browsers use SVG for the graphics rendering; in legacy IE, graphics are drawn using VML.

EXTRA FEATURES

There are more advanced ways to modify Highcharts visualisations. There is an API to draw custom shapes on a chart using SVG or VML, depending on the user's browser. The library comes with internationalisation support to allow for multiple language support.

D3.JS

D3.js is a domain-specific language that lets users bind JavaScript objects to DOM elements to create unique data visualisations.

Used to visualise data in a creative manner by letting devs bind data to the DOM. It's easy to set custom classes and attributes on each DOM element, making visualisations styleable with CSS. Provides modules for custom animations, mouse events and layouts.

Has a steep learning curve. Code needs to be written to support common graph features, such as responsiveness and tooltips. The dev also needs to be aware of performance hits from common problems, such as creating too many DOM elements.

Supports only modern browsers out of the box. Commonly used with SVG, which is not supported by IE8 and lower. However, it supports new browser features such as custom Web Components.

D3.js comes with several modules that can help you create common chart features with SVG quickly. There are methods on D3's selections that enable you to animate SVG elements and allow you to control many animation parameters.

VERDICT

Both libraries can help you display your data in the best way possible, so which one you choose depends on the type of visualisations you need to create. With an easy-to-use API as well as built-in responsiveness and all-inclusive browser support, Highcharts is the best option for quick visualisations. But for visualisations that need custom styles and interactions, D3.js is a great choice.

 FACT FILE

INSTALLATION

Highcharts

Can be downloaded from highcharts.com

D3.js

Hosted on GitHub at github.com/mbostock/d3

DEPENDENCIES

Highcharts

Comes with JS and CSS files that must be included.

D3.js

No dependencies, though Sizzle is required for older browser support.

Get to the top of **Google™** 164 pages of advice from leading SEO experts

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CLIMB THE RANKINGS Give your sites a performance boost today!

THE

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UPDATED FOR
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SEO HANDBOOK

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ABOUT THE AUTHOR

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MANDEVILLE

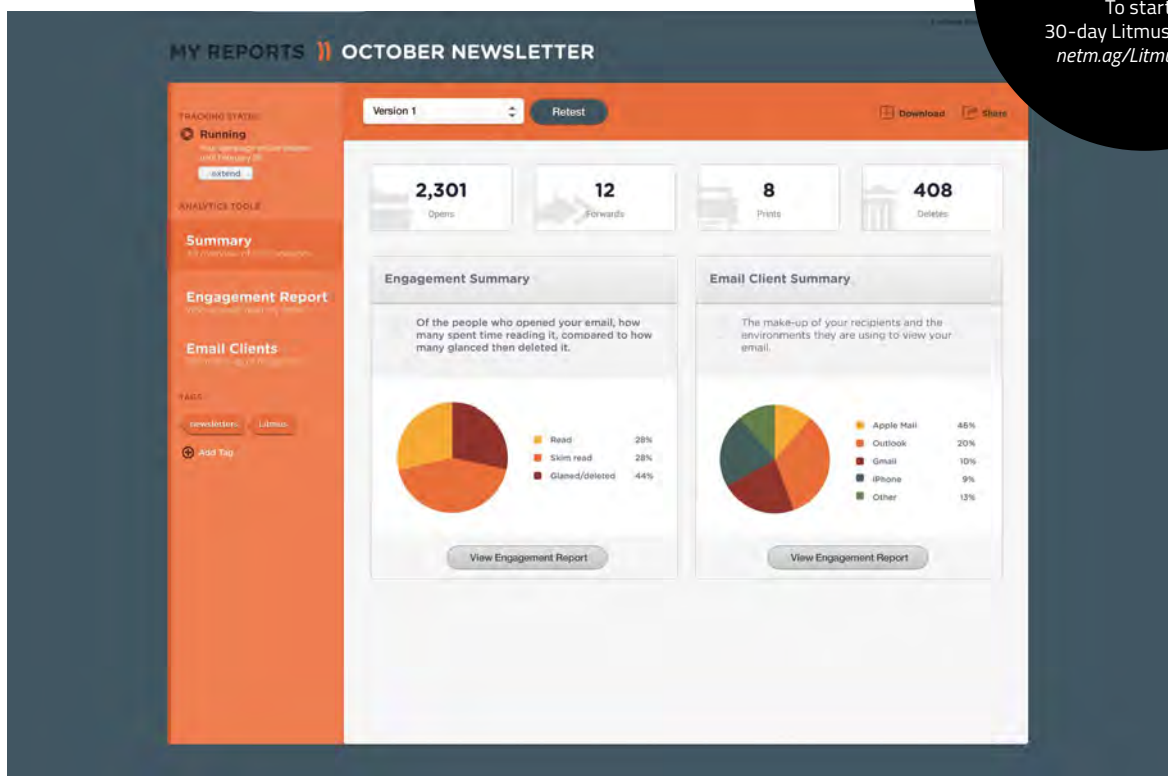
w: litmus.com

t: @kevingotbounce

areas of expertise:
Photoshop, HTML, CSS

q: what's your opinion
on Marmite?

a: No thanks. Pass
the bacon



*GRUNT

CREATE BETTER HTML EMAILS WITH GRUNT

Kevin Mandeville explains how to automate the process of developing HTML emails using the popular JavaScript task runner

➤ Email clients are infamous for their poor rendering. With quirky clients like Gmail that strips the `<head>` tags out of HTML emails, or Outlook 2007–2013 that uses Microsoft Word as a rendering engine, building emails has always been problematic. Crafting an efficient workflow to develop those emails can be even more challenging.

But a lack of support for modern standards doesn't mean that email development requires antiquated tools. Emails don't need to be hand-coded in Dreamweaver like it's 1998 any more: modern tools now play a major role in the way the best email developers build their emails. In this tutorial, I'm going to focus on how Grunt can accelerate the process of preparing and testing an HTML email.

Grunt is a popular JavaScript task runner. It helps automate time-consuming tasks such as minification and inlining, and can be an even bigger time-saver for emails. If you don't have Grunt already installed, follow the instructions at gruntjs.com/installing-grunt.

Grunt will help us with several key functions that will automate our email development workflow:

- Removing unused CSS
- Inlining certain CSS styles
- Sending a test to the Litmus email-testing service

In this tutorial, I will go through and review each of these functions in depth.

VIDEO

Kevin Mandeville has created an exclusive screencast to go alongside this tutorial. Watch along at: netm.ag/gruntvid-259



Gmail decapitation Gmail strips the `<head>` tag out of emails – using Grunt to inline your CSS minimises potential problems

REMOVING UNUSED CSS

The first task Grunt will run for us is `grunt-uncss`. This task removes any unused CSS in the email, reducing the overall email file size. This task only works on external CSS files, not embedded styles in the `<head>`.

To install it, open your desired project location in the terminal window and run this command:

```
npm install grunt-uncss --save-dev
```

Emails don't need to be hand-coded in Dreamweaver like it's 1998 any more

Then add the task to your Gruntfile:

```
grunt.loadNpmTasks('grunt-uncss');
```

Finally, insert the following inside the `initConfig` method of your Gruntfile:

```
uncss: {
  dist: {
    src: ['src/input.html'],
    dest: 'dest/output.css'
  }
}
```

Simply specify the CSS file you would like to uncss in the `src` array. The final output of the file is defined in the `dest` file. In the example given above, uncss will extract the CSS from `input.html` and compress it into `output.css`.

★ FOCUS ON

USE CSS ON TABLE CELLS

Every HTML email needs to use a `<table>` structure to render properly across email clients. I recommend putting every single piece of content in its own table cell (`<td>` tags) and applying CSS to it. For instance, instead of using...

```
<h1>This is a headline</h1>
<p>This is a paragraph.</p>

```

... structure the content like this:

```
<table>
<tr>
<td style="/* Insert Styles Here */">This is a headline</td>
</tr>
<tr>
<td style="/* Insert Styles Here */">This is a paragraph</td>
</tr>
<tr>
<td></td>
</tr>
</table>
```

There are a few tags that can use CSS – for example, images (``), links (`<a>`), spans (``) and client- or mobile-specific CSS. However, email clients are very quirky in rendering tags such as `<h1>` and `<p>`, so keeping all the styles on table cells in this way minimises inconsistency.



Rough plan Sketching out different email components. Each box and line of text represents a table cell that you need to style

* IN-DEPTH

HOW TO TARGET OUTLOOK

+ Versions of Outlook for desktop (Outlook 2000–2013) are the most problematic email clients when it comes to email rendering. Luckily, Outlook can be targeted using a conditional `mso` statement.

```
<!--[if mso]>
/* Insert HTML or CSS here */
<![endif]-->
```

This hack lets us use Outlook-specific CSS styles in the `<head>` of the email or insert Outlook-specific HTML content. Additionally, specific versions of Outlook can be targeted using the following terms in the conditional statement:

- `lt` = less than a specific version
- `gt` = greater than a specific version
- `lte` = less than or equal to a specific version
- `gte` = greater than or equal to a specific version

For example, take the following statements:

- `<!--[if mso 12]>` – targets only Outlook 2007
- `<!--[if gte mso 12]>` – targets Outlook 2007 and above
- `<!--[if gt mso 12]>` – targets above Outlook 2007 (Outlook 2010/2013)
- `<!--[if lte mso 12]>` – targets Outlook 2007 and below
- `<!--[if lt mso 12]>` – targets below Outlook 2007 (Outlook 2000/2002/2003)

Here is a list of Outlook’s version numbers:

- Outlook 2000 = 9
- Outlook 2002 = 10
- Outlook 2003 = 11
- Outlook 2007 = 12
- Outlook 2010 = 14
- Outlook 2013 = 15

Outlook also has its own unique CSS that can be applied to HTML elements. Here is an example of a commonly used `mso` CSS property:

```
<span style="mso-hide: all;">This text will not display on Outlook.</span>
```

You can find a full list of over 200 unique CSS styles by visiting netm.ag/259-outlookcss.

► It’s worth noting that in certain use cases, removing unused CSS can be a drawback when it comes to email. It is best practice to have email-client specific reset styles that aren’t always referenced in the HTML, but are needed to properly render an email for some clients. Be aware of this and only use this technique where appropriate.

SETTING UP GRUNT EMAIL BUILDER

The most useful Grunt task for email is `grunt-email-builder`. It provides the best email CSS inlining functionality and the most customisable email client testing options to date. To install `grunt-email-builder`, run the following command:

```
npm install grunt-email-builder --save-dev
```

grunt-email-builder provides the most customisable email client testing options

Next, add the task to your Gruntfile:

```
grunt.loadNpmTasks('grunt-email-builder');
```

INLINING CSS

`grunt-email-builder` will help run several functions. The first is inlining our CSS. This is important because certain email clients like Gmail strip out the `<head>` tag.

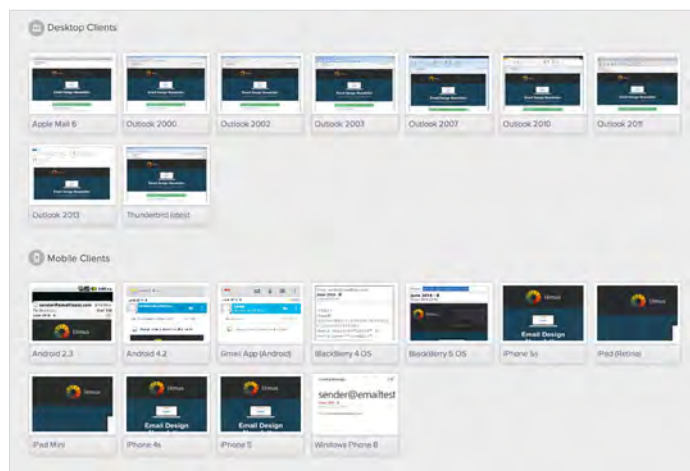
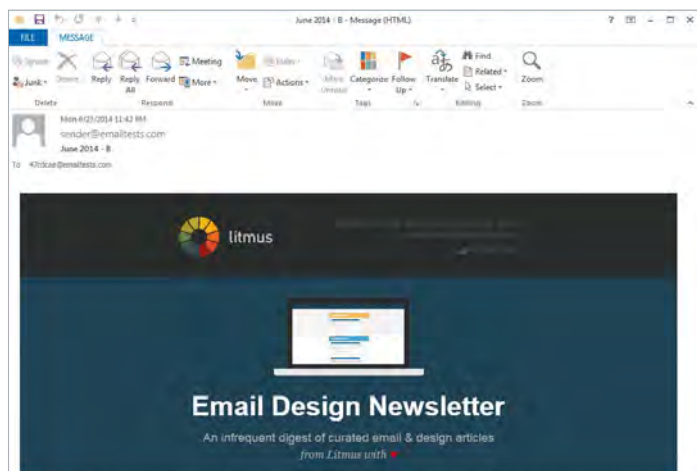
Place the following in the `initConfig` method of your Gruntfile:

```
emailBuilder:{
  inline: {
    files: { 'dest/output.html' : 'src/input.html' }
  }
}
```

In the example above, `grunt-email-builder` will take the file `input.html` and convert it to `output.html` with inlined CSS.

`grunt-email-builder` also enables us to specify which CSS will be inlined. Using the HTML attribute `data-ignore="ignore"` on external or embedded styles prevents those styles from being inlined. Here is the HTML attribute in action:

```
<!-- External styles -->
<link rel="stylesheet" data-ignore="ignore" href="css/style.css" />
```



```
<!-- Embedded styles -->
<style data-ignored="ignore">
/* Styles here will not be inlined */
</style>
```

For some use cases, inlining certain CSS may not have a desirable effect. For instance, an advanced email hack is to use inline styles to target Gmail and then overwrite those with new styles in the `<head>` for other email clients.

Another extremely popular CSS inlining tool for email is Premailer. The only drawback to Premailer is that it does not allow you to specify which CSS can be inlined. You can learn more about Premailer at: github.com/premailer/premailer.

SENDING EMAIL TESTS

It's always helpful to see a live email test in a real inbox. There are several transactional email providers that have Grunt tasks already created, such as Mandrill (mandrill.com) and Mailgun (mailgun.com). You can use your existing provider if a Grunt task already exists for it.

If you have a Litmus account (litmus.com), `grunt-email-builder` will also trigger an email test in Litmus to see how your email renders in over 30 email clients. This Grunt task allows users to select which email clients they want to test with. To use it, insert the following code under the `initConfig` method:

```
emailBuilder: {
  litmus: {
    files: { 'dest/output.html': 'src/input.html' },
    options: {
      encodeSpecialChars: true,
    },
    litmus: {
      username: 'username',
      password: 'password',
      url: 'https://yoursite.litmus.com',
```

```
// All test options at http://yoursite.litmus.com/emails/clients.xml
```

```
// The <application_code> tags contain the name e.g. Gmail Chrome:
```

```
<application_code>chromemailnew</application_code>
  applications: ['gmailnew', 'ffgmailnew',
    'chromemailnew']
}
```

COMBINING GRUNT TASKS

You can combine all of these functions into a single Grunt command by defining the following, under the main tasks in your Gruntfile:

```
grunt.registerTask('default', ['uncss', 'emailBuilder']);
```

The `grunt` command in Terminal will automatically trigger all of these tasks simultaneously. You can easily make changes to your files, save them and re-run all the tasks again, by simply typing `grunt` and hitting `Enter`. It's that easy.

GOING FURTHER

These are just a few of the ways in which you can use Grunt to automate your email development. There are plenty of other tasks you can incorporate into your own workflow, such as converting preprocessing languages such as Haml or Sass to HTML/CSS, HTML and image compression, and uploading images to a server or your ESP.

If you search for the term "grunt email" on GitHub, you will find several pages' worth of repositories showing varying email development workflows. It's all about finding the tasks that make the most sense for you to automate, and finding out which workflow suits you best. [n](#)

Outlook issue Desktop editions of Outlook are the most problematic clients for email rendering. See the boxout for more information

Automated testing

Litmus (litmus.com) speeds up the testing process, previewing your email in over 30 clients

PODCAST

Stay abreast of what's happening in the world of email design with Litmus' Email Design Podcast: netm.ag/emailpodcast-259

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* CSS

WHY USE CSS VARIABLES?

Ben Schwarz explains what user-defined variables inside CSS will do for developers

> There are still CSS purists who don't believe that they need a CSS processor. Maybe you're one of them. Or maybe you already use a CSS preprocessor and see no need for 'real' CSS variables. If so, read on!

If you use third-party components, you probably hope to be able to customise them a bit without having to modify the original code. Let's say you want to use the Bootstrap grid, but your designer has used different gutter widths. You now have three choices.

First, you can modify the Bootstrap CSS code, thereby making future upgrades near-impossible. Second, you can convince the designer to change the grid to match Bootstrap. Or third, you can include all the unprocessed Bootstrap Sass, incorporate it into the build system, and add your own custom variables. For many, the third choice is the path of least resistance – but along the way, your build system becomes bigger, slower and more dependent on the entire team understanding everything going on.

Native CSS variables help us get around this problem. First, let's take a look at the CSS variable syntax:

```
:root {
  --gutter-width: 1rem;
}
```

Above, a variable named `gutter-width` is set to `1rem`. Note that the selector I've chosen to use is `:root` which equates to HTML (or the root SVG node). I'm using `:root` to showcase a very important aspect of CSS variables: the cascade. That's right – variables can cascade through the tree just like properties!

```
.my-module {
  margin-right: var(--gutter-width);
}
```

The `gutter-width` variable cascades down from the root element. Say that I want to tweak the gutter in one particular area only:

```
.my-module {
  --gutter-width: .5rem;
  margin-right: var(--gutter-width);
}
```

No need for a build system: I just sprinkle in a couple of simple variables and customise to my heart's content. Stringing together a series of changes is even easier when you realise that any browser that supports variables has had CSS `calc` for a long time:

```
.col {
  --column-width: 4rem;
  width: calc(var(--column-width) - var(--gutter-width))
}
```

In the above example, we've calculated the `width` of the `.col` selector by subtracting `column-width`.

BROWSER SUPPORT AND TOOLS

Firefox 31 is currently the only browser that supports CSS variables. But there are tools that can help until variables are fully supported. Myth (myth.io) is a post-processor that pulls together rework-powered plugins (netm.ag/259-rework) to provide `calc`, variables, colour mixing and – thanks to the autoprefixer project (github.com/ai/autoprefixer) – vendor CSS prefixes. There's no need to labour over what's supported in each browser: just write code once! [📄](#)

* PROFILE

Ben Schwarz (germanforblack.com) is an independent web dude. He's a team member of CSSConfAU, JSConf and Bower. You can read an extended version of this article at netm.ag/259-morevariables



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a: Sorry, what's Marmite?

* GIT

CONTRIBUTE TO OPEN SOURCE WITH GIT

Lorna Jane Mitchell on how to brush up your Git expertise and get started testing, using and helping out with open source projects

➤ The dominance of GitHub has been a feature of our industry over the past few years, but working with an open source project's code rather than your own individual repositories can be a tricky proposition. Whether you're already using Git, or you're a complete beginner, this article will explain how to start using an open source project via GitHub, and walk you through how you can use Git and GitHub to contribute back to the projects you use.

Before we begin, you'll need to install Git on your machine, and get a GitHub account if you don't have one already (it's free). For this, follow GitHub's own great instructions (help.github.com/articles/set-up-git), and then read on to get started.

FORKING AND CLONING

The main difference between an open source project repository and your own personal or work one is that you probably don't have permissions to push changes to an open source project repository. Therefore you'll need your own 'fork' of the repository. This will be the place you push your changes to so that others can see and consider them.

To make your own fork, make sure you are logged in to GitHub and visit the repository you're interested in contributing to. For this example, we'll look at the project I spend most of my time with: Joind.in (m.joind.in – an open source event feedback site). Visit the page on GitHub (github.com/joindin/joindin-web2) – or, alternatively, pick another project

you're interested in – and look for the **Fork** button on the top right-hand side.

It will take a moment to create a copy of the repository under your GitHub account. It's this repository, belonging to you, that we'll work with. To do anything useful though, we'll need to get that code onto your machine by 'cloning' it. GitHub recommends using the HTTPS URL option for this, and you'll find that URL over on the right-hand side of the page, with a handy **Click to copy** feature.

The dominance of GitHub has been a feature of our industry over the past few years

With this URL in hand, or rather in clipboard, jump to using Git on your local machine. All the examples here are command line-based, but feel free to use other tools as you wish; there is excellent support for Git in most Integrated Development Environments (IDEs), as well as some very good dedicated tools available.

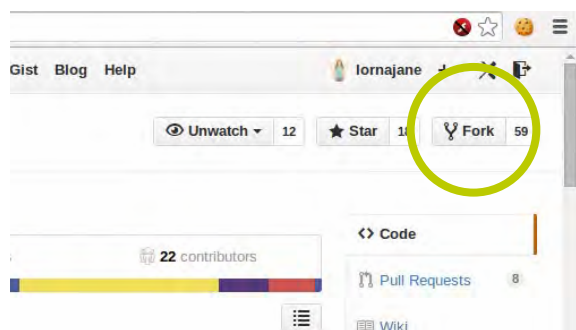
Next, clone the repository to your local machine by adding the URL on your clipboard to this command:

```
git clone [url]
```

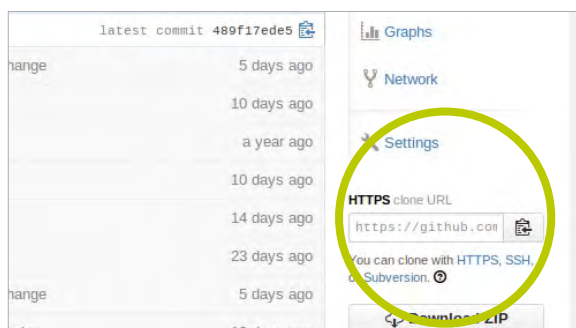
RESOURCE

GITHUB HELP

Many open source projects are hosted with GitHub, and luckily there's great documentation to help you out along the way. Check it out at help.github.com



Forking Look for the 'Fork' button on the top right hand side of the page



URLs Find the URL of your repository – unless you have your SSH keys set up already, it's recommended to use the HTTPS URL

You will now have the code in a new directory. The project's readme file should tell you if you need to initialise some Git submodules, or use npm, Bundler or Composer to bring in any extra libraries needed to make the application work locally.

You will also find information there about what the 'main' branch is. By default in Git we use the 'master' branch but other workflows may be in use, such as Git-Flow which uses a 'develop' branch. If you have to ask questions to get the project working, then your first contribution will be to update the project's readme file – a sure way to make friends on a new project.

KEEP UP TO DATE

The problem with open source projects is that they keep moving on all the time, meaning your version of the code can quickly become stale. Therefore we need to know how to make sure we have the latest and greatest code in our repository.

To do this, we need to add the main project repository as a 'remote' to our project. A remote is just another Git repository that our local repository knows about. To see which remotes are already known, run:

```
git remote
```

You will see that you already have a remote called 'origin'. That's your GitHub repository, and we'll be

★ IN-DEPTH

GIT CHEATSHEET

+ Whether you're new to source control systems or just to Git, there are a few pitfalls to getting your changes under control. Here's a cheatsheet to help get you through successfully.

Git status

This command is your informer. It will tell you what is changed, what is added, what isn't being tracked by Git, and whether you've forgotten to push your changes. If you were to read my history file, you'd see that one command in three is "git status".

Git add

If you have previous experience with Subversion, remember with Git you need to add, or 'stage', every changed file – not just new files. This allows for some very neat tricks, such as staging only some of your changes, or even only part of a file. To stage one file:

```
git add [filename]
```

To pick from a diff view of which changes should be staged (note: diff is a file comparison program which generates output showing the changes between two versions of something):

```
git add -p
```

This system of staging changes before committing them is a useful feature. It enables us to develop away until we're making some sense, then curate some sane commits from the result. There's no need to remember to come back and do something later – do it now, and just tell the story as if it happened later!

Git commit

When "git status" is showing the output you are aiming for, you are ready to commit. Pro tip: this is an excellent time to check that you are on the correct branch – changes to your working copy and staged changes will all come with you if you change branches now. So when you are ready:

```
git commit
```

```
git commit -m "Meaningful and descriptive message about the features or other changes made in this changeset"
```

You can either use the first command, in which case your system should prompt you with your favourite editor to add your commit message, or include it inline as shown in the second example here.

* FOCUS ON

HOW TO GET YOUR PULL REQUEST ACCEPTED

+ Most open source project leads are in favour of encouraging and accepting contributions, but there are a few things to avoid if you're hoping to get your pull request accepted:

An unwanted feature

If you're planning a new feature that isn't listed on a project's roadmap or in its task tracker, it's usually worth talking to the maintainers first to check that your work will actually be welcome.

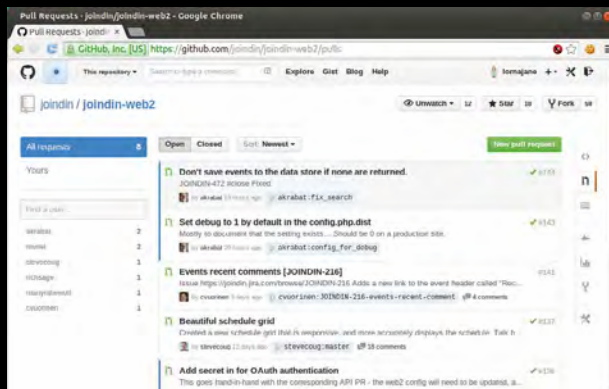
A huge changeset

Anything which is going to take six hours to properly review, check and test will probably wait a very long time to get that much attention. Like most project leads, I also have a job and a family, and open source is my hobby. No matter how good your change is, if it's monstrously large then it's likely that it'll sit open and waiting until such time as it won't merge cleanly, and then get closed.

Combined or mis-branched features

Pull requests with multiple features are very likely to get rejected because one of them isn't acceptable and so the other can't be included. Also if you open a pull request that depends on another pull request, the same problems apply. If you have a couple of ideas, then create each one in a clean branch from the master.

My final advice is this: if you want to contribute to a project, be a part of it. Join the mailing list or IRC channel, and find out what they're working on. Most projects maintain a list of issues they're hoping someone will be able to help them out with. If you've got the skills, then assign it to yourself, ask any questions you need to, and jump on in. You don't need an invitation to participate in open source, it's created and cared for by people just like you.



Pull request Your pull request will be reviewed, and hopefully merged

▶ pushing to that in a moment. First though, we need to tell our local repository about the main project repository, which by convention we call 'upstream'.

Navigate to the main project page again (*github.com/joindin/joindin-web2*) and look for the clone URL over on the right-hand side. Copy it, and add it to your repository using a command like this:

```
git remote add upstream [url]
```

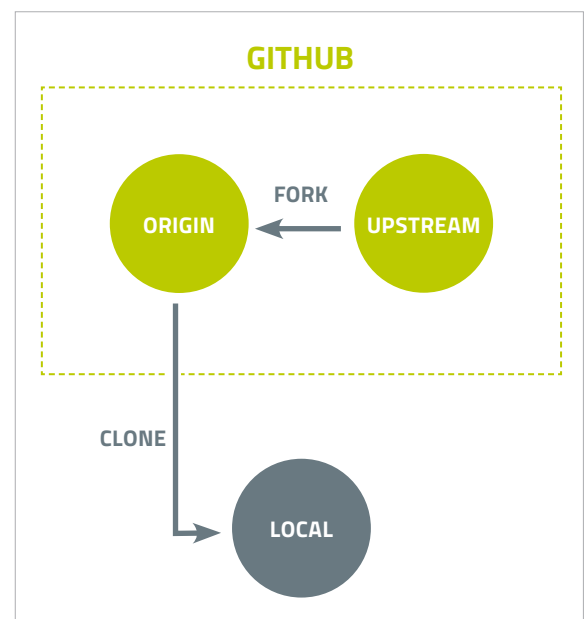
Now if you type "git remote" again, you should see both origin and upstream listed. These repositories – one belonging to the project and one to you – are both on GitHub. To obtain the main project changes, we want to pull from upstream. The command will look like this:

```
git pull upstream master
```

The changes are now in your local repo on your machine, but not on your GitHub repo yet. To do that, we push our changes to our own GitHub remote:

```
git push origin master
```

Now you can have your own copy of the up-to-date code at all times. This is very useful if you want the bleeding edge of the code, but essential if you're going to contribute changes back to the project, as keeping up to date avoids conflicts which might lead to your pull request (more on those in a moment) being rejected.



Upstreaming Your local repository and the two remotes. We fork the main project remote, 'upstream', to create your 'origin'

BECOME A CONTRIBUTOR

Whether you've spotted a typo in the docs or you have a big feature planned, you need to do some research before you start making changes. Most GitHub projects that welcome changes from new people will have a file called CONTRIBUTING.md in their root folder. This will describe the desired format and process of how to offer a change. Should you supply all your changes in a single commit? Does an issue have to be created first? Is there a naming convention? Make sure you have this information before you begin – and if it isn't available, see if you can find an IRC channel or mailing list where the existing contributors can be found, and ask. Potential contributors always get a warm welcome.

The most important and basic guideline before contributing any change to any project is this: make a branch. If there are no guidelines, you can call it anything you like, but make sure you have a branch. My branch is going to be called "feature42", so the command to create it looks like this:

If your pull request doesn't merge cleanly, it is much less likely to be accepted

```
git checkout -b feature42
```

This command creates my new branch, feature42, but also checks it out. So when I make changes and commit now, they will be applied to this new branch. You are now free to start hacking away and working on your masterpiece.

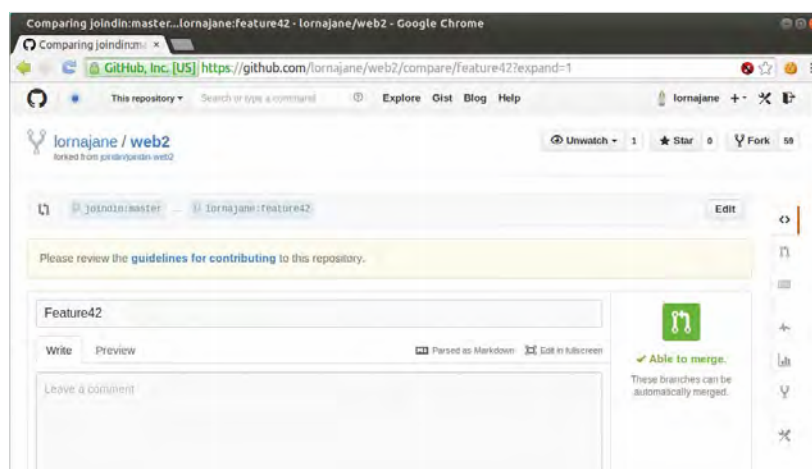
Once you're done and all your changes are safely added and committed, we need to make your feature available somewhere that isn't your local repository. Just like before, we're going to push to GitHub, but this time we'll push the feature branch:

```
git push origin feature42
```

You can now see your changes on GitHub itself. Visit your fork (not the main project repo) and choose the new branch from the **Branches** dropdown – or look out for the prompt GitHub provides, showing you the new branch and a **Pull request** button.

OPEN A PULL REQUEST

The final stage is to offer your changes to the project itself. Now you've pushed your changes to a publicly



Pull request When creating your pull request, GitHub will show you what you're including and prompt you to give details for the maintainers

available branch, you just need to ask the project leads if they'd like to include, or pull, your changes into their project. On GitHub we do this with a 'pull request' – literally requesting someone pull from your branch.

Make sure you've picked your new branch from the dropdown, then press the **Pull request** button (green with arrows on it, immediately to the left of the branches dropdown), or just use the same button shown next to the prompt about your new branch. This will create a pull request for you to fill in the details of.

This is the moment where you need to give your pull request a meaningful title to stop it getting lost in a busy project. GitHub helpfully links to the contributor guidelines again at the top so you can double-check those tricky details, such as whether the title must follow a specific formation or include particular information. There is also room for a description. As a project lead, I strongly recommend that you spell out what this pull request will fix or create, and why it's important.

Check the top panel, which shows you which branch is being pull-requested against which other branch, and check it looks correct. If not, perhaps the project doesn't use master as its mainline branch, you can press the **Edit** button to change. You'll also see whether or not your pull request will merge cleanly. It's important to bear in mind that if it doesn't, your contribution is much less likely to be accepted.

Before you submit, scroll down the page. Both the included commits and the diff of your changes are shown. Check that they look right, then press the **Create pull request** button and wait. When your pull request is accepted, you'll get an email notification to tell you that it has been merged. At that point, congratulations are in order: you're an open source contributor. 🎉



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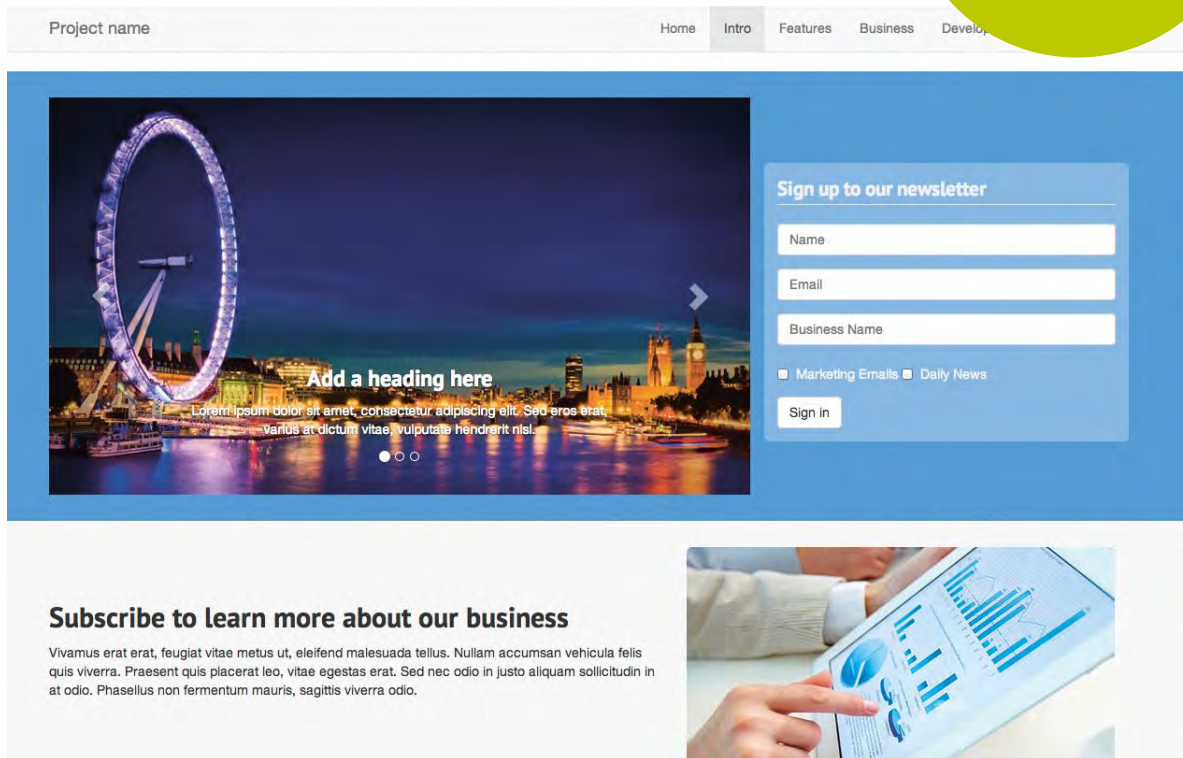
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areas of expertise:

Magento, WordPress,
Frontend web
development

**q: what's your opinion
on Marmite?**

a: It should be banned
and replaced with a
sweet and sour spread



* RWD

BUILD A SIGN-UP PAGE WITH BOOTSTRAP 3

Steven Wu shows you how to use the latest, mobile-friendly version of this framework to build a custom sign-up page

➤ With the recent release of Bootstrap version 3.0, big changes have been made. Most notably, the responsive frontend framework has been rebuilt from the ground up to be mobile-first. This means whenever you start using this framework, your website will be responsive and mobile-friendly from the get-go.

The overall aesthetic has also changed. Most of the original Bootstrap styles have been removed, and in their place is a modern, flat approach. Even the icon library has transformed from being image-based to using glyph icons, making it much easier to add icons into your project and improving overall performance. The codebase has been rewritten, except for the class names in the base CSS – even the

variable names are all different. Bootstrap previously used CamelCasing but this has been updated to use hyphens instead.

There are now four grid systems, separated by the screen width you wish to work with. These are broken down to extra-small devices (phone), small devices (tablets), medium devices (desktops) and finally large devices (large desktop screens). Other particularly noteworthy additions to version 3 include improvements to the navbar, modals, a better customiser, list groups and panels.

In this tutorial I will take a closer look at these changes and improvements, and demonstrate how the new Bootstrap can be used to build a custom sign-up landing page.

 VIDEO

Steven Wu has created an exclusive screencast to accompany this tutorial. Watch along at netm.ag/BootstrapVid-259

DOWNLOAD BOOTSTRAP

First off, you need to head over to Bootstrap's website (getbootstrap.com) and download the latest version. At the time of writing, the newest release is version 3.2.0. A luxury for those who are familiar with CSS preprocessors such as Sass or Less is that you can write your CSS with either of these preprocessors. To allow beginners to follow with along this tutorial, we'll be using traditional CSS.

Once you've extracted this zip file, you will discover that it only contains the CSS, Fonts and JavaScript we require to adopt this framework. If you open up the `index.html` in the project files, you will see the `<head>` has all the basic CSS framework and external links which we need to get started with this project. You will also notice that just above the closing `</body>` tag is the minified latest version of jQuery plugin.

NAVIGATION

Bootstrap's navbar component is responsive, and has been designed to be mobile-first. This navigation will be automatically collapsed and is toggleable on mobile devices.

This responsive framework has been rebuilt from the ground up to be mobile-first

Simply set up a `div` with the appropriate default navbar classes to ensure our navigation stays static at the top of our page. You have the options to stick the navigation to the top or even bottom.

```
<div class="navbar navbar-default navbar-static-top"
role="navigation">
</div>
```

Within this we'll need a `div` class name of `container`. The container `div` is used to set a fixed width and the correct padding for our navigation. Inside our container we can add in our navigational structure.

```
<div class="navbar-header">
  <button type="button" class="navbar-toggle" data-
toggle="collapse" data-target=".navbar-collapse">
  <span class="sr-only">Toggle navigation</span>
  <span class="icon-bar"></span>
  <span class="icon-bar"></span>
  <span class="icon-bar"></span>
</button>
```

★ FOCUS ON

WORKING THE CAROUSEL

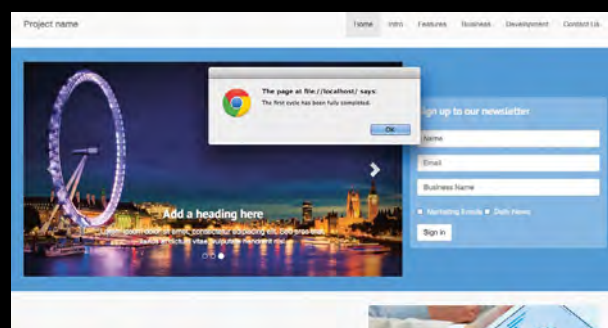
To initiate our carousel, we've used the data attribute `data-ride="carousel"` to mark the starting animation on page load. If data attributes are not your cup of tea, you can use JavaScript to manually initiate the carousel. Wrap the JavaScript in a `script` tag. The carousel plugin is identified by our unique ID `carousel-slider`, using the `carousel()` method, which will execute once the HTML document is ready.

```
<script>
$(document).ready(function(){
  $('#carousel-slider').carousel({
    interval: 3000,
    wrap: true,
    pause: false
  })
});
</script>
```

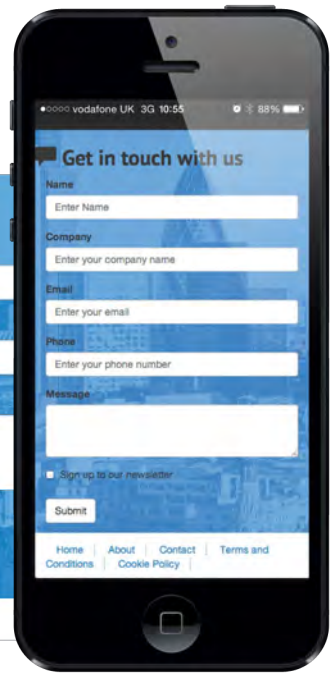
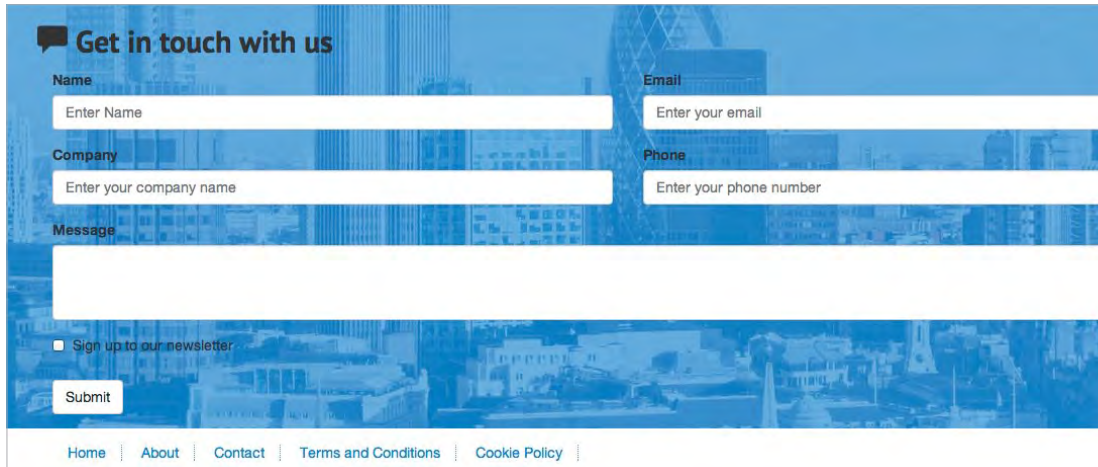
There are a few options that you may parse to the `carousel()` method. `Interval`, set in milliseconds, is the amount of time in which to cycle to the next slider. `Wrap` determines whether the carousel rotates continuously or if there's a hard stop. `Pause` will pause the cycling on mouse-over and resume on mouse-off.

As previously mentioned, you can set these using data attributes, append these to the option name (such as `data-interval="3000"`, or `data-wrap="true"`). You can even include events to hook into the carousel. We can fire an alert message once the first slide transition has been completed:

```
<script>
$(document).ready(function(){
  $('#carousel-slider').on('slid.bs.carousel', function () {
    alert("The first cycle has been fully completed.");
  });
});
</script>
```



Carousel It's easy to apply options and events in the carousel component



New look Bootstrap has been rebuilt to be mobile-first – the form elements and grid system are fully responsive and function on all devices

```
<a class="navbar-brand" href="#">Project name</a>
</div>
<div class="navbar-collapse collapse">
  <ul class="nav navbar-nav navbar-right"
  role="tablist">
    <li class="active"><a href="#">Home</a></li>
  </ul>
</div>
```

The `button` and `icon-bar` are used as the burger menu on a mobile device, which won't be seen on the desktop. The class `navbar-brand` is used to identify our website logo. Following this is a `` which will contain our actual website navigation links.

CAROUSEL AND GRID SYSTEM

Bootstrap comes with a fluid grid system, which scales up to 12 columns as the device or viewport size increases. To incorporate the grid system into our layout, add a parent `div` called `container` (this sets a fixed width) followed by a `div` called `row`. For medium-sized devices and desktops of up to 992px, we can use the class prefix `col-md-8` which will span eight columns, within which our carousel will sit.

We'll start off by creating a containing `div` with a unique ID for our rotating carousel plus the `carousel` and `slide` classes which generate the rotating effect. The `data-ride` attribute is especially important as it's used to mark an animation starting point on page load.

```
<div id="carousel-slider" class="carousel slide" data-ride="carousel">
  <ol class="carousel-indicators">
    <li data-target="#carousel-slider" data-slide-to="0" class="active"></li>
    <li data-target="#carousel-slider" data-slide-to="1"></li>
```

```
<li data-target="#carousel-slider" data-slide-to="2"></li>
</ol>
```

The `` we just declared are the indicators or small circles placed at the bottom of the slider to show the current active slide and number of remaining slides. Directly beneath this is the slider content.

This space is defined using the class `carousel-inner`. Within this we can have unlimited 'item' `divs` to

Bootstrap comes with a fluid grid system, which scales up to 12 columns as device size increases

house each element of our slider content. The first 'item' `div` must have a class of `active` defined.

```
<div class="carousel-inner">
  <div class="item active">
    
    <div class="carousel-caption">
      <h3>...</h3>
      <p>...</p>
    </div>
  </div>
</div>
```

A carousel slider would not be complete without specific controls with a left and right arrow to manually change the slider. Each arrow is set up as an anchor tag, with a span class of `glyphicon glyphicon-chevron-left` and respectively `-right`. Since Bootstrap

uses fonts instead of images to show icons, we use glyphicon classes to present icons.

```
<a class="left carousel-control" href="#carousel-slider"
role="button" data-slide="prev">
  <span class="glyphicon glyphicon-chevron-left"></
span>
</a>
<a class="right carousel-control" href="#carousel-
slider" role="button" data-slide="next">
  <span class="glyphicon glyphicon-chevron-right"></
span>
</a>
</div>
```

This wraps up the carousel, and without a single line of JavaScript. It all feels like magic.

NEWSLETTER SIGN-UP FORM

Next to our carousel we'll place our sign-up form. Creating responsive forms is simple with Bootstrap, as it automatically adds global styles for you. Start by wrapping your form in a grid column of `col-md-4` and a class name of `sign-up-form` for styling purposes.

```
<form class="form-horizontal" role="form">
  <fieldset>
    <legend>Sign up to our newsletter</legend>
    <input class="form-control" placeholder="Name"
name="name" type="text" required>
    <input class="form-control" placeholder="Email"
name="email" type="email" required>
    <input class="form-control" placeholder="Business
Name" name="business" type="text" required>
```

The class `form-horizontal` is a predefined grid that aligns labels and groups of form controls together in a horizontal layout. Here, the `checkbox` class will provide the appropriate padding and margin for our checkboxes.

Forms All inputs are now displayed as a block with 100 per cent width. Users can change the size attribute to modify the padding and font-size

* IN-DEPTH

USE GRUNT AND BOWER WITH BOOTSTRAP

Since the release of version 3.1 onwards, Bootstrap hasn't just made improvements to its boilerplate, but also designed a whole new development workflow. You can now use Bower and Grunt to formally carry out all the manual labour, including compiling your Less or Sass, running tests and more.

Use Bower to fetch the latest version of your frontend packages – this really helps to save a heap of time and headaches. Firstly make sure you have Git (git-scm.com/downloads) and Node.js (nodejs.org) installed, and in the command line install Bower (you may need to use `sudo` (sudo.ws) for the below command):

```
$ npm install -g bower
```

Now let's install Bootstrap:

```
$ cd /path/to/directory/
$ bower install bootstrap
```

Once installed, you will notice Bootstrap is now set up in a web app folder structure – an approach that makes it far easier to integrate this framework into existing application solutions. This feature is a great benefit of the new version of Bootstrap, as it forces developers into good habits from the offset.

We'll now install Grunt, to deal with all the nitty-gritty tasks that make frontend development rather tedious:

```
$ npm install -g grunt-cli
$ cd /path/to/bootstrap/
$ npm install
$ grunt default
```

Finally you can run any of the handy commands below:

```
$ grunt watch
```

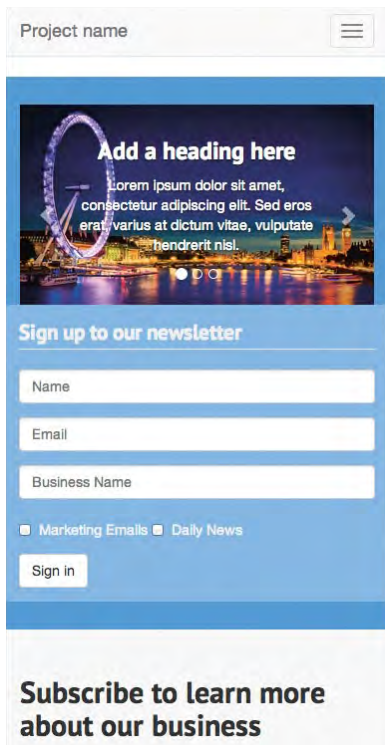
Watches your Less/Sass source files and compiles them upon save.

```
$ grunt dist
```

Regenerates the `/dist/` directory and minifies CSS and JavaScript source files.

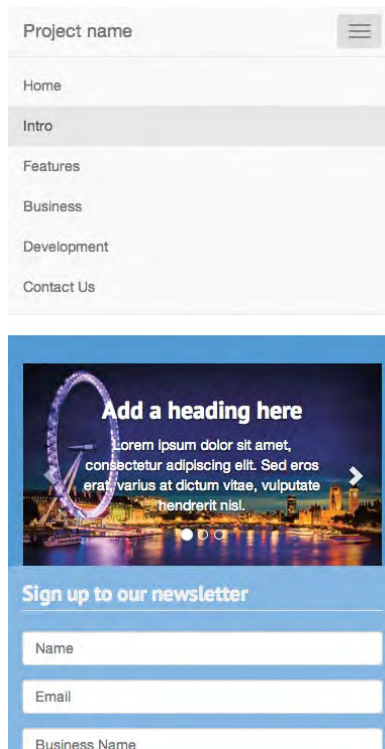
```
$ grunt test
```

Runs JSHunt and Qunit.



Above left The carousel component is now fully responsive, relieving the pain of having to write multiple media queries

Above right The Navbar is made up of horizontal navigations on wide viewports, which collapse on mobile devices



```

<div class="checkbox">
  <label>
    <input type="checkbox"> Daily News
  </label>
</div>
<button type="submit" class="btn btn-default">Sign
in</button>
</fieldset>
</form>

```

Within the style.css some basic styling has been applied to our sign-up form.

```

.sign-up-form {
  padding: 1em;
  background: rgba(255,255,255,0.3);
  border-radius: 5px;
}
.sign-up-form legend {
  color: #efefef;
}
.sign-up-form input {
  margin-bottom: 1em;
}

```

CONTACT US FORM

Now let's set up a contact form. Start by creating a `<section>`. Within this we will again need our container `div` followed by a row `div`. Below this, we want to add a heading.

Using a `span` tag we can now incorporate a `comment-icon` using the glyphicon, simply by referencing the class name.

```

<h2><span class="glyphicon glyphicon-comment"></span> Get in touch with us</h2>

```

Following our heading, open a `form` tag and set up a grid column of `col-md-6`. To create optimum spacing between form controls we can use a predefined class called `form-group`.

```

<div class="form-group">
  <label for="contact-name">Name</label>
  <input type="text" class="form-control" id="contact-name" placeholder="Enter Name" required>
</div>
<div class="form-group">
  <label for="contact-company">Company</label>
  <input type="text" class="form-control" id="contact-company" placeholder="Enter your company name">
</div>

```

Repeat this process again so that we'll have our form controls sitting side by side.

Beneath this we can add in a `<textarea>` wrapped in a full-width row of `col-md-12`, followed by a submit button.

By utilising Bootstrap's framework we can build a production-ready site for any device

```

<label for="contact-message">Message</label>
<textarea class="form-control" rows="3" id="contact-message"></textarea>
<button type="submit" class="btn btn-default">Submit</button>

```

STYLING

Open up the style.css and you will find styles applied to the contact form, with a photographic background image. Further down this stylesheet is a media query that ensures our navigation has some top padding, but only for larger screen sizes, and for our sign-up form. You can finish off this landing page by adding in your own footer.

There you have it: a simple sign-up landing page. With minimal work, by utilising Bootstrap's responsive framework, we can quickly build a production-ready website for any device. **■**

RESOURCE

DOCUMENTS

To view the full list of components, CSS classes and JavaScript components, check out Bootstrap's documentation at getbootstrap.com/getting-started

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* ACCESSIBILITY

COLOUR BLIND DESIGN

Around one in 10 of your site's male visitors are colour blind. **Dennis Gaebel** explains how to make your designs accessible for them

> A little-known fact: colour blindness doesn't mean a person sees the world without colour: it's actually a decreased ability to distinguish particular hues from one another. It's much more common in men than women: around 8-10% of the male population has some sort of colour blindness.

For that reason, colour should not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element. In this article, we'll run through a short list of things designers and developers can do to make websites more accessible to the colour blind.

MAKING COLOUR ACCESSIBLE

The contrast between text colour and background colour must meet WCAG guidelines. That means text and images of text must have a contrast ratio of at least 4.5:1. Large-scale text must have a contrast ratio of at least 3:1. All other elements like logos and incidental text have no contrast requirements whatsoever. To check, use Lea Verou's Contrast Checker (leaverou.github.io/contrast-ratio) or try this Sass function: netm.ag/259-sasscontrast.

If the background or the letters vary in relative luminance (or are patterned), the background around the letters can be chosen or shaded so that the letters maintain a 4.5:1 contrast ratio with the area immediately behind them, even if they don't

have that contrast ratio with the entire background. You can see examples of different contrast ratios at netm.ag/259-contrast-ratios.

Colour association is another factor to consider. People writing ecommerce listings often forget to include terms like 'fuchsia' or 'navy' in the product descriptions. If you intend to use images for items with colour variations, always reference the name of the colour in the description.

Colour-specific instructions often lead to confusion as well. If someone is asked to perform tasks specifically using colour as a direction, most colour blind individuals will fail. Instead of relying on colour coding alone for your chart or diagram, use a combination of colour and texture or pattern, along with precise labelling, and reflect this in the key or legend. For example, if your real estate site provides a bar chart of average housing prices in several regions of the United States, the bars for each region should have different solid colours and different patterns. The legend should use the same colours and patterns to identify each bar.

Visual designers can test colour usage within Photoshop and Illustrator by using the Color Blindness filters, which mimic how your designs look to people with impaired colour vision. These can be found under **Views > Proof Setup > Color Blindness > Protanopia-type** or **Deuteranopia-type**. [.in](#)

* PROFILE

Dennis is a frontend developer and lead contributor for The Accessibility Project (@A11YProject): a community-driven effort to make web accessibility easier. Follow him on Twitter @gryghostvisuals



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