FREE! TERMINAL VIDEO TUTORIALS TURN TO PAGE 8

THE COMPLETE GUIDE TO CSS GRID

The voice of **web design**

net

Issue 309 : summer 2018 : *net.creativebloq.com*

*BUSINESS GROWTH

PLANNING FOR PROFIT

Build your business and boost your cash

10 WEB SKILLS THAT PAY

THE MONEY ISSUE

- Find out which talents bring home the bacon
- Learn all the expertise clients most value
- Maximise the money you can make

+

CREATE LUXURY ECOMMERCE SITES

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ISSUE 309

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EDITOR'S NOTE

The UK may have seen some seriously glorious weather in the last month but we're sure mercury levels aren't the only thing devs and designers want to see rising. Increasing the revenue coming in is vital for any business, whether you're working as a freelancer or as part of an agency. And that's why we've made the summer edition of **net** our money issue, dedicated to helping those working in the web to pull down more profit.

The most critical money-making tool designers have is their skills. In light of this, Jim McCauley has been speaking to some of the industry's highest profile figures to help you identify the skills that will pay the bills, as well as maximise the cash value attached to your abilities. Elsewhere we've been looking at how you can plan for growth and identify the best opportunities to build your business.

But that's not all: our feature on crafting luxury ecommerce sites will have you hooking high-end brands in no time. Meanwhile, our complete guide to CSS Grid will show you how to fashion fantastic site layouts. And last but no means least, hone your commercial and web design skills by attending Generate London, (www.generateconf.com) our conference running from 19 - 21 September. Make sure you grab your ticket before they're all gone.

FEATURED AUTHORS

JIM MCCAULEY

Jim is a writer, dilettante and cat butler who contributes a lot more to **net** than you realise. On page 60, he explores the 10 skills that pay and shows how you can learn and earn even more from them.
t: @JimMcCauley

LEON BROWN

Developer and author of e-learning content at *nextpoint.co.uk*, Leon makes complicated concepts easy to understand and fun to learn. He breaks down the best way to build your business's finances on page 68.
t: @_LeonBrown

EMILY MELLING

Emily is the digital marketing manager at Yes I'm A Designer, as well as a freelance graphic designer. Who better to profile some of the quarter's best websites on page 40?
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AHMED ABUELGASIM

Ahmed is a front-end developer for Potato London with expertise in CSS, JavaScript and Angular. On page 76, he provides a guide to CSS Grid, meaning you'll soon be crafting responsive layouts with ease.
w: *hungryphilomath.com*

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Photo: Craig Williams (*https://craigwilliams.net*)

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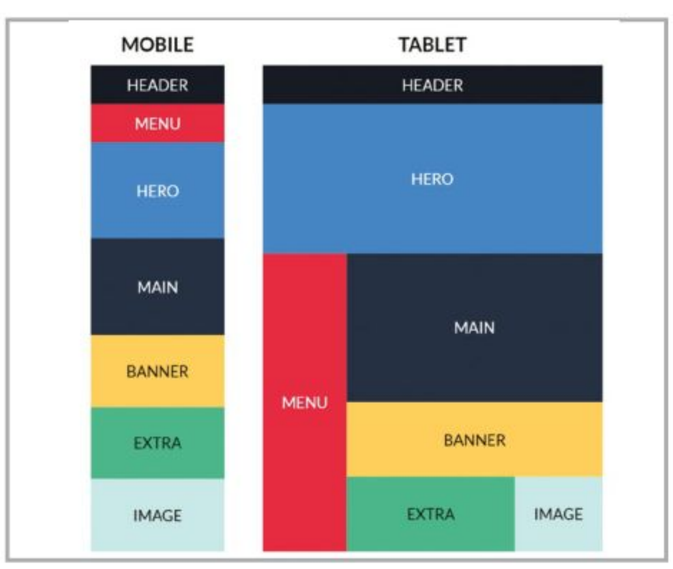

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EXCHANGE

Practical advice from industry experts

Send your questions to netmag@futurenet.com

THIS MONTH FEATURING...

REMY SHARP

Remy is the founder and curator of ffconf, the UK-based JavaScript conference, and runs a video course on the command line. He also fronts his own development and training company in Brighton, Left Logic.

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t: *@rem*

JIM BOWES

Jim is the CEO and founder of Manifesto, an award-winning agency of creatives and technologists who collaborate with exceptional organisations to change things for the better. He also presents the @Alexa_Stop podcast.

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t: *@jimbowes*

Photo by Kevin Lorenz

★ QUESTION OF THE MONTH

Working on open-source tools, while massively useful to the community, can suck up a lot of time. How do you keep going?

Martin Peck, Reading, UK

RS: There's that age-old existential question: why? Honestly, every few months I hit an emotional rain cloud and find myself asking this very question. But, for myself, I do know why.

A very small part of my public work generates paid work. I think it's by reputation, and probably by the sheer amount of code and time I've put out to the web. But this isn't the motivator.

Sometimes it's love (thinking of JSBin) but I've also fallen out of love with projects (again, thinking of JSBin). I do think a bit of love is good for work but I also think it's easy for the project to slip into a negative relationship. But it's not that either.

My projects are primarily a creative outlet for me. A place to practise my skill and learn from new mistakes. A place to solve puzzles and play with code. The why? For fun. Mostly.

We might take open-source tools like JSBin for granted but people have to invest a lot of their own personal time and effort into maintaining them

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Chatbots

A BOT-BASED SITE BLIGHT?

Do you think that chatbots will overtake websites in the near future?

Andreas Kviby, Sweden

JB: In a word: no. Historically, when new forms of media or interface are introduced they tend to be additive rather than a replacement. For example, we still listen to radio even though we have television. That said, user behaviour will continue to change, along with our idea of what it's most appropriate for websites to do. So, when it comes to user experience, it will be even more important for web designers to consider the different channels and options available.

One of the things that chatbots aren't currently great at is chatting. However, the user research that I've been involved in has shown that this isn't actually what people want. Some of the most successful bots at present act more like guided navigation to either help people find the right piece of content or to complete a decision-tree-like process.

The applications for bots are wide ranging though. As they get to know individuals and more information about

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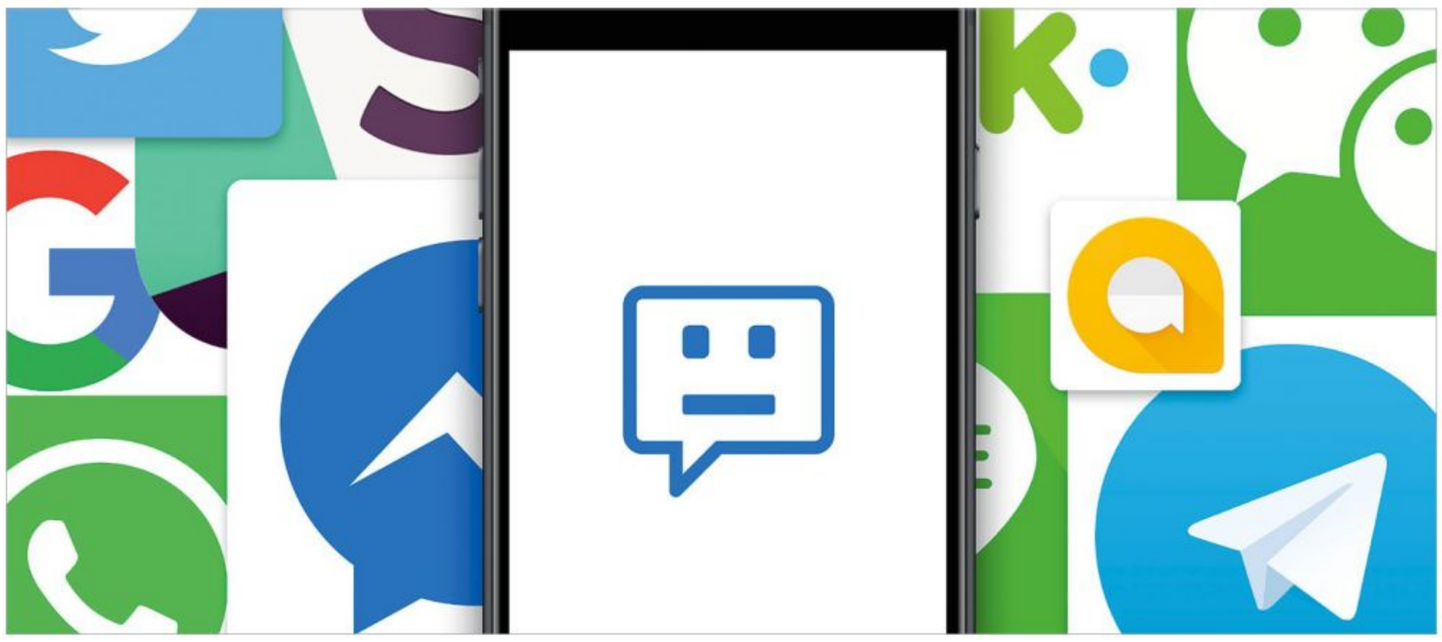


Chatbots won't replace websites but complement them, predicts Jim Bowes

their lives and various external factors, they can become great at everything from reporting traffic jams to warning that a day might be a bad day for anyone suffering from allergies.

CSS-in-JS

THE CASE FOR CSS-IN-JS

When is CSS-in-JS a good tool to use?

Albino Tonnina, London, UK

RS: I had some 'interesting' responses on Twitter over an observation I had that CSS-in-JS doesn't often come with a relatable use-case.

My opinion has always been: use the best tool for the job. When I first looked at CSS-in-JS it was because I was using a pattern library that included a 200K CSS file (compressed!). This wasn't okay. I wanted to only deliver the CSS I was using in my components. CSS-in-JS seems a good match for this problem.

Coupled with the promise of scoped styles (i.e. no global styles interfering), the ability to automatically ensure only the used CSS is delivered, CSS-in-JS has its appeals. The killer feature for me, though, is if some CSS-in-JS tool can provide automatic, configuration-free, critical CSS.

I do know that I'll continue to use stylesheets when I want to avoid the headache of tooling, though!

Agency strategy

DIGITAL AGENCIES' DESTINY

What will digital agencies be doing in five years' time that they're not doing now?

Anna Maynard, Peterborough, UK

JB: Right now, we're at the beginning of the fourth industrial revolution. We're starting to see the convergence of disparate technologies that are being used in more intelligent ways to change our lives. Much of this change will manifest itself in manufacturing and the world of work more generally. The third industrial revolution was all about information and digital, where digital agencies helped organisations understand and implement the change needed for this era. To remain relevant for this next wave of digital change, agencies will need to modernise.

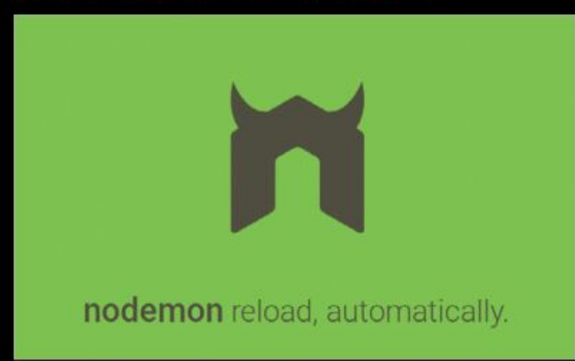
Some of the classic stomping ground of designing and building websites has become more commoditised through platforms that enable people to do a lot of this work for themselves. As professionals in this industry, we need to keep learning and use our experience to help organisations add another layer that goes beyond simply having a digital presence. This can come in many forms, whether it's through automation, personalisation, improving the customer experience, joining up systems or becoming more data driven.

In five years' time I think agencies will be spending more time on-site with customers, doing more coaching and upskilling of client teams, while also providing skills in voice and visual search, data and implementing machine learning. The good news is that ways to work in these fields are available in the programming languages already used by web designers.

3 SIMPLE STEPS

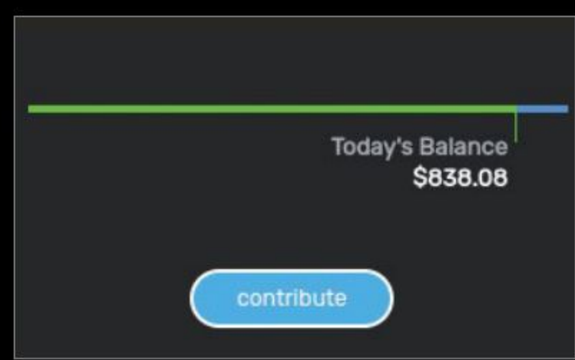
How much has financial support for your open-source projects impacted the amount of time you work on them?

Max Stoiber, Vienna, Austria



Doing it for love

RS: I've been publishing and contributing open-source content for over a decade now, including nodemon, a node monitor script. Until relatively recently, I had never received any financial support from, or for, these open-source projects.



Get supporters

However, if you install nodemon today, you'll see a pledge for support on *https://opencollective.com/nodemon*. As much grief as I got for this, it does work. Nodemon now has supporters. Recently, I even invoiced a small fee for closing issues, landing fixes and maintaining the project.

Extra motivation

Knowing that there's a small amount of money coming in adds to my motivation for nodemon. I feel responsible to those supporters to show the project still lives. I don't resent the time I spend on the project because I know there are individuals and companies that value my work.

COOL STUFF WE LEARNED THIS MONTH

DARK PATTERNS AND AGGRESSIVE PERSUASION

It's a sad fact that we're all becoming accustomed to UI patterns that try to manipulate us into taking certain actions, whether it's accepting advertising cookies or completing a checkout process. In this article Paul Boag presents the business case for avoiding these unethical design choices. *https://boagworld.com/marketing/dark-patterns*

DESIGN SYSTEMS SURVEY

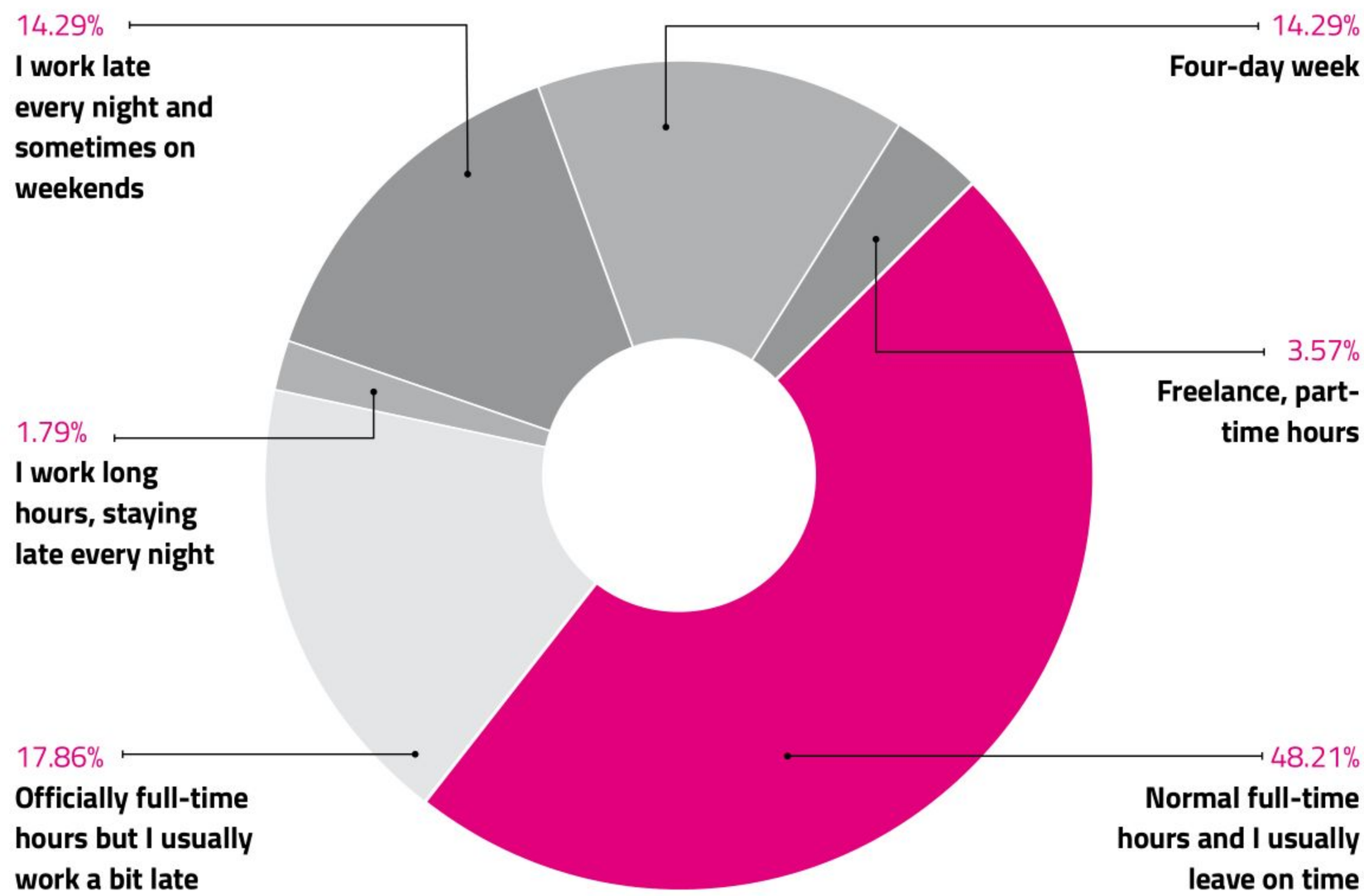
The people at Sparkbox have conducted a detailed survey of how and why organisations are using design systems, and the results make interesting reading for anyone looking to understand exactly what makes a successful design system and how to navigate the challenges of this way of working. *https://designsystemssurvey.seesparkbox.com*

CULT OF THE COMPLEX

An over-reliance on bloated frameworks is creating a web full of redundant code deployed by people who have no idea what most of it does. In this piece Jeffrey Zeldman makes the case for learning how to write your own code so you can build lean, resilient sites. *https://alistapart.com/article/cult-of-the-complex*

*THE POLL

HOW LONG IS YOUR WORKING WEEK?



From our timeline

What are some good questions to ask when you're being interviewed for a web design or a development job?

How do you ensure your employees get the professional development and training they need to succeed in a rapidly evolving industry?
@mor10

How do you overcome the gender gap? What's the female percentage in the company? How do you hire diverse candidates?
@paul_melero

For development jobs, always ask about their deployment process. You can tell a lot about a company by how it deploys its code to production environments. Fast and loose approaches suggest that's how they'll approach design and development, which usually equals unnecessary stress. Also, where deployment goes through only one person, it suggests there may be a control freak at the top of the chain who'll also make your life misery.
@frontendben

How do you deal when projects start to go bad?
@pixeltoofar

Don't be afraid to enquire about the company's financial position. What projects do they have lined up? Where is the company heading in the next 3-5 years? These questions help figure out whether your new position is secure or if you'll be looking for a new job in six months time.
@McKay_1988

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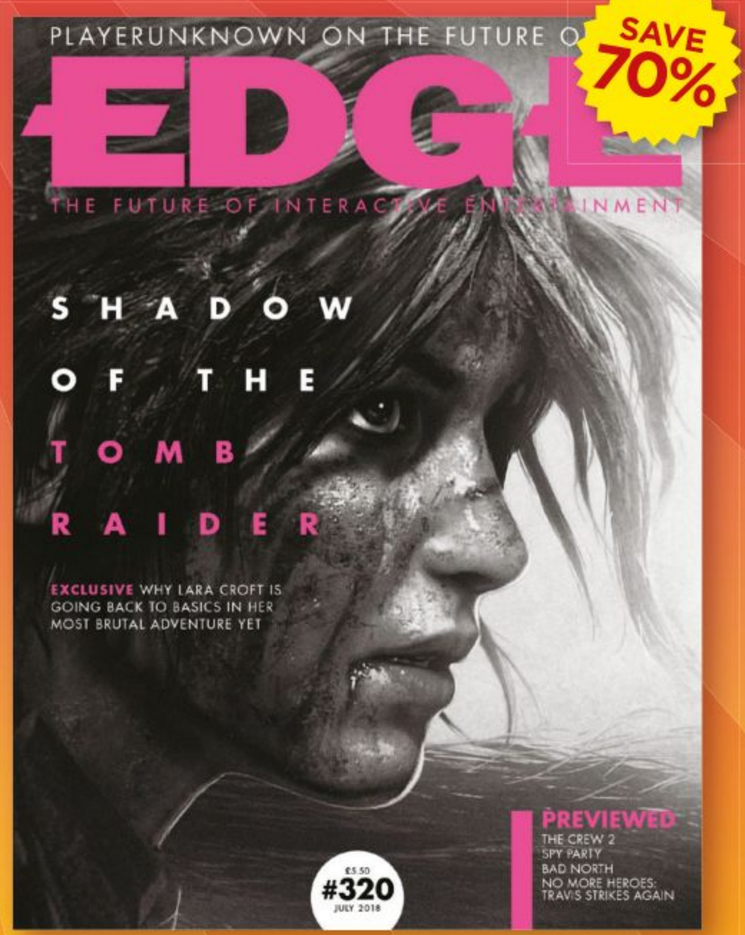

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FEED

People, projects & paraphernalia

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This month a web dev learns that sleuthing for a client's login credentials is hardly elementary

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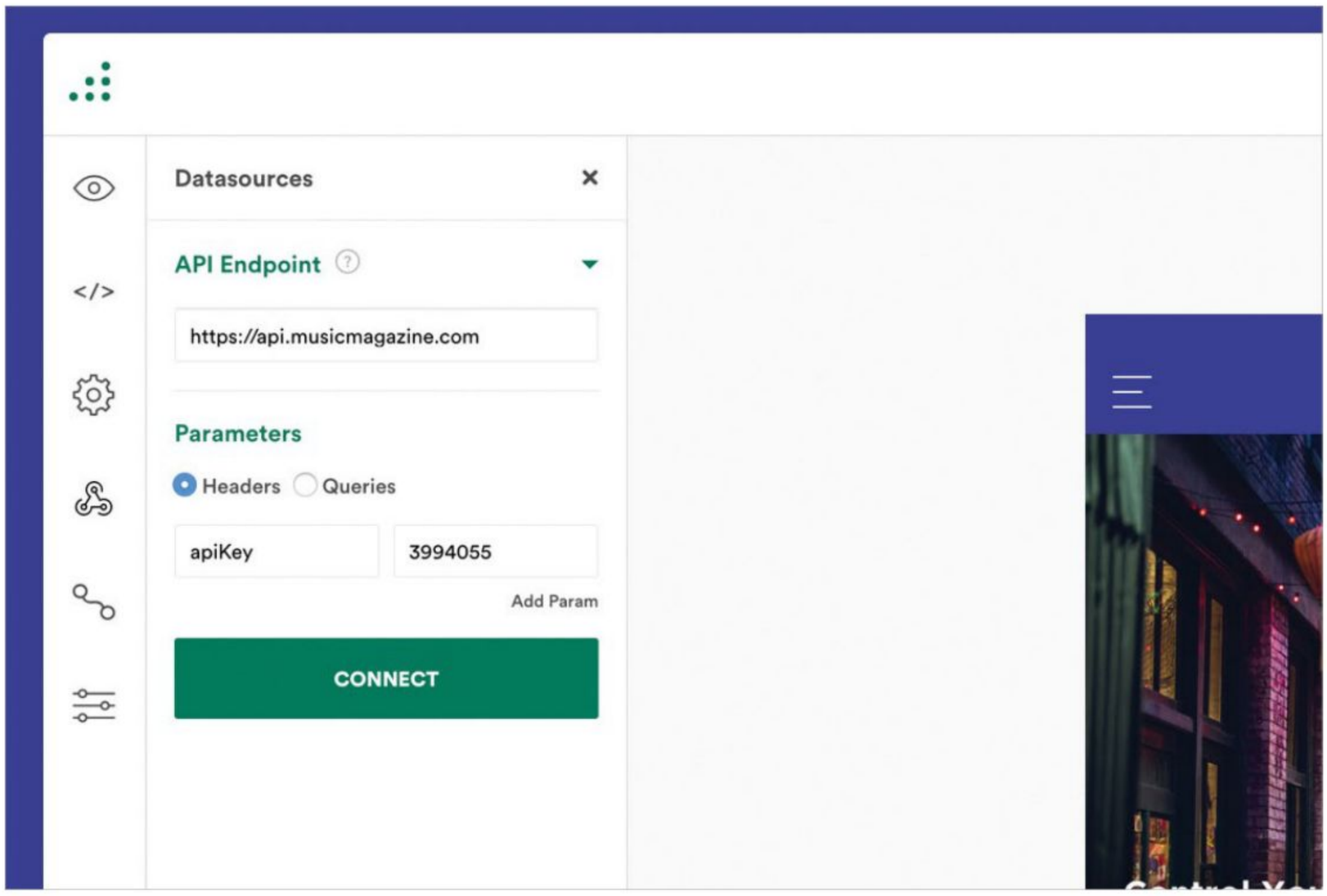

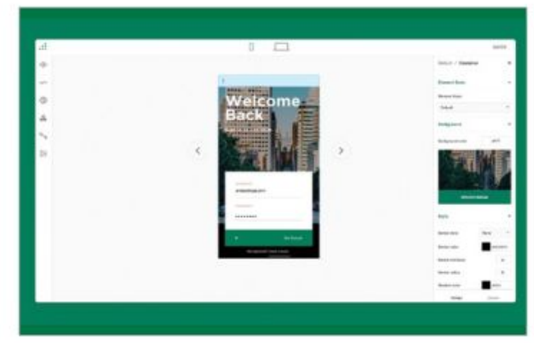

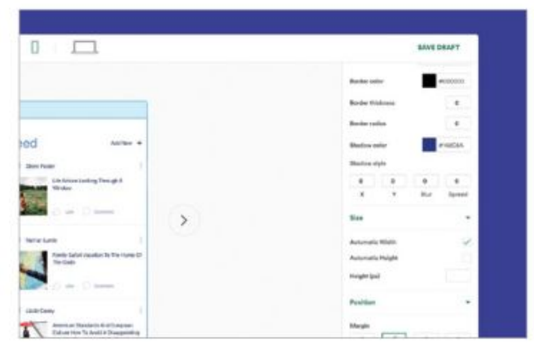

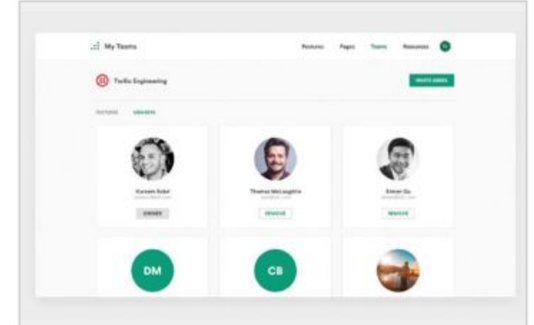

MASON

Clair Byrd drills down into her new tool that's helping to break down siloes throughout the stack

*** SIDE PROJECT OF THE MONTH**

INFO

CLAIR BYRD

job: Clair currently leads Enterprise GTM at Twilio. She guides programs that unify creative strategy, brand impact and demand generation.

w: *trymason.com*

t: @theclairbyrd

Tell us what your side project does

Mason easily and simply blends front-end design, development and software delivery into an easy to use, centralised software-management platform. It allows most users, technical or not, to create meaningful front-end experiences that can be delivered into any code base because of the on-demand nature of Mason-powered software elements. Additionally, the platform allows all users to maintain and manage software from a visual codebase, which enables anyone to make live production changes in the wild instantly and with no code (e.g. change button text, colours, layout).

Why did you create it?

For too long, businesses have had to deal with clunky workflow-orientated tools that siloed highly-technical ICs (like designers and devs) into their respective workflow-stage aligned tools (like Sketch, InVision, Zepelin or GitHub). Mason solves this problem by bringing the software creation process in line with the software delivery process. Devs get API-based tools, designers get a visual studio and other contributors get the collaboration tools and editing features they need – without any context switching or platform fragmentation.

What were you hoping to achieve?

The way front-ends are currently created and managed is fundamentally broken because it is aligned to a process (design/develop a new thing) instead of an outcome (deliver an amazing software element to a user). By unifying all front-end stakeholders into a single platform, we hope to power a front-end revolution focused on the needs and experience of a product's end user.

What technologies were used in building it?

Our platform is built on a number of proprietary technologies but our software is delivered to the end user on demand as nested React components over a single line of code. Because Mason-built experiences are delivered on demand and don't engage unless called, they reduce the system load a front-end build has to handle.

How has it been received?

So far, we've had great responses to the platform from many different types of user – though predominantly they are 'blended' ICs of some variety, e.g. designers who can code, devs who are comfortable with UIs, growth folks who can hack out changes in their CSS. We have people signing up from great companies, including Coca Cola, Zendesk and Accenture.

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*HOW TO

WHAT'S THE BEST WAY TO SHOW THE VALUE OF DESIGN TO MANAGERS?

Managers don't always appreciate the extent to which good design impacts upon the success of their business, which can make things tricky if you're trying to grow the design team or increase its profile internally. We asked @netmag's followers how they demonstrate design's value to their managers.

USE DATA

"Showcase the quantifiable data of how it impacts the bottom line. Not just feelings or qualitative feedback but specific data that makes them look great to their own management. It sells itself then." @Candorem

PAST SUCCESSES

"Tell them about a past experience. When we revamped the design for the recruitment magazine, parents kept copies, students retained interest in stats about the college and @SimpScar showed greater brand recognition. This accomplishes [list top business goals]" @alainavirginia

EDUCATE

"Make sure that senior managers generally understand and are up-to-date with modern possibilities and that they're excited about digital. Change the relationship from one-offs to a culture that embraces it." @sallylait

SHERLOCK HOMEPAGE

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

*CLIENTS FROM HELL

I am a web designer who offers web hosting. My client, a very capable retired professional, let his domain name expire and only noticed four months later. I explained how to re-register the domain and how to edit the name servers so the site is accessible again. That kicked off this painful email exchange.

Client: I registered the domain name just now but I can't log back in because I can't remember what my username is! I think it is my full name but that doesn't work. Here is my payment transaction number and my password. Please figure it out.

Me: Can you take a look in your order confirmation email or forward it to me? Your username is likely in it.

He doesn't forward email. Two days pass.

Client: Why aren't you helping me? I sent you everything you needed! I thought this was part of the service! I need my username!

Some background: I designed his small HTML website nine years ago. He's never updated a word on it and has been paying me $50/year to host it. He sometimes emails to say how he's so disappointed his website isn't more successful.

Me: I'm doing everything I can to help you but there's only so much I can do. I suggest that you contact the registrar; they can give you your username. Here's a link to their support page with all their contact info.

Client: The registrar doesn't have any contact information available. Nothing – not an email or a phone number. Why can't you do this for me?

Me: I don't work for the registrar and can't access your account information there. Here's a link to their contact page again; they offer support via email, phone and support ticket. They're known for great customer service and will help you.

Client: I guess I just won't have a website, then. Why don't you want to help me?

Gee. I wonder.

CLIENTS FROM HELL
clientsfromhell.net

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ROLLER DERBY

Amie Colosa shares how participating in women's roller derby empowered her to improve her web-design strategies

* BEYOND PIXELS

With my starter roller skates in hand and a few hours of practice under my belt, I walked into the rink anxious but excited for a new experience. It was a recruitment event for a local roller derby league just starting up. I prepared myself to observe from the sidelines but something totally different happened – when I got there one of the women convinced me to put on my skates and safety gear. 'Get out there!' she said while pushing me onto the rink. This began my roller derby career.

I primarily play the point-scorer position called jammer. Jammers have to be speedy and agile to fight their way through a pack of skaters on the opposing team before their Jammer does. I quickly found that in order to be successful I had to learn to be resilient and flexible.

Flexibility is important in roller derby and the creative process. I used to be stubborn in starting everything from scratch and doing things the hard way – I was reluctant to utilise resources that would help my workflow. Now, I welcome working smarter and being open to new tools and ideas. Similarly, in derby, you can't have tunnel vision or you might miss the help of your teammates.

There is a misconception that roller derby isn't a 'real' sport – that there isn't athleticism involved, even though it is full-contact. When you're a spectator watching, it's easy to look past the sport aspect of the game and just see girls in fishnets skating around. But what the attendees of a game aren't seeing is the hours of practice we spend working together and perfecting our strategies, which is similar to prepping to design a website. Like derby, making a website has rules and involves a lot of work behind the scenes. All of the research, UI/UX decisions and lines of code are not apparent to the end user.

Playing roller derby has improved my self-efficacy. I can directly see how gaining a better understanding of game strategies makes me a better teammate and skater. This confidence has transferred into my life and especially my career. This quick-thinking sport has empowered me to trust my judgements and my skills to work with others towards a common goal. When you trust yourself and fully collaborate with a client or teammates, that's when the magic happens.

* PROFILE

Amie (@amiegrrl) is a multi-passionate designer, front-end developer and DIY enthusiast.

STUFF I LIKE

WARREN CHALLENGER
Senior designer at
warch.io

ICONJAR

Whether I'm working on high- or low-fidelity designs, there is always a need for iconography. IconJar lets me upload sets I've downloaded or purchased. Through the app, I can search through the icons and drag them onto my artboard in vector format.
geticonjar.com

FONTBASE

There are thousands of font families and font weights and choosing what to use in your design is a key milestone. I use FontBase to compare and see fonts in action without code or design tools. I've found this superior to other typography comparison tools.
fontba.se

GRAMMARLY

I'm continually designing UI, writing up UX research or communicating with clients. It's vital my content and designs make sense. With its browser / mobile plug-ins and app, Grammarly has saved me countless times and genuinely improved my writing.
grammarly.com

PAUL BOAG

Paul explains why when it comes to creating a productive workspace, it's okay to mix business with pleasure

* WORKSPACE

Experts say that one of the most important rules for working from home is to separate personal and work life. So when I first started working from home 16 years ago, I made my workspace as much like an office as possible to create a distinction between my personal life and work.

But when I undertook a renovation of my house, I found myself with an opportunity to rethink my home office and I decided to take a radically different approach. It is an approach that combines my family life with my work. I have created an oasis of peace in my home free from video games, TV or the bustle of life. It is a place that is not only great for working but is fantastic for relaxing in too.

I was inspired by the studies that exist in so many of the National Trust properties my wife drags me around. A place of work but also a cosy, personal space too. A place for thinking and learning.

The result has been transformational both for my own mental health but also for family life. I see so much more of my wife as she comes and sits and reads in our study while I work. My teenage son even occasionally visits.

In the summer I can gleefully throw open the bifold doors **(1)** and revel in the sunlight. Being trapped in front of a computer during the summer can often feel like torture, yet working outside is not an easy undertaking because of screen glare. But opening the bifold doors brings the outside in.

In the winter, I can settle in and light the wood burner **(2)** and listen to the rain on the Velux window. As somebody who struggles during the winter months, this activity goes a long way to lifting my mood, especially when combined with the light that streams in from the doors and windows.

I adore my desk **(3)**, which is made from recycled scaffolding planks and poles. Combined with other details such as my concrete lamp **(4)** and sideboard, it gives the whole room a vaguely industrial feel. The high vaulted ceiling helps a lot too. It makes the whole room feel airy, which improves my mood no end in the winter months.

Finally, the room looks great for the video training I find myself increasingly doing. I really couldn't ask for more.

Now all I need to do is work on sorting the garden **(5)**, as that is still a building site!

* PROFILE

Paul is a user experience consultant, speaker and author of User Experience Revolution. He is also a director of SmashingMag.

t: *@boagworld*

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Hilary Stephenson on the importance of ensuring older users aren't left behind

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We're being asked to do more as a profession. Fortunately, it's **Sarah Parmenter**'s mission to help front-end devs secure fair remuneration

Photo: Craig Williams (https://craigwilliams.net)

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Stephen Roberts discusses the difference between startup and agency culture and previews his Generate London workshop

* ECOMMERCE

CREATE A LUXURY ECOMMERCE SITE

Rotate°'s **Adam Robbins** offers insight into luxury ecommerce design best practices

Shopping online is commonly about finding the right product at the right price with minimal effort. However, when a product's price point is higher than usual, the site you're purchasing from needs to work a little harder.

Having designed many luxury ecommerce sites over the years, there are a few age-old practices I keep coming back to, that have proven to convert site visitors into customers.

VISUAL SOPHISTICATION

It sounds obvious but it's important for a premium product or service to be displayed in a premium way. Think of a luxury band. Now imagine what the brand's physical store feels like. Busy, brash, difficult to navigate? Probably not. Chances are the brand you're designing for feels clean, considered and sophisticated. Replicating this in the UI design with tasteful typography, good use

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of whitespace and subtle yet delightful interactions can instil a desire in the visitor to purchase.

A luxury brand's physical store is also likely to be immaculate and well organised. From an information architecture perspective, a luxury ecommerce store should be too. Avoid creating choice paralysis by keeping top-level product categorisation to a minimum (e.g. Shop Men / Shop Women) before allowing users to really drill down (Tops: Casual Shirts, Smart Shirts, Sweatshirts, T-Shirts, Long Sleeves).

RETAIL IS DETAIL

This point is possibly the single most important: showing a product in all its glory. High-quality photography and video content can be costly to produce and convincing your client to invest in this can therefore be challenging. But from a UX perspective, zoomable images that enable items to be experienced in hyper-detail can help to create a connection between visitor and product. Furthermore, visually communicating what a product is made from, where it's made and offering an insight into the design process can help justify a product's price point.

In essence, the greater the effort that goes into showcasing a product, the easier the sell, almost regardless of cost. Look no further than Apple's website for a textbook example of this.

LIFESTYLE CONTENT

In the case of many luxury brands, the customer is often buying into more than just a product or service; they're buying into a lifestyle. Dedicating an area of your site to demonstrating how the offering fits into the customer's lifestyle – if done tastefully – can be an emotive and effective way of connecting the customer with the product.

A classic example of this takes the form of building a narrative around a product. Premium US running brand and Rotate° client Tracksmith, does this exceptionally well across almost all of its product pages and online lookbooks by demonstrating the use of its products in real-world scenarios via fly-on-the-wall documentary-style photography and strong editorial storytelling.

CUSTOMER SERVICE

Take yourself back to the luxury retail store you were imagining earlier. When you walked through the door, how were you greeted? Warmly? Were you offered help? Most probably. While these traits can't be translated directly into a digital environment, there are things that can be done to instil the same positive emotions. One area to really execute this is online customer service. A good FAQs section, effective customer enquiry funnelling and even live chat (if tastefully integrated) can evoke a sense of consideration, again helping to instil a sense of confidence and therefore an increased likelihood of purchasing. This is done especially well when centred around a consistent brand tone of voice. Working with a dedicated copywriter to establish guidelines can be extremely valuable and help to maintain a positive rapport between brand and customer.

GO BEYOND THE PRODUCT

Start by simply displaying the product's packaging; given its price point, it's likely that the luxury product you're selling is well packaged. From experience, subtly showcasing this is something that really resonates with customers.

Furthermore, premium gift-wrapping is a proven way of enhancing sales not only during key shopping holidays but all year round. Nobody does this better than Mr Porter, whose products are delivered in an immaculate china-white box, wrapped in fine tissue paper, sealed with a faux-hand-signed label – at no extra cost. This is a tactic that makes purchasing directly from its site a uniquely luxurious experience.

For the customer, this particular offering can help define a luxury ecommerce experience from a more generic one, by simply elevating an off-the-shelf product to the next level. n

* PROFILE

Adam is co-founder and design director at Rotate°, a digital studio specialising in the design and build of luxury ecommerce websites.

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* AGE ACCESSIBILITY

HOW AGE AFFECTS A11Y

Illustration by Kym Winters

Hilary Stephenson discusses the importance of ensuring older users aren't discriminated against in our increasingly digital society

As a nation, we're living longer than ever before and, as a result, the number of older people in the UK is on the rise. However, despite technology playing an increasingly significant role in our society, we're currently not doing enough to digitally engage this growing demographic.

According to a 2018 Office for National Statistics statistical bulletin on UK internet users, the proportion of older people using the internet has risen rapidly since 2011, but there's still a long way to go. As it stands, the Centre for Ageing Better found that the over-55 age group makes up 94 per cent of those who've never been online.

As vital services become digitised, transforming the way we shop, manage money and pay bills, online will become a quality-of-life necessity, not a choice. For example, research from Age UK found that more than two-fifths of local councils (41 per cent) admit their housing benefits and council tax reduction – vital sources of financial support – can solely be accessed online. This begs the question: are we excluding older users as technological innovations propel the rest of us forward?

WHY ARE OLDER PEOPLE BEING LEFT BEHIND?

While age can result in conditions that hinder our ability to use tech and digital services – according to the disability charity Scope, nearly half (45 per cent) of us will experience such a change – in many cases it's actually poor design that exacerbates the issue of digital exclusion, alongside misconceptions around age and technology. Let's take a closer look at some of these myths.

MYTH 1: OLDER USERS DON'T WANT TO EMBRACE DIGITAL

Although there are some who will always prefer the traditional, non-digital services they're accustomed to, 67 per cent of older people show a clear willingness and enthusiasm to engage with digital products and services (*https://netm.ag/2K6CfWc*).

However, we must remember that many less experienced older people may lack the skills – and in turn the confidence – to use online services regularly. More importantly, we must do more to educate businesses on how to provide better digital support for older users in order to increase this confidence. Subsequently, more should be done to help increase older users' confidence in engaging with online services and illustrate how to browse online with simplicity, as well as the benefits this can bring, such as improved health and wellbeing and greater connectivity with family and friends.

A more empathic, user-centred design approach is required, wherein we have a deeper understanding of the everyday issues and concerns people may have with accessing the internet, as well as the barriers we (often unwittingly) put up.

MYTH 2: OLD AGE REFERS TO A SPECIFIC NUMBER

Interestingly, there is no set definition of what constitutes 'old age,' as virtually every study of older adults tends to have a different idea of when old age starts (*https://netm.ag/2JTSCGo*). The fact that we all age differently creates further confusion – you don't simply become 'old' once you hit 60. Instead, we will all experience different changes in physical and cognitive condition at varying ages.

MYTH 3: DESIGNING FOR OLDER USERS HAS NO BUSINESS BENEFIT

A common myth surrounding accessible digital products and services is that accessibility is expensive to achieve, which could act as a deterrent to smaller enterprises with more limited funding.

Building accessible products and services requires only a modest initial outlay and the long-term profits of engaging the older generation far outweigh this cost, which should be looked at as an investment, rather than an expense.

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Research in the journal Research on Aging showed that the over-65 age group tends to have more free time than any other age group, as well as a higher disposable income, suggesting a greater willingness and means to spend. In fact, it is estimated that the 'grey pound' was worth more than 50 per cent of UK consumer spend in 2017. When you also consider that, according to the EMEA research team at Colliers International, 78 per cent of net users aged 65 or over regularly shop online, there is clear economic incentive to invest in digital accessibility.

DESIGNING FOR AGE

Making a website accessible can seem a daunting prospect. However, digital accessibility is not as complex as it may seem. There are a variety of simple, quick-to-action best practice principles – broken down by condition here – that can make a website more inclusive.

PHYSICAL DECLINE

With age comes a natural decline in bone and muscle mass, as well as our overall physical condition. In fact, muscle mass and strength tend to begin decreasing at around age 30 and this effect only becomes more pronounced with age.

One of the most common physical conditions experienced in later life is osteoarthritis, which often manifests itself age 40 and up. This can result in pain, stiffness and an overall loss of function, which in turn hampers our ability to interface with digital devices. The condition is particularly prevalent age 80 and above, when virtually everybody will be affected.

The key to accessibility in this respect is to tweak any inputs or processes that require a fine degree of motor control, which naturally diminishes with age. Always ensure that links and input buttons are not grouped too closely together, particularly on mobile devices. Also make sure that any buttons on-site have large clickable areas and avoid any actions that require greater accuracy, such as hovering or dragging.

VISUAL CONDITIONS

Our eyes can also lose strength as we get older, potentially leading to conditions such as glaucoma and cataracts. After the age of 40, it becomes more difficult for the majority of us to focus on objects up close due to a condition known as presbyopia (*https://netm.ag/2tdkLoI*). It affects all people to some degree and only becomes more advanced with age (*https://netm.ag/2JRXlbr*).

To design for impaired vision, ensure your site follows a linear, logical layout, so users can easily zoom in and out on all devices without having to scroll sideways. Effective use of colour and space to differentiate key areas on the page is also key (although never exclusively rely on colour, as this can exclude colour-blind users).

Always use strong colour contrasts to make text clearly readable and ensure that all information is published on web pages – never hide it behind a separate download.

HARD OF HEARING

Many people gradually lose their hearing as they age. This is known as presbycusis and, according to Patient, the provider of health information, is the most common cause for hearing loss in people aged 55 and over, illustrating how important it is that digital products and services include this demographic.

Ensure all audio and video content on site is clearly subtitled, with separate transcripts for each video so that users can peruse the content at their leisure.

> "As more of our products and services move online, ensuring that the growing older demographic are not excluded from accessing vital services has never been more crucial"

Those hard of hearing may struggle to use the phone and instead prefer email or other text-based contact. To cater for these users, always provide multiple ways for users to get in touch – never just provide a phone number.

INCLUSION IS A RIGHT

As more products and services move online, ensuring that the growing older demographic are not excluded from accessing vital services has never been more crucial.

This also extends to non-digital channels. While the increasing digitisation of our society points to a future where, eventually, we will all be online, we cannot just assume this applies to every user. As mentioned, some people will always prefer non-digital platforms and all users must be catered for in an inclusive society.

Essentially, inclusivity is all about offering everybody a choice and – regardless of age, condition or preference – we must ensure that no user is left behind. n

* PROFILE

Hilary Stephenson (@Hilaryonline) is the founder and MD of north west digital user experience (UX) design agency Sigma, having set up the business 11 years ago.

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TWO SIDES

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Sarah Parmenter

Words by Tom May
Photography Craig Williams (https://craigwilliams.net)

We're being asked to do more and more as a profession and something's got to give. Fortunately, this well-known designer has made it her mission to help front-end devs secure fair remuneration for their efforts, as her upcoming talk at Generate London is set to reveal

INFO

job: Creative director and founder, You Know Who
w: *sazzy.co.uk*
t: *@sazzy*

There's no hiding it: we're genuinely excited about the talk Sarah Parmenter will be giving at our Generate London conference on 19 - 21 September. Because she'll be addressing a subject that's increasingly important in our industry, yet not often talked about.

"[I'm looking] at how everything we're learning about social media at the moment needs to be wrapped into web design," she explains. "I believe this is as important as learning about responsive web design was back in 2012 or 2013. Nowadays, we have to understand marketing strategies and there are loads of other elements to our jobs that are growing beyond just dealing with code."

Of course, some companies think social media means they no longer need a website at all but Parmenter dismisses these as outliers. "The majority of firms still recognise the need to have a website, a base of their own online," she says. "However, the sea-change we're experiencing is more about the decreasing effort that people are putting into that base."

Clients, in short, are moving their priorities away from website maintenance and more towards Facebook advertising. "But what they don't realise is that the whole thing needs to work together," she points out. "It's not enough to just have great Facebook advertising, for example, if the call to action on your website doesn't instil confidence in someone to buy your product. So the whole thing feels like a house of cards at the moment. If it's not all lined up properly, the whole lot falls down."

Keeping everything working together properly is an increasingly onerous job. But it's one that's mainly being dumped on web designers. "The job has been growing into a beast," she says. "Most of the people in this industry love what they do. But we've been bolting on all these extra facets to our jobs and we've not really been putting our prices up in line with the new skill sets that we've had to learn.

"For example, when responsive web design arrived, everyone was really excited about it but it was really hard work. I remember having to sit down and relearn everything: it was like when we went from tables to CSS layouts. Yet no one's rates really went up in line with that. And nowadays, I feel like understanding marketing strategy and social media and how we actually design for that is another bolt-on to an ever-growing job title that doesn't really reflect the totality of what we do any more."

In fact, she's not even sure whether the job title 'web designer' is still useful. "Employers keep adding to it," she complains. "I've spoken to so many web designers at conferences whose boss has told them: 'Our social media account is on the web, you're the web person, you're now our social media manager as well.' And they're like 'Wait? What? How has that been rolled into my job title?'"

So what's the solution? "It needs the whole industry to collectively say: 'Right, we've been too cheap, too long'," argues Parmenter. "People need our skills, so we all need to collectively understand just how much goes into what we do these days and collectively raise our rates. That's a very difficult thing to do, of course, and I don't have any easy solution to how to go about that. But we need to face up to it as a profession; this isn't a problem that's going to go away."

> "[Using Facebook advertising] feels like a house of cards at the moment. If it's not all lined up properly, the whole lot falls down"

In the meantime, her talk at Generate London will be full of real-world advice on how to make our web designs work with social media. "It's a practical talk," she stresses. "It's about how to look at audience insights, how small changes to the way you work can help you add value. Essentially, I want people to be able to go to their boss and say: 'I'm doing all these things and I've identified a brand new market that we should be targeting: please can I have a pay rise?'"

She gave a similar talk at An Event Apart in Seattle this April and it struck a real chord with the audience. "I had loads of people tell me: 'I've been waiting for someone to say our jobs are insane and we're being asked to do too much'," she recalls. "But I'm also offering practical ways to knit everything together where possible. I always try to make my talks really practical; I think 'if I was in the audience, would I want to see it?'"

And it's all grounded in real-world experience, because Parmenter – who won the **net** magazine Award for Designer of the Year back in 2011 – is nothing if not a hands-on designer. With years of experience, she has an impressive client list that includes Blackberry, News International, STV, The National Breast Cancer Foundation of America and, most recently, Adobe.

She's currently spending a year as part of the latter's 'Insider Team' and has created a unique UI kit for its Adobe XD tool called Sky. This provides everything you need to create a travel app or website, from pages with hotel, flight and activity listings to buttons and icons for social sharing and connection.

"Every quarter we each submit a giant project to Adobe and basically they advertise the hell out of it," she explains. "We have to travel a lot; we just visited their Times Square office in New York and met lots of the people who work on the apps, so it's all really exciting. The workload is quite intense but it's a dream really; it's been absolutely wonderful. Adobe as a company is so well organised and it's made me realise that I need a little more of that in my own life, in all honesty!"

But it seems as though she's being overly modest here. In truth, Parmenter must be pretty well organised because not only does she manage both her design work and speaking engagements, she's also achieved something few in the industry have ever managed: founding a full-blooded, bricks-and-mortar business.

Blushbar is a blow-dry salon in her hometown of Leigh-on-Sea, Essex, and it's been doing strong trade for five years, which is a very impressive milestone in what is a fiercely competitive field. It's essentially a modernised version of the old-fashioned beauty parlour, where an earlier generation would typically visit to get a 'blow dry and set' for the week. The salon prides itself on high-quality service and exceptional customer experience and presents itself as a social place that friends and family can enjoy together.

"Hair is a very interesting business," says Parmenter, wryly. "The universal truth about salons is they tend not to be that well run. ▶

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"Once you learn the basic principles of UX you can apply that to any type of business you want"

They often run very close to the wire in terms of cash flow and there tends to be lots of ill-feeling between one salon and another; it's not a friendly industry like web design. Also, a lot of staff get pushed into doing hairdressing straight from school because they don't know what they want to do with their lives. So it's not really a chosen profession like in the States, where a cosmetology licence costs upwards of $10,000 and people have to be really sure they want to go into it. In the UK, it's a completely different kettle of fish."

Parmenter has keenly learned from other salons' mistakes, only employing fully qualified professionals rather than juniors and focusing on quality rather than cost-cutting. "We're also one of the only salons this side of London that's vegan and cruelty-free," she adds. "I'm not a vegan but I've got two dogs at home and so using products in the salon I can feel happy about, even if they're more expensive, is a nice feeling."

But perhaps the most important thing about Blushbar is its strong focus on improving the customer experience. "For that, I can hand-on-heart say we are head and shoulders above the service levels elsewhere," she stresses. "As a whole, I think the salon business is broken and we have definitely raised the bar."

Perhaps unsurprisingly, she's achieved that accolade by drawing on every lesson she's learned in web design. "Once you learn the basic principles of UX you can apply that to any type of business you want," she stresses. "So I approached the salon with the same mindset."

Take, for example, user testing. "We had a week-long friends and family when I first opened the salon," she recalls. "And I literally sat in the corner and just watched, in the same way that you'd watch a user journey on a website. I watched what the customers and staff were doing, where they were going and whether there were things that could be improved. For example, were stylists having to walk backwards and forwards to get bowls or brushes? Could we place them somewhere different? So I did approach it with that mindset and I think it definitely helped." Not surprising then, that Parmenter has recently been considering two "massive offers" to franchise the business at a larger scale.

Running a salon, web design client work, speaking, international travel… it seems like Parmenter's life is just an endless round of plate spinning. But you'll hear no complaints from her. "I love the freelance lifestyle," she enthuses. "And I don't think I'd ever be able to plant my feet behind a desk and work a nine-to-five again. I've worked for myself for too long, I've become accustomed to just getting up and doing what I need to do, on my terms, rather than a boss's."

Sarah Parmenter will be speaking on 'Digital Marketing Strategies for the Busy Web Designer' at Generate Conference London, which takes place between 19 and 21 September. For details and to buy tickets, see https://www.generateconf.com/london

*THE DESIGN OF BUSINESS

GRATITUDE

Christopher Murphy emphasises the importance of fostering a culture of gratitude in business

INFO
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You might be working in a business of many or a business of one but regardless of the scale of your company, you're unlikely to be working alone.

Business involves relationships – between partners, suppliers and, most importantly, between the business and its customers – and those relationships need to be nurtured. Neglect them and you can damage future prospects for your business.

Gratitude – the simple act of saying thank you for a job well done – is important and yet it's surprising how few make the effort to say it, which is striking when you consider that the cost of these two powerful words is zero.

I've had the pleasure of working for organisations where a culture of gratitude is prevalent. I've also worked for organisations where the words 'thank you' are, sadly, seemingly alien. Working for the former is infinitely nicer.

Working for an organisation that embraces a culture of gratitude is not only more pleasurable, it's also, importantly, more motivating. When your work is celebrated – even when you've been paid to do it – you find yourself working that little bit harder.

We are not worker drones, so it's important we don't act like them, mindlessly working our way through a list of tasks without a pause for reflection and gratitude. Even if you're paying a supplier or partner, that doesn't mean everything needs to be transactional. Money will have changed hands but that doesn't preclude gratitude changing hands, too.

The best businesses – and leaders – understand this and focus on creating a workplace culture that celebrates success, recognising the importance of gratitude, manners and courtesy as core values.

A CULTURE OF GRATITUDE

Businesses that are built around a culture of gratitude typically benefit from a happier and more productive workplace. Put simply, good manners matter. They don't just make for a nicer working environment; they also have a considerable impact on the business's bottom line.

A culture of 'minding your manners,' far from being characteristic of a bygone era, is a culture that the best businesses embrace in the here and now. As Peter Drucker, the noted management consultant, writer and educator, puts it in his excellent book *Managing Oneself* (*https://amzn.to/2yqOvw3*):

"Manners are the lubricating oil of an organization… Simple things like saying 'please' and 'thank you' and knowing a person's name or asking after… family enable two people to work together whether they like each other or not."

Great leaders understand this and express their thanks not only in private, but in public, too, aware that making the time to acknowledge work well done leads to more motivated staff and increased loyalty. Money is a motivator, of course, but having your work acknowledged can make a world of difference.

As a leader, whether your organisation is large or small, show your colleagues and collaborators you're thankful for their work. They'll appreciate it and your working relationships will improve.

Gratitude is a multiplier. Make a habit of saying: 'Thank you'. Those two little words will pay dividends over time and, even better, they won't even cost you a penny. Use them, don't forget them and you'll supercharge your business.

A short but important read, Peter Drucker's *Managing Oneself* (*https://amzn.to/2yqOvw3*) is well worth owning

WorldMags.net

*Q&A

STEVEN ROBERTS

The creative developer discusses the difference between startup and agency culture and previews his Generate London workshop

INFO

job: Creative developer, Asemblr

w: *codepen.io/matchboxhero*

t: *@matchboxhero10*

You joined Asemblr, a startup in the corporate events space, in February. How's it going and how does working at a startup differ from an agency?
SR: It's going great. We're currently designing the next generation of the platform, which will be launching in the summer. While my previous roles were primarily advertising-based, now I'm designing software as a service (SAAS). The platform has a lot of moving parts, which have been a challenge to design.

There's been a huge difference in the transparency of the company in terms of involvement. I know what I'm going to be doing for the next few months, whereas in an agency setting it could be day to day.

Working within a SAAS company, there's one single focus instead of a number of projects flying around, which has been a change of pace for me. I'm also getting to be more of an advocate for the user in my new role, primarily because I've had far more time to learn and discover who the user is.

Have you discovered any cool tools along the way?
I've not had a lot of time to use many new tools but the standout for me at the moment is Spirit (*https://spiritapp.io/*). It gives designers and developers the ability to create animations in the browser using a timeline, similar to Flash. The animations are running on GSAP in the backend, so the animations are really smooth and cross-browser compatible. Although currently in beta, the developer is hopeful for a full release soon. I've created a quick example of what you can do with it in just five minutes over on CodePen: *https://netm.ag/2LQkurk*.

What's the web-design scene like right now in the north east?
It's exciting. There are a number of companies in the Middlesbrough Boho Zone producing some wonderful work and working with high-profile clients. Hopefully this will attract and keep new and upcoming talent from leaving the area. There are also a number of great companies in Newcastle and a couple of conferences. Frontend NE, which is a local meetup, successfully put on its first conference this year. Design It; Build It (DIBI) runs events in Newcastle too.

How important is music in your life and why do you think so many web designers are in bands?
Music plays a huge part in my life. I've played guitar since I was 14 and have been in a number of bands. I find listening to music while I'm working to be productive, although sometimes I find podcasts to be good for concentration too. I think many of us are in bands because it's another outlet for creativity. Being in a band also promotes teamwork, discipline, leadership and ownership, all of which are part of our jobs, so it's easy to adapt to the band environment.

Tell us about the workshop you'll be giving at Generate London.
I'm really looking forward to it; it should be a fun day. We're going to be building a web-based music player interface inspired by the likes of Spotify and Google Music. I'll be teaching the new CSS layout properties – CSS Grid and Flexbox – as well as utilising SVG as an icon system and, to top it all off, we'll style the interface using custom properties in order to provide themes. We'll be using very little JavaScript and concentrating on CSS and HTML to build a responsive interface for modern browsers.

Steven Roberts will be giving a talk and workshop at Generate London, 19–21 September 2018. For more info, visit www.generateconf.com.

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CAREER ADVICE

WHAT DO YOU WISH YOU HAD KNOWN STARTING OUT?

Our experts share the lessons they wished they'd been told at the beginning of their careers

SALLY LAIT
Digital transformation consultant
sallylait.com

Starting out as a junior developer on a university year in industry, I wish I'd better understood what it feels like to work with a medium that never, ever stands still. Embracing changes in technology, user expectations and societal shifts – even my own interests – over time was something that I initially struggled with rather than welcomed. Change often feels scary and tiring but it's also really exciting to naturally keep evolving on your own personal journey and keep finding new things that you enjoy.

BILLY FAGAN
Freelance developer
billyandjames.co.uk

When you first start out, especially if you've turned your hobby into your work, you want to put all the cool stuff into all the projects. However you're not doing this as a hobby any more; it's a professional situation. This means the client is paying for your time. The client almost never has the budget for you to test out your new shiny thing on their project and why should they? You just need to try the shiny stuff on your personal projects.

JAMES STIFF
Freelance designer
jamesstiff.com

Trust your instincts and have confidence in your abilities. There will be times when you have doubts or find yourself outside your comfort zone. Don't let fear of failure stop you trying new things.

Manage expectations and keep stakeholders actively engaged in the design process. Avoid big reveals to minimise unpleasant surprises. When presenting designs, remind stakeholders of the problem that they aim to solve.

Clear communication is key to avoiding many common pitfalls of the design process. When working with clients, have a contract or statement of work. If you're in-house, make sure you have a brief, even if you write it yourself!

WorldMags.net

CATT SMALL

Product designer and developer

cattsmall.com

In design school, my classes mostly focused on aesthetics. However, design in the real world is also about usability. By thinking about the people who will use the experience, understanding them deeply and considering their stories, I have become a much better designer. My favourite thing to do is create scenarios that help me understand when people would use my designs. This not only helps me identify potential pain points but also helps me communicate better with collaborators.

DIANA LOPEZ

Principal designer and developer, Diana.nu

diana.nu

That underquoting repels the good clients. They can't have confidence in you if you don't have confidence in yourself. Too-low rates can severely affect your business and you can end up feeling frazzled at the end of every month, from overwork and empty pockets. If underquoting is affecting your business like it once did mine, consider breaking your quotes into smaller chunks. Quoting by line item prevents anxiety because you can wholly justify your cost. When I started doing this, the scope of work became clearer so I could justify my quote easily. You stop feeling like clients will run away at the sight of your quote.

MARIA PERNA

Co-editor, SitePoint

twitter.com/antoniettaperna

When I first started in web design I was coming from an academic philosophy background. Back then, I didn't realise how much I would need business skills and how much easier my professional life would be if I felt at ease building personal connections. I took for granted that long-term professional development and continuing to be my usual geeky self would be enough. I had to understand the importance of building up bridges with other devs, both to stay on top of what happens in the industry and to learn about work opportunities. Not to mention getting to grips with marketing and business concepts.

MARCO POLETTO

Front-end software engineer

marcopoletto.co.uk

Stick to what you like and don't waste time on too many different specialisations and choices. It is all too easy to fall into the trap of wanting to learn it all: all the frameworks, all the languages, everything. After years in the field and a touch of 'JavaScript fatigue', I wish I'd known how to evaluate my options briefly, without wasting time on the array of choices in front of me and then invest my time on that and only that. How to choose? Follow what you like and it's easier to learn and easier to stick to it.

RESOURCES

THINGS I WISH I KNEW BEFORE I STARTED MAKING WEBSITES

https://netm.ag/2sWnawB

Now a teacher with training platform Treehouse, there's a lot that Nick Pettit wishes he'd known when he started. He shares those lessons here, in the hope they will make things less frustrating for today's beginners.

15 THINGS THEY DIDN'T TEACH YOU AT DESIGN SCHOOL

https://netm.ag/2LL6nDF

Design school can't teach you everything. With that in mind, Creative Bloq's Rob Carney talked to successful professional designers and asked them what they wished they had known when they were at college.

7 WEB DESIGN DOS AND DON'TS

https://netm.ag/2JKyzGe

Coding courses may teach you to write good JavaScript but they don't usually cover those rules of etiquette that can be the difference between good working relationships and office warfare. Here, leading web professionals reveal the dos and don'ts.

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UX

CORE PRINCIPLES OF UX DESIGN

Karolina Mrozwska identifies the six pillars upon which truly great UX is built

The core principle of user experience (UX) design is to make each user feel like the website they're visiting has been built specifically for them. To achieve this, you need to know who your audience is before building the site. From there, you should tailor your website content to your most valuable users. To designers' advantage, most users have similar online behaviours and once you've worked out what those behaviours are, you can tailor your website design to their specific needs.

THE FIVE-SECOND RULE

Visitors should be able to tell what your site has to offer within the first five seconds of landing on your homepage. This is the average time users need to form a first impression and decide whether it's worth engaging with content. To retain visitors, a landing page must clearly convey its purpose, what content is on offer and a strong call to action.

FIRST STEPS

Most website traffic will come from external links such as search engines or site links, rather than from users who know your URL. As a result, users are likely to land on your website with a specific goal, which a website should satisfy by providing engaging, relevant and valuable information through an easy to use interface. It's also likely that users who are directed to your site from another source will land on a deeper page of your website; therefore, all website pages need to be designed to clearly communicate what information can be found there to avoid high bounce rates.

USE MINIMAL DESIGN

The information users are looking for on your site needs to be presented in a clean and simplistic way. If any element of the page doesn't need to be there, get rid of it. In terms of copy, communicating key information in fewer words is more effective than reading long bodies of text that users will skim read. Avoid clutter and keep decorative elements minimal; fewer distractions allow users to find what they're looking for, faster.

BE CONSISTENT

Keep design consistent across pages so users can easily find information. For example, the main menu should always have the same elements. Clicks should always perform the same action, for instance, clicking on a link should always open it on a new window. Consistent design means users learn how to navigate your site quickly and effectively.

USE STANDARD DESIGN PATTERNS

Designing the layout and navigation for a website requires you to follow tired-and-tested trends. This means using standard design patterns and taking inspiration from successful websites, which will also encourage cross-browser compatibility across devices.

STRUCTURE CONTENT

The information you put on your website needs to be arranged and grouped into pages and the resulting structure will form the navigation and logic for your menu. Within each page, you'll also need to organise information; if content isn't visible on the screen before scrolling down, then there's a high chance that users will miss it. Call to actions should also prompt users to scroll through to uncover more information. When it comes to a website's homepage, it should contain a brief summary on the brand and what it does, so that users know what to expect from the site.

PROFILE

Karolina has been digital designer at digital agency Greenlight for three years, working with clients including Millennium Hotels and Resorts, Hiscox, Dyson and Currys PC World.

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when a click
turns into a lead.

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GALLERY

Sensational design and superb development

EMILY MELLING

Emily is the digital marketing manager at Yes I'm A Designer, as well as a freelance graphic designer specialising in branding and identity.
w: *www.yesimadesigner.com*
t: *@YesIMaDesigner*

* WEBGL, THREE.JS, 3D MODELLING

OAT THE GOAT

http://oatthegoat.co.nz/intl.html

Paying a visit to Oat The Goat is a unique experience. This beautiful website was rendered using WebGL through three.js and is an interactive, animated storybook that will capture your imagination. Crafted by Assembly and FCB, both New-Zealand-based companies, it features fully rigged and animated 3D characters and combines illustration, animation, music, interactivity and storytelling to tell of Oat's adventure. The aim was to teach young children about social interaction.

Once the story gets started, you are sucked into rich colourful New Zealand landscapes. I was immediately impressed with the framing of each scene and how the animation playfully reveals more of the landscape while also moving the story forward. On top of this, its soundtrack, which features the New Zealand Symphony Orchestra, not only helps you feel immersed in the site but goes a long way toward telling the story and setting the mood.

Lead dev for the project, Matt Wilson, said it was "one of the largest web projects I've ever worked on... We wrote just shy of 13,000 lines of TypeScript, plus enough HTML and responsive CSS to glue it all together."

The site was launched as part of Bullying-Free NZ Week, and aims to prompt conversation between adults and young children about making choices and how they act when spending time with people their own age.

* HTML5, CSS3

IBM PLEX

www.ibm.com/plex

IBM recently released its own custom font; this is the first refresh of its corporate typeface since 1956 so it's a big deal. To help introduce the typeface to the world, IBM asked studio XXIX to design and build a website to show it off. The thinking behind the design was to use images, animation and photography to tell the Plex's story while showcasing the font in exciting ways.

What's great is that a lot of the site serves as a way to test out the font and explore the multiple styles available to use. So you can really see it in context before you decide to start using it in projects. The site is definitely one for graphic designers and is somewhat reminiscent of a portfolio page. Especially because, despite the dense information displayed, it is a single-page site you can continuously scroll through, where you are greeted by some inventive scroll-triggered animation.

Its bold visual graphics suit the limited colour palette and ensure the viewer's attention remains on the typeface as the different weights and styles in the Plex family are shown off. Visual impact is very much at the heart of this site, which was styled using CSS3; ideal for content-rich web pages and customising fonts, colours and spacing.

Invite Ono In

Ono delivers to your do
packaging. If you want,
compostable silverware
with your meals simply
(food scraps and all) in
pick it up. We compost
the containers, and fill t
delicious food.

SEE HOW ONO WORKS

* CSS3, HTML 5, JQUERY

ONO MEALS

https://onomeals.zeusjones.com

Ono is a concept site created by the Zeus Jones agency to explore how the future of food culture could look in America and I'm a big fan.

The agency believes that food is in its DNA and wanted the site to "bring the future of food to life", while the prototype was "fuelled by months of research and decades of expertise". This is an idea, not a business (at least not yet, anyway) but this gives the site permission to be more bold, innovative, playful and unafraid to stand out. Which with its bright use of colour, large background images, responsive design and elegant typography, it certainly does.

The greatest feature of this site has to be its use of animation, created using GSAP, which provides the option to animate colours, CSS properties, arrays and scrolls and it has definitely been put to good use. The elegant and smooth motions draw the viewer's attention to the right information at the right time while they explore the website, creating a strong sense of hierarchy and making the user experience easy, engaging and fun. This site takes the trend towards animating information a little further than animating the company logo, actually using it to introduce new facts and help tell the story Zeus Jones aims to communicate.

nside

oor in 100% re-usable
we'll even include
e. When you're done
put the containers
your crate and we'll
the leftovers, sanitize
hem up with more

D SHOULDN'T BE ONE-SIZE-FITS-ALL

more we know about the microbiome and
health, the more we realize that food and
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k for a family? Ono meals are so delicious
we're confident any member of your
ily will enjoy them. And they'll end up
ng amazing, whole, beneficial foods while
do it.

* SHOPIFY, SVG, JQUERY, HTML5, CSS3

NOT ANOTHER BILL

www.notanotherbill.com

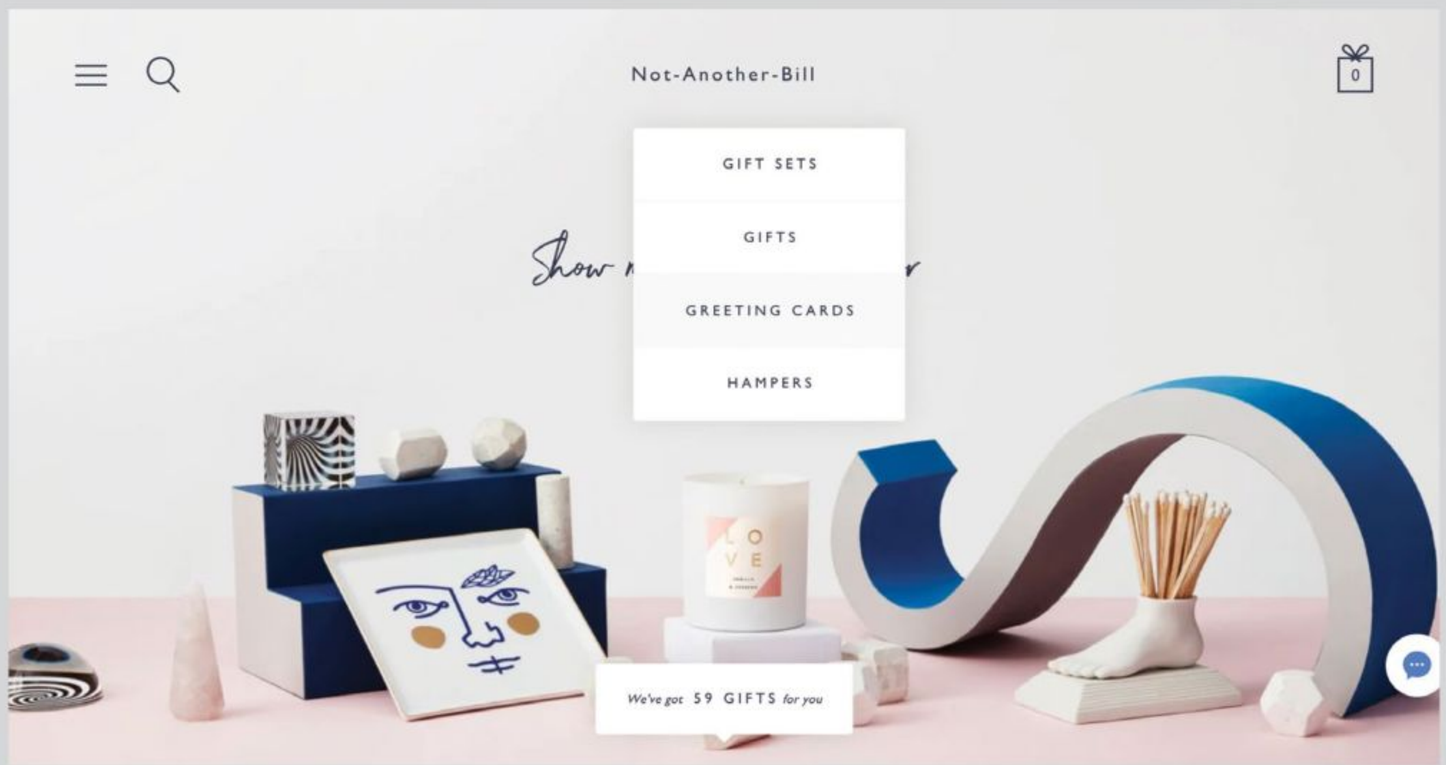
The whole idea behind the rebuild for this site was to shift the company's direction from a gift subscription service to a full online store, featuring the "best gifts in the world" available to buy with the help of ecommerce solution Shopify. Definitely a company that sets its sights high and now it has a website to match!

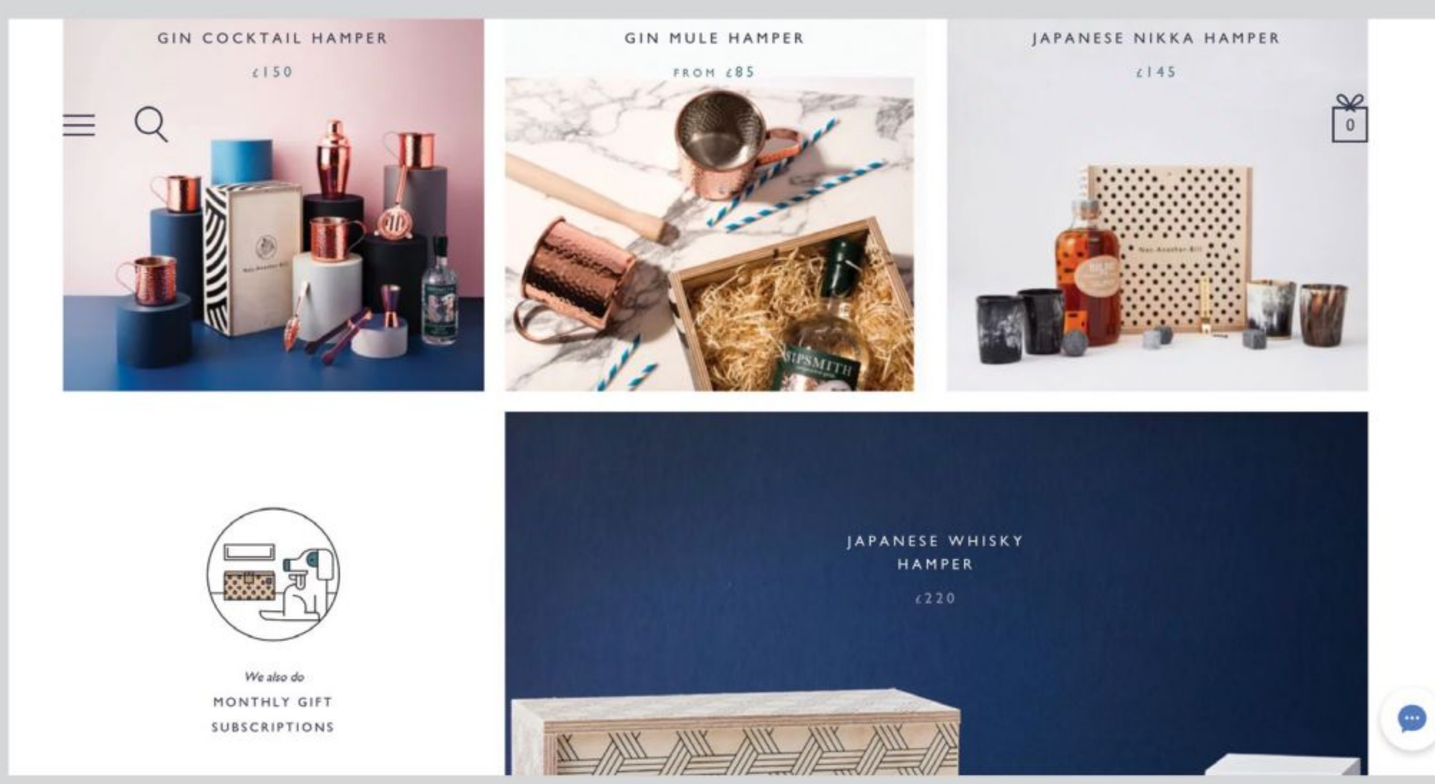
The minimal design approach is about more than just looks: Studio Create, the London-based agency that designed and developed the site, explains that the "stripped back UI is intended to let the products (and art direction) shine". Which is brilliant because the products are gorgeous and deserve to be shown off.

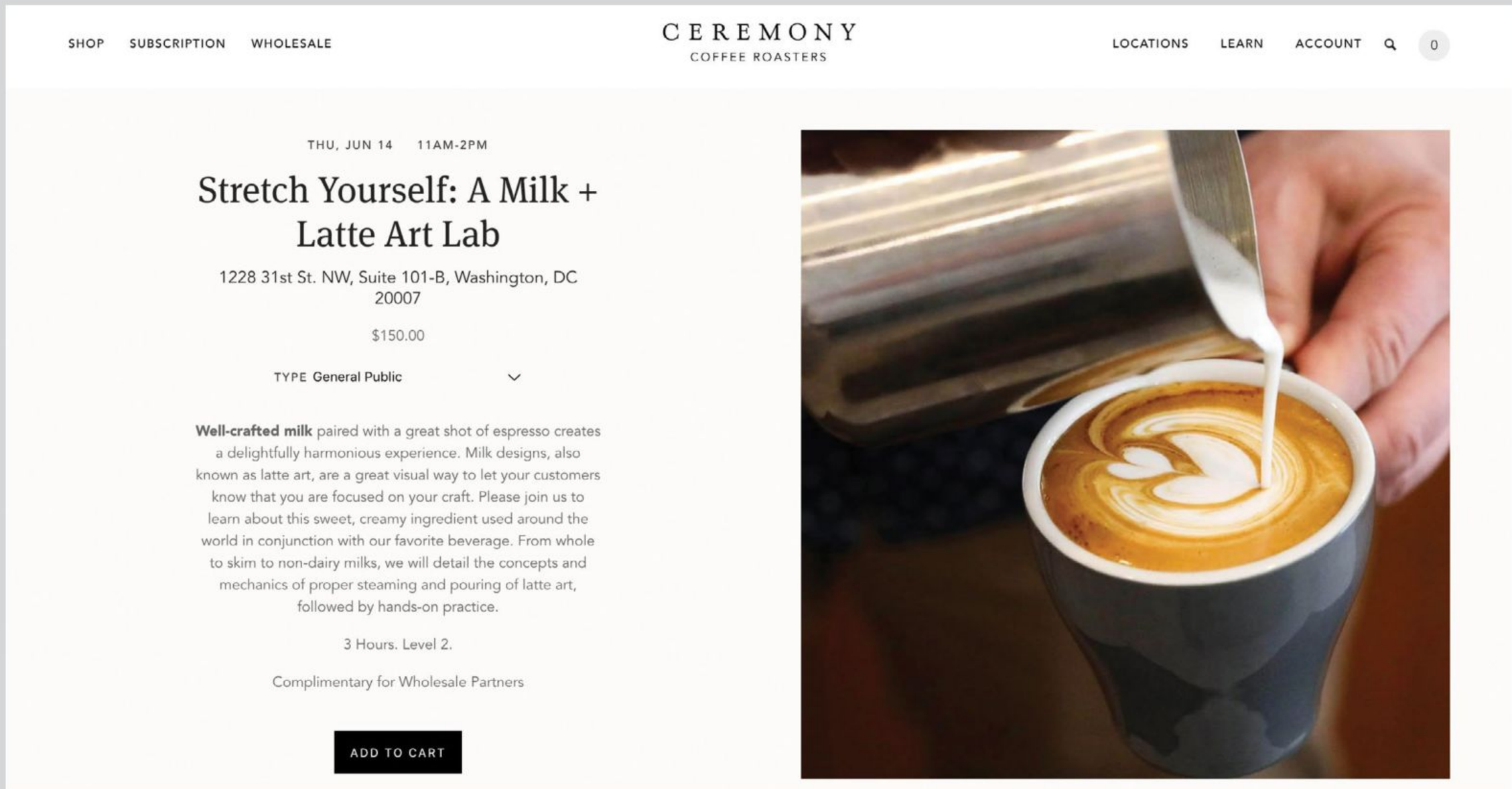
The site uses contemporary photography that wouldn't look out of place in a creative lifestyle magazine. These photos look their best as full background images. Check out the landing page and main gift pages: at no point do they slow down the impressive loading time of the site, delivering a positive customer experience.

My favourite feature is the natural language filter, which makes finding the type of gift or product you are looking for easy and painless.

In the first month after it was launched, Studio Create saw a "39% increase in conversion rates" and it has said "the recent launch is just the beginning".







* WORDPRESS, PHP, SHOPIFY

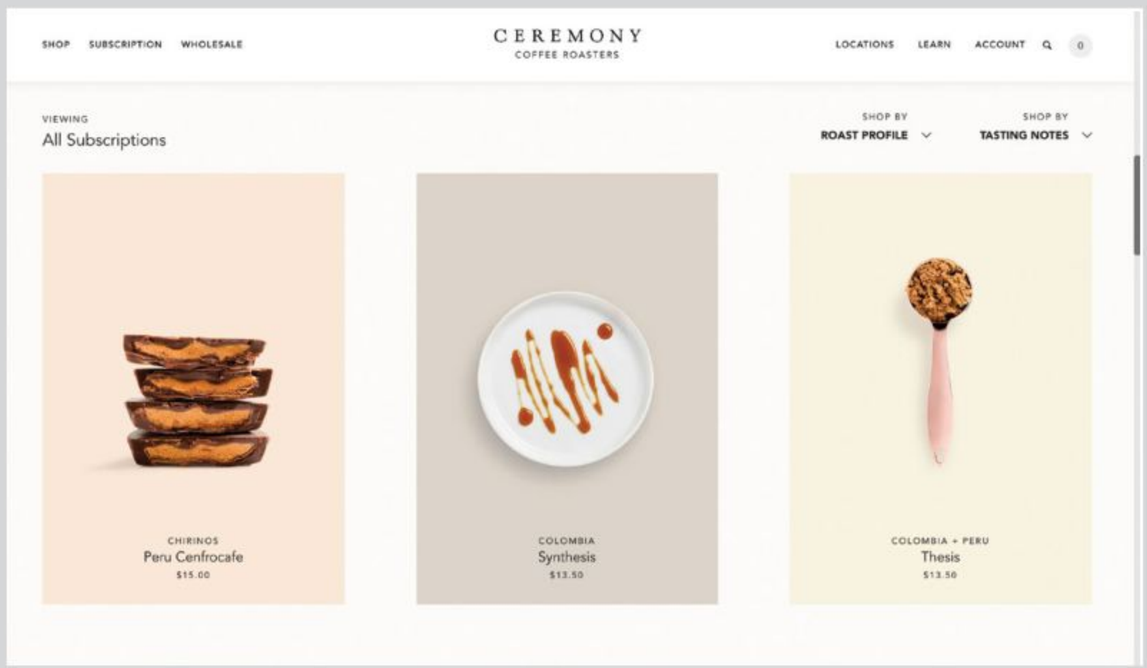
CEREMONY COFFEE

https://ceremonycoffee.com

With an elegant design that uses subtle and smooth animation, it's not until you start poking around that you realise this site is jam-packed with information. There are options to shop, get a coffee subscription (very tempting), discover stores, sign up to events, learn more about coffee itself… and that's only the top navigation bar. There's even more to see at the footer of the page. The design for this site does an amazing job at feeling light, airy and considered on every single page, despite the huge range of information it includes. It's a great use of WordPress.

In designing and building the site, Drexler set out to "communicate the brand in a way that is true to its history" and "create a compelling experience for the range of speciality coffee drinkers". These aims are fully achieved in the final result; from the copywriting and choice of type to the use of colour and imagery, all elements work together to tell the story of the brand and create a persona for the company.

Drexler also mentioned that the Shopify product pages needed to be dramatically adjusted so users could add products to their cart without disrupting their experience. Everything about this site feels crafted and considered, which matches the company ethos and product. It feels like something you should take time over, a little like a good cup of coffee.



PUT A PAUSE IN YOUR DAY

With so many demands from work, home and family, there never seem to be enough hours in the day for you. Why not press pause once in a while, curl up with your favourite magazine and put a little oasis of 'you' in your day.

PRESS PAUSE
ENJOY A MAGAZINE MOMENT

To find out more about Press Pause, visit;

pauseyourday.co.uk

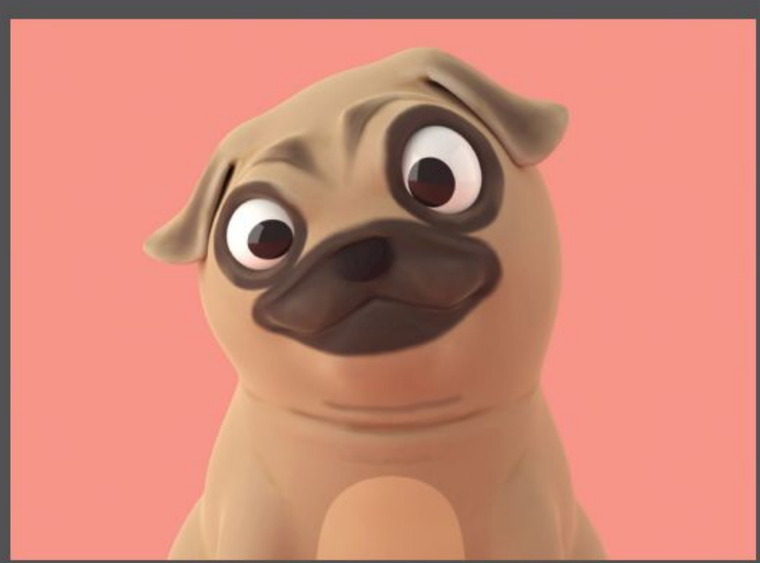
SHOW/CASE

Sublime design & creative advice

THIS MONTH FEATURING...

PROFILE 50

We catch up with Ever & Ever and discover how the agency is doing great things without the pressure and expense of a physical studio



HOW WE BUILT 56

The ToyFight team reveal how they gave Toggl a shiny new startup vibe in order to stand out from the crowd

DESIGN CHALLENGE

This month...

BACKPACKER HOSTEL

* PROFILES

JUSTIN MARCHANT

Justin is designer and the owner of Black Bear Creative, a boutique design studio in Australia.

w: *blackbearcreative.com.au* **t:** *@B_BearCreative*

OLLIE MILLER

Ollie is a product designer currently working at Crunch in Brighton, UK.

w: *omillerdesign.com* **t:** *@ollie__miller*

DARRELL ESTABROOK

Darrell leads the design team at SingleStone, a tech consulting firm in Richmond, VA.

w: *singlestoneconsulting.com* **t:** *@DesignResponds*

BRIEF

This month we would like you to design a website for a fictional backpacker hostel. It must be easy for people to find all the essential information such as location, room options, prices and availability and we'd also like you to convey a sense of the personality and ethos of the place.

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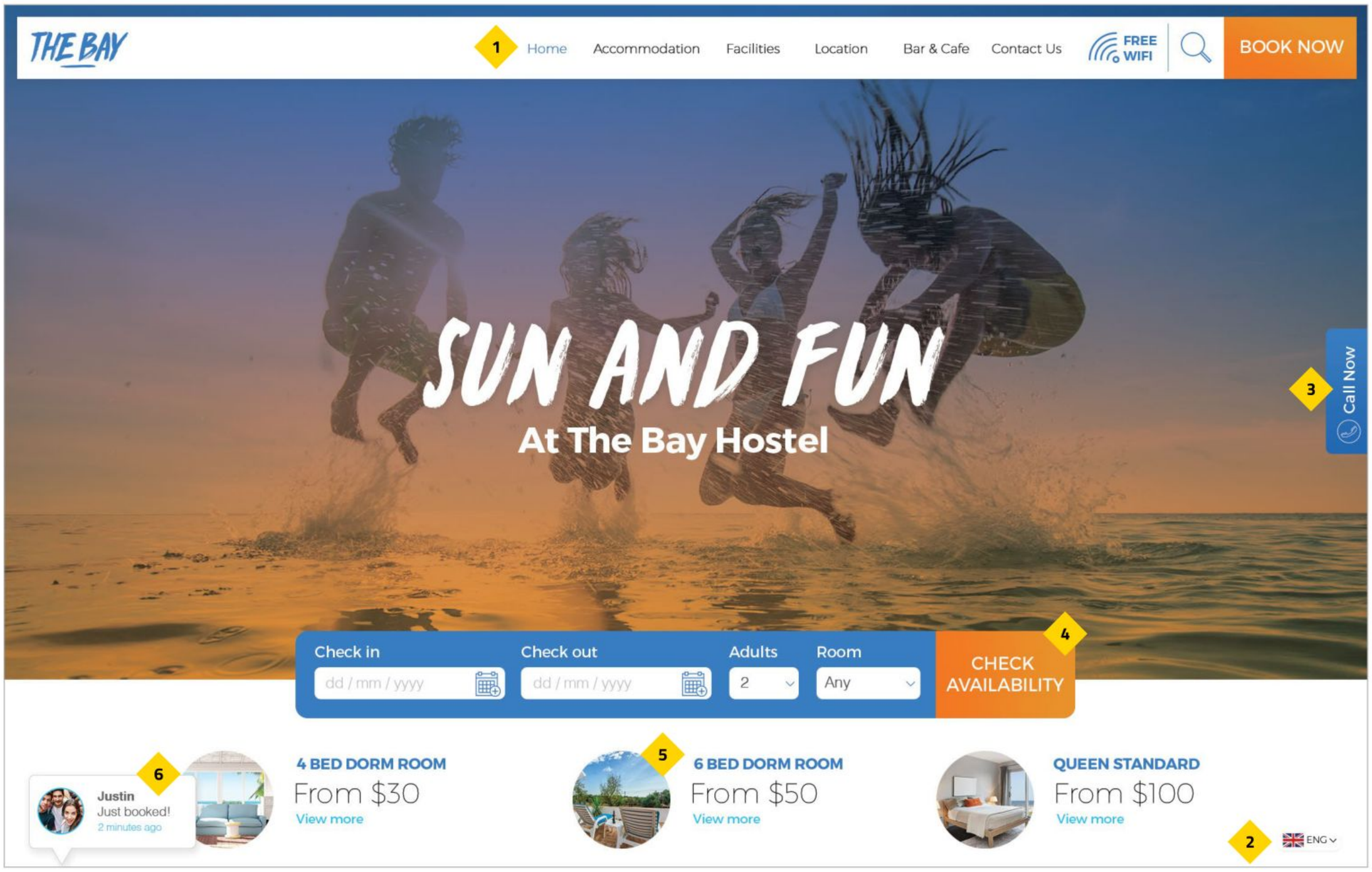

JUSTIN MARCHANT

THE BAY HOSTEL

A site for a beach hostel aimed at younger travellers

This site is aimed at 19- to 25-year-olds including festival attendees, students who have just graduated high school and international backpackers who want a taste of the Australian surf and beach lifestyle. To appeal to this target demographic, I created a design that is clean and includes an inviting and down-to-earth colour palette associated with summer, beach lifestyle and fun. Modern, rounded typography is used for important information, while the main heading uses the same font as in the hostel's logo to keep consistency with the hostel's brand identity.

The site's layout is designed to quickly present the information needed to make a booking decision including price, location, facilities, room availability and the ability to book from the home page. It also considers the user's preferred language and removes language barriers that influence the user's booking decision. The photography tells the story of the hostel's culture, which is that of a fun, carefree, beach lifestyle.

CLOSE UP

(1) Navigation enables the user to have access to relevant information that will influence their booking decision. So keeping the navigation clear and clutter-free is necessary. **(2)** The site will be translated into multiple languages to assist overseas users. **(3)** A 'Call Us' side tab lets the user quickly call the hostel if they have any questions during the booking process. **(4)** Another important feature is the 'Room Availability Checker', which enables the user to input their travel dates, the number of guests and their room type to see which rooms are available. This also lets them proceed to a booking confirmation page. **(5)** Users can see what type of rooms are available. They can see the pricing for each room and the option to view more details if required. **(6)** This feature shows who has recently booked a room and how long ago. This creates a sense of urgency, as the user doesn't want to miss out on their booking and also provides social proof that real people are currently booking their rooms.

MY MONTH

What have you been working on/doing this month?
I have been working on designing sales conference collateral for clients, packaging design for a client's new suntan products, as well as creating video content and learning how to be a photographer.

Which two websites have you visited for inspiration?
I like to check out Behance and Pinterest.

What have you been watching?
Brooklyn Nine-Nine and inspirational Netflix documentaries.

What have you been listening to?
Old-school 1990s hip-hop and Triple J Radio.

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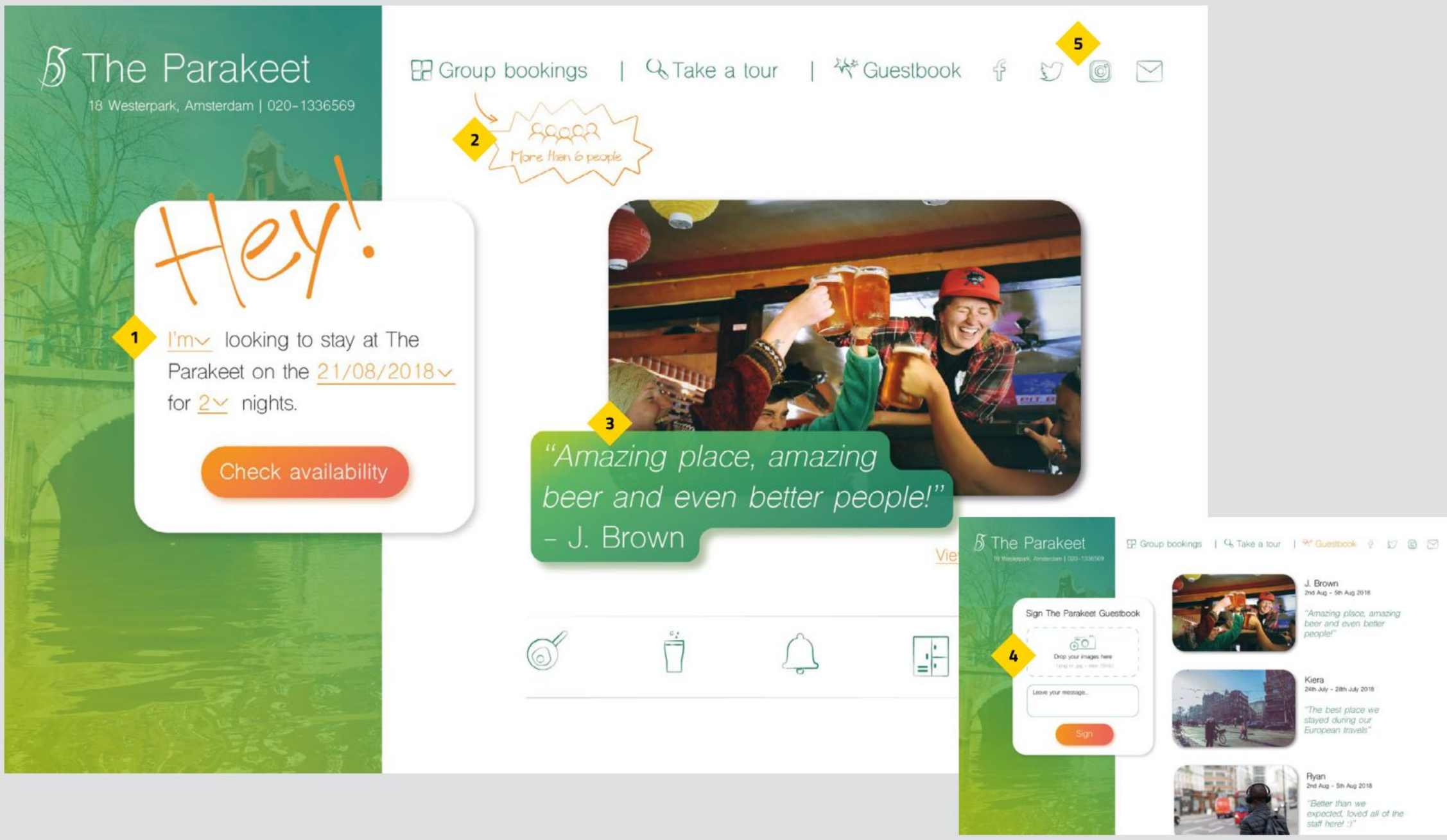

MY MONTH

What have you been doing?
I've been working on our revamped careers section and a redesign of our blog, which helps users run their small businesses.

Which two sites did you visit for inspiration?
Airbnb and the website of a youth hostel called The Wombats.

What have you been watching?
A range of documentaries but the last few weeks my excitement has been around *Westworld*.

What have you been listening to?
Nightmares On Wax, Four Tet and Arctic Monkeys' new album.

* OLLIE MILLER

THE PARAKEET

A site that seeks to attract new visitors by using the experiences of previous guests

The site hopes to appeal to the young, social demographic by providing a laid-back design, which comes through with the handwritten typography and the sketch-style illustrations highlighting key points of interest.

The name 'The Parakeet' is inspired by Amsterdam's parakeet population, which has also been referenced in the colour scheme. The name also has a secondary meaning; due to the birds in Amsterdam being of a more exotic descent, it looks to convey the idea that the hostel is for people from all over the world.

The main feature is the online guestbook, which is designed to replace the physical guestbook of hostel lobbies. The most recent post will be dynamically pulled through onto the homepage. The site is built on React, so it will run efficiently and quickly with user-end rendering. As well as this, a style-guide driven design is used to keep the site consistent and in-brand.

CLOSE UP

(1) The 'Check availability' form on the homepage has been designed using a natural language form layout. This is to make the user feel like they're having the first conversation, with the second being when they enter the hostel lobby and meet the staff at reception. This form would transfer data in order to offer the best room available for that user. **(2)** The illustration style and colour scheme has been kept loose to give the site personality. With subtle hints of Amsterdam culture, this can be seen behind the green multi-purpose sidebar. **(3)** Social proof is one of the main features of the site. Displaying other people's experiences of the hostel will hopefully give visitors the confidence to make a booking. **(4)** A drag-and-drop photos feature means the user can share photos from their stay to add to the online guestbook feed. **(5)** Dynamic homepage content is used to keep the site looking fresh. This should also help with marketing and SEO.

* DARRELL ESTABROOK

BISCUIT'S LANDING

A hostel site that offers adventurers a hidden place to relax and escape

Adventurers love to experience hidden, offbeat places and meet new people but sometimes they also need a little downtime and privacy. Biscuit's Landing meets these needs.

Historic London is charming but can weigh down a brand, so I've used vibrant colours to contrast with the photography. This has a youthful vibe, to appeal to the target customer. Activity humanises the space, so this collage of photos creates an expectation of the experience.

The scrolling homepage acts as a condensed view of the whole site. A traveller's review, a peek at some places around London and a tool to check room availability offer a fuller picture than a simple listing of main menu items.

Mobile content prioritises the needs of someone on the move. CSS Grid is used to reflow these homepage elements to give the mobile-specific content a proper informational and visual hierarchy.

CLOSE UP

(1) Travellers can easily check room availability from the homepage. We get the information using a human-language approach such as 'When will you arrive?' and 'How many nights?' **(2)** A button-like input for number of nights and guests lets users quickly enter information using only their mouse. **(3)** The location labels in each photo serve as a virtual tour of the hostel. They are also a quick way to highlight amenities without resorting to a text list. **(4)** Reviews help build rapport and trust. The quote attributions expose the variety of people one might meet at the hostel. **(5)** The mobile design assumes the user is in the city looking for a place to stay that night. So, two call-to-actions are upfront: today's vacancies (and the functionality to book a room) and GPS directions to the hostel from their location. **(6)** Address, telephone and site navigation are tucked into the header, reserving ample real estate for the meatier content of any given page.

MY MONTH

What have you been working on/doing this month?
Designing digital dashboards for enterprise clients. My analogue hobby is woodworking: I recently built a cedar-shingled chicken coop.

Which two websites have you visited for inspiration?
Unsplash for free photography, Hostelworld for the business of hostels.

What have you been watching?
Stargate, Blender 3D tutorials and those chickens.

What have you been listening to?
Everything from Jóhann Jóhannsson to Joey Alexander.

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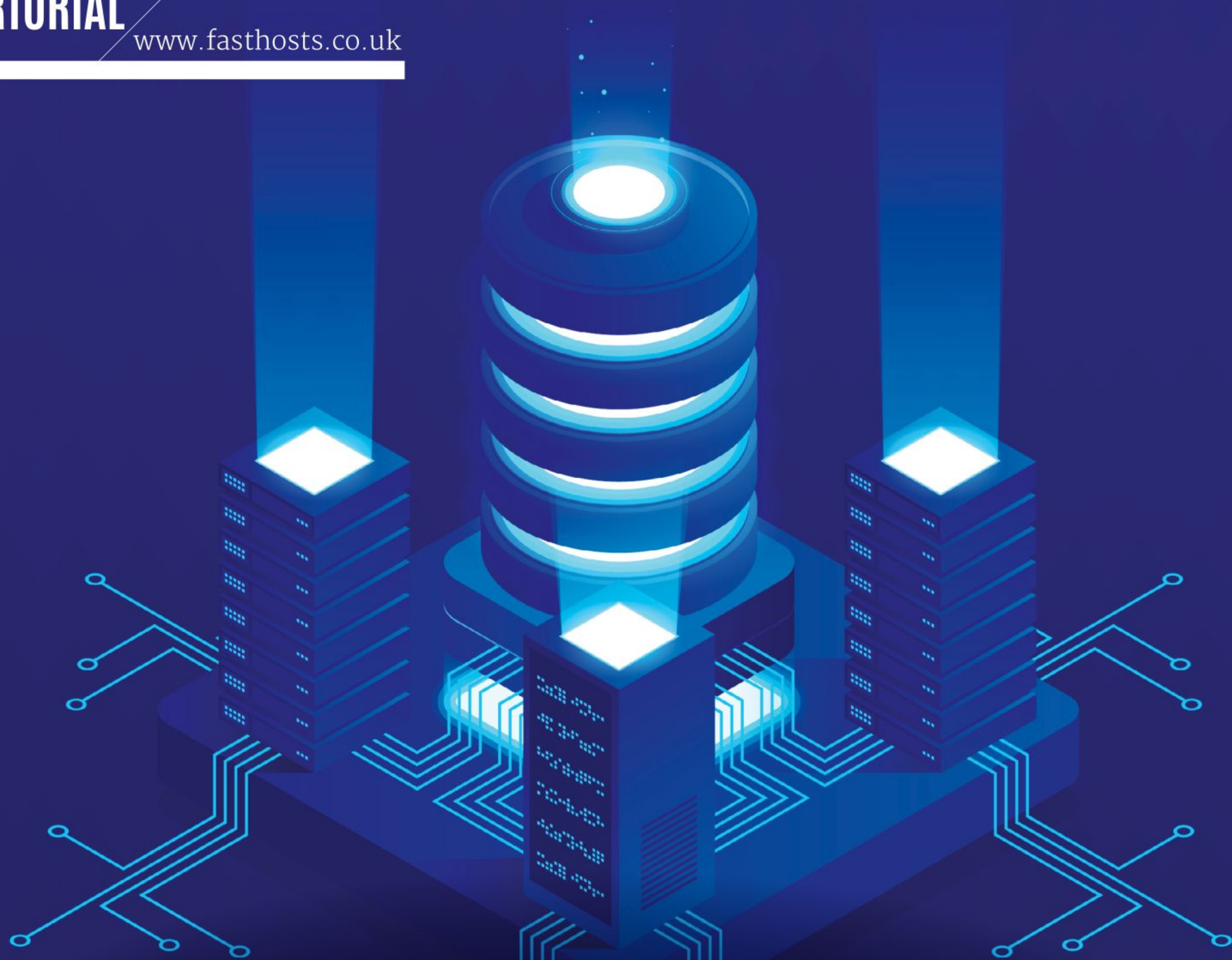

PROCESSING BIG DATA BY THE PETABYTE

In an increasingly interconnected world, where smartphones talk to doorbells and fridges have their own cameras, devices are collecting data like never before. But where is it all stored and how is it processed?

New smart technology and internet of things devices are constantly being developed. Whether it's automated thermostats or wearable technology, the collection, processing and analysis of large amounts of data help application and program developers provide internet of things services to consumers. This data comes in previously unimaginable quantities, hence the – perhaps understated – "big data".

For example, a smart thermostat application could be regularly collecting petabytes (nine zeroes) of data on temperature, humidity, time of day, etc. A smartwatch could collect similar amounts of data on things like heart rate, location, and distance travelled. A smart fridge takes photos of its own internal contents and sends them over the internet to be accessed by a user wondering if they've run out of milk.

All of these IoT devices are dependent on data – and lots of it. But storing masses of data and performing calculations and analysis on that data puts a serious drain on server I/O and so requires huge amounts of processing resources.

The most common solution to the recently emerged problem of storing and processing bulk-loads of data is Apache Hadoop. Hadoop combines

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Google's MapReduce algorithm with Hadoop's distributed file system (HDFS). By splitting data up into blocks that are distributed over multiple nodes in a cluster of machines, the processing of big data is made much more efficient. Instead of analysing one large block, Hadoop processes multiple, smaller ones in parallel. This speeds up processing times significantly.

Handling big data has a particularly unique set of server requirements. Heavy, resource-intensive processing requires the performance capabilities of physical hardware but choosing that route means you miss out on the scalability and flexibility offered by virtual servers.

With big data processing, the need for resources is short-term, inconsistent and relatively sporadic. There might be long periods without any need for computational or analytical processing, but as soon as the processing begins the server needs to be able to handle a huge demand on resources. Because of the importance of high-performance resources, the traditional choice for big data processing has been to run Hadoop on dedicated hardware. But this often results in over-provisioning – and inevitably, overpayment – of resources.

> "Bare metal servers offer a perfect middle-ground solution for the big data processing conundrum"

Bare metal servers offer a perfect middle-ground solution for the big data processing conundrum. By combining the best bits of both dedicated hardware and virtualised machines, bare metal servers provide a flexible and powerful big data processing solution.

Bare metal servers are designed to deal with significant but short-term processing needs. Data can be stored, processed or analysed on a server for as long as is necessary and then the server can be spun back down again. This way, resources are not over-provisioned and there's no need to continue running the server if it's no longer being used.

In a cloud server infrastructure, there could be dozens of virtual machines running on the same physical server, each with its own processing requirements and each contending for the same resources. However, bare metal servers are single-tenant and resources are dedicated to only one user. There's no resource contention or 'noisy neighbour syndrome' to worry about and performance will never be degraded because of the workload of VMs running on the same server – because there aren't any. The resources on each bare metal server are completely dedicated to one user.

Bare metal servers can also be used as part of a network of virtual machines, allowing full flexibility of server architecture. The hypervisor on virtual machines often leads to degraded performance because it is a drain on resources. However, there is no hypervisor layer on bare metal servers so this virtualisation overhead is eliminated with no sacrifice on performance.

A bare metal server is fundamentally a dedicated server, insofar as it offers high-performance resources that are dedicated to one user, but comes with the advantage of flexible, pay-as-you-use billing with no contracts.

The combination of powerful resources and flexible, no-contract billing make bare metal servers the perfect solution for big data processing, where resource demands are both temporary and yet extensive.

At Fasthosts we offer a range of Bare Metal Servers to suit all types of processing demands. For more information call us on 0808 1686 777 or visit the Fasthosts website: www.fasthosts.co.uk

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PROFILE

EVER & EVER

everandever.co

Meet an agency that's doing great things without the pressure and expense of being tied to an actual physical studio

Who really needs a studio? Ever & Ever has been in business since 2016 and its three partners have chosen to work remotely rather than sink money into an expensive London workspace – and it's an approach that's paying off. Agile, flexible and keen to face big challenges head-on, the company has tackled everything from straight web design to cryptocurrency and 3D-printed installations over the past couple of years. We spoke to the team to get the inside scoop.

Hi guys! Could you tell us a little bit about yourselves?
Simon Brown: Hey! I have a mixed background but mainly focus on technology. I have a law degree but have worked as a designer, front-end developer, UX designer and created strategy for agencies and startups. I've been mainly in London but have done a stint in New York and San Francisco. London is definitely my favourite place to live and work.
Luke Patton: I cover all things creative, making sure we push things conceptually and visually. I previously studied Visual Communications at AUB and whilst there I was awarded both a D&AD yellow pencil and student of the year. This led me to be inundated with job offers from some of the biggest agencies around the world; however I ▶

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INFO

Location: London, England

Designing since: 2016

Team size: 3 (plus our tight network of freelancers)

Expertise: Strategy, branding, digital development

Clients: Gap, Gymbox, The-Dots

Awards: D&AD yellow pencil, multiple Awwwards

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respectfully declined and opted for a smaller digital agency, one where I could learn the process of running an agency and take on more responsibility. Fast forward a few years and working for numerous agencies and startups, I'm now currently forging a path within the creative industry with Ever & Ever.
Maciej Kawalec: I make everything technical happen, build what the other guys conceptualise and keep all systems running. I started not in technology but in civil engineering. I've been programming since I was 15 so it seemed like the right time to join the tech industry. I think it turned out alright.

How did Ever & Ever come together?
LP: We met at a previous agency. We then all went our separate ways; freelancing or working for startups. After completing a range of projects and recognising that our skill sets complemented each other, we decided to combine forces to create Ever & Ever. Operating as an agency instead of freelancing gives us more flexibility on the kind of projects we take on – and it's always nice to have a team to rely on.

Can you tell us about what prompted the decision to work remotely rather than in a shared space?
SB: It was a natural progression from freelancing. Keeping agile is a core principle of our process; we like to adapt and change the way we work for almost every project we work on. It gives us the freedom we need to work from New York for an installation (as Maciej recently did) or place ourselves inside a company for a few weeks to streamline the design process (as Luke is right now for our client Cleo). There is a constant flow of communication between us digitally, not restricting us physically to a location.

What are the advantages to you all working remotely?
SB: In our industry the ability to adapt at the insane pace of technology is core to creating the challenging solutions we come up with. The process of working with a cryptocurrency startup, 3D printing an augmented model of New York or delivering a 200,000 user startup are vastly different.
MK: It's nice having the flexibility to adapt to different workflows and spaces. We think it creates insights and solutions that might not be discovered with a more traditional approach.
LP: There is also the financial benefit of not having an office. A physical space and more full-time staff come with a lot of expense and time spent on processes instead of creativity. It's something that we could accept one day but right now it doesn't feel right.

As a startup bank, Dimes didn't pay off for Ever & Ever but even though it didn't come to fruition, it still had plenty of benefits for the team

And the disadvantages?
SB: Having to constantly communicate digitally. Nothing can beat a five-minute catch up face-to-face to understand where a project is at and what people are working on. Writing out what you're doing constantly so the team is updated is a long process in itself. We accept this for now as most of this has to be done digitally anyway. We've worked in teams in offices and the process is very similar to ours.

What would you say is your USP?
LP: We'd say it's being able to apply ourselves to anything. With our diverse skill set we can execute almost anything a client wants. From physical interactive tech to complex back-end architecture.
SB: Clients like our no-nonsense approach. If we see an inefficiency or really don't believe the work we're doing is useful, then we'll say. This always seems refreshing.

When you built a site for Gymbox you wanted to do things differently. Can you tell us about the project?
LP: When people think of gym identities something clean comes to mind but everything kind of looks the same and is pretty boring. Gymbox (*gymbox.com*) isn't that kind of gym so we did not want to present them in that way. We were given the space to create something really visually exciting and on-trend. We took cues from the fashion and music industries to develop a direction that uses bold extended typography, off-grid layout and powerful images.
SB: It also led us to shooting our first film. Gymbox needed a visually impactful landing so we created a video, which is a great asset to cut up and use across the site and social. This was a great experience in itself and something we'll be doing more of. The result of the site is something we're incredibly proud of and it's already won an Awwward.

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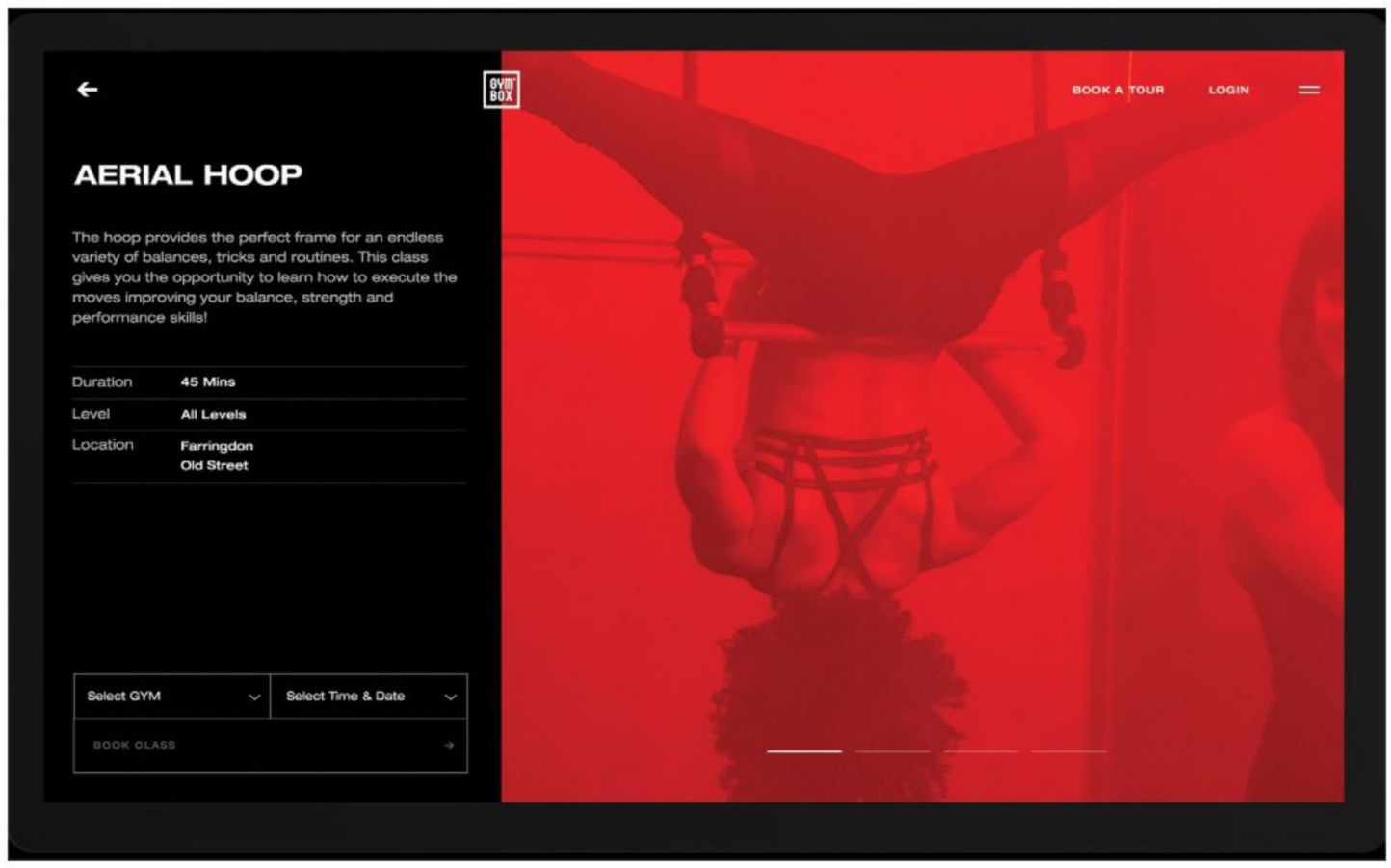

Ever & Ever were determined to go the extra mile in order to give Gymbox an online presence that isn't your run-of-the-mill gym site

Tell us about your adventures in 3D printing for Streamr (*streamr.com*)
SB: We were approached about creating an exhibition piece showing data movement around New York. We came up with the concept of 3D printing 32 blocks of Manhattan and placing a super bright outdoor display underneath it. This was something we had never seen or done before so it was quite a challenge. I learnt more about 3D printers than anyone should ever know over the space of a couple of weeks.
MK: In the end the result was really amazing. You were able to highlight buildings and roads and display any kind of data inputted into the model with a touch interface. Another challenge was lugging a near 200kg container full of delicate models to New York – something you don't expect to be doing as a digital agency.

You gave creative networking site The-Dots a complete and challenging overhaul; talk us through the process
LP: The-Dots (*the-dots.com*) was a creative's dream project: designing and developing a product that is used and viewed by a huge creative network. However this didn't come without its issues, from old and unusable data sets, feature bloating and a visual style that really didn't put the users' work at its forefront. But through planning, iteration and determination to make a great product, we were able to build a social network that doubled in users and was loved by many.
MK: Yes the technical challenge was immense. The whole back-end needed to be rewritten from scratch, taking a huge amount of old data and making something usable out of it. The end result is technically very impressive and still runs smoothly.

Not all projects pay off. Tell us about your banking service, Dimes
MK: Haha, yes, Dimes (*dimes.io*) was an interesting one. There's not enough time to talk about this fully but it consumed a lot of energy, took us from New York to SF and enabled us to be the first developers to work with the third largest cryptocurrency, Ripple. We created a marketing page, had 10,000 sign ups and had one of the most popular social presences of any startup bank. After having chats with some of the top VCs we never quite managed the funding.
SB: And yeah I totally understand why: I'm not sure I'd have given 24-year-old me £1m to start a bank. It's a shame it ▶

SPOTLIGHT

LUKE PATTON

What's on your desktop today?
Laptop, the book *Homo Deus*, Wacom tablet, Moleskine, pen and a few plants.

What do you have on the walls?
A signed print from Mlui, an LA monotype print designer.

What will you do for lunch?
Jerk chicken, rice and corn.

What hours do you work?
8am to 10pm – but I like to spread my hours in the day.

What else do you do in the office?
Well it's my home, so pretty much everything.

How often do you all hang out?
A few times a week, we climb, play squash and party together.

Describe your office culture in three words
Digital, creative, techy.

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TIMELINE

Key dates for Ever & Ever

FEBRUARY 2016

Maciej, Luke and Simon decide to create Ever & Ever

APRIL 2016

Ever & Ever lands its first large client; The-Dots network

JUNE 2016

All three founders move to central London

SEPTEMBER 2016

The-Dots is launched with great success

JANUARY 2017

Ever & Ever launches its own site – winning an Awwward

JULY 2017

The agency buys its first 3D printer

AUGUST 2017

Ever & Ever creates a fashion chat bot for Gap

FEBRUARY 2018

It 3D prints half of Manhattan

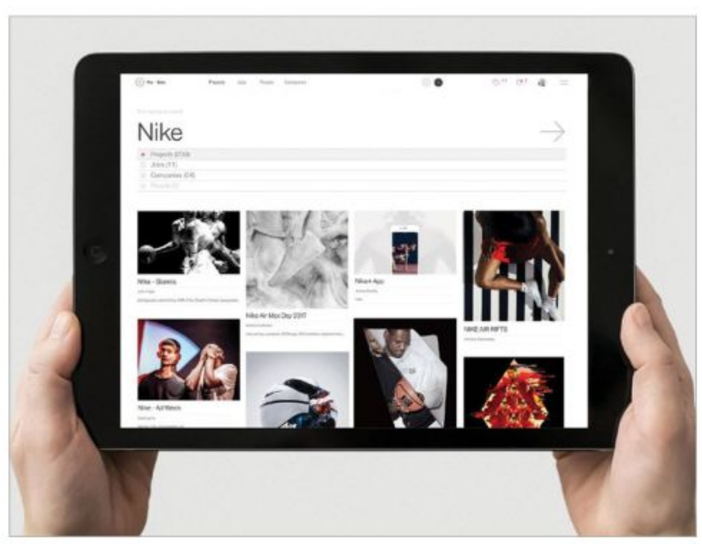
MARCH 2018

Ever & Ever shoots its first film for Gymbox

MAY 2018

Launch of the new Gymbox.com

To create this data-focused 3D installation for Streamr, Ever & Ever had to learn the intricacies of 3D printing... and fast



Creative networking site The-Dots was a dream project that came with a lot of technical challenges

never turned into anything and we made no money from it but this 'failure' still has an ongoing positive impact on Ever & Ever. More than half of our current clients have some kind of link to Dimes and want to work with us because of how impressive it was.

For Gap you built a Facebook Messenger chatbot. What sort of challenges were involved with this?

SB: Weirdly the hardest thing here was not actually building the bot; it was getting the client to effectively communicate the flows of the bot. We needed Gap to show us which collections and items needed to be surfaced by the bot, which in the end was an extremely complex spreadsheet. After this, creating the flows was relatively easy – just time consuming.

You've built your own CMS. Why did you choose this homegrown approach?

MK: We were really stuck between large, over-complex CMS solutions and underdeveloped experimental ones. We thought as a fun exercise we could try to build our own. Worst case it'd end up as a lesson in product development and best case we'd develop our own IP and end up with a SASS CMS. Luckily it's looking like the latter at the moment. It saves us and the client loads of development time as we know the CMS back to front. Let's see how it develops.

Are there any other tools that you couldn't do without?

LP: We all heavily rely on our laptops, that's for sure! Personally I can't live without the Adobe software, my Wacom tablet, camera, pen/pencil and Moleskine. So cliché I know.

SB: Trello. I think I use it to organise everything – even my free time.

MK: Kettle. Give me a constant flow of hot tea and I'll be the most productive guy on earth.

Do you think you would ever consider setting down roots and becoming a more traditional studio?

SB: The concept of being traditional is never something that has interested us. Having a physical space is something we've been talking about for a while. We're really into shared or 'maker spaces' where our wider network can come work with us or use our tools. Opening ourselves up to experiment with physical space – whether it is retail or even food – is a whole new area of interesting business opportunities. It'll be exciting moving forward and seeing what works.

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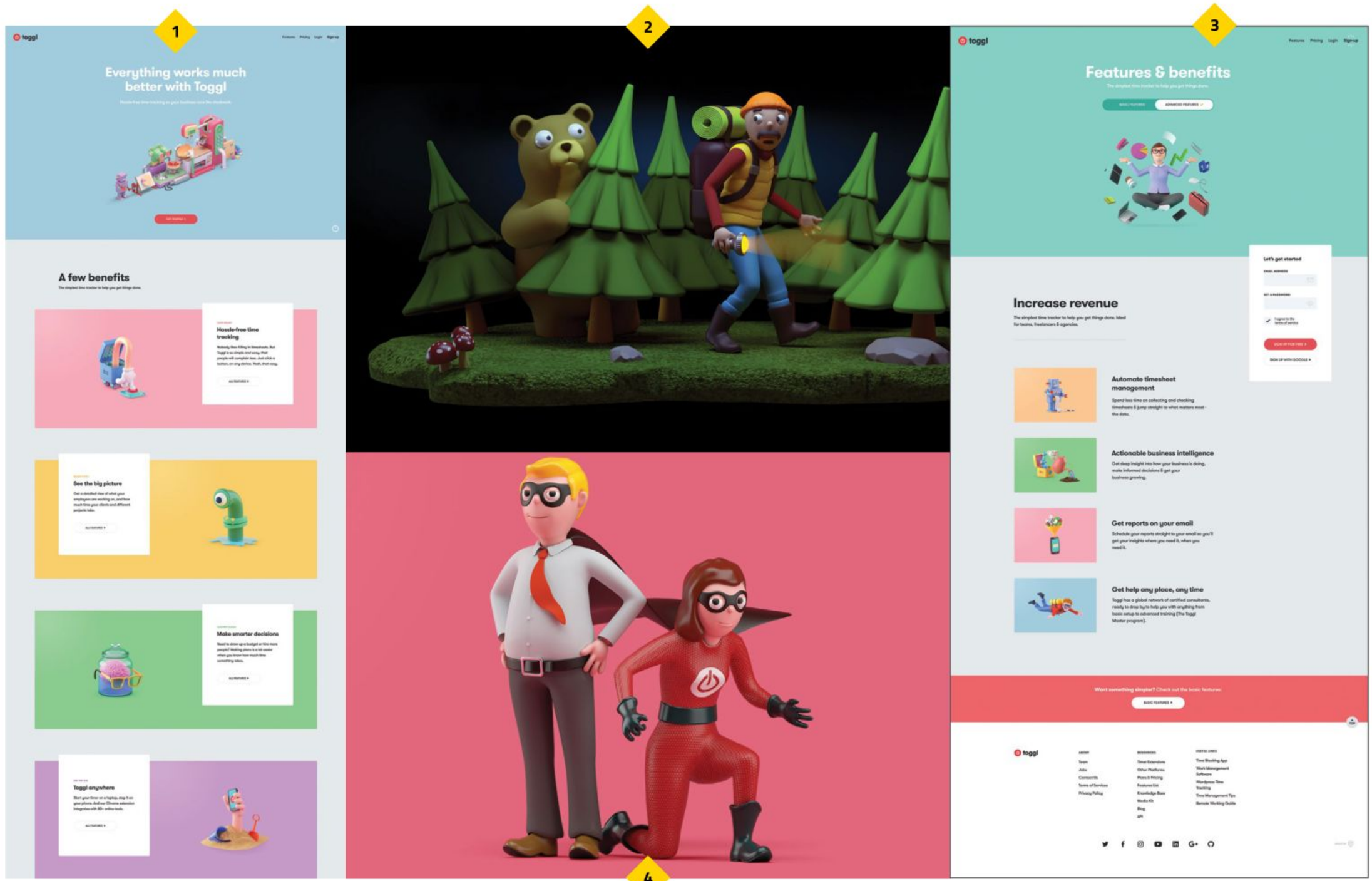
HOW WE BUILT

TOGGL

The ToyFight team reveal how they gave this time-tracking company a shiny new startup vibe in order to stand out from the crowd



BRIEF

Time-tracking experts, Toggl, needed a brand refresh and accompanying site to help the company stand out in an increasingly crowded market. Fun, friendly and engaging were to be the order of the day and ToyFight was brought in to deliver.

CLOSE UP

(1) Toggl needed a site that enabled it to stand out from other brands with similar offerings. The new site showcases the brand's online time tracking product with an experience that's packed full of bright, quirky content sprinkled with moments of fun along the way. **(2)** The site uses 3D to make it more interesting and fun, bringing more emotion and story to the experience, whilst also feeling a very unique and ownable element of the brand. **(3)** As well as looking great and adding a much-needed element of fun to the Toggl site, the 3D brand assets also really help with the flow of the site. They break up the larger pages of content and make it easier to access and a lot more memorable. (4) The characters really became the heroes of the brand. ToyFight created a menagerie of memorable 3D creations for Toggl, from pugs, robots and hot dogs through to actual superheroes, giving the new site a big helping of joyful visual impact.

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JONNY LANDER

Foul-mouthed, wisecracking, no-nonsense New York cop with an itchy trigger finger and a never-say-die maverick spirit.
t: *@johnnyLander*

LEIGH WHIPDAY

A tactless and inept TV and radio presenter who insults guests and whose ego drives him to treachery and shameless self-promotion..
t: *@LeighWhipday*

BRAD ARNETT

A floppy pull-string cowboy doll and the leader of the toys in Andy's room.
w:*untitledseven.co.uk*
t: *@UDSeven*

Just one look at its Web 2.0 name is enough to tell you that Toggl (*toggl.com*) has been around for a while. Formed in 2006, it provides tracking and reporting tools that enable companies of all sizes to help make the most efficient use of their time and maximise revenues. With a proliferation of competitors on the market, Toggl needed a modern makeover, so it brought in the fun-loving guys at ToyFight (*toyfight.co*) to provide fresh new branding and a bang up-to-date site. We caught up with the ToyFight team to find out more about the project.

Tell us a bit about Toggl
JL: Sure. Well, basically Toggl is a time-tracking tool that allows businesses, small and large, to track their time. They also provide powerful reporting tools so that companies can gain insights, develop and grow.
LW: They're also a super cool bunch of folks from around the globe, probably one of the most helpful and fun clients we've ever worked with.

Toggl's been going since 2006. What prompted the need for a new site?
JL: They simply needed to stand out amongst a bunch of me-too brands, all using the same imagery, tonality and that kind of 'startup' vibe. They wanted something new and exciting, ownable – very ownable.

What was the brief?
LW: Make us unique, make us something that you could look at and instantly know it's us. We need to be fun, friendly, engaging, thoughtful and did I mention fun?

How did ToyFight become involved? Was there a pitching process?
LW: Toggl contacted us directly and asked for us to take part in a pitch process, at first we were super slammed and reluctant to take on new work. But when we looked at what they were doing, it became really clear to us that this was a great opportunity.

Because we had never worked together previously they asked us to do some sample treatments and thoughts, just to see if we're all aligning and that we got the brief.

After we presented our work, which seemed to be really well received, they got back in touch with us and gave us the news that we had got the work.

Can you talk us through the site's main design features?
JL: One of the significant parts of the site is obviously the brand design work we did as part of the overall site creative and positioning. We absolutely loved putting all of those pieces together into one well-composed crafted finish.

The illustrations and animations seem very ToyFight. What was the story behind them?
LW: We like to have fun, and we love to find brands that have that sensibility too. That said we don't come across that many brave enough to do something that ▶

TIMELINE

Key dates in the Toggl project

31 MAY 2017
First email from the client asking if ToyFight would be interested in helping them with a new website.

29 JUNE 2017
ToyFight presented two concept design directions to the client on a Google Hangout.

3 JULY 2017
The client chose ToyFight as the agency to do the entire project and chose a design direction to push ahead with.

6 JULY 2017
Final contracts sent to the client, signed and sent back. Slack channel set up, team assembled.

7 JULY 2017
ToyFight reached out to third-party illustrators with a brief for what it was looking to achieve.

17 JULY 2017
Weekly design sprints begin, with checkins and presentations taking place on Hangouts.

9 OCTOBER 2017
Development begins, with weekly checkins with the client's internal development team.

24 NOVEMBER 2017
All development work and testing complete. Handover to the client for content population.

31 MARCH 2018
HUZZAH! The site goes live. ToyFight fills a wheelbarrow with all the cash it made and puts it on a nag.

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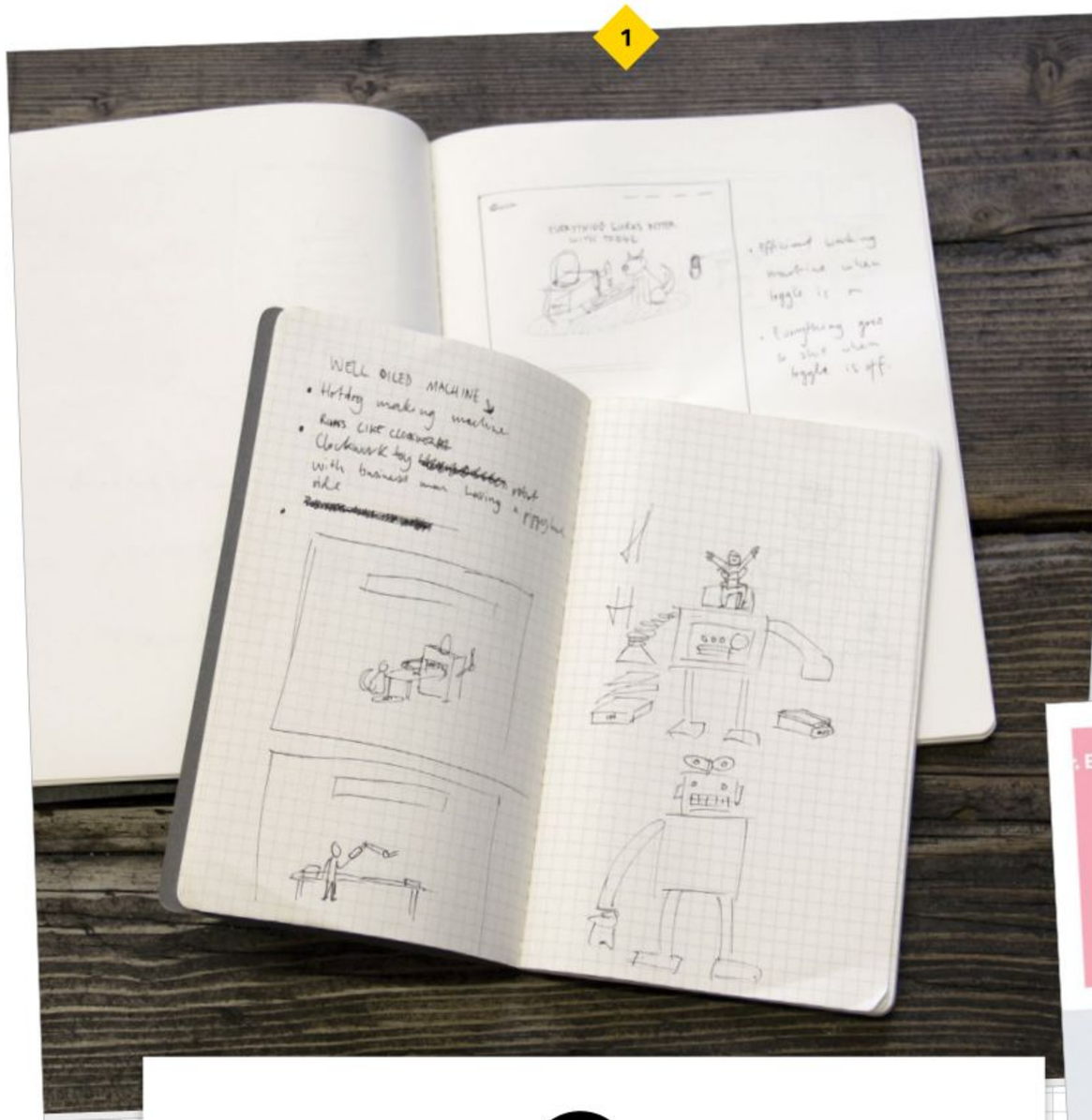
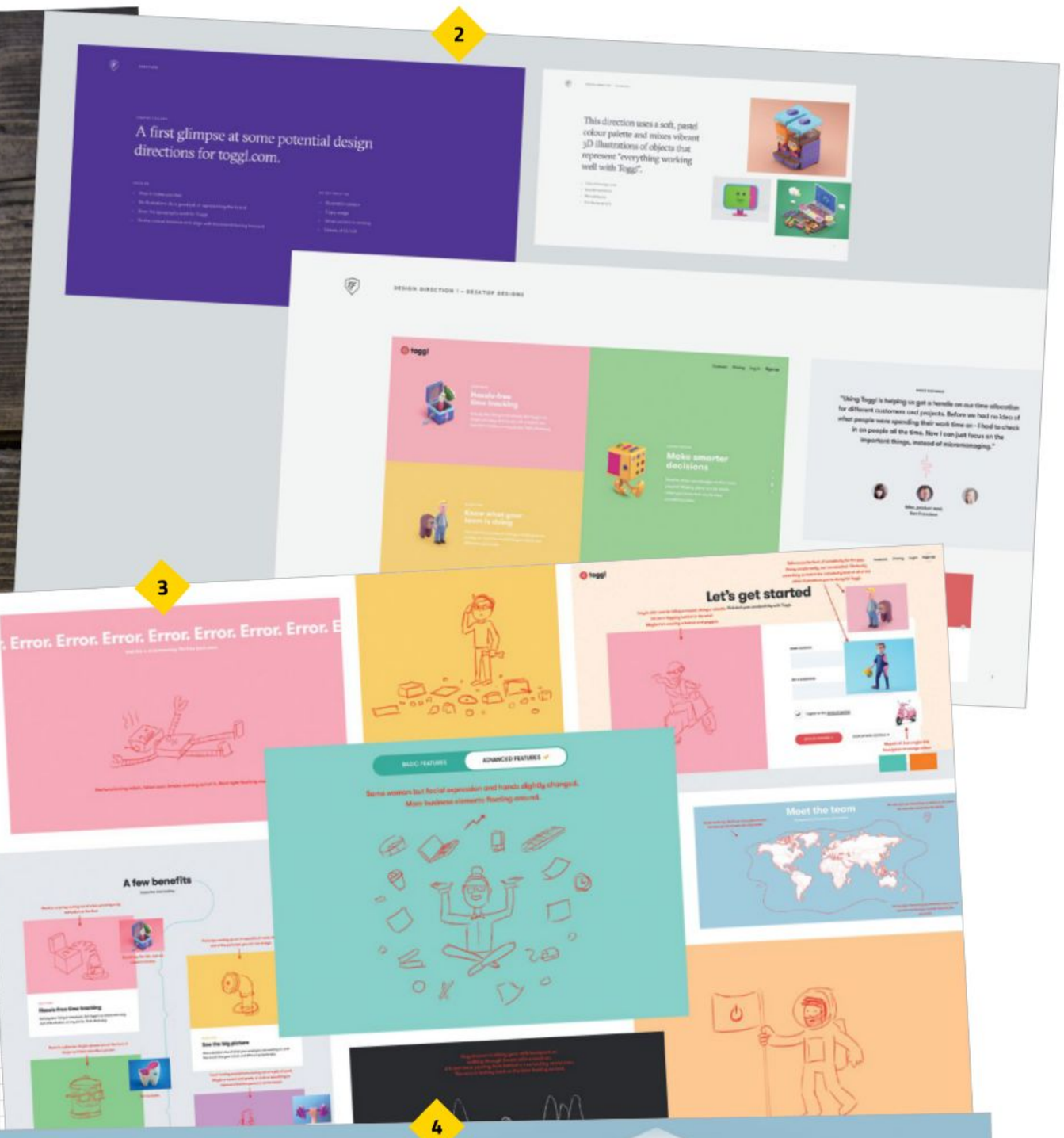
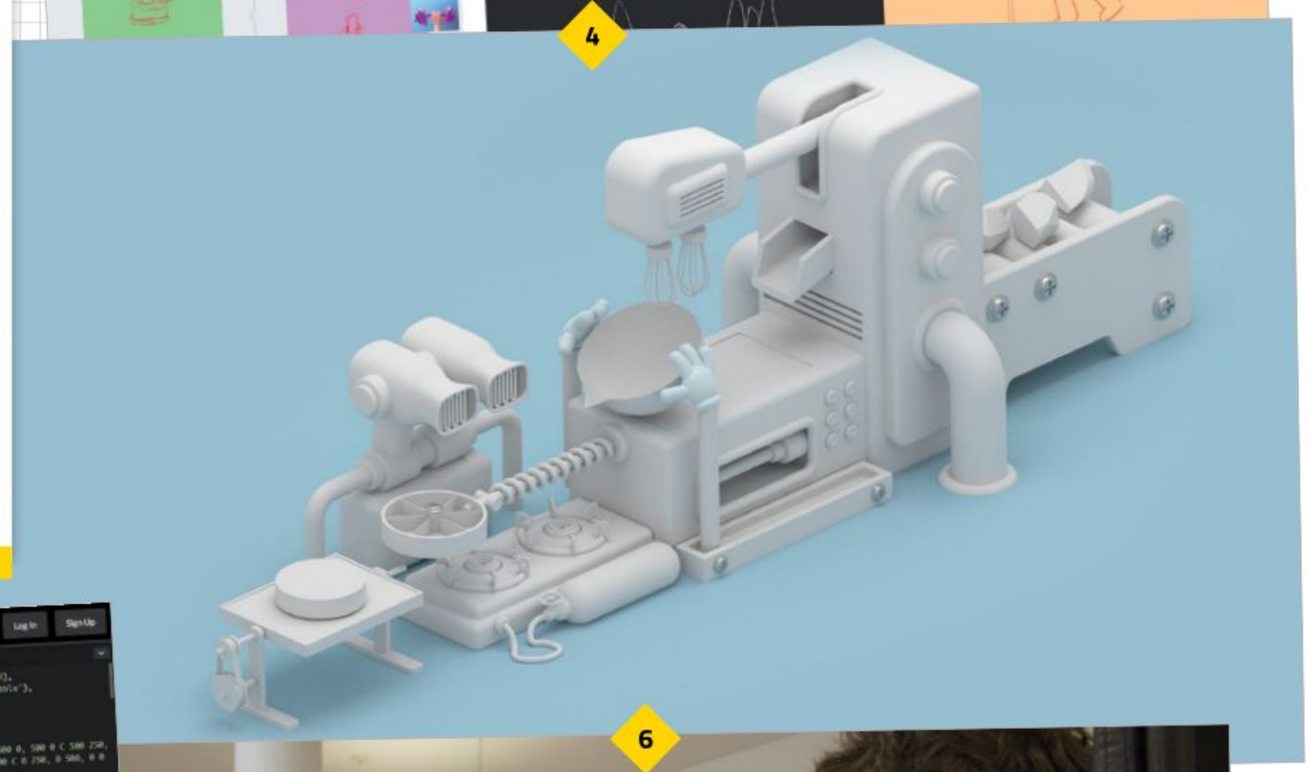
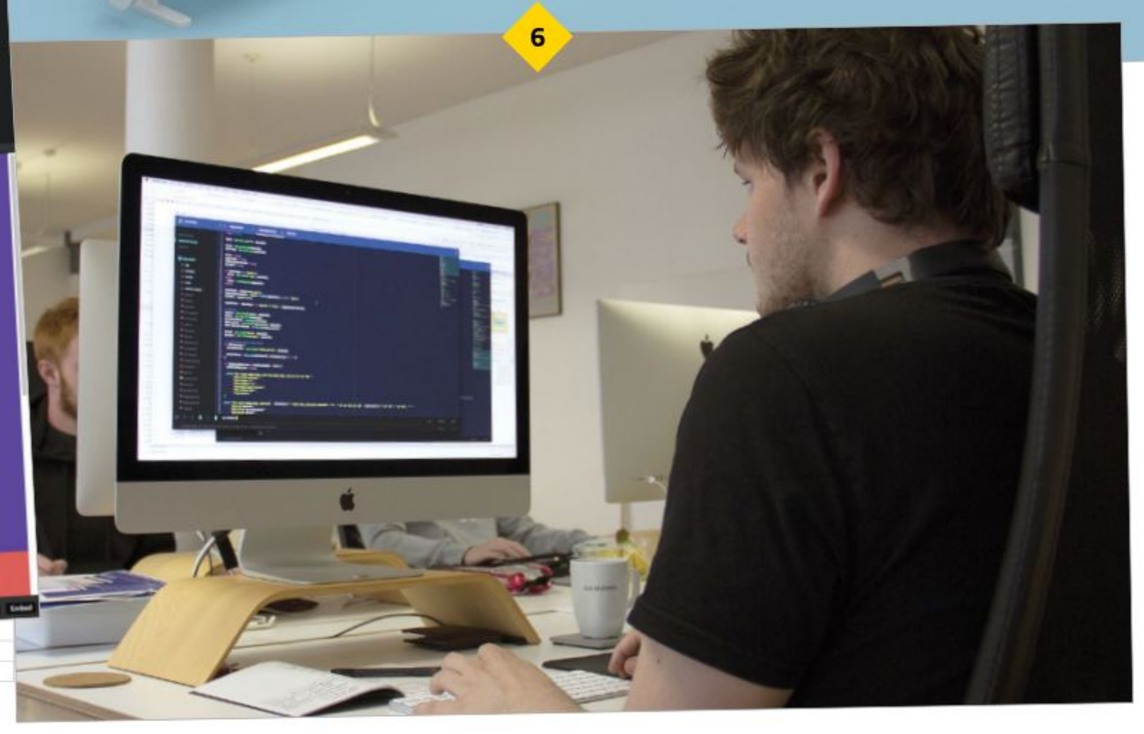






EVOLUTION

(1) Starting out with good old pen and paper sketches. **(2)** To help develop the creative approach for the brand we created a series of moodboards and written treatments, alongside initial concept designs that we presented to the client. **(3)** As well as the visual design phase, we briefed the illustrator for what we needed for each page by sketching over the designs and writing ideas out. **(4)** Early 3D models were sent to us for feedback, which we did with the client. **(5)** Quick prototypes were made for key features and interactions before we got into the full development phase. **(6)** Once the client signed off designs, the development phase began and worked in weekly sprints with regular client checkins.



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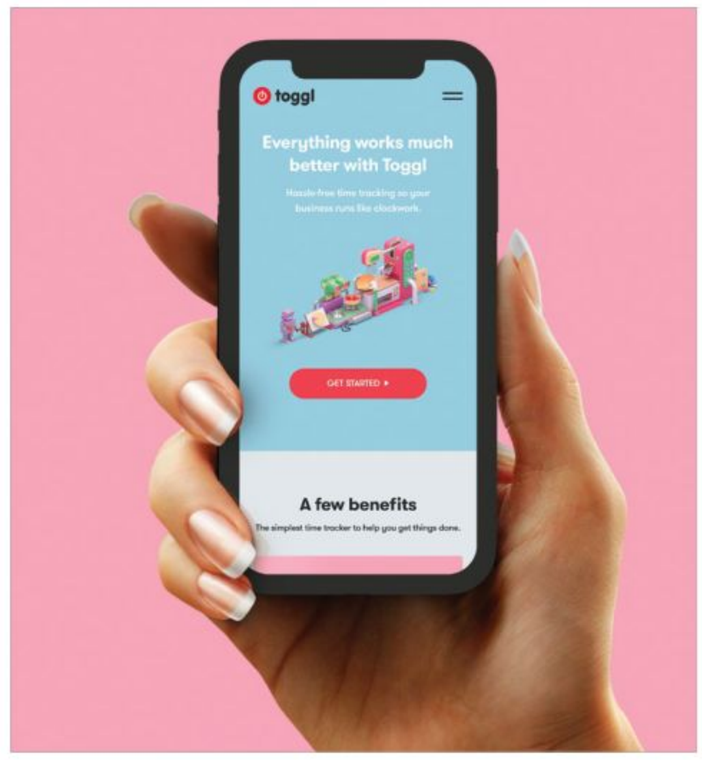
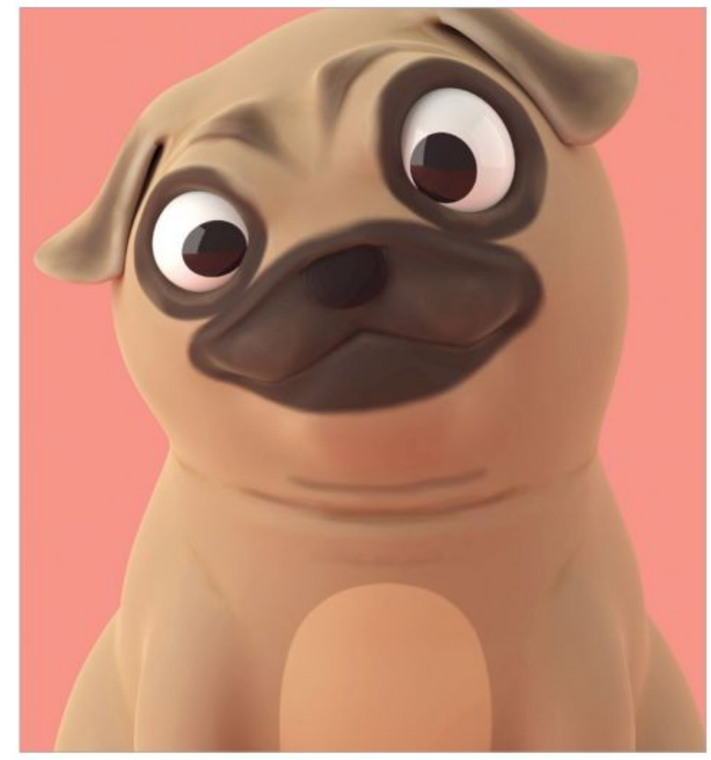
aligns with that. But we got super lucky I guess with Toggl; they fit our mentality very well.
JL: For the most part, we wanted to break up the market and show that software can be expressive. We tried to get a little more emotion and playfulness into the brand, so we went to a space that felt rich with this using machines and scenarios that could comically play out [all of] the product features.

There's a great elastic effect on the text boxes as they scroll into view. How did you make that?
BA: The elements wrapping the text also contain SVG paths within them. Each SVG path is offset on page load to appear slightly above its container. The points that define the top and bottom of the SVG path use curves, which are initially set to be straight. When the scroll point reaches an element, the SVG animates vertically into place, and at the same time the curve points animate to be offset (to create a drag effect), and then back to their original straightened position using a 'wobble' easing, creating a bouncing effect. The same effect was used to create the animating in-hero backgrounds on internal pages.

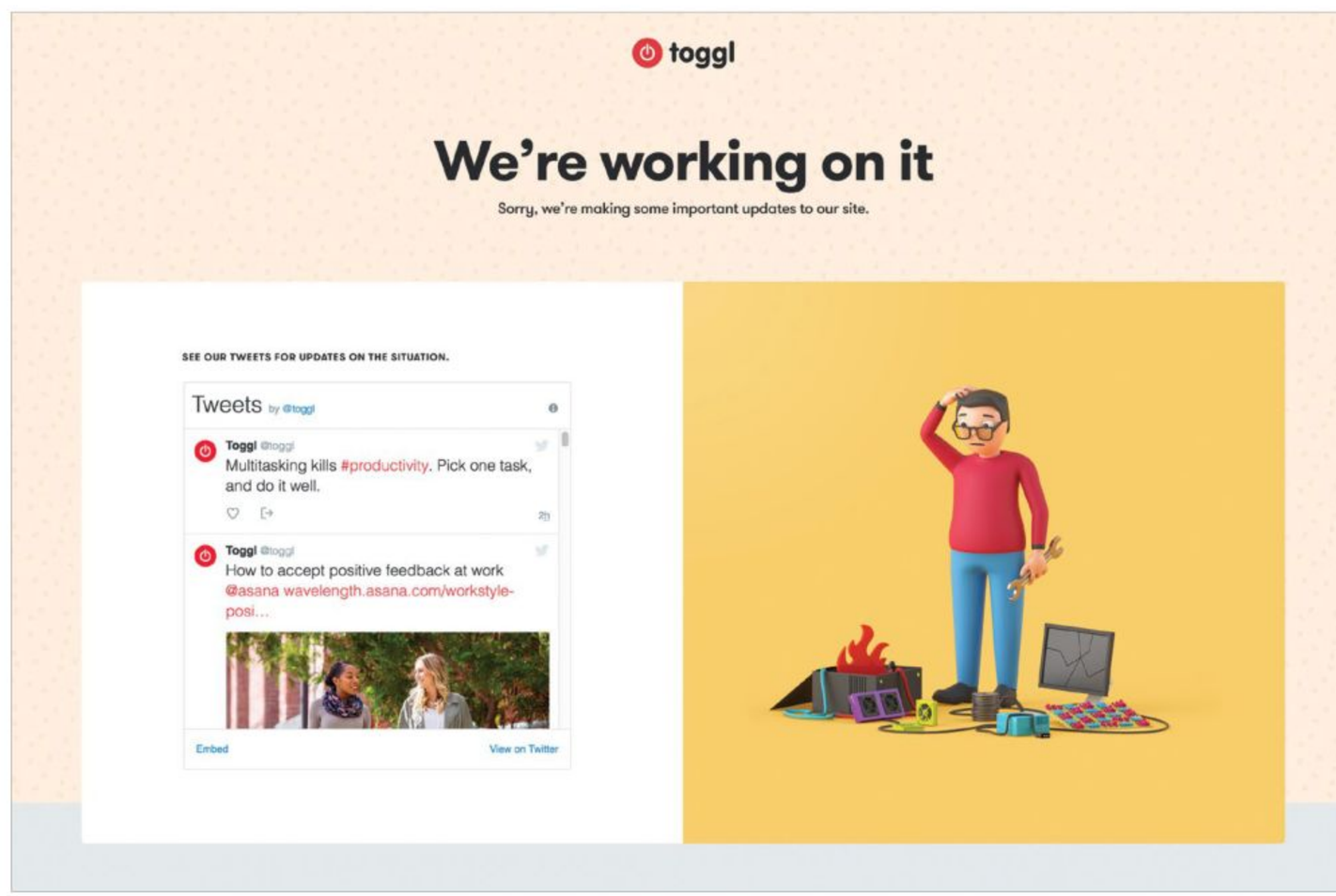
What technologies are running the site? Be technical!
BA: The front-end is built using HTML/Sass and a modular ES6 structure. The animations on the site use either SVG or videos. The templating is achieved using Handlebars and the static site templates themselves are generated using Metalsmith.



Different formats Representation of how the brand tackled mobile



Charming canine ToyFight wanted to create lovable characters for the brand; he's one of its favourites



Keep smiling Supportive illustrations were used for key features/areas of the product – but using humour to keep it memorable

What was the biggest challenge along the way?
LW: Getting it all done working with remote teams and also making sure everything worked well, from the design, the front-end, and all those tricky integration bits.
BA: Probably ensuring a high level of consistency across such a large site while also ensuring that templates could be adapted to fit content where necessary. Some templates needed to work with some sections missing, depending on content provided to the site generator, and some sections needed to be reusable across multiple templates. However, using the highly modular Sass/JS approach that is utilised on Toggl made this a manageable task.

Talk us through your testing process. Did it throw up any major issues?
LW: We did a bunch of internal testing on the front-end, browser testing and design tweaks; Toggl took care of a lot of the back-end system stuff. So it worked really well.

How has the site been received?
LW: I mean really well, the client loves it, their consumers too, and we've had a lot of work requests because of it. Plus, we've already managed to win a few awards (YAY).

Couldn't really ask for anything more. Been an enjoyable thing to do – and how many of us get to say that nowadays?

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THE MONEY ISSUE

10 WEB SKILLS THAT PAY

Want to boost your income? If you can expand your skill set then you can make a solid start on building up your salary. Here are 10 ways to become a more attractive prospect for employers and clients

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JavaScript

There are lots of JavaScript jobs out there but the bar is remarkably low. Take the time to become better than the herd and you can quickly start commanding serious money

This might seem like a glaringly obvious place to start but we're kicking off with JavaScript for a good reason: decent JavaScript developers are in surprisingly short supply. If you can demonstrate an in-depth knowledge of vanilla JavaScript then you're immediately on a firm footing to find well-paying work. If you add some of the more popular frameworks to your armoury then you can start earning some serious money.

James Huckle, head of technology at Mirum UK (*www.mirumagency.com*), suggests that you can get a long way on just React; however if React is all you know it's really going to limit your usefulness to an employer. "Someone who comes in and can only do React isn't a lot of good because if something goes wrong you've got to have someone with the skills to find out where the defect's coming in," he tells us. And that's where fully-fledged JavaScript developers can really make their mark.

If you set your mind to it, adding JavaScript to your skill set needn't take long. "One of our developers came straight off one of these 12-week boot camps and she's turned out amazing," says Jonathan Bradford from Kota (*www.kotacreative.co.uk*). "There are great courses that you can do for next to nothing and if you get that on your CV then my eyes are going to light up because at the moment I'm dealing with people who only have limited knowledge of HTML, CSS and jQuery."

From a hiring perspective, we are finding it really hard to get JavaScript developers. Entry-level JavaScript devs can get their first job for £35k only knowing basic JS

Jonathan Bradford, Kota

Pump up your pay

Nail the basics
Knowing base JavaScript inside-out makes you a valuable coder and also a go-to problem-solver.

Add React
Everyone we spoke to rates React as an essential framework; Angular will also see you in good stead.

Explore the new frameworks
JavaScript moves fast and an eye for new frameworks will put you in demand.

Project management

Feeling agile? Step your career up a gear, take on some project management responsibility and start reaping the financial rewards (but don't worry about Prince2)

Sometimes you're going to have to step up if you want to maximise your earning potential and if you want more money and new challenges, a move into project management can give you both. Nowadays it's near-impossible to avoid project-management methodologies and it's about a lot more than simply shipping products on time and on budget – agile methodologies can shape the way a project progresses.

"You definitely need a smart techie in the room able to organise the work, the crossover between the technical build team and the delivery management team," says James Huckle. "It's about understanding process, how creative crosses over into technology and experience of what those overlaps are, understanding how edge cases occur and how mistakes get made."

"Companies know they need to shift cultures towards being lean, with small multi-disciplinary teams working at a faster rate," adds Kate Taylor client services director at Zone (*zonedigital.com*). "So agile project management is something where we're competing with more people and starting to see a better quality in the market than the last few years."

> "If you work in an agile way and test and learn as you go, you can realise that a consumer might be using something a bit differently and pivot the focus in the direction that's working"
>
> Kate Taylor, Zone

Pump up your pay

Get accredited
Agile or Scrum accreditation is valuable; Prince2 is a little too prescriptive for web work.

Work on soft skills
We mention soft skills elsewhere; apply them here and you'll find projects flow more smoothly.

Know your tools
Having the right tools is vital; here's a rundown of what's hot in 2018: *https://netm.ag/2KeTEfz*

UX design

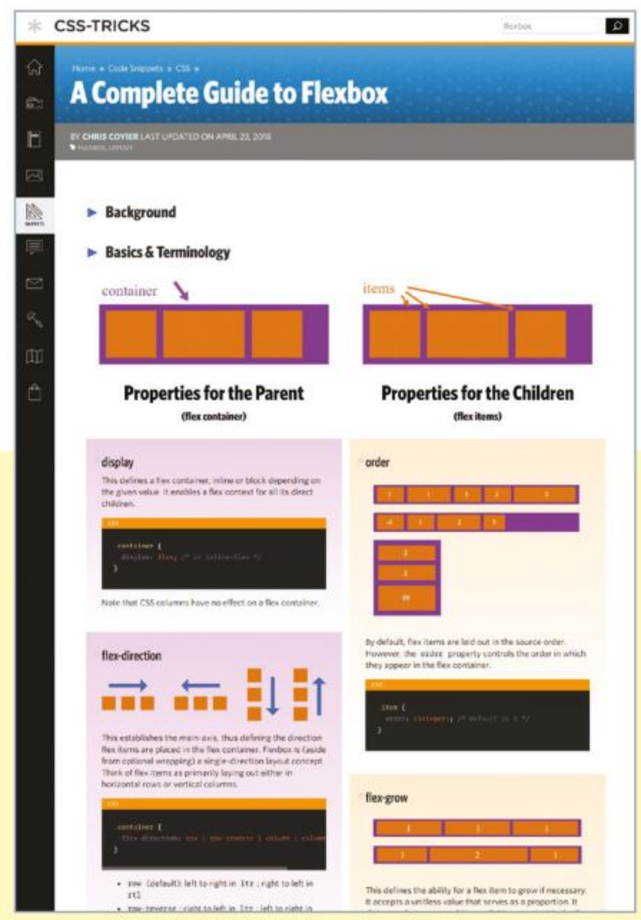
Top tips

Make UX your business: Even if UX isn't your job you can contribute to the process and stand out to employers.
Think beyond design and development: Jobs such as UX consultant, strategist or researcher can bring in big money.
Ditch the jargon: Jargon is never helpful, especially in UX where clarity is the aim. Explain your work in everyday language.
Think like a user: Users never use your products the way you envisaged; know your audience and discover the best user journeys.

Even if you're not a designer, the demand for excellent user experience means that you can benefit from the booming UX market by picking up some design know-how

"UX is definitely hardest to hire in at the moment," says Zone's Kate Taylor. "The market is so buoyant, it's really tough to get people and UX designers can command a high day rate as freelancers."

Which is all well and good if you're a UX designer, obviously, but even if you're not, the need for good design means that, whatever your job, if you can bring some design sensibilities to the table then you're increasing your value. After all, these days design is everyone's business. "There are a lot of creative thinkers in all of the other disciplines who are experienced in working alongside clients and who know what good looks like," says Taylor. "The whole obsession we're seeing at the moment with just wanting a UX designer is short-sighted. The market's struggling to deliver enough people and a lot of those skills really do exist elsewhere, so you just have to be a lot more open-minded about how you approach those conversations and how you get to a solution."



Flexbox & CSS Grid layouts

Flexible layouts can seem intimidating to some designers; take the time to crack the code and you're set to supply a much in-demand service to clients

The very nature of the web means that new techniques and technologies are evolving all the time. If you're down with the latest cutting-edge tools then you can be sure that your skills will be in demand – and along with that will come decent remuneration.

Right now, the smart money is on flexible layouts and grid-based systems; over the past year they've been fully adopted by the major browsers and the benefits of using them are instantly obvious to anyone who appreciates great-looking responsive layouts. So if you're prepared to invest time in figuring out how they work, you'll be adding a vital skill to your CV.

Should you go with Flexbox or CSS Grid Layout? Almost certainly both: Flexbox is built for layouts in a single dimension, while CSS Grid works with two-dimensional layouts and is therefore much better suited to dealing with more complex designs. With both systems under your belt you'll be able to provide clients with beautiful and sophisticated layouts, whatever their requirements may be.

Resources

- A good place to begin is our in-depth guide to getting started with CSS Grid in this very magazine. *Turn to page 76*
- Need a handy visual guide to what you can do with Flexbox? Chris Coyier's here to help: *https://css-tricks.com/snippets/css/a-guide-to-flexbox/*
- How does CSS Grid fit together with existing CSS techniques? Find out with this in-depth developer guide: *https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Grid_Layout/Relationship_of_Grid_Layout*

WordPress

Why make life hard? With a bit of entrepreneurial nous and some solid WordPress skills, you can build a thriving business

Top tips

Learn from existing themes: The best way to get started with WordPress is to tear down existing themes and make your own.
Roll your own plugins: A good plugin can provide extra income; target a specific need and build a solution.
Be bold: An in-house WordPress job will net you around £35,000; however you can bring in a lot more money if you go out and find your own business.
Consult: If you have great WordPress skills you can always find customers who need bespoke designs or a bit of teaching.

It's easy to overlook WordPress if you're a serious web developer but as a platform it's immensely popular, running 30 per cent of the web from the personal blogs that helped it make its mark, through to heavyweight news and corporate sites. And its benefits for agencies with an eye on the bottom line should be obvious: with an immense library of plugins and themes, WordPress makes it much easier to get a full-featured site up and running fast, as Kota's Jonathan Bradford attests.

"Learning WordPress doubled my salary when I was at an agency and I now own a WordPress agency," he tells us. "I used to approach small businesses and charge just under £1,000-£2,000 for a website with SEO. I could build this from a theme in a weekend."

As Kota has grown, its relationship with WordPress has become more sophisticated, moving from themes to bespoke JavaScript. "The way WordPress is moving forwards now," says Bradford, "that's all going to be using headless JavaScript on the front end and really separating WordPress on the back end."

Testing

No one likes testing and that's why if you're prepared to incorporate QA process into your workflow, you'll be well on the way to becoming employee of the month

"Developers don't really see QA as part of their job," says Mirum's James Huckle, and this can be a big problem when it comes to delivering working sites on time. "The definition of 'done' is one of the biggest challenges I have with midweight/junior developers," he continues. "Done is not when you say you've done the feature; done is when you've done it, you've tested it, someone else has tested it and the test has passed."

And it's an awareness of the need for testing that makes you more valuable as an individual. "A good developer should know how to write unit tests in their code, so they can at least test their own code is working as per design," he tells us. "I'd expect developers to be able to write functional tests and I'd expect them to understand that it's their responsibility to work with QA to make sure whatever they develop gets into production in a way that is defined as done."

Resources

- Keep up to date with the latest testing news and insights over at Google's Testing Blog: *https://testing.googleblog.com/*
- James Marcus Bach is the creator of Rapid Software Testing methodology and his blog is a gold mine for no-nonsense testing talk: *http://www.satisfice.com/blog/*
- For all manner of discussion around testing topics, subscribe to the Tester's Digest newsletter or simply dig through its archives: *http://testersdigest.mehras.net/archive/*

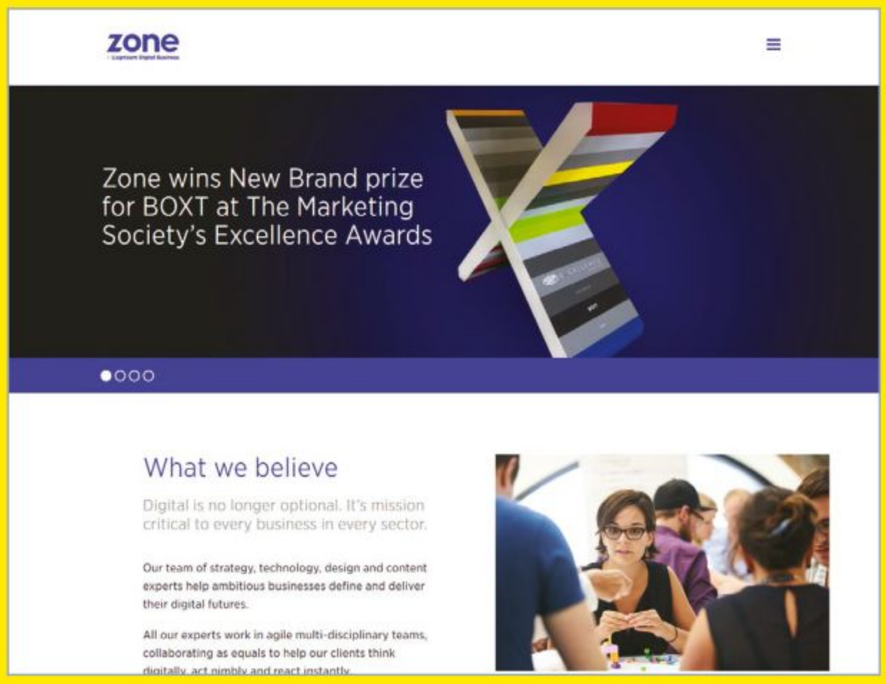
Soft skills

You might be happiest with an editor, a browser and some peace and quiet but push yourself, build on your people skills and you can go a long way

Tech and design skills are all well and good but, like it or not, for a web business to succeed it needs people who can grease the wheels. The skills we're talking about here are generally referred to as 'soft skills' – the ability to communicate with teams, talk to clients or customers and ensure that projects get delivered on time.

"I really hate the name 'soft skills' as it downplays the benefits," shares Zone's Kate Taylor. However, even if the name makes it sound a bit fluffy and probably not your problem, the fact is that if you can master the soft skills, you'll become a much more attractive prospect for employers and you'll see many more opportunities to expand your career in different directions.

Kate Taylor continues: "We're seeing a much greater requirement for the soft skills that you'd find in client services for candidates across the board." She points out that from a tech and project management perspective, these disciplines are becoming a lot more client-facing, particularly now that agile practices mean that client teams are being injected into projects. When you find yourself working shoulder-to-shoulder with the people paying the bills, an old-fashioned coder mindset won't get you far; agencies need people who can build relationships, read the politics and who are strategically minded enough to spot opportunities and bring them to the agency.



> **People get so set on learning the next big thing but don't realise that unless you can work in a team and communicate and understand your clients' needs you're on a hiding to nothing**
>
> Sush Kelly

Resources

- What are the soft skills you should be working on? Here are nine that every web developer should master: *www.netguru.co/blog/9-soft-skills-every-web-developer-should-master*
- Together London's Jonathan Kahn outlines the people skills that web workers need to learn over at A List Apart: *https://alistapart.com/article/people-skills-for-web-workers*
- Keep the heist running – or rather help move projects along – by becoming a better facilitator; Brian Frank explains all: *www.smashingmagazine.com/2017/01/becoming-better-facilitator/*

Facebook

If you want to win big from SEO then forget about Google; everyone's on Facebook and they're practically queuing up to give your clients their money, so go get 'em!

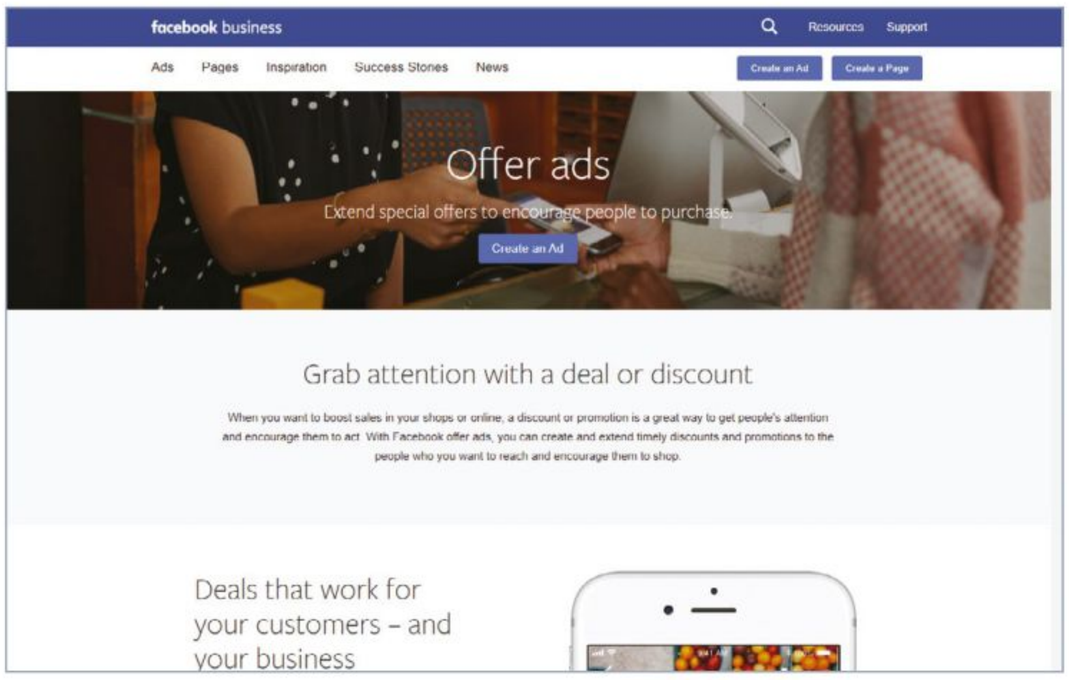
When you're all about the code or the design, demands such as marketing and SEO can feel like a bit of an unwelcome distraction. If you want to earn more money, though, they're a sure-fire way of boosting your income and the best place to take advantage of that right now is Facebook.

Pump up your pay

It's all about the offers: If you can put a tangible benefit, like a special offer, in front of users, they're much more likely to grab it.

Target as finely as you can: Facebook ads give you a lot more scope for reaching the relevant audience for local businesses.

Keep up with the algorithms: Facebook is a lot more open about its rules than Google; make the most of this and keep ahead of the game.



For Jonathan Bradford of Kota, SEO and marketing were his route to escape from an agency job and set up his own studio. And while mastering Google's mysterious SEO algorithms is an obvious solution, Kota has found that Facebook ads represent a much better way to make money. He explains how he set up Facebook ads for Brazilian restaurant chain Presto's new outlet: "We put out an offer via Facebook ads that targeted a mile radius around Chelmsford and we got thousands and thousands of downloads from this advert."

Facebook ads are easier to target than Google ads and Facebook's new commitment to transparency is making things even easier. "Soon you'll be able to see competitor ads and you'll be able to see the likes, tags and engagement," says Bradford. "For someone to add that to their skill set if they're working on the digital marketing side, once they've done a few they've got it on their portfolio and they can show you the result."

Side projects

Raise your profile and boost your desirability to employers by ensuring that you always have some side projects on the go

Top tips

Always have a side project: Whatever it is, simply being creative outside of the day job is an appealing trait to have.

Get involved with meetups: They're a great way to discover new contacts and collaborators, pick up tips and have fun.

Share your knowledge: People are always keen to learn from professionals; give a talk or simply maintain a blog.

Show your work: Done is better than perfect; if you've created something, show it off even if you're not entirely happy with it.

It's all too easy to focus on the day job but if you want a competitive edge in the jobs market, then a strong portfolio of side projects can really help you stand out. "The people with more value are the people with more skills, more crossover and more collaboration," explains James Huckle. Basically, if you have a lot of skills across the board under your belt then you're a lot more useful – and you can command a bigger salary as a result.

Of course, it depends on the side project. Your fledgling webcomic might have some social traction but it probably isn't going to give you much leverage in your pay negotiations. Rather, think

about something like speaking at conferences – whether it's a big-ticket event or a local meetup. If you can do conference talks or even a bit of teaching, this demonstrates that you know your stuff and you have the confidence and communication skills to share your knowledge – a quality that's irresistible to employers.

> If you're full stack you understand how design works, you understand how processes fit together and you're definitely a person who's valuable to me
>
> James Huckle, Mirum

Full-stack development

If you're full stack then you're the person everyone expects to have all the answers... and the rewards can be immense

10

Finally, the big one. The web industry is awash with specialists but to hold it all together there's always demand for multitalented full-stack developers.

In theory, if you're a full-stack developer you're at home at the front or back end. Realistically, though, you're more likely to be focused on one and this can make a big difference to how much you'll earn. Back-end work, with its requirements for heavyweight languages and systems that provide foundations for any site, is more valuable to employers, while the slightly less demanding front-end aspects, while still a vital link in the chain, don't attract the same high rates.

Full stack isn't something you drift into; it requires a particular mindset. Kate Ganiukova at Hacker Noon describes the traits as an analytical mind, patience, love for learning, attention to detail, creative vision and discipline (*https://netm.ag/2tt43cK*), and you'll need all of those to master the full set of skills – and to carry on learning fresh ones.

If that's beyond you, it still pays to apply full-stack thinking in your work. As Jonathan Bradford points out: "The kind of developer we would like is someone who has a core mindset, is clever and, if they have a problem with code, by the next morning they'll have figured it out." n

Pump up your pay

Carry on learning: If you're full stack you never stop learning; the more skills you can master to put under your belt, the better.

Sell your seniority: Confident about your abilities? If you can call yourself a senior full stack you can add at least £5,000 to your salary.

Focus on the back end: Front end might get the glory but if you can ensure the fundamentals of a site work perfectly, you're golden.

5 more skills that are good to have

Mentoring

When at the top of your game, it can be frustrating to work with junior colleagues who make all the mistakes you used to make. Rather than get annoyed, get into mentoring and help them on their way; it's win-win for everyone and the time you spend mentoring will show you in a good light when grabbing a senior position.

Events

Organising events isn't for the faint-hearted – booking venues and speakers, drumming up publicity and ensuring guests have a great time is a lot of work. If you're prepared to put in the time and effort, however, you'll not only raise your profile, you'll also catch the attention of employers in need of staff that can set up events for them.

Languages

If you can speak another language then not only can you deal with foreign clients, you can also up sticks and go where the bigger wages are. According to Balderton Capital's (*www.balderton.com*) European Talent Report, the UK is lagging fourth in developer pay; head to Denmark, Norway or Switzerland if you want to maximise your income.

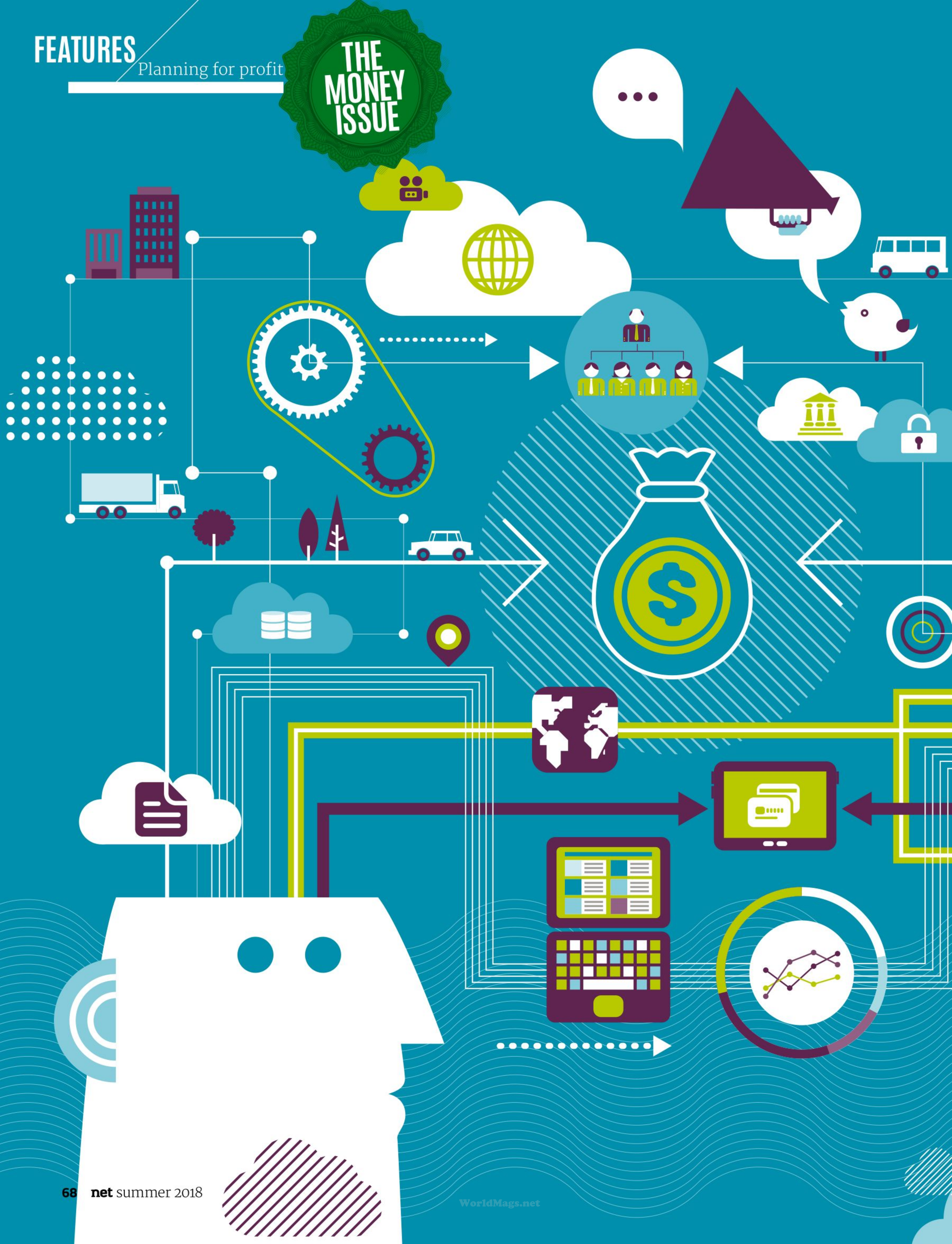
Willingness to learn

"You'd be surprised at how much of a one person, one job attitude we get these days," says James Huckle. It's easy to get stuck in a silo mentality. But if you're willing to learn fresh skills and deal with stuff that isn't strictly your problem, you'll become a valuable employee and your career might head in new directions.

Know what good looks like

If you have an eye for quality and you're willing to fight for it, employers want to know. "We're looking for people who can come in with the credibility and expertise to know what good looks like and who are assertive enough to poke holes in solutions, say they don't agree and bring their opinions to the table," says Zone's Kate Taylor.

THE MONEY ISSUE



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PLANNING FOR PROFIT

Leon Brown provides a no-nonsense perspective for growing a digital creative business that can embrace emerging economic changes, trends and opportunities for better profitability

For the most part, successful businesses emerge as an outcome of a thoroughly planned and well-executed strategy. While luck may be a small factor, success is always primarily 'engineered' through successfully defining and following a path that embraces profitable opportunities. The question isn't about who or why people are successful but how can success be crafted?

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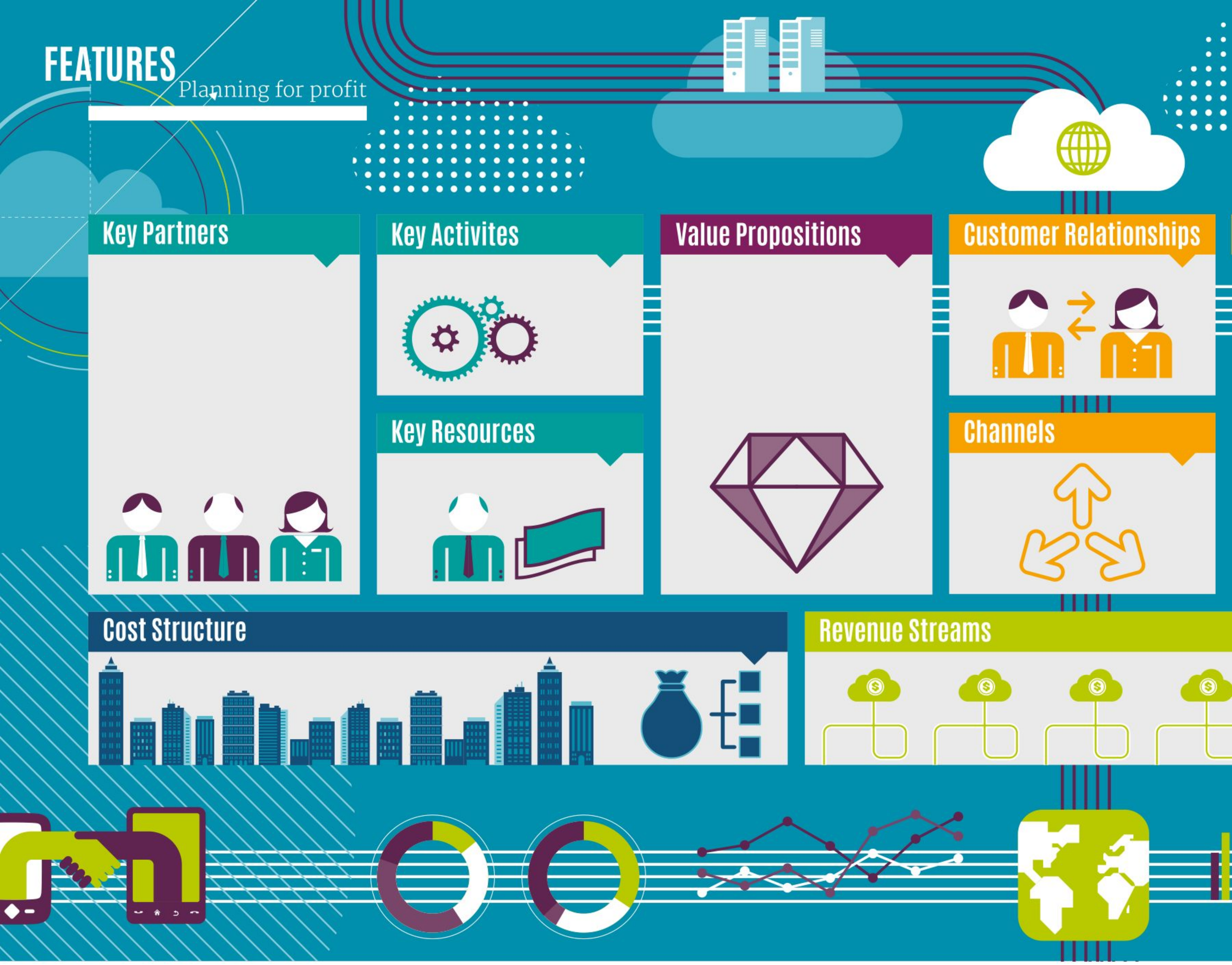

What is success?

Success can be defined by many factors but, from a strictly business perspective, it's all about the money. Making profit is the name of the game – or at least breaking even. If the primary objective isn't making a profit, it's not a business. At best it's a social enterprise or charity; at worst it's merely a hobby.

Creatives are often guilty of wanting to use their passion to run a business but actually treating it as a hobby. It probably doesn't help that many, if not most, academic courses in computing and design don't teach how to apply technical theory to real business situations. Growing your business requires you to sidestep any technical rules that are in contrast to the needs of the business. That is, all technical implementation needs to be executed with a focus on being profitable – even at the expense of breaking technical principles if required.

> "Creatives are often guilty of wanting to use their passion to run a business but actually treating it as a hobby"

Growth options

All options for growing a business can be boiled down to three areas:

- Sell more of what you already do.
- Charge more for what you already do.
- Sell things you don't already sell.

Each of these options has clear benefits that are applicable to different situations and ambitions. For people who are happy with how their business already operates, the answer is simple; sell more or charge more. The answer to which of these is most suitable is defined by two factors: the characteristics of customers and delivery processes.

There's no law to stop a business from charging millions of pounds per hour for their services. Just two factors stop this from happening – the willingness and ability of customers to pay the quoted rate. As a result, product and service pricing has to be produced inline with whatever there's a market for.

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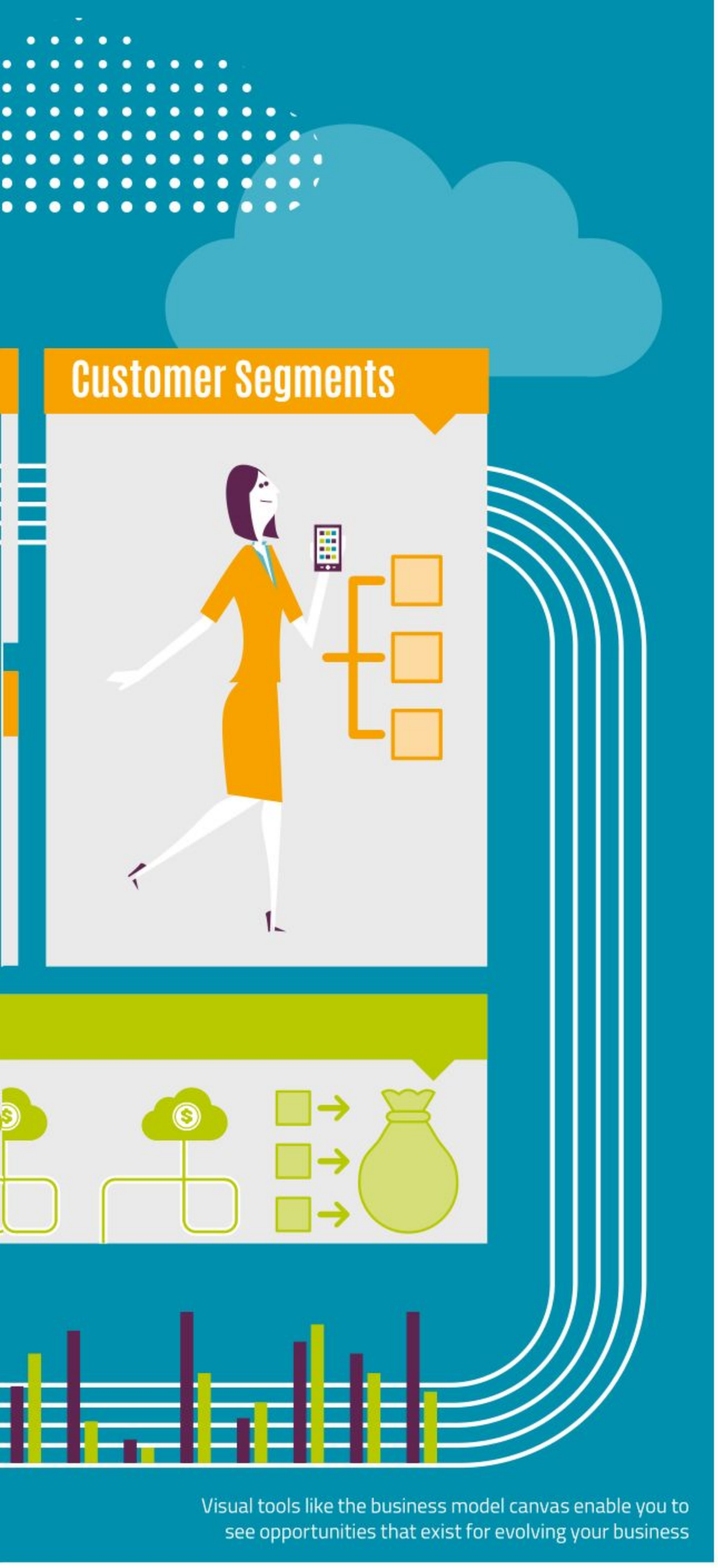


Visual tools like the business model canvas enable you to see opportunities that exist for evolving your business

More people are able and willing to pay for lower prices, so it makes sense to adopt a low pricing strategy if you aim to make many sales. The problem at this end of the market is profitability. Small profit margins limit the amount of time you can invest before you lose your profitability. This means that you must have the right processes in place to maximise efficiency and avoid wastage. Without these processes, you risk finding yourself in the situation where you end up making less money.

At the other extreme, being able to charge higher prices depends on your customers placing value on factors other than just the price you sell your products and services for. This could be appreciation of the quality you deliver, trust in your ability or your brand reputation. Whatever the reason, an ability to sell at a higher price requires customers who value factors beyond price – and who are able to pay the amount you want to charge. These customers typically seek a level of service that isn't possible to deliver with budget pricing.

For people seeking a new challenge, there is also the option of applying existing skills and knowledge to introduce new products and services to the business. Ideally, these would complement something that the business already sells, which would enable easy sales to existing customers. This option is riskier because demand hasn't been proven – this is especially problematic when you are looking at products that require significant investment before they can be sold.

To be forewarned is to be forearmed. The best approach to managing these risks is to create a solid plan that produces a clear picture of what needs to be done. And the first step of this is to understand the environment your business exists within.

Business model canvas

Whether you want to attract new types of customers or increase the number of products and services you offer, visual tools like the business model canvas enable you to see opportunities that exist for evolving your business. The business model canvas is a tool that gives you the ability to recognise the important components and relationships needed for your strategy to work:

- **Key partners** are the people and businesses you can work with who will add value to what you sell.
- **Key activities** include anything that you need to invest time in so that you can run the business.
- **Key resources** are the equipment and digital services you'll need to deliver your product or service.
- **Value propositions** highlight the reasons why people would want to buy from you: what problem can you solve?

Profitise your skills

Many options are available to sell new products and services. The most obvious is to sell your primary skills for what they are, but how can they be applied to serve other types of demand?

Teaching

Whether it's your primary skill as a designer/programmer or a subset of your skill such as understanding maths, people want to learn them. Make money selling your expertise as tuition sessions and full-scale training programmes.

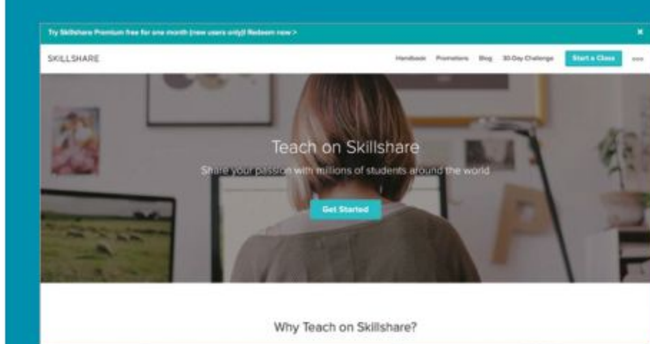
Writing

As with teaching, there's a market for delivering the knowledge you have through written content. Write tutorials and interesting perspectives about what you do. Sell writing for SEO, social media engagement and magazines – or fund it through selling ads on your own website.

Products

Use your skills to create products that people would want to buy. These products could complement other services you sell or be something separate. From books and videos to games and apps, all are products that design and programming skills can be used to create.

All of these options have multiple routes to market. The easiest options are marketplace sites such as Skillshare, Tutor Hunt and First Tutors that enable you to list your content and services. These websites take care of the marketing, meaning the only barrier to success is having an effective profile description. Achieve this by understanding the characteristics of your customer segments and the value proposition of interest to them.



Sites such as Skillshare are channels you can use to sell content products you create using your design skills

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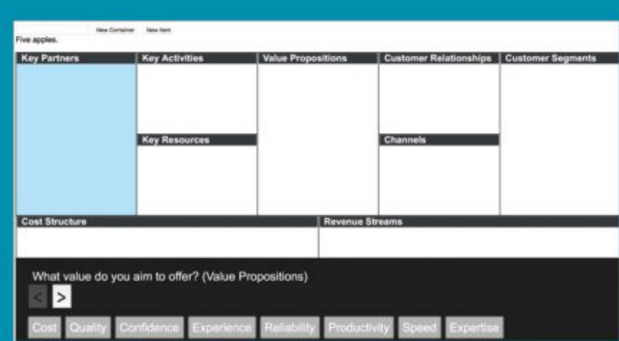
Create a canvas

The business model canvas is a planning tool that enables you to visually identify the components needed for a business strategy. Its layout means you can identify the most important categories for your strategy's components, as well as how they relate to each other.



http://qrin.uk/prl/1

Use this link to access an interactive business model canvas. Use the suggested items and then create your own for each of the categories.

Use this tool as an exercise to learn about the types of components placed into each canvas category to define your business idea. Follow the on-screen instructions to drag suggested components to their associated categories – or create your own. Experiment with the tool to identify combinations that increase potential for a business strategy, along with those that cause conflict. What opportunities can be turned into a profitable business?

- **Customer relationships** detail critical information about relationships with customers, including factors such as loyalty and support costs.
- **Customer segments** describe the characteristics of customer groups you sell and market to.
- **Channels** identify how you are able to reach current and potential customers – for example, where to advertise.
- **Cost structure** enables you to identify profitable price points for anything that you sell.
- **Revenue streams** are the methods you will use in order to make money from the business.

From what makes money through to the reasons why people will buy into the idea, these categories enable you to identify answers to the important questions of the business idea. From a financial perspective, cost structure and revenue streams are the two categories that should be given the most attention. Getting these wrong will lead to a failed business, no matter how good the planning and execution of the other categories is. The reasons for this are the fact being profitable depends on understanding how money is to be made and because the costs of running the business and making sales need to be stacked up against the income generated.

Understanding what makes money and what costs money results in better decisions to define and refine the business model. Every other part of the canvas supports the identification of the financials in one way or another. This ensures you avoid mistakes that on paper sound feasible but that in reality turn out to be impractical.

Many people who are new to the web design and development business sell websites using the pricing structure of a product. Without enough business experience, this almost always leads to money being lost. If taking this approach, it's important to remember that although the customer is buying a website, you are ultimately selling the time to create what they want – no matter what pricing model you use. The easiest way to remain profitable with your work is to price using time and materials – the only question being how much do you value your time to be worth?

When selling services at a fixed price, a bit more effort is required to make sure that projects have the highest chance to be profitable. This includes evaluating how client relationships and the available resources should affect the quoted price. With custom website creation services still being an issue of time sold, there is the issue of 'ideal' time and 'actual' time to complete the project. A client with a track record of being efficient to work with is less likely to drag out a project, while a client who is known to be problematic or overly bureaucratic should be expected to cost more time. For this reason, an understanding of the client relationship should be used to estimate the time that prices are based on.

The major problem with this kind of pricing model is that you need prior knowledge of the client, along with experience of the problems that can be caused by difficult clients. Both of these are issues that can be difficult to understand without having significant experience of project management.

Maximise profit

There are only so many hours in a day, so maximising profitability is all about selecting the work that delivers the most profit from your available time. It doesn't matter whether you sell a product, a service or a mixture of the two – if you invest your time in activities that produce the lowest profit margins, you are missing opportunities to make the most money with your time.

It's also important not to confuse turnover with profitability. When expanding your business to involve other people's services as an employee or supplier, the income generated by what you sell can easily become misleading. At first glance, big numbers seem impressive but this money is quickly eaten up by people you need to hire to deliver the work. Without

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> Although making a short-term profit is always tempting, it can limit your abilities in the long term

proper scrutiny, it becomes easy to simultaneously grow the turnover of your business while reducing your profit – or even making a loss. This is where maths becomes a useful tool; numbers tell the story of what's happening but you need to know how to read the numbers to understand the story.

When evaluating the numbers, it's important to remember that some costs are fixed, regardless of how many sales you make. So think about how many sales you need to make to cover these costs. Conversely, other costs are proportionate to the number of sales you make, so always ensure that you incorporate these costs into your unit pricing.

When time is limited, you need to avoid activities, clients and products that distract you from maximising your profitability. This includes those that are not profitable or less profitable than other available options. While this may sound harsh to clients, it's important to remember that the work you do is business – nothing personal. Although clients hire you because they view you to be worth their money, you must provide your availability to the clients who you value to be worth your time. This means favouring clients who are productive to work with and, most importantly, fund the time you allocate to them without expecting freebies or discounts that hurt your profitability.

Another factor to consider around maximising profitability is thinking about the short, medium and long term. It's important to be ethical in business because although making a short-term profit is always tempting, it can limit your abilities in the long term. And this works both ways. Customers who may initially buy small services or products from you are likely to return for higher-value purchases once they see that you are reliable and capable of delivering the results they want.

Technical application

Much has been said about business strategy but remembering how technical issues impact its execution is a priority. Increasing profitability can come in part – or entirely – from how you implement your creations. Agile methods of developing website code and design components can mean the difference between change requests taking just a few minutes or taking a full day to implement. Learning and embracing these practices, therefore, make a significant impact on projects that operate on a fixed budget.

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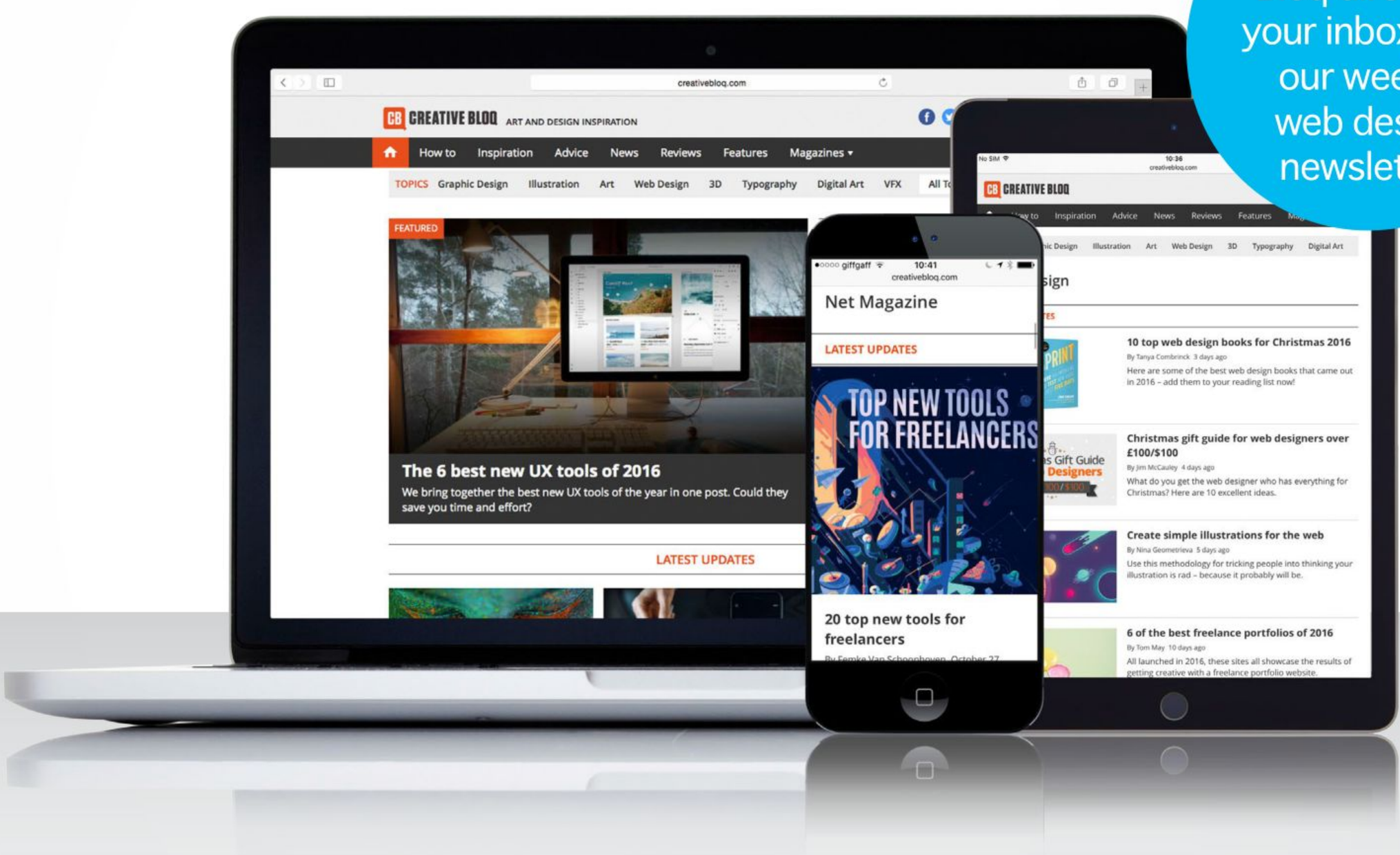

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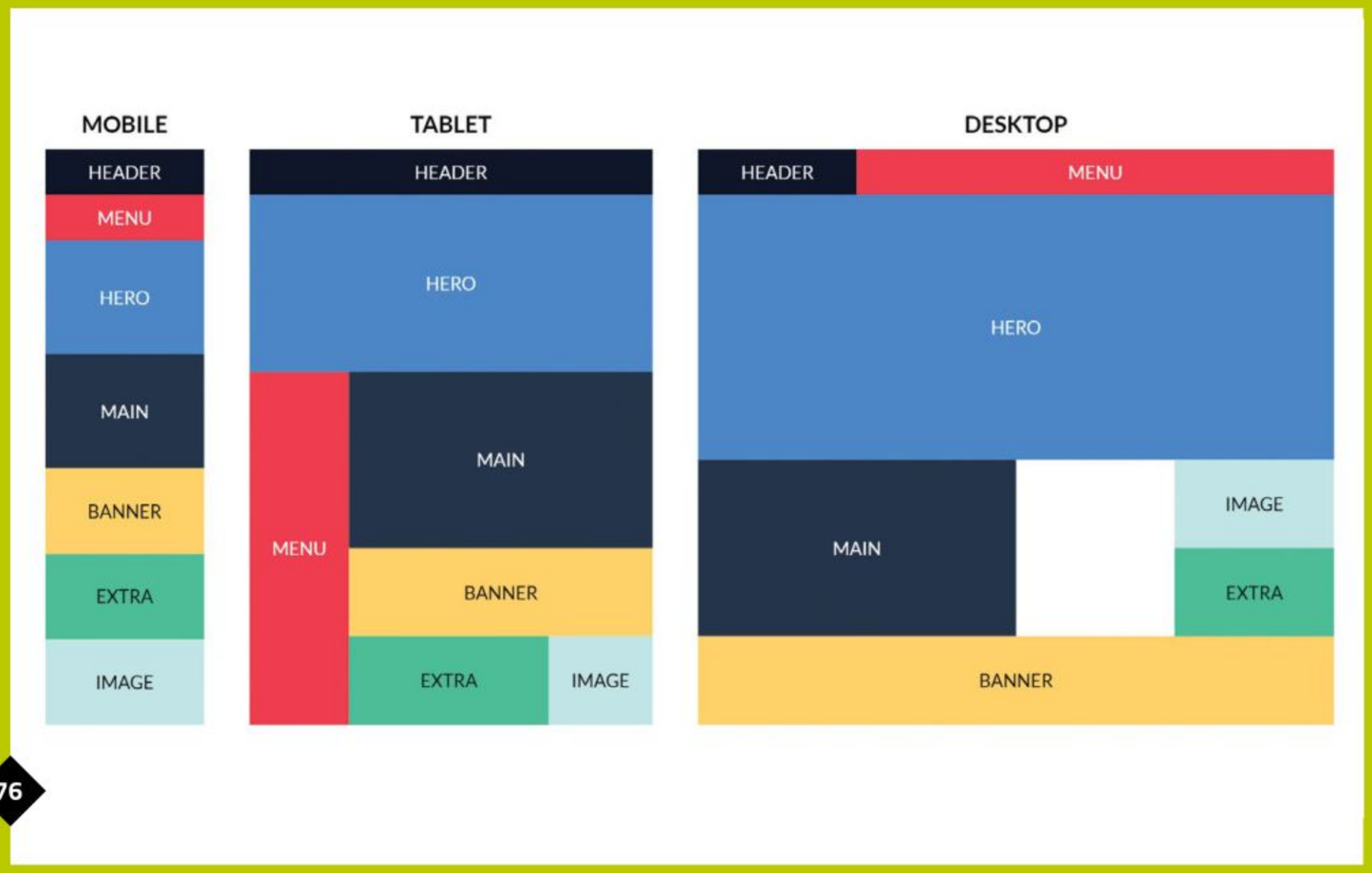

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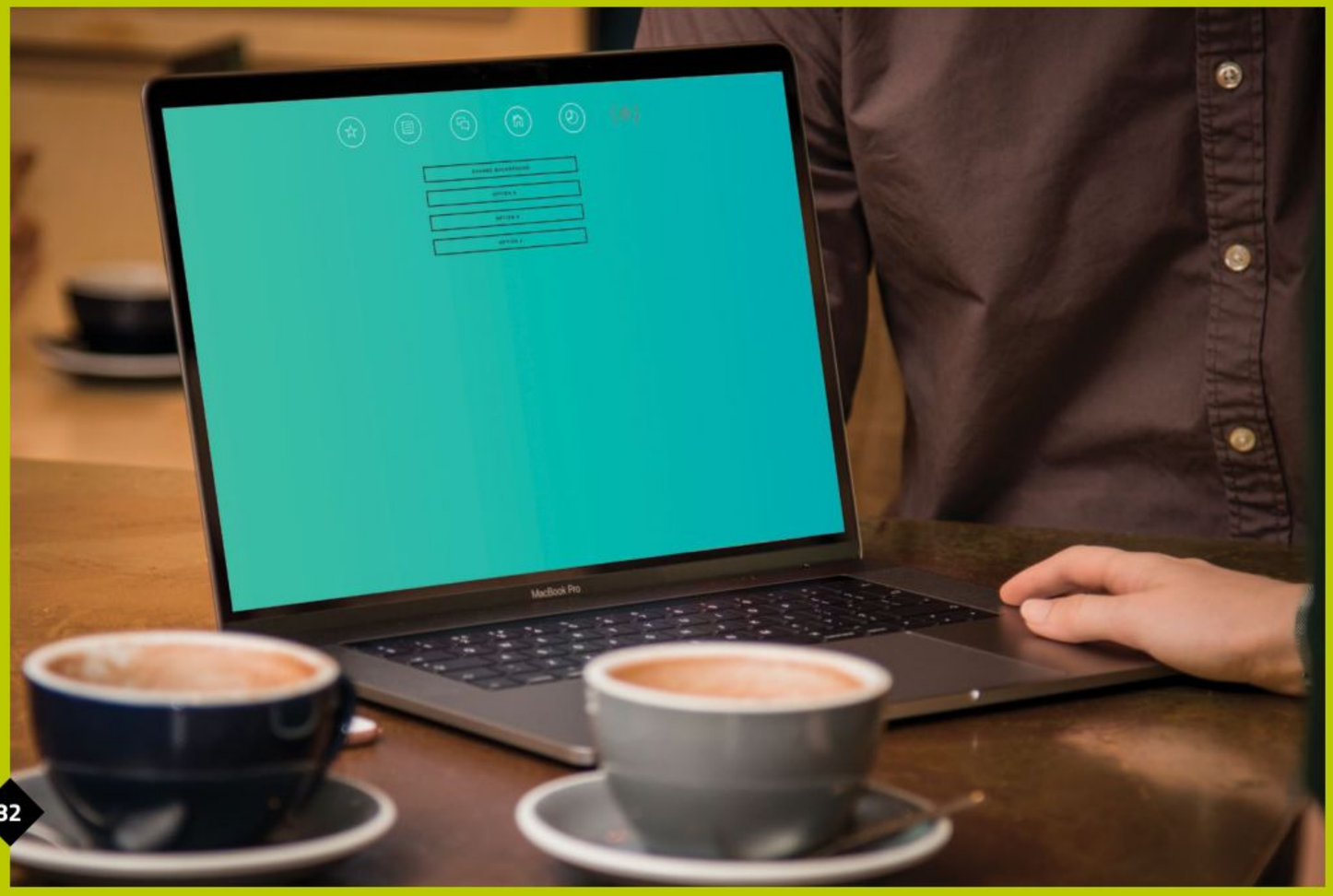

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View source files here!

All the files you need for this tutorial can be found at *https://codepen.io/hungryPhilomath/pen/LrdNvb*

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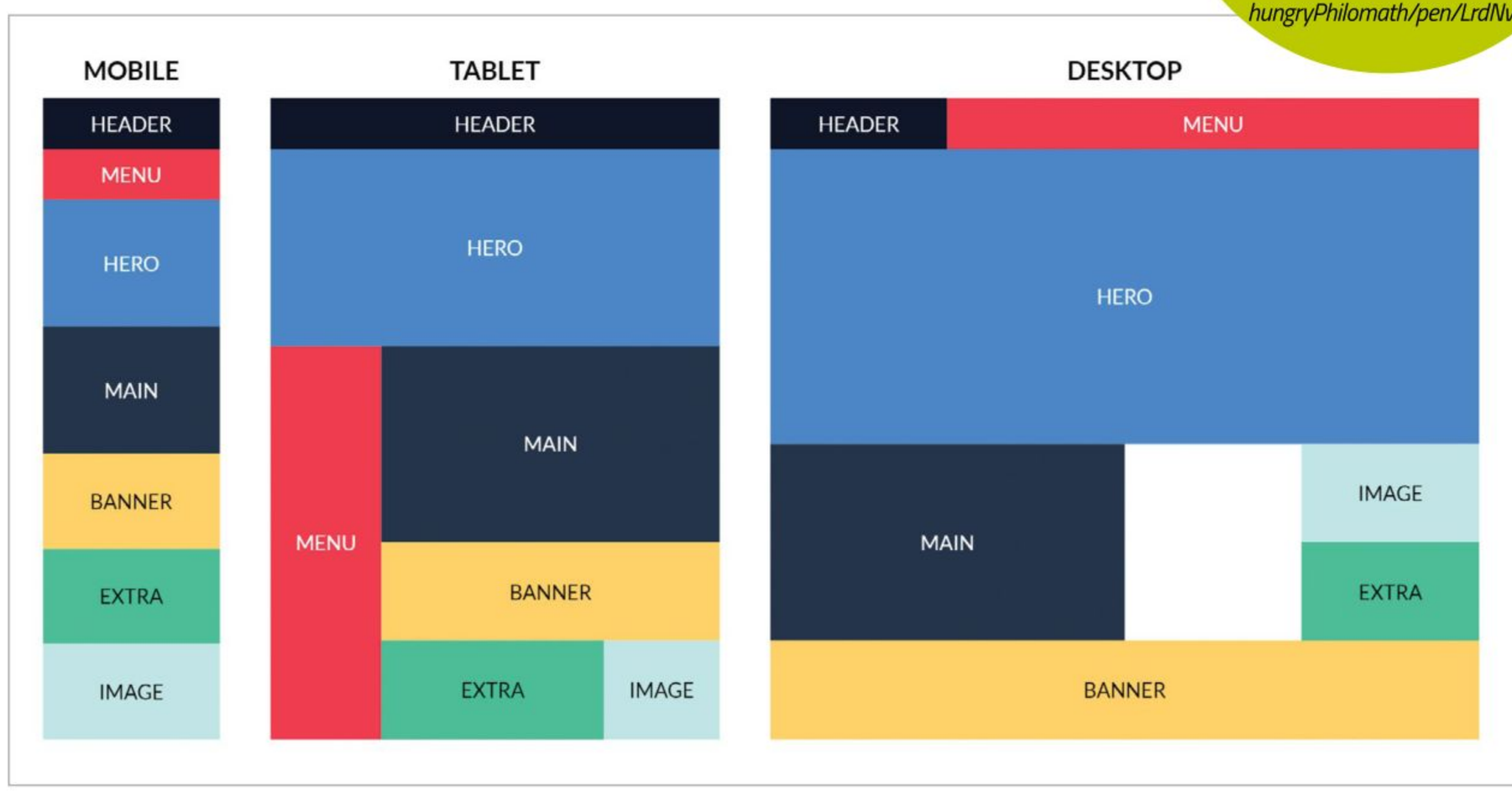

* CSS GRID

A COMPREHENSIVE GUIDE TO USING CSS GRID

Keen to make the leap into using CSS Grid? Read on, as **Ahmed Abuelgasim** gives us an in-depth guide for how to use CSS Grid for creating responsive layouts

The CSS Grid Layout Module introduces a new and versatile system for placing elements on a web page through the use of a highly customisable grid. With CSS Grid it is now possible to place elements anywhere on the page, irrespective of their position in the markup and without removing them from the document flow.

Element size and position can be changed for different screen widths using pure CSS only, without needing to change any HTML, use JavaScript or other such methods. This enables designers to create completely different device-specific layouts without keeping adjacent elements near one another, nor having to worry about markup accessibility for screen-reader users.

CSS Grid is now supported by the last two versions of all major browsers so it's about time we start adopting it in all our projects. In this tutorial we will take an in-depth look into using its main properties, starting with setting up the grid.

DEFINE THE GRID

In order to create a grid within a container it must be given the CSS property `display: grid`. The number of columns and rows are determined by the number of space-separated sizes assigned to `grid-template-columns` and `grid-template-rows` respectively. Sizes can be any valid CSS unit such as `px` or `vw`, or the `auto` keyword that enables columns or rows to stretch across available space. For instance, `grid-template-columns: 10px auto` leads to a 10px column followed by a second column that fills all available space. Grid also uses a 'fractional' unit `fr` that causes any remaining space to be distributed to columns or rows based on the ratios of these units. `grid-template-rows: 1fr 2fr` creates two dynamic rows with the second twice the

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size of the first, while grid-template-columns: 1fr 1fr 1fr 1fr defines four equal-sized columns. The latter can be simplified using the new repeat() function to grid-template-columns: repeat(4, 1fr).

A grid can therefore be created inside a container of class grid with four equally sized, dynamic columns and four 75px tall rows using:

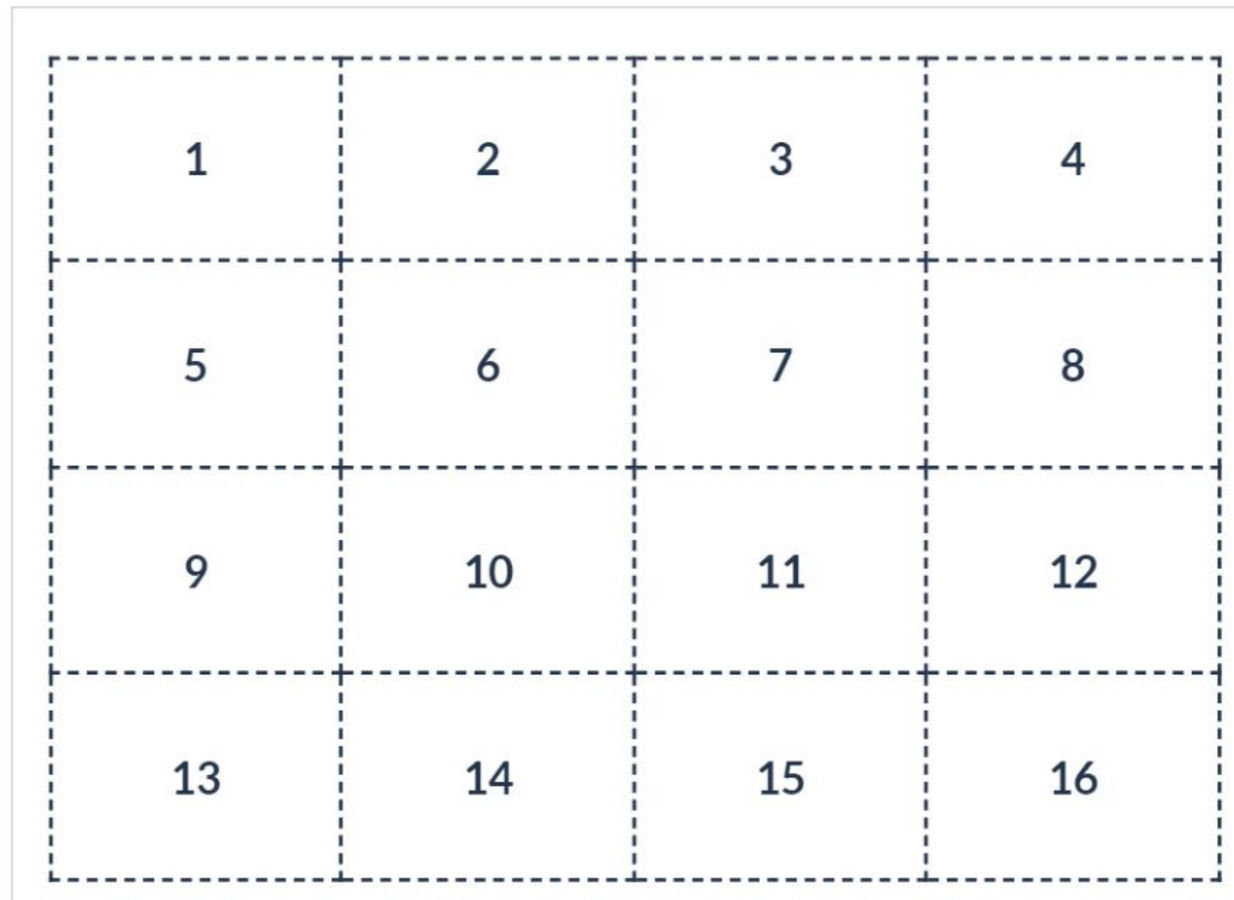
```
.grid {
  display: grid;
  grid-template-columns: repeat(4, 1fr);
  grid-template-rows: repeat(4, 75px);
}
```

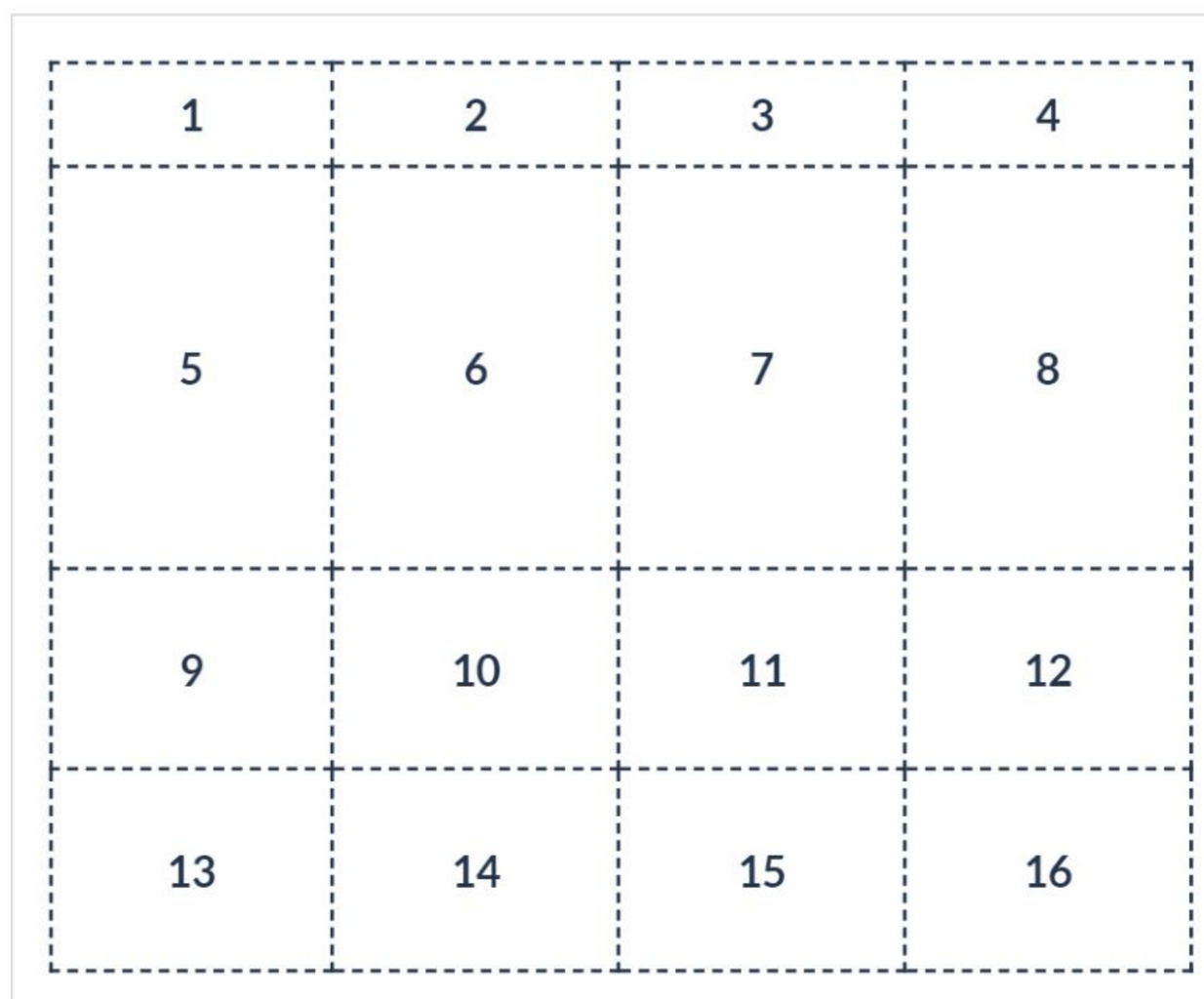
Complex grids with unequal sized cells can be created by combining the different units mentioned earlier. We can also use the minmax() function to define the minimum and maximum sizes of dynamic columns and rows. Hence, grid-template-rows: 40px 2fr repeat(2, minmax(75px, 1fr)) leads to four rows with the first 40px tall, the other three stretched over remaining space in a 2:1:1 ratio, and the last two having a minimum height of 75px, which sets the minimum height of the second row to 150px:

> "Element size and position can be changed for different screen widths using CSS only, without any HTML"

Once a grid is created, grid lines, represented by dotted lines in the images, are automatically numbered from the top for rows or from the left for columns. The lines are also given a second, negative number relative to their index from the bottom for rows or from the right for columns. For instance, the first dotted vertical line on the left in the grids above is 1 and -5, and the third line is 3 and -2. These numbers can be used as the boundary lines of items placed in the grid. The grid lines can also be named by adding a string between square brackets in the property declarations, e.g. grid-template-rows: [1st] 1fr [second-line] 1fr [last].

Similar to Flexbox, the horizontal and vertical position of items placed in the grid can be controlled by setting justify-items and align-items respectively, to start, center, end or stretch. The same is applicable for grid column and row positions within a larger container using justify-content and align-content respectively. Valid options for these properties also include space-between, where extra space is divided between columns/rows, as well as space-around and space-evenly where space is divided evenly between columns/rows with the same or half the amount of space on the ends respectively. We can also define align-content and justify-content (in that order) using place-content, and align-items and justify-items using place-items.





Top Grid with equally sized cells resulting from equal-ratio, dynamic-width columns and 75px tall rows

Above Grid with minimum and maximum heights created using a combination of px and fr units and the minmax() function

POSITIONING ITEMS IN THE GRID USING LINE NUMBERS

To place an item in the grid we can set its grid-column-start and grid-column-end properties to the vertical ▶

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line numbers between which the item should be stretched. For rows the properties are grid-row-start and grid-row-end and of course the numbers refer to the horizontal lines. We could also make use of the shorthands grid-column and grid-row, by setting them to only the starting grid line, causing the item to automatically stretch to the next grid line only. Using these methods, item1 can be placed between vertical lines 2 and 4 and horizontal lines 3 and -1 (last line or first from bottom), and item2 from vertical line 3 and horizontal line 1 to the next grid lines using:

```
#item1 {
 grid-column-start: 2;
 grid-column-end: 4;
 grid-row-start: 3;
 grid-row-end: -1;
}
#item2 {
 grid-column: 3;
 grid-row: 1;
}
```

To simplify further, the declarations grid-column-start: 2 and grid-column-end: 4 can be combined together as grid-column: 2 / 4, with the same applicable for rows using grid-row. The caveat with using these placement methods is that some of the declarations are somewhat misnomers in the sense that for example, grid-column-end: 4 and grid-column: 2 / 4 can be misinterpreted as meaning "end item placement in column 4" and "place item in columns 2, 3 and 4" respectively. This is of course not the case as the numbers represent the grid lines rather than columns. To avoid this potential pitfall, we can declare the starting grid line number and the number of columns or rows the item should span across use the span keyword.

Using these methods, we can reposition item1 between horizontal lines 2 and 4 and vertical lines 1 and 2, and item2 starting from vertical line 2 and spanning across three columns and from horizontal line 3 spanning across two rows using:

```
#item1 {
 grid-column: 1;
 grid-row: 2 / 4;
}
#item2 {
 grid-column: 2 / span 3;
 grid-row: 3 / span 2;
}
```

Believe it or not, item placement can be simplified even further with the property grid-area, which is a shorthand for grid-row-start, grid-column-start, grid-row-end and grid-column-end in that order. If only the first two properties are defined the item will automatically be placed between those lines and the following ones. This grid property also enables line numbers to be combined with the span keyword. Applying these methods, we can reposition item1 and item2 as such:

```
#item1 {
 grid-area: 2 / 1 / span 2 / span 3;
}
#item2 {
 grid-area: 4 / 4;
}
```

POSITIONING ITEMS IN THE GRID USING AREA NAMES

Although using grid line numbers and the span keyword is a great way of positioning items, there is an even more intuitive and easy way to place items in the grid that involves using the grid-area and grid-template-areas properties. To achieve this, each item to be positioned in the grid must first be given a

> "We can declare the starting grid line number and number of columns or rows the item should span"

name by setting its grid-area property to a string that can then be included in the grid's grid-template-areas declaration. It then becomes possible to define grid-template-areas using a visual 'map' in which rows are enclosed in quotation marks with the contents of each grid cell represented by a string pertaining to the grid-area names of the items. Empty cells are symbolised by a full stop . and spaces signify vertical grid lines. The rows can be placed on new lines to provide a visual representation of the grid, as follows:

```
#item1 {
 grid-area: item1;
}
#item2 {
 grid-area: item2;
}
.grid {
 grid-template-areas:
```


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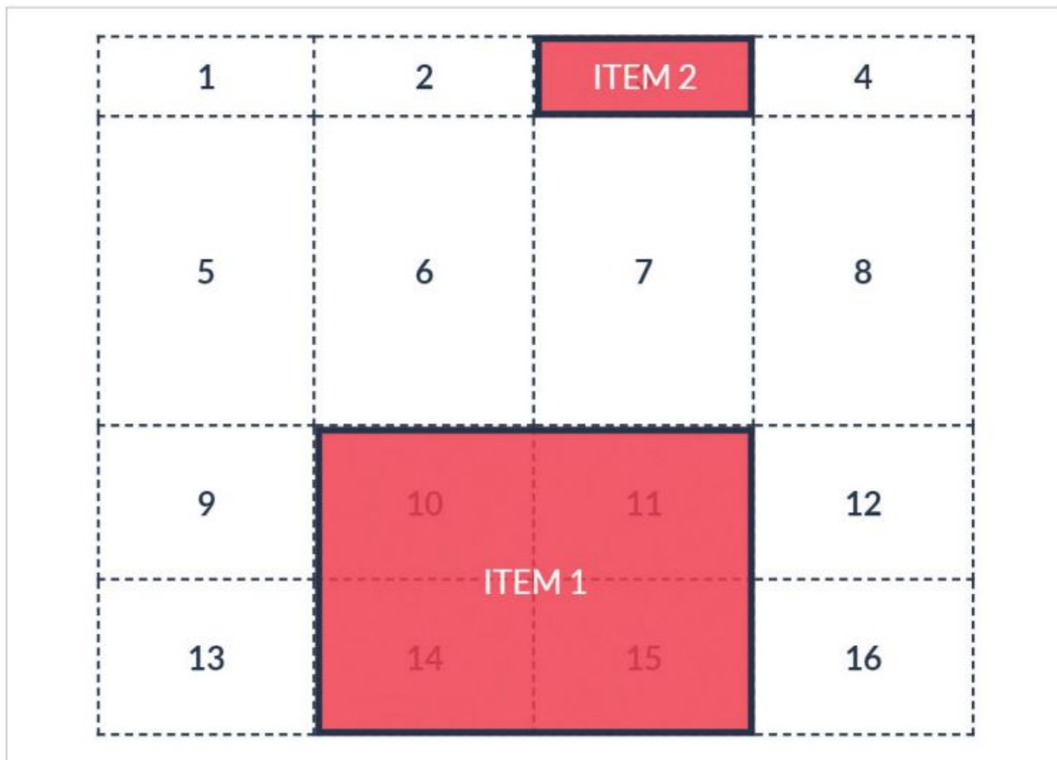

Above Items can be contained within a single grid cell or alternatively, stretched across multiple columns and grids

Above Use the span keyword to determine the number of columns or rows you would like an item to span

```
  ". . . ."
  ". . . item1"
  "item2 item2 item2 item1"
  "item2 item2 item2 .";
}
```

CREATING A RESPONSIVE LAYOUT USING CSS GRID

CSS Grid can be used with media queries to restructure items on different screen sizes without changing the markup. Item shape, size and position can all be completely changed, thus leading to a truly responsive and highly customised layout. Let's say that we have a list of elements generated from this HTML markup:

```
<div class="grid">
 <div class="header"></div>
 <div class="menu"></div>
```


ALTERNATE LAYOUTS

BROWSERS LACKING CSS GRID SUPPORT

Laying out CSS Grid properties below mobile properties ensures browsers that still don't support Grid will ignore it and render the mobile version. We can alternatively add a basic fall-back layout using @supports, a query that applies rules based on browser support for a specific CSS feature. We can thus set a fall-back layout for screen sizes wider than 720px:

```
@supports not (display: grid) {
 @media (min-width: 721px) {
  .header,
  .extra {
   float: left;
   width: 50%;
  }
 }
}
```

A simple, fall-back layout that can be applied to browsers lacking CSS Grid support

If for some reason you need this fall-back to be shown for Internet Explorer 10 and 11, which don't support Grid nor, ironically, the @supports query, you can use a well-known query that applies styles only in IE10 and 11:

```
@media (min-width: 721px) and (-ms-high-contrast: none),
(-ms-high-contrast: active) {
 .header,
 .extra {
  float: left;
  width: 50%;
 }
}
```

If you require IE9 and older support, load an additional stylesheet in the HTML with the relevant styles using:

```
<!--[if IE]><link rel="stylesheet" href="ie.css" /><![endif]-->
```


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```
<div class="hero"></div>
<div class="main"></div>
<div class="banner"></div>
<div class="extra"></div>
<div class="image"></div>
</div>
```

Using what we have learned about Grid so far we can apply styles for screens that are wider than 720px, using a media query:

```
@media (min-width: 721px) {
 .header { grid-area: header; }
 .menu { grid-area: menu; }
 .hero { grid-area: hero; }
 .main { grid-area: main; }
 .banner { grid-area: banner; }
 .extra { grid-area: extra; }
 .image { grid-area: image; }

 .grid {
   display: grid;
   grid-template-columns: repeat(4, 1fr);
   grid-template-rows: 40px 2fr repeat(4, 1fr);
   grid-template-areas:
     "header header header header"
     "hero hero hero hero"
     "menu main main main"
     "menu main main main"
     "menu banner banner banner"
     "menu extra image image";
 }
}
```

We can also easily reposition and resize the items for larger screens that are wider than 1000px using another media query:

```
@media (min-width: 1001px) {
 .grid {
   grid-template-areas:
     "header menu menu menu"
     "hero hero hero hero"
     "hero hero hero hero"
     "main main . image"
     "main main . extra"
     "banner banner banner banner";
 }
}
```

That's not all – the number of grid columns and rows can even be changed to make allowances for certain screen sizes, if this is desired, by redefining `grid-template-columns` and/or `grid-template-rows` within the media queries.

* RESOURCES

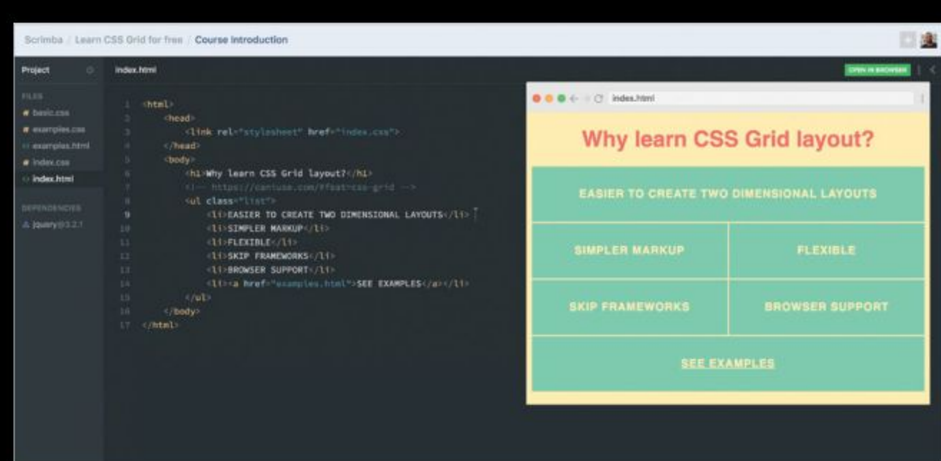
ESSENTIAL READING

For more information and tutorials on the CSS Grid Module have a look at the following resources.

MDN web docs

https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Grid_Layout

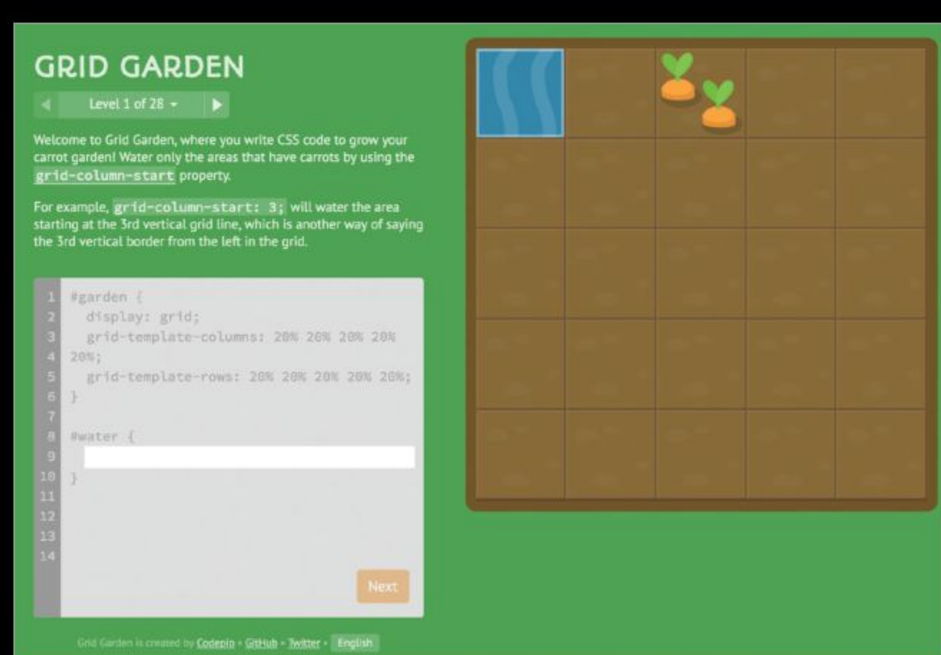
As always, the Mozilla Developer Network web docs site is a great place to start with – or continuously return to depending on how strong your memory is – for web developer resources. Its CSS Grid layout page in particular has explanations for all of Grid's properties, as well as interactive examples for you to try yourself.



Scrimba interactive, CSS Grid tutorial

https://scrimba.com/g/gR8PTE

Scrimba is an interactive code courses platform. You can pause the videos, edit the code in them and see the results before resuming the tutorial. It's a fantastic way to learn coding and Per Harald Borgen's free, 14-part CSS Grid course is great for those who prefer video tutorials.



Grid Garden game

https://cssgridgarden.com/

A great interactive way of learning to code is through games. Grid Garden is an online game that has you watering a carrot garden by typing CSS Grid properties into an editor. It's a lot of fun and surprisingly satisfying, even if your harvest is just a digital one.

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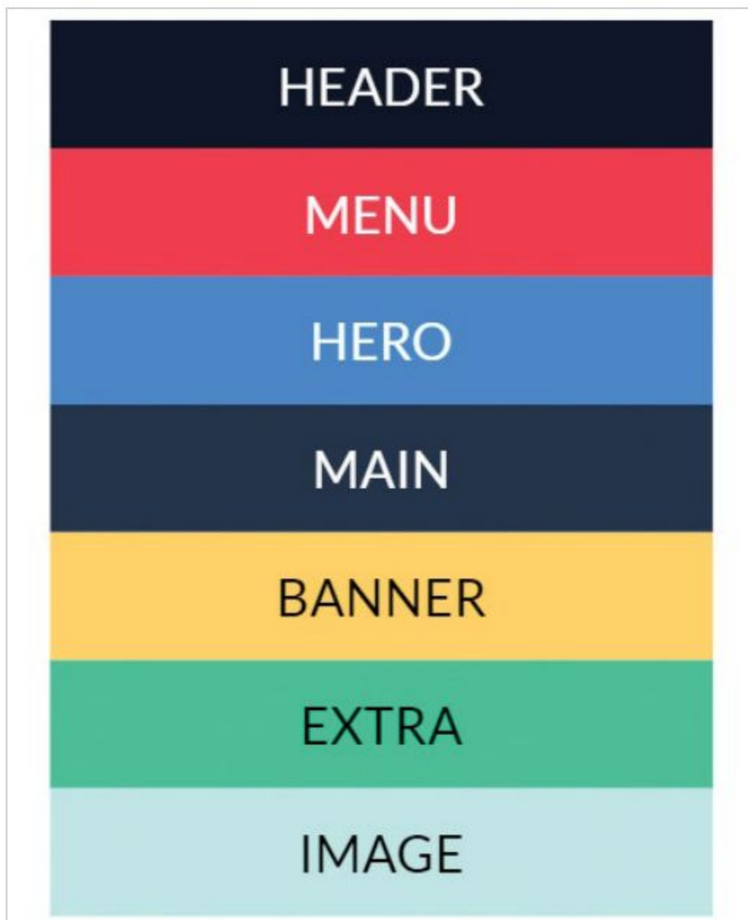

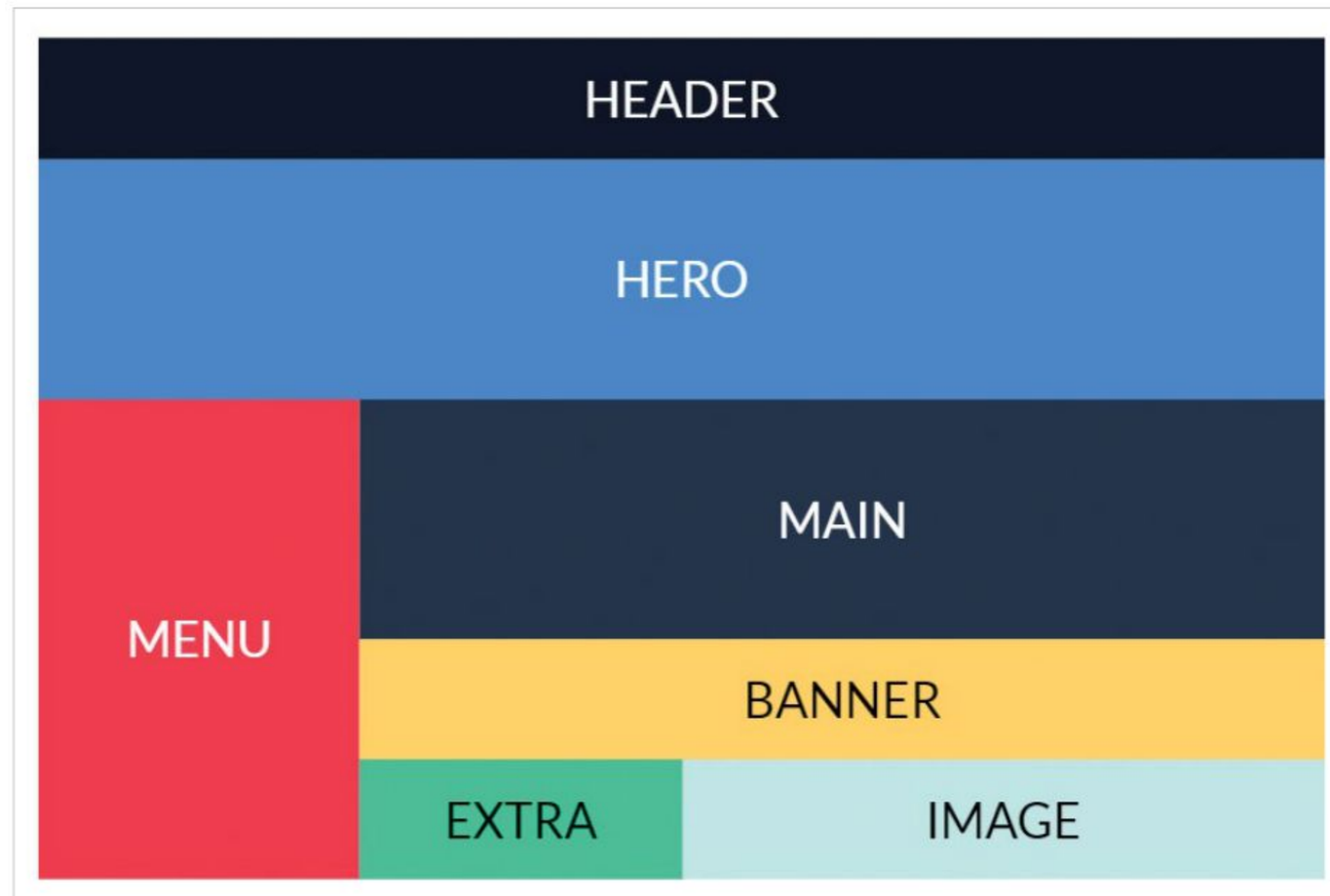

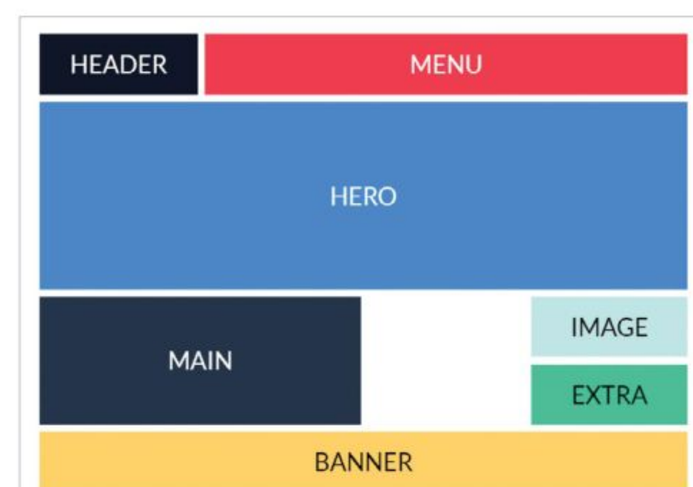

Top left Items can be restructured depending on screen size without changing the markup

Top right Use a media query to apply styles for any screen that is larger than 720px

Above left Another media query enables items to be repositioned and resized for screens larger than 1000px

Above middle It's possible to overlap elements using CSS Grid

Above right You can separate elements in the grid: this image shows the result of applying grid-gap: 5px

> "CSS Grid is a powerful tool for element layout that introduces a level of flexibility never before possible with pure CSS"

Overlapping elements can also be achieved using CSS Grid. Multiple items can occupy the same grid cells and hence can overlap with one another, utilising the `z-index` properties of the items to control the order in which they stack. For example, we can add a semi-transparent element with the class `toolbar` inside the grid container and position it in the right-most column so that it overlaps with all the other elements:

```
.toolbar {
  grid-column: 4;
  grid-row: 1 / -1;
  opacity: .85;
  z-index: 1;
}
```

The final aspect we will discuss is the spacing between columns and rows or gaps. Items in the grid can be separated using the `grid-column-gap` or `grid-row-gap` properties that set the size of the gap between columns and rows respectively. The shorthand property `grid-gap` can set both.

As we have seen in this tutorial, CSS Grid is an extremely powerful tool for element layout that introduces flexibility never before possible with pure CSS and without absolutely positioning elements – a technique that can lead to many problems. CSS Grid enables us to achieve extremely diverse and device-specific layouts from the same exact HTML markup. We no longer have to rely on hacks, absolute positioning nor JavaScript DOM manipulation to realise dynamic, shape-shifting layouts. CSS Grid gives designers a blank canvas to create whatever layouts they desire without having to worry about how to achieve it, ushering in a new era of web design and development with freedom from the CSS limitations and workarounds of the past.

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View source files here!

All the files you need for this tutorial can be found at *https://github.com/darryl-bartlett/UIAnimations*

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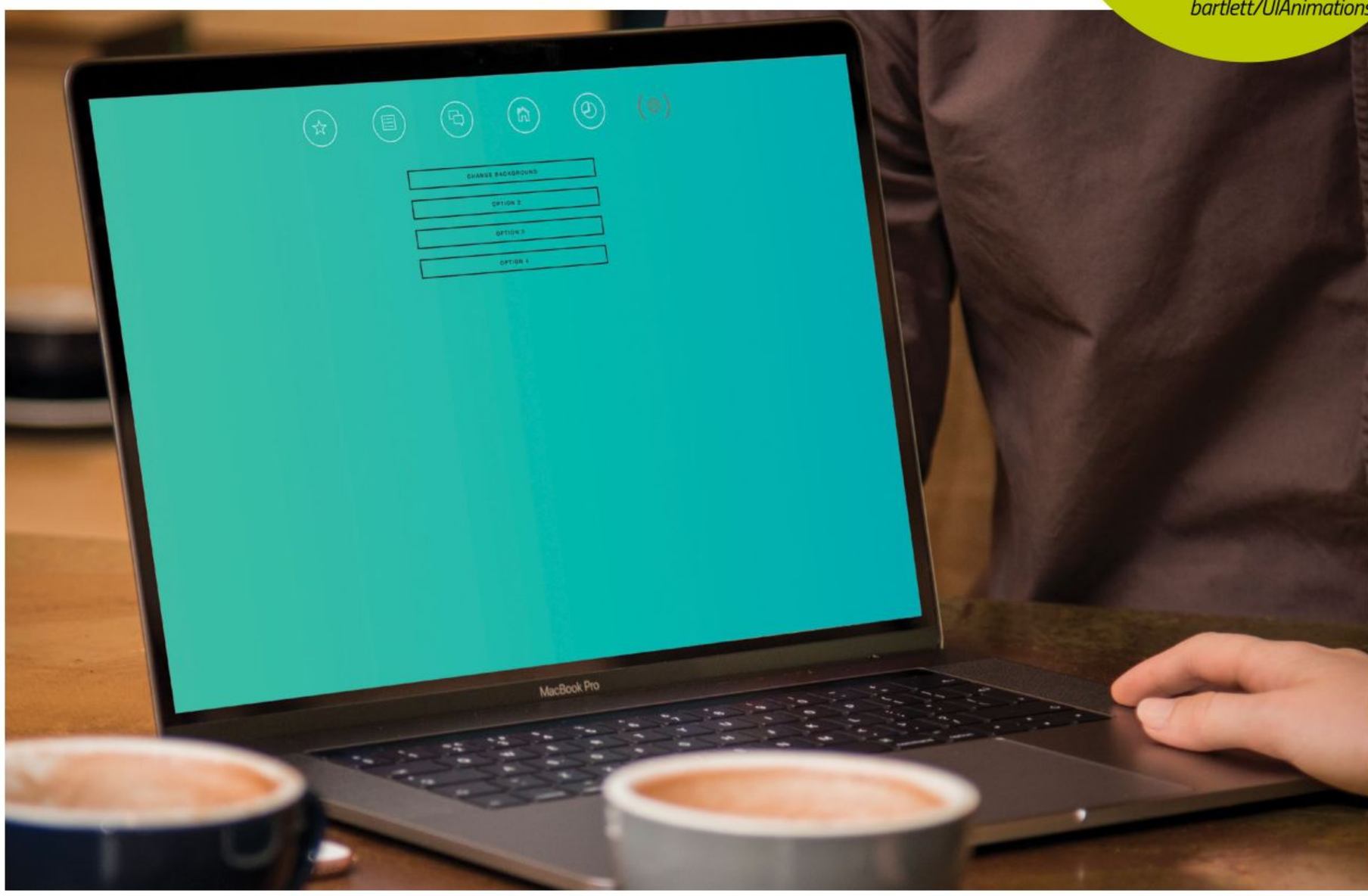

* GREENSOCK AND CSS

BRING ANIMATIONS AND TRANSITIONS TO YOUR UI

Darryl Bartlett explains how you can use both GreenSock and CSS to create an animated user interface

Most people see user interfaces daily, whether it's inside a mobile app or on a website, so it's important to get it right when creating them. A bad interface experience could turn away a potential user. While building for the web, particularly when it comes to animation, you have to consider things like browser support and performance. In this tutorial, we're going to walk you through two of the best solutions for creating UI animations and transitions.

We will be using a combination of CSS and GreenSock (GSAP). We are all aware of CSS but some of you may not be aware of the GreenSock platform. GreenSock is a JavaScript framework that enables you to easily create stunning animations with HTML elements using just a few lines of code.

Images and logos have particularly stood out a lot more over the last few years. How often do we use emojis rather than text? Mobile navigations seem to use icons rather than text and over time users come to know where each will take us. We are going to start by creating an animated navigation bar just using logos. When you hover over each one, it will animate to the final state, which will look similar to the screenshot on the next page.

BUILDING THE NAVIGATION

First of all, we will create a new index.html file and set up our navigation area along with six links. Each link will be made up of an icon taken from Ionicons. We will need to assign a class to each.

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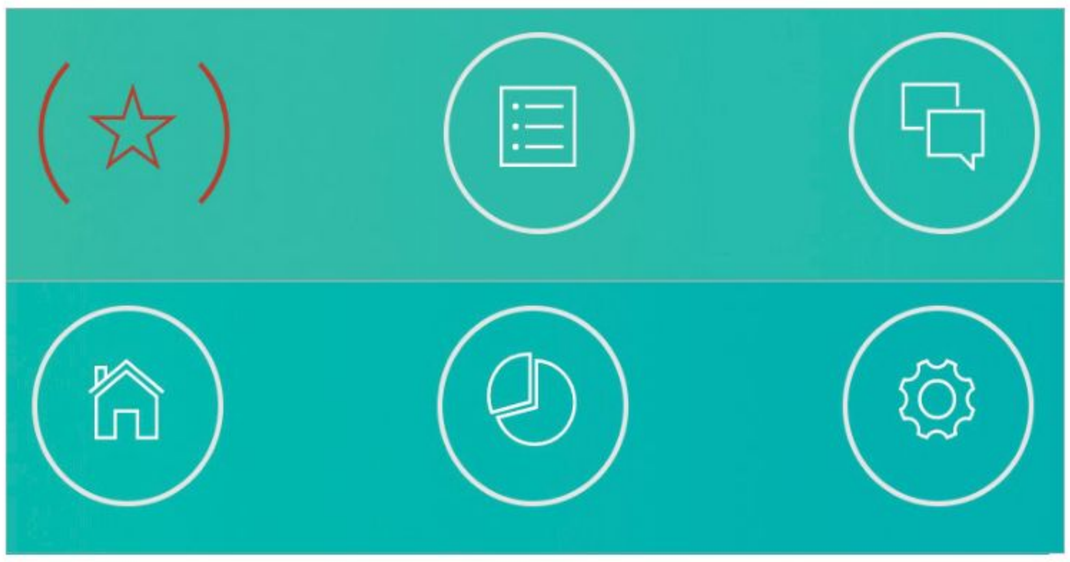


Above We have the six navigation icons and one of them shows off what the hover state will look like once the animation is completed

```
<div class = "navigationbar">
<a href="#" class="navlogo ion-ios-star-outline"></a>
<a href="#" class="navlogo ion-ios-list-outline"></a>
<a href="#" class="navlogo ion-ios-chatboxes-outline"></
a>
<a href="#" class="navlogo ion-ios-home-outline"></a>
<a href="#" class="navlogo ion-ios-pie-outline"></a>
<a href="#" class="navlogo ion-ios-gear-outline"></a>
</div>
```

We won't be covering the full HTML or CSS document in detail but you can get the full code listing from *https://github.com/darryl-bartlett/UIAnimations*.

Next, we will need to create a CSS file that's called style.css and then insert the following line of code to import Ionicons:

```
@import url(https://code.ionicframework.com/
ionicons/2.0.1/css/ionicons.min.css);
```

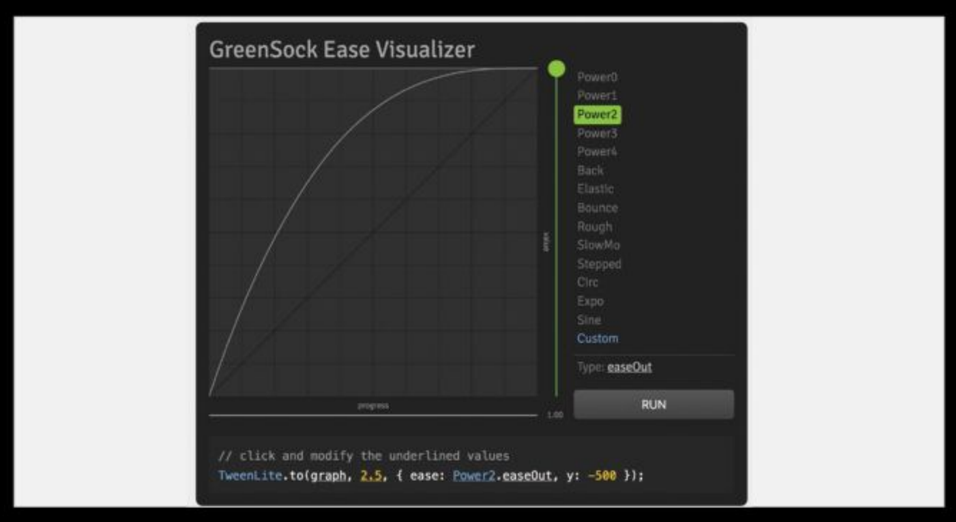
We will now set up the class `navlogo` for our navigation images inside the stylesheet. Here we will set up the position, height, font size etc.

```
.navlogo {
 position: relative;
 font-size: 40px;
 width: 75px;
 margin: 40px;
 height: 75px;
 line-height: 75px;
 display: inline-block;
 color: #fff;
}

.navlogo:after {
 position: absolute;
 top: 0;
 bottom: 0;
```

SYNTAX

GSAP TWEEN SYNTAX



As you learn more about GreenSock, you will hear the word 'tween' used quite a lot. A tween is essentially a single movement in an animation. Here is a breakdown of the syntax:

```
TweenMax.method(element, duration, vars)
```

Method:
This refers to the GSAP method you would like to tween with. When you're new, the ones you'll use most are set, from and to.

set sets the vars object to the specified values without creating an animation.

to animates the element from their current values to the values you set in vars.

from animates the element from the values you set in vars to their current values.

Element:
This is the name of the element you want to animate. If you want to create tweens for multiple elements at the same time, you can pass in an array of elements to element.

Duration:
Set the duration of your tween. It is an integer in seconds, e.g. 2.

Vars:
Vars is an object that lets you specify the properties you want to animate. You can specify any CSS property here. Just switch the CSS naming format into camel case.

For example, if you wanted to animate the font size, you would put fontSize rather than font-size; for background colour, you would use backgroundColor instead of background-color.

GreenSock also lets you animate CSS transforms. The syntax here is slightly different, though:

- For translateX, you would use x
- For translateY, you would use y
- For rotate, you would use rotation

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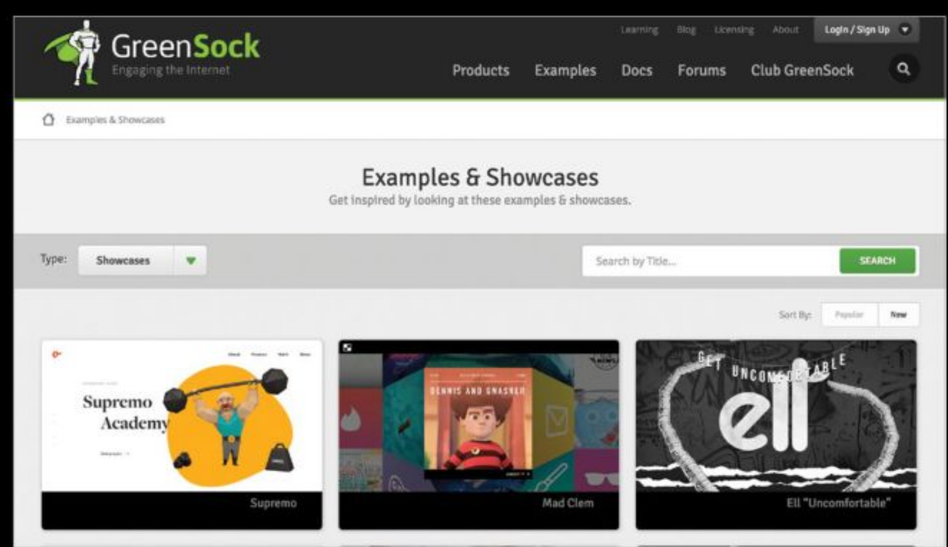
* RESOURCES

ESSENTIAL READING



Here is a list of useful resources that will help you on your way with learning and discovering more about UI animation on the web.

GreenSock
https://greensock.com
There is no better place to start than the GreenSock website. It's full of examples, documentation and even a forum, if you are struggling with a particular issue. There are also bonus plugins if you decide to sign up to Club GreenSock.

Animista
http://animista.net
Even though the website is currently only in beta, Animista is a great resource for designers to play around with and tweak a number of different CSS animations. Once you are happy with the result, you can then use the code on your own website.

UI Movement
https://uimovement.com
UI Movement is a good place to find inspiration for your UI animations. It showcases work from other designers and developers in a filterable format. There is also a weekly newsletter.

HTML5 Animation with GreenSock
www.nobledesktop.com/html5-greensock-video-class-gsap
Noble Desktop offers an online video course that walks you through various HTML5 projects using GreenSock. If you don't mind investing some money in learning, then this is a good place for further education.

```
  left: 0;
  right: 0;
  border: 2px solid #e6e6e6;
  content: '';
  z-index: -1;
  border-radius: 50%;
}
```

Next, we need to set up the animation for our `.navlogo` element. Here we will create the rotation and transition effects, as well as changing the element colour on hover.

```
.navlogo:before,
.navlogo:after {
  -webkit-transition: all 0.45s ease-in-out;
  transition: all 0.45s ease-in-out;
}
.navlogo:hover,
.navlogo:active,
.navlogo.hover {
  color: #c0392b;
}
.navlogo:hover:after,
.navlogo:active:after,
.navlogo.hover:after {
  border-color: transparent #c0392b;
  -webkit-transform: rotate(360deg);
  transform: rotate(360deg);
}
```

Finally, we will need to add an event that removes the hover class when the mouse is no longer hovering over our logos. This is to make sure that our logo comes out of its animation. Create a new JavaScript file called main.js and then enter the following code:

```
$(".hover").mouseleave(
  function () {
    $(this).removeClass("hover");
  }
);
```

Our navigation is now ready to go, apart from adding some hyperlinks. We have managed to achieve this just by using CSS3.

CREATING AND ANIMATING BUTTONS ON LOAD

We will now add four buttons to our page and use the GreenSock library to slowly bring in each button, one after the other with a one-second delay. This will create a nice transition effect.

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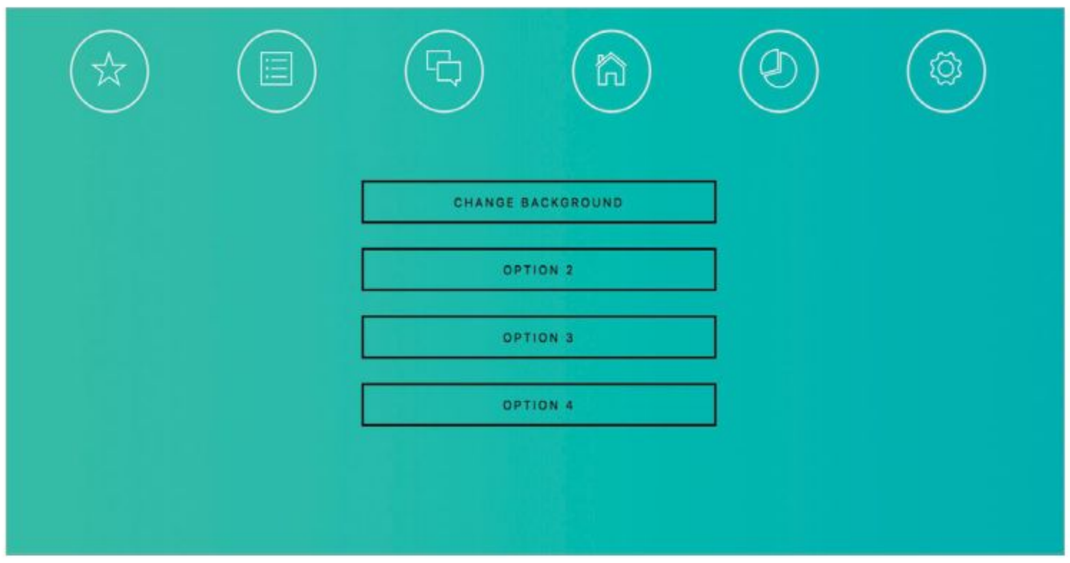

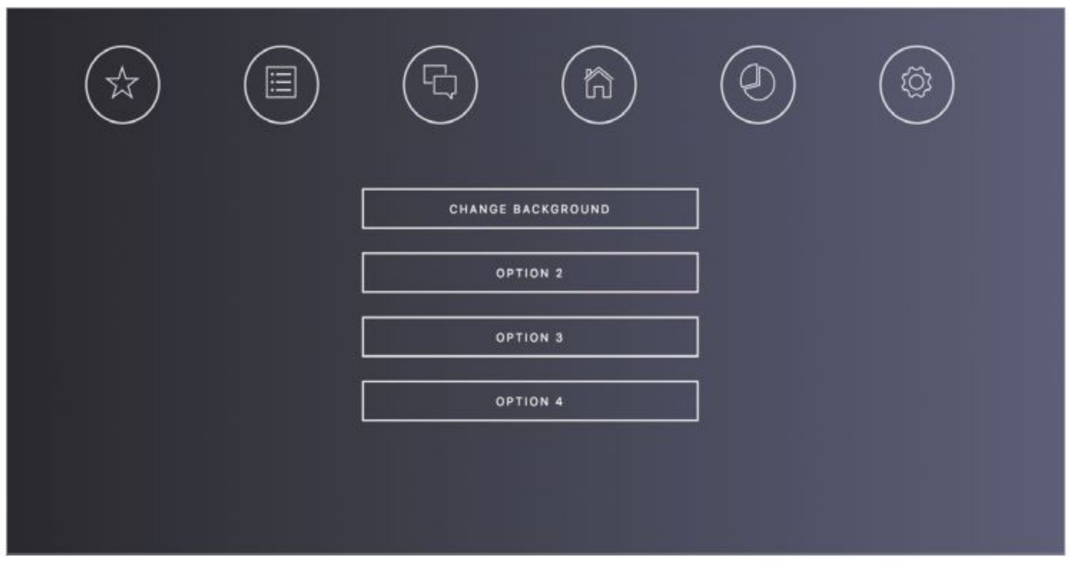

Above left The buttons will appear one by one with a one-second delay in-between. GreenSock enables you to do this with any HTML element

Above right This is how the UI will look after the background and button transition from one colour to another

First, we will need to reopen the index.html file and create our button section using the code below:

```
<div id = "buttonarea">
<button class="anibutton">Change Background Colour</button>
<button class="anibutton">Option 1</button>
<button class="anibutton">Option 2</button>
<button class="anibutton">Option 3</button>
</div>
```

> "GreenSock is a JavaScript framework that allows you to create stunning animations with HTML elements"

We then need to set up a reference to the GreenSock library inside the <head> section.

```
<script src="https://cdnjs.cloudflare.com/ajax/libs/gsap/1.19.1/TweenMax.min.js"></script>
```

Finally, we need to set up our animation. This will only take one line of code. `StaggerFrom` is a function that will stagger the start time of our element. In our brackets, we specify the name of the element. In this case it would be `.anibutton`. We also need to set a duration and in this case it is set to one second between each `anibutton` element.

```
TweenMax.staggerFrom('.anibutton', 1, {opacity:0}, 1);
```

BACKGROUND AND ELEMENT COLOUR TRANSITION

The next thing we are going to look at is transitioning the website background and buttons from one colour to another. We don't often come across this feature on websites, although it would definitely be interesting for things like accessibility or for web app preferences when the user might want to set their own colour scheme.

Make sure that you have a background colour and a border and text colour set up for your page in the style.css file.

```
.anibutton {
border: 2px solid #000;
color: #000;
}
```

Next, we will create a JavaScript function to set up our various GreenSock colour transitions.

```
function changeBackground()
{
  TweenMax.to("body", 3, {backgroundImage:"linear-gradient(to left, #646580, #212121)"});
  TweenMax.to(".anibutton", 3, {color:"#fff"});
  TweenMax.to(".anibutton", 3, {border:"2px solid #fff"});
}
```

We are going for more of a dark mode look here, so the background will be dark but the buttons will appear light. The first line of code will change the background colour to a darker variation over a period of three seconds. The second and third line will change the colour and border of the text to white over a period of three seconds.

Finally, we will need to call the `changeBackground()` function from one of our buttons found in the index.html file.

```
<button class="anibutton" onclick="changeBackground()">Change Background</button>
```

The project is now ready to run. Of course, you can go a lot further by adding new elements and changing the colour style for those, too.

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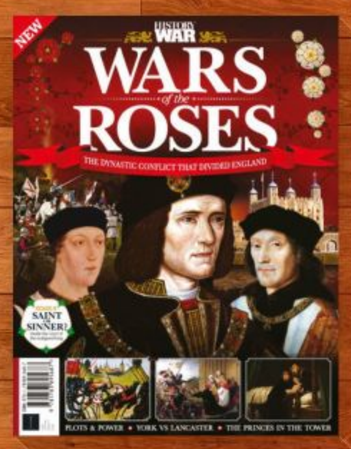

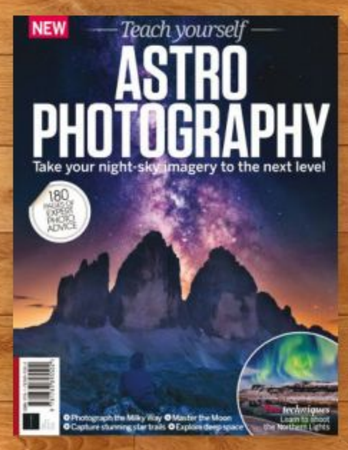

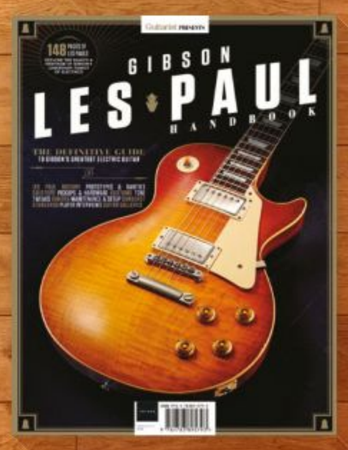

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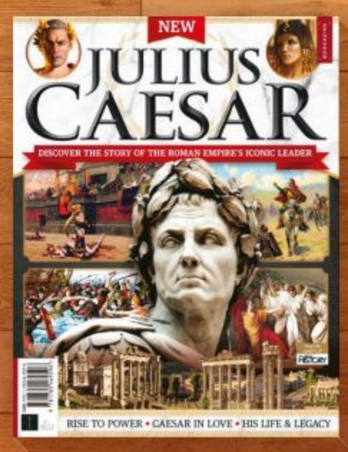

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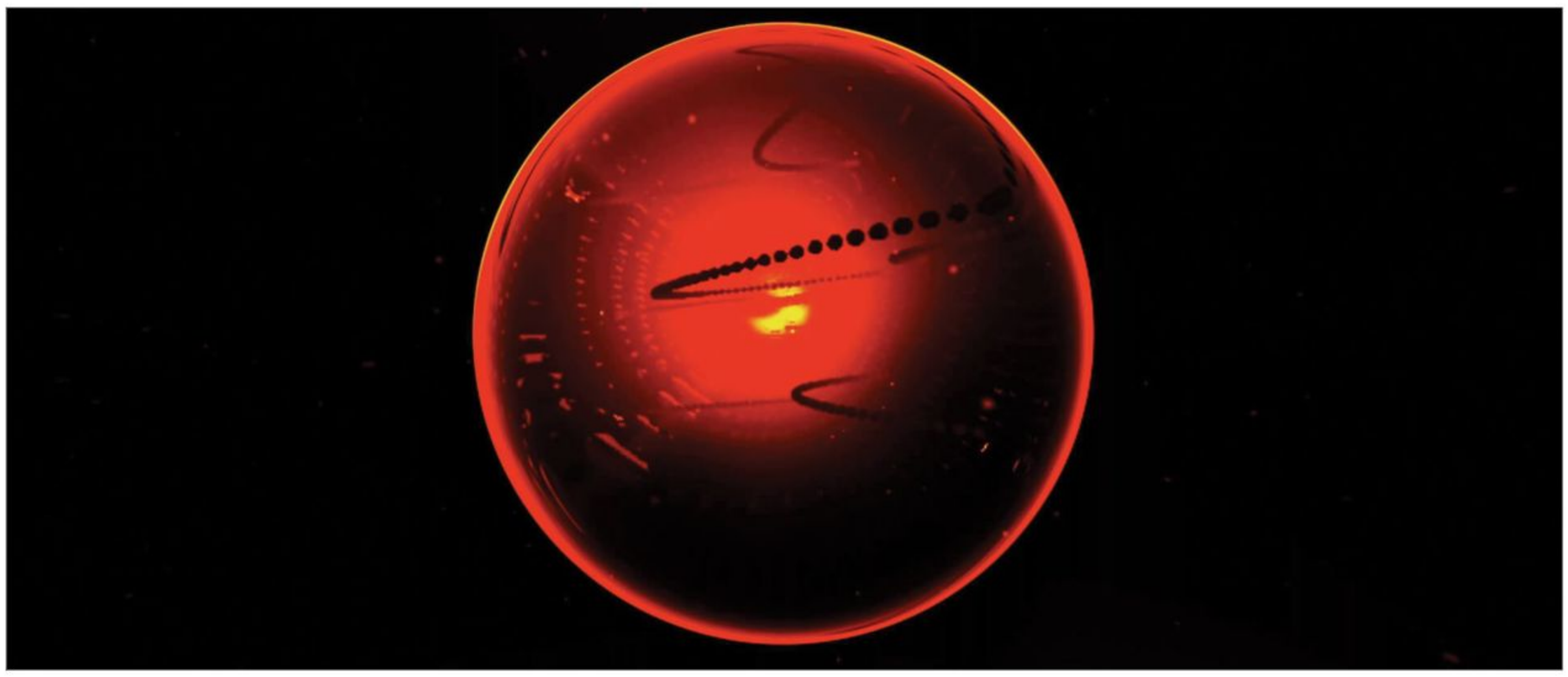

* SHADERS AND THREE.JS

LOAD AND WORK WITH SHADERS IN THREE.JS

Richard Mattka continues to explore shaders, focusing on how to use them in three.js and load from popular sources such as Shadertoy

Shaders enable a wide range of effects by working with the graphics hardware of devices. This tutorial will show you how to bring our previous Shadertoy experiments into three.js so you can begin to use them in your web sites and apps.

Shaders are incredibly powerful for visualising complex imagery and animations because of their optimised performance. Three.js is a popular WebGL 3D rendering library written in JavaScript. It already uses shaders and enables custom shaders as a material type for objects. Combine these technologies for amazing real-time animations.

SET UP A BASIC HTML PAGE

Start by setting up the HTML page and some basic CSS to size things for full screen. We're going to use three.js to handle drawing to the canvas. Add a reference to the three.js library. You can grab it here: *https://github.com/mrdoob/three.js*

```
<!DOCTYPE html>
<html lang="en">
 <head>
        <script src="three.min.js"></script>
        <style>
                html, body {  margin: 0;  padding:0; }
                canvas {  width: 100%;  height: 100% }
        </style>
</head>
<body>
        <script>
                // main code here
        </script>
</body>
</html>
```

TAG VERTEX AND FRAGMENT SHADERS

You can load shaders in different ways. Best practice is to separate these shaders into their own files and load as needed via JavaScript. You'll learn how to do that in the next tutorial but, for now, use this inline technique. It is great for simple prototypes and quick tests. Add this code in the <head> of your HTML.

```
<script id="vertexShader" type="x-shader/x-vertex">
</script>
```


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```
<script id="fragmentShader" type="x-shader/x-fragment">
</script>
```

CREATE A SHADERTOY SHADER

As in previous articles, you'll make use of the WebGL rendering tool, Shadertoy. It gives you a nice code window to test in and a render window to see your work. Once you see the flow of creating your own shader and loading it into three.js, you can use previous ones you've created or grab other ones as starting points for inspiration.

To begin, go here: (*www.shadertoy.com/new*) in a browser that supports WebGL. You will see a sample shader code all ready to go for you in the code window. Delete it, so that you're able to start writing your own.

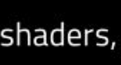
Type in this new code and then press the black Play icon at the bottom of the window. This will execute the shader code.

```
void mainImage( out vec4 fragColor, in vec2 fragCoord ){
        vec2 uv = fragCoord.xy/iResolution.xy; // normalize
        vec2 p = (2. * uv - 1.); // center
        float d=.01; // intensity
        vec3 col; // color
                float l = length(p);
        float t = iTime*.25; // adjust speed
        for(int i=0;i<=3;i++) {
                uv+=p/l*(sin(l - t));
                col[i]=d/length(mod(uv,1.0)-.5);
        }
        fragColor=vec4(col/l,0.);
}
```

CREATE A VERTEX SHADER

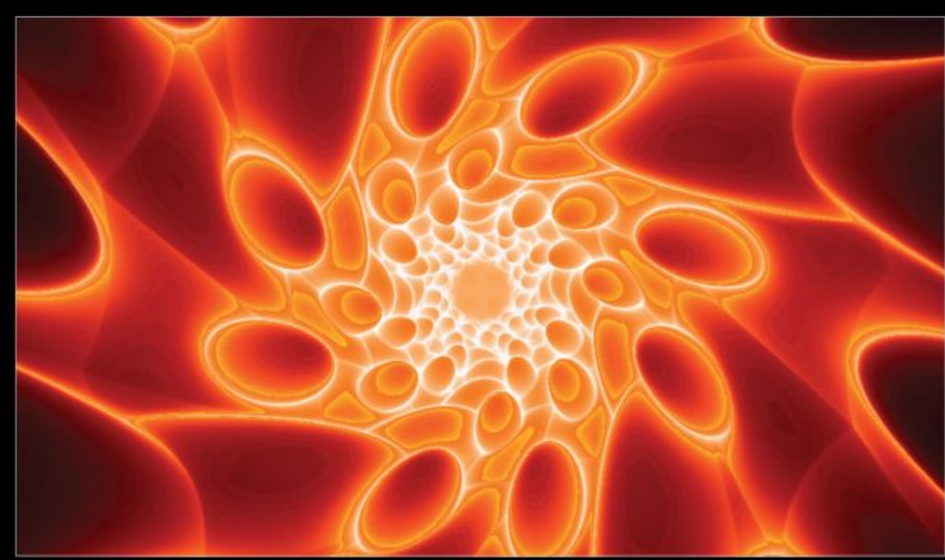
Shadertoy shaders are concerned with the fragment shader portion of the pipeline. That's what you just created. In three.js you also can work on the vertex shader. Add a simple vertex shader to your code now; this will pass through the position data to the fragment shader. In future tutorials you will learn to do more with this shader to manipulate the geometry of objects and much more. For now, add this vertex shader code between your vertex shader script tags:

```
varying vec2 vUv;
void main() {
        vUv = uv;
        vec4 mvPosition = modelViewMatrix * vec4(position, 1.0 );
        gl_Position = projectionMatrix * mvPosition;
}
```



* SHADERS

WHAT ARE GRAPHIC SHADERS?



Shaders can be used to create beautiful generative effects optimised for performance

If you missed previous articles or are new to graphic shaders, here is a quick primer.

Multiple shaders can be combined together in the graphics pipeline. Some are programmable, while others are locked to the hardware. We are most interested in two specific shaders in the pipeline – vertex shaders and fragment shaders. Together these make up the core of the OpenGL Shading Language and the WebGL graphics pipeline.

GLSL (OpenGL Shading Language) shaders compile and run on a wide range of platforms. You can apply what you learn to any environment that uses OpenGL, OpenGL ES or WebGL. This means you can use this knowledge for websites, three.js, iOS games, interactive installations, Unity, openFrameworks, Processing and many others.

What is a fragment shader?

This shader, which is typically the last in the pipeline, instructs each fragment or pixel what colour it should be. It does this by setting a value for fragColor in the code's "main" function. It's where we'll create our photo filters, animations, effects and so much more, by manipulating the colours of the pixels.

Vertex shaders

Vertex shaders handle the processing of individual vertices. They take a vertex as an input and return one as an output in a 1:1 mapping. Because we won't be diving into manipulation of 2D or 3D primitives or geometry, we don't need to do anything with these to get started. Just know that it is the first step in the pipeline and for now is essentially giving us a canvas to colour.

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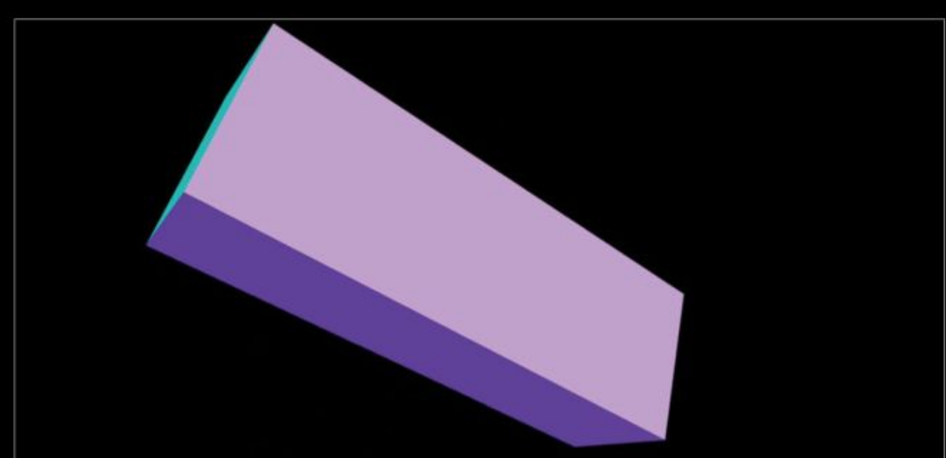
* GLOSSARY

THREE.JS CORE ELEMENTS



Three.js is a powerful WebGL library for web apps and sites

The scene
The scene is a container object that encapsulates the other objects and elements that we wish to show.

Camera
Three.js has a few different camera classes including a perspective camera, which we will use for 3D, and an orthographic camera, used for rendering 2D scenes or UI elements.

Renderer
The renderer handles the display of the 3D scene using WebGL. It targets an HTML <canvas> element to draw into. Typically you will call the renderer to render each frame.

Materials
Three.js comes with several materials, such as Normal, Basic, Lambert, Phong and Shader. Materials are used to texture the faces of an object's geometry. Attributes include things such as texture maps, colour and opacity.

Geometry
Geometry defines the vertices of an object to draw it. Faces created by these vertices are also defined, which can be filled by a material. It can be defined manually through code or as pre-defined primitives such as planes or spheres. It can also be loaded from external files exported from 3D-modelling software.

Mesh
A mesh is the combination of a geometry and a material. This mesh object is what we would typically think of as a physical object because it now has enough information to be seen.

► ADD AND UPDATE FRAGMENT SHADER

Copy and paste the code you created in Shadertoy into the fragment shader section of your HTML.

There are a few things to adjust when migrating code from external sources. First, references to FragCoord need to be updated to gl_FragCoord, and FragColor to gl_FragColor to match up to three.js's internal references. If you use functions for loading textures such as "texture", it needs to use the supported "texture2D".

Some code may use variables (uniforms) such as iGlobalTime instead of iTime or resolution instead of iResolution. Make sure those are consistent in your shader code and the uniforms you'll set up later. Lastly, update the mainImage function declaration to use the simpler form "main" with no parameters.

Your new fragment shader code between the shader's script tags should now look like this:

```
uniform float iTime;
uniform vec2 iResolution;
void main(){
  vec2 uv = gl_FragCoord.xy/iResolution.xy; // normailze
  vec2 p = (2. * uv - 1.); // center
  float d=.01; // intensity
  vec3 col; // color
  float l = length(p);
  float t = iTime*.25; // adjust speed
  for(int i=0;i<=3;i++) {
    uv+=p/l*(sin(l - t));
    col[i]=d/length(mod(uv,1.0)-.5);
  }
  gl_FragColor=vec4(col/l,0.);
}
```

GLOBAL VARIABLES AND INIT FUNCTION

Between the main script tags you defined earlier, add these global variables for your camera, scene and renderer. You will also use the three.js clock class to update the iTime Uniform in your shader. You'll also call your main init function and create its declaration. Add this code:

```
var camera, scene, renderer;
var uniforms, material, mesh;
var startTime = Date.now();
var clock = new THREE.Clock();
init();
function init() {
        //init code
}
```

SET UP THE THREE.JS SCENE

Inside the init function you need to set up a scene, camera and renderer. Then you can add a canvas

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element via the renderer's "domElement" property. This process is similar in all setups you'll do in three.js. Add this code next:

```
//create a Three.js scene
scene = new THREE.Scene();
// add a camera
camera = new THREE.PerspectiveCamera( 45, window.
innerWidth / window.innerHeight, 1, 1000000 );
camera.position.z = 1;
 // add the renderer
renderer = new THREE.WebGLRenderer({antialias:true});
renderer.setSize( window.innerWidth, window.innerHeight
);
document.body.appendChild( renderer.domElement );
```

We moved the camera back a little using the position property so it would not occupy the same position as the plane we are going to render our shader on.

DEFINE THE UNIFORMS

Next, you need to create an JSON object to hold the uniform values that correspond to your fragment shader's uniforms. You've used iTime and iResolution in your shader but if you modified your shader code, be sure to include all the uniforms you wish to update. Add this code also inside the init function.

```
// set up uniforms
uniforms = {
    iTime: { type: "f", value: 10000.0 },
    iResolution: { type: "v2", value: new THREE.Vector2() }
};
uniforms.iResolution.value.x =  window.innerWidth;
uniforms.iResolution.value.y = window.innerHeight;
```

CREATE A CUSTOM SHADER MATERIAL

Three.js enables you to create shaders as materials for objects. Declare the ShaderMaterial inside your init function, and assign your uniforms JSON object and the two shaders you created previously, like this:

```
// create custom shader material
material = new THREE.ShaderMaterial( {
    uniforms: uniforms,
    vertexShader: document.getElementById(
'vertexShader' ).textContent,
    fragmentShader: document.getElementById(
'fragmentShader' ).textContent
});
```

3D PLANE WITH THE SHADER MATERIAL

Next, create a 3D mesh by combining the built-in three.js PlaneGeometry and the new material you created. Set the scale of the plane to match the full size of the screen. Then add it to the scene. Do that by adding this code inside your init function:

```
// create object mesh
var geometry = new THREE.PlaneGeometry( 1, 1 );
var mesh = new THREE.Mesh( geometry, material );
mesh.scale.x = window.innerWidth;
mesh.scale.y = window.innerHeight;
scene.add(mesh);
```

You now have a 3D object mesh with a custom shader material. You're just about ready to see it in action.

CREATE A RENDER ANIMATION LOOP

To see the scene rendered by the camera, you need to render a frame. You need to call and create your animation loop. You bind this to the requestAnimationFrame function to ensure that it runs as optimally as possible for the browser (ideally this should be 60fps).

First, add the call to the animation function as the last line in your init function:

```
animate();
```

Then, create a new function for animation outside the init function like this:

```
function animate() {
   requestAnimationFrame( animate );
   render();
}
```

UPDATE SHADER UNIFORMS FOR EACH RENDER

For each frame, you need to increment the uniform's iTime by the amount of time that has passed since the last frame. You will use the clock class that you declared previously to do this. Add this final code as a new function:

```
function render() {
   uniforms.iTime.value += clock.getDelta() ;
   renderer.render( scene, camera );
}
```

Now, when you run the code you will see your shader, converted from Shadertoy running in three.js. It is just the start but you can tweak and run your own shaders in your own code. This means you can include them as backgrounds on your web page or app or as other layers where you wish. Next tutorial, we'll explore using shaders as material on more complex objects and make the shader move with the object in 3D space. n

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View source files here!

All the files you need for this tutorial can be found at *https://codepen.io/2975/pen/NzvvPz*

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* CSS GRID AND VANILLA JAVASCRIPT

CREATE AN IMAGE CHANGER WITH CSS GRID AND VANILLA JAVASCRIPT

Using CSS Grid and Vanilla JavaScript, **Neil Pearce** will show you how to create a simple image changer

There are many image sliders or image carousels seen on the internet; some are developed as plugins and many rely heavily on jQuery. As a front-end developer, you would find it hard to avoid using one when you develop your websites. But that doesn't mean we can't use one or even learn how to develop them, especially if they can be applied as a handy image changer.

Let's say you have an ecommerce website to build and you wanted a simple and easy way of changing images of a specific product. Or perhaps you just want a simple way to shift through your personal images on your portfolio or blog. Well, in this tutorial you will learn how to build this simple image changer using CSS Grid and Vanilla JavaScript.

We will be using CodePen throughout as it's a lot easier to set things up, so if you haven't got a free CodePen account yet, quickly go and set one up now. Then open up your *https://codepen.io* account and let's get started!

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GET SET UP

To begin with, open up CodePen and create a new pen. In the CSS section, go ahead and change the settings to SCSS as the preprocessor and select normalise as the base reset. Then in the JS section, change the settings to Babel so that we can use the ES6 syntax.

ADD THE HTML

In the HTML section of our pen, we can begin proceedings by adding in a container class. We will be using this as a wrapper. And then in between that, we will be adding our main image. With this in mind, it would make sense to give this a class name of main--img.

```
<div class="container">
  <div class="main--img">
  </div>
</div>
```

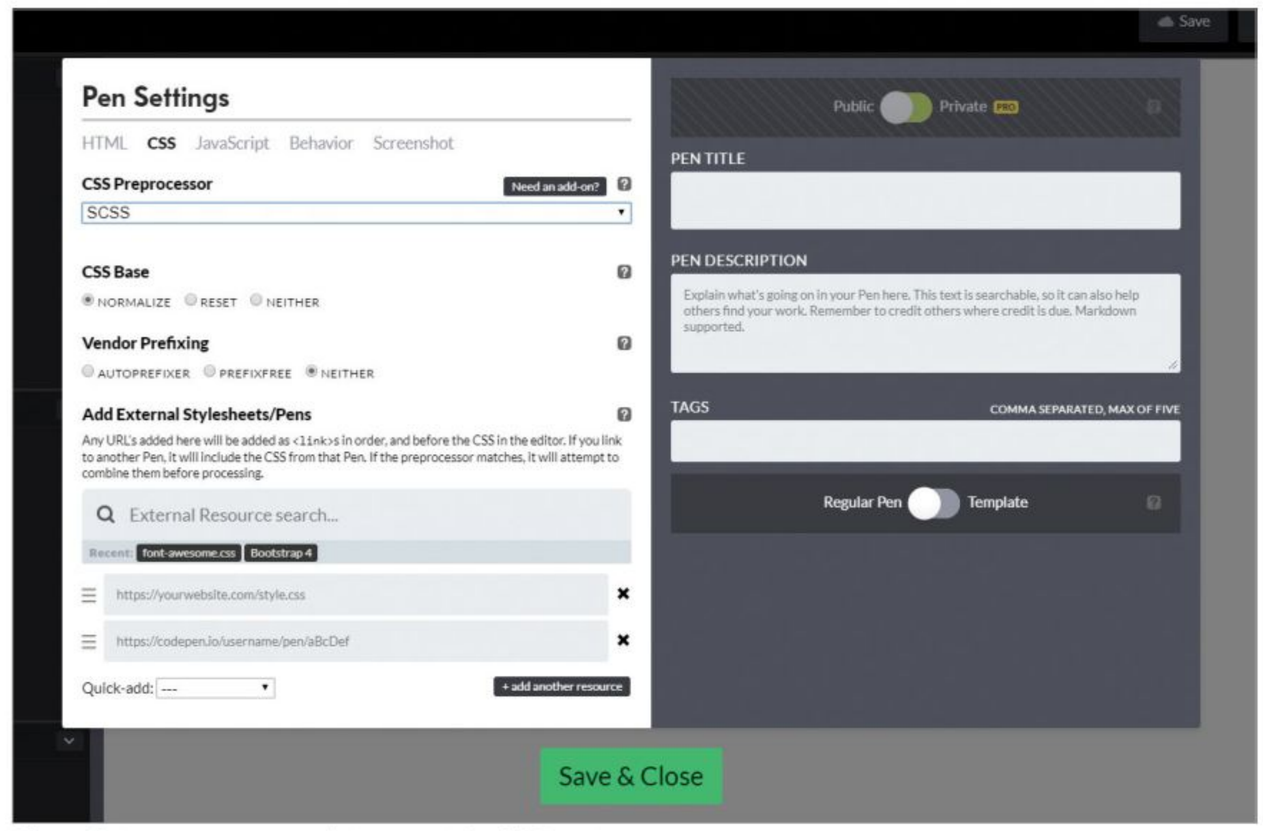
> "In the HTML section of our pen, we begin by adding a container class. We will be using this as a wrapper"

BRING IN IMAGES

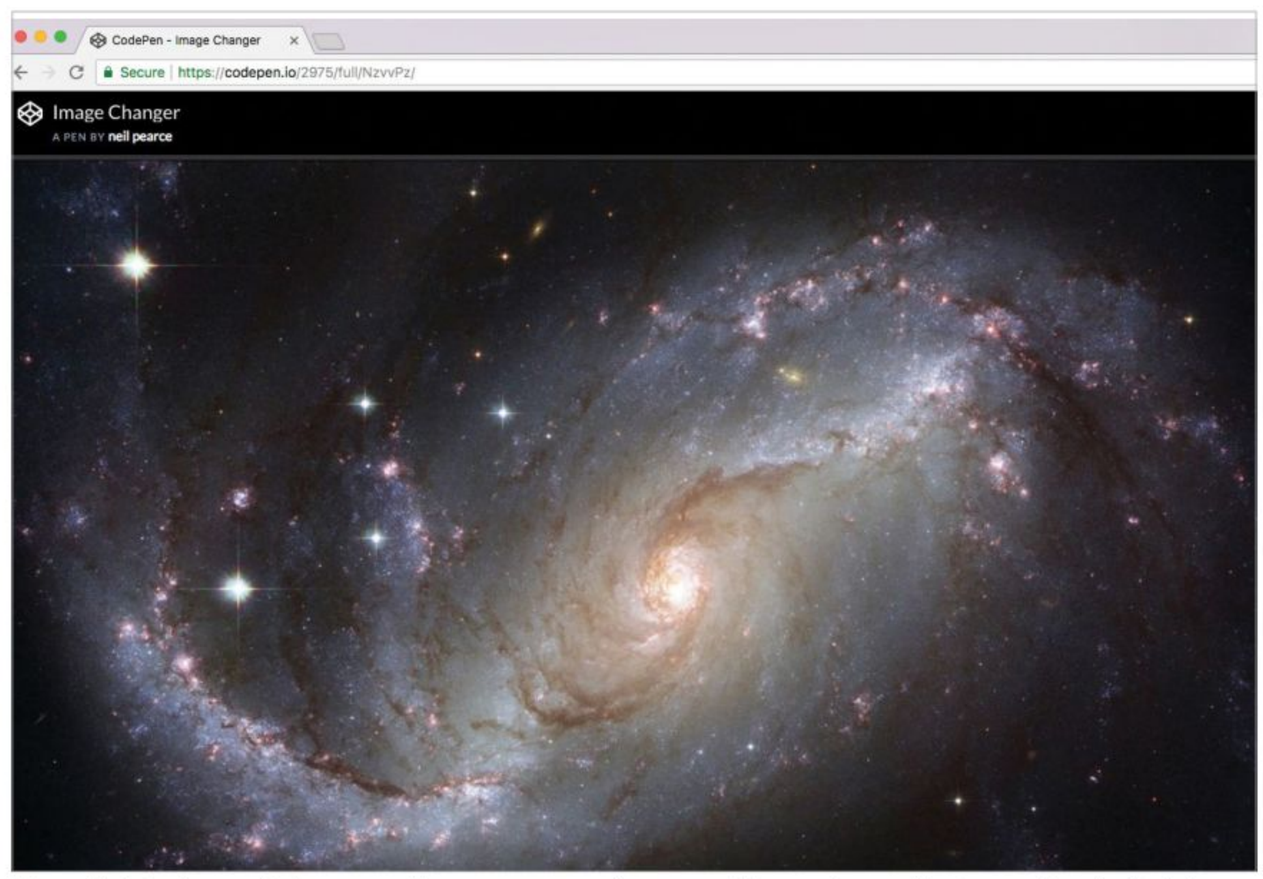
The images we will use are going to be stored on a free image hosting and sharing website: *https://image.ibb.co* – it's free to sign up and it's handy for when you want to add images to your pens or to do rapid prototyping. The main image will, of course, be the active image, so make sure you add a class called active to the link. What we will do later on is use JavaScript to target that active image and save it as the current main image.

```
<div class="main--img">
  <img src="https://image.ibb.co/cTfhsy/galaxy.jpg" alt="" class="active">
 </div>

 <div class="images">
  <img src="https://image.ibb.co/cTfhsy/galaxy.jpg" alt="">
  <img src="https://image.ibb.co/dOrizd/galaxy_arc.jpg" alt="">
  <img src="https://image.ibb.co/iP1BkJ/spaceman.jpg" alt="">
 </div>
```



Above Set up a new pen ready to accept the ES6 syntax



Above Pick the image that you want to use as your main one and then make sure that you add an 'active' class to the link

INITIAL CSS

The HTML section is now finished and we need to begin adding in the CSS. The first thing we need to do is set the default styles to the body and container. The container will sit centre to the browser window with a maximum width of 900px and we will centre it using margin: auto.

```
body {
 margin: 25px;
 padding: 0;
 background: #000;
}

.container {
```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```
  max-width: 900px;
  margin: auto;
  border: 4px solid #333;
}
```

IMAGE STYLES AND THUMBNAILS

The first thing we want to do is make sure all our images have a width of 100%. Then because our images won't link to anywhere, we need to make sure they look clickable so we add a cursor pointer to give us that effect. Then we want to position thumbnail images underneath the main image.

To achieve this we can use CSS Grid. So using the grid template property, we can specify we want to have three columns with each taking up one fraction of the size of its container. So in other words, all three will be the same size. Then we give them a gap of four pixels so that they appear to have a border around them.

> "Because our images won't link to anywhere, we need to make sure they look clickable, so add a cursor pointer"

```
.main--img img,
.images img {
  width: 100%;
  cursor: pointer;
  transition: .8s;
}

.images {
  display: grid;
  grid-template-columns: repeat(3, 1fr);
  grid-gap: 4px;
}
```

KEYFRAME ANIMATION

When we click on each thumbnail image and the main image changes, we want some kind of animation to occur, otherwise it'll be a bit jarring and won't offer a good user experience. We can do this quite simply by using CSS keyframes. Firstly we will add a subtle hover effect by increasing the thumbnail opacity to 80% and adding a transition. Then we'll create a keyframe animation called `fadein` that will be used to bring up the full opacity of the target image.

```
.images img:hover {
  opacity: 0.8 !important;
  transition: .8s;
}

@keyframes fadeIn {
  to {
    opacity: 1;
  }
}
```

IMAGE FADE

The image fade rule will be where the overall animation will trigger. JavaScript will be used to add in this class name (which we will get into more detail later). But before anything happens, we need to make sure the image opacity is set to zero and then we can trigger the `fadein` animation, which sets the opacity to 1 (100%).

```
.image-fade{
  opacity: 0;
  animation: fadeIn 0.6s 1 forwards;
}
```

CONSTANTS

Now we head over to the JavaScript section and will begin by adding in some constant variables. First of all we can store the document in a constant called `doc`, which will enable us to shorten our statements whenever we want to target the document. Makes sense, right?

Then we will need to store the active image within a constant called `currentImg`. And then by using `querySelectorAll` we can create and store a Node List of all the thumbnail images. And lastly we will store a opacity value that we will use on the inactive images.

```
const doc = document;
const currentImg = doc.querySelector('.active');
const imgs = doc.querySelectorAll('.images img');
const imgOpacity = .5;
```

SET THE OPACITY

Because we created a Node List using `querySelectorAll`, we can use this in a similar way to how we use arrays and target the first image thumbnail `[0]` and set its style property equal to our `imgOpacity` constant.

```
// Set the first image opacity
imgs[0].style.opacity = imgOpacity;
```

LOOP THROUGH THE IMAGES

Before we do anything else, we first need to create a global variable, which stores the last selected image (more on this in a later step). Then we can loop through each image and add a click event that

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will fire off a function called clickImage, which we will create in the next step.

```
// A pointer to last selected thumbnail image
let thumbPointer = imgs[0];

// Loop through the images and add a click event
imgs.forEach(img => img.addEventListener("click",
clickImage));
```

THE CLICKIMAGE FUNCTION

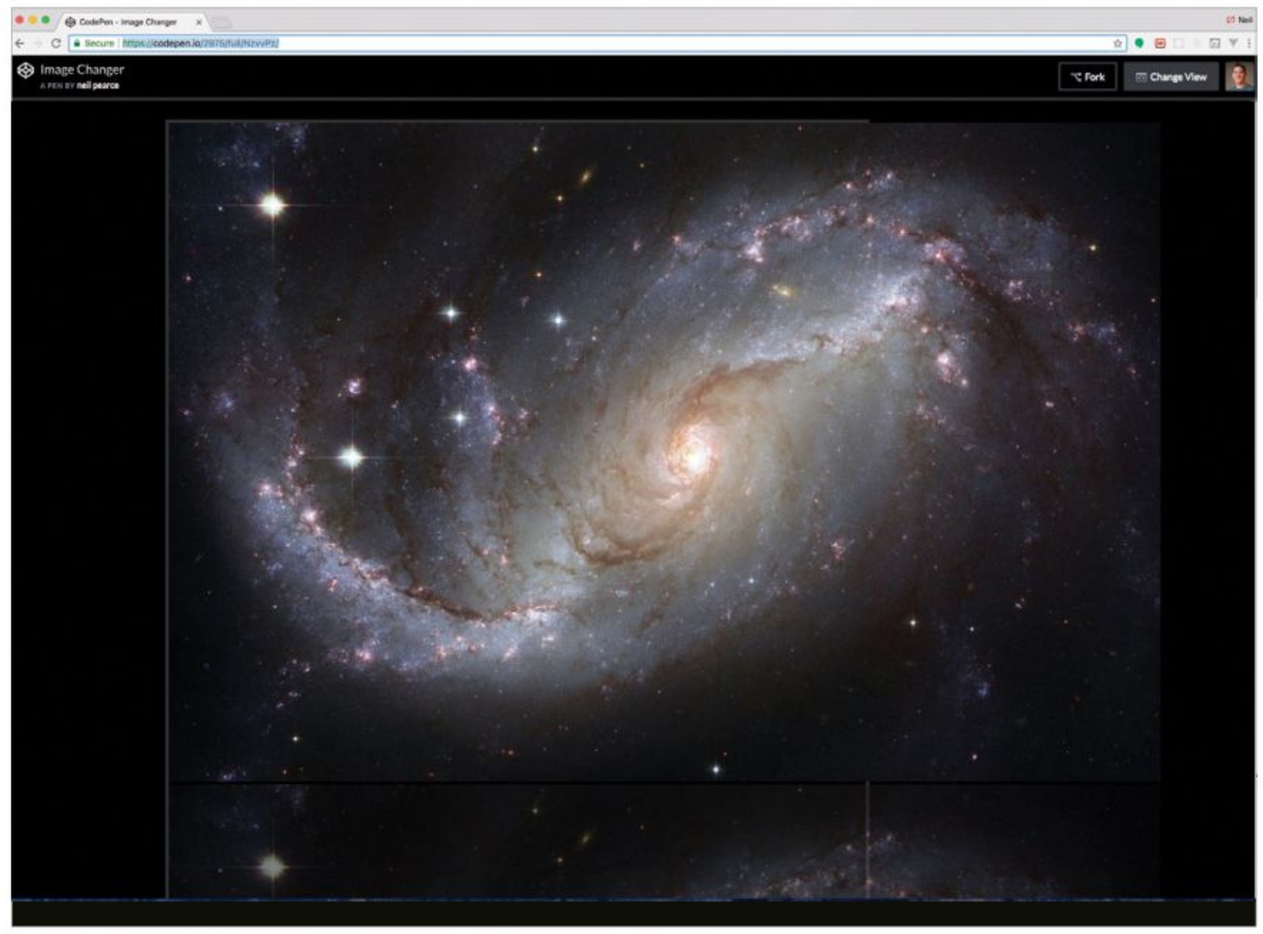
The clickImage function will be given a parameter called e that will reference any click events that occur. Using the letter e is normal naming convention; however, you can use whatever convention that you wish, as long as it's descriptive to what it does. We are then going to check and see if the target we clicked on is the same picture; if it is then we will return it and not do anything else. However, if it is not then we will change the main image with the one we just clicked on. As this happens we will add on the class image-fade and fire off our CSS animation. Then the last thing we do is reset the opacity of the last thumbnail so they brighten up again, ready to be clicked on.

```
function clickImage(e) {

  // In case the same picture is selected again.
  if(e.target === thumbPointer) return;

  // Change current image to src of clicked image
  currentImg.src = e.target.src;

  // Add fade in class
  currentImg.classList.add("image-fade");

  // Change the opacity to opacity var
  e.target.style.opacity = imgOpacity;

  // Reset the opacity of last thumbnail
  thumbPointer.style.opacity = 1;

  // Update thumb Pointer
  thumbPointer = e.target;
}
```

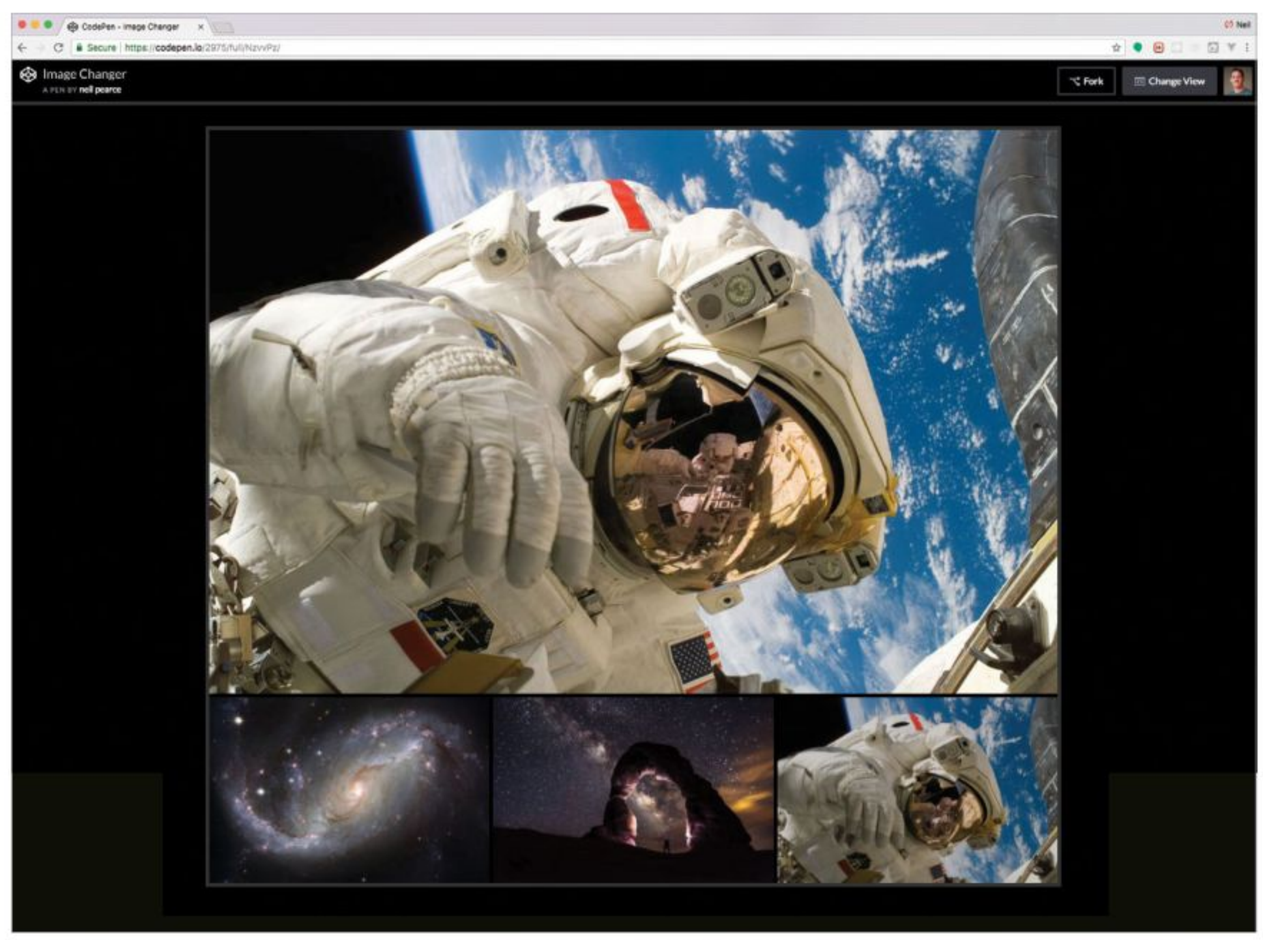
REMOVE THE CLASS

The problem we face now is that after the image-fade class has been added, it stays added. So we need a way to remove this class on the current image. To achieve this we can use the setTimeout method and say after half a second, remove the image-fade class.

```
// Remove fade-in class after .5 seconds
```



Above The overall animation is triggered via the image fade rule



Above The clickImage function enables you to pick out a main image, and then brighten the opacity of the thumbnails to be clicked on again

```
  setTimeout(() => currentImg.classList.remove("image-
fade"), 500);
```

CONCLUSION

Throughout this tutorial we have learned how to create a simple but nonetheless handy image changer that could be used anywhere on your websites. We've also been using ES6 syntax, such as const, let and arrow functions. Arrow functions are certainly something that we recommend you learning more about, as they are very useful when it comes to cleaning up your code.

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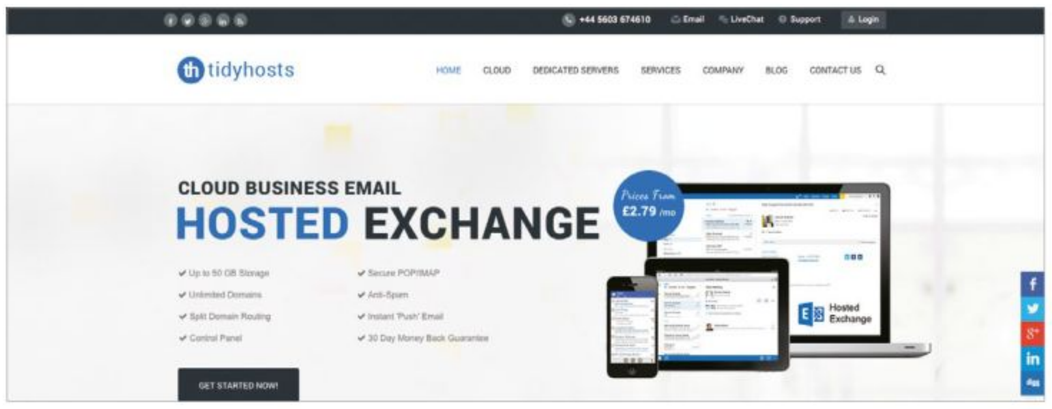

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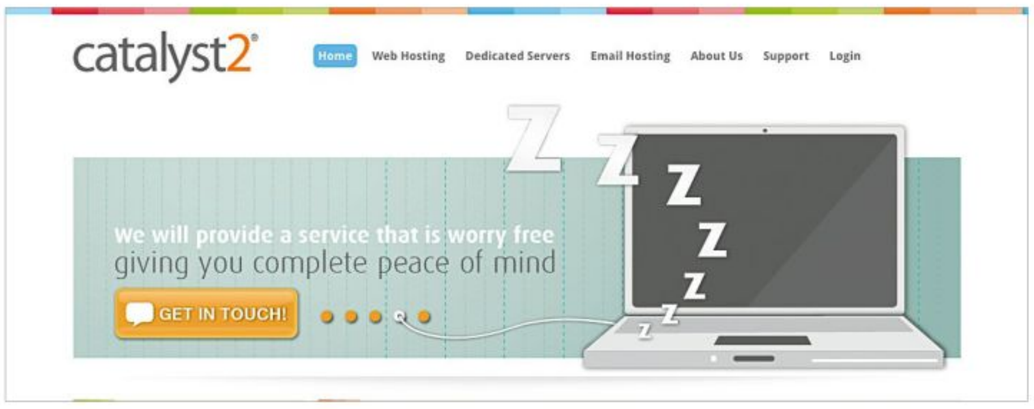

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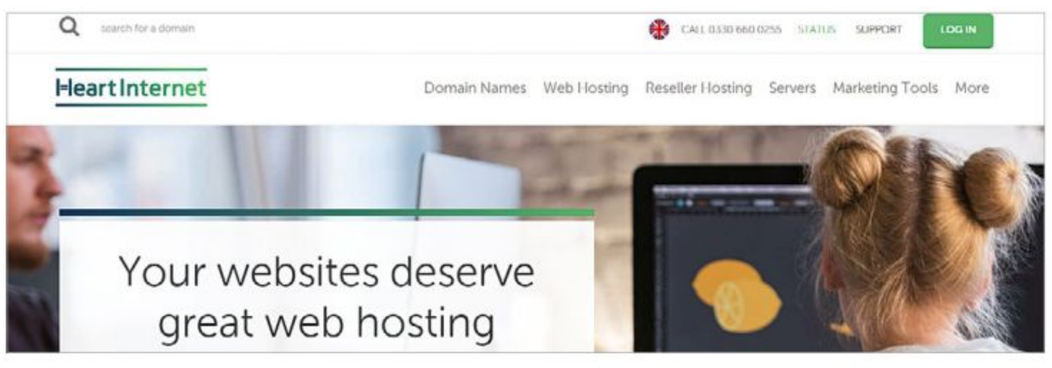

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* ACCESSIBILITY

NAVIGATING ACCESSIBILITY WITH REACT NATIVE

Viktor Charypar talks us through why accessibility was important when Red Badger designed and built this year's Pride in London app

When Red Badger won the opportunity to create the Pride in London app pro bono, we knew that it had to reflect the diversity and inclusivity of the event and be accessible. The Pride festival in London is the largest of its kind in the world, so everyone – no matter what their abilities may be – should be able to enjoy the app.

Choosing React Native was a no-brainer. We wanted the app to be built as open source, for the community, by the community and React made contributing accessible to anyone familiar with modern web development. This means the app can evolve every year, based on user feedback and insights, rather than starting from scratch. Finally, because React brings good separation of behaviour and styling from the web to native apps, any other Pride or LGBT+ organisation in the world can easily modify the app for their own needs.

However, given it's only two years old, getting React Native to adhere to accessibility standards wasn't without its challenges.

It starts with UX. With the limited screen real estate, building the user interface to still work even with accessibility settings (such as large font size) enabled means this needs to be built in from the outset. While React Native handles cross-platform development with high levels of code reuse (well over 90 per cent), the primitives are still backed by native components and text rendering behaves differently on each platform. Close collaboration between the designers, developers and testers was crucial in getting this right.

The most effort went into making sure the app is usable with a screen reader. While React Native enabled us to develop visual and touch interfaces for both platforms at the same time, the native screen readers are significantly different, so we typically focused on each platform separately. However, the API resembles the web ARIA accessibility tagging, so it should feel familiar to any web developer.

The major difficulty with mobile screen readers is the limited set of controls available to the user. Some UI patterns don't fit this well and we had to go back to the drawing board in order to make things usable. React Native was a great help here – even major design changes only took a few hours.

All challenges were worth it, though, and we're so proud of the app and the fact it is accessible.

* PROFILE

Viktor (@charypar) is a tech lead at digital consultancy Red Badger. The company helps large organisations navigate the open-source revolution.

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(mt)

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