## Design Systems and Front-End Architecture

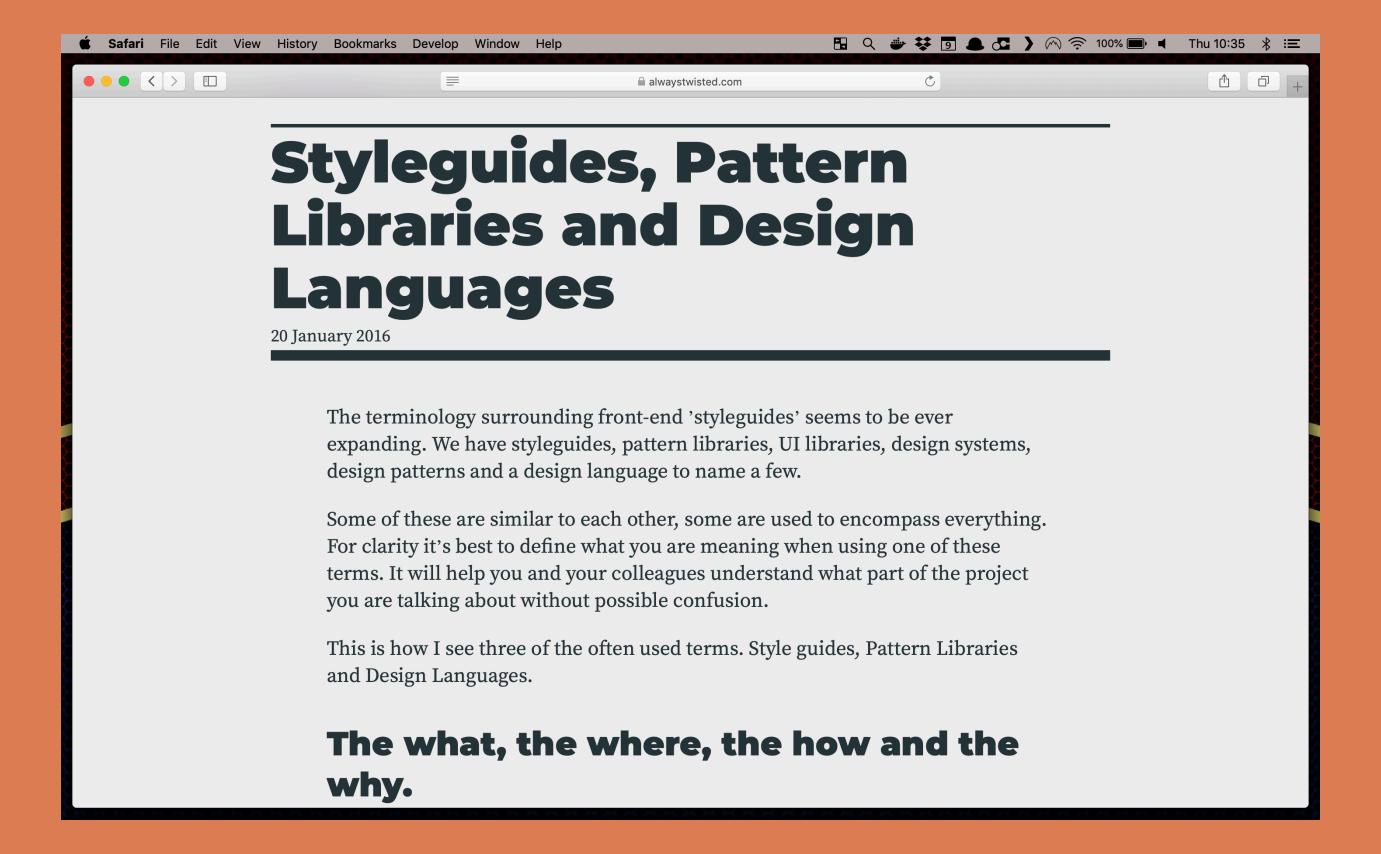




#### What we are going to discuss today:

- 1. What is a Design System?
- 2. Do we need one?
- 3. Where should we start?
- 4. What makes a component?
- 5. How do we maintain it?

### What is a Design System?



## Pattern Library

# Pattern Library Style Guide

# Pattern Library Style Guide Design Language

### A Design System contains:

the who, what, where, when, why and how of a product

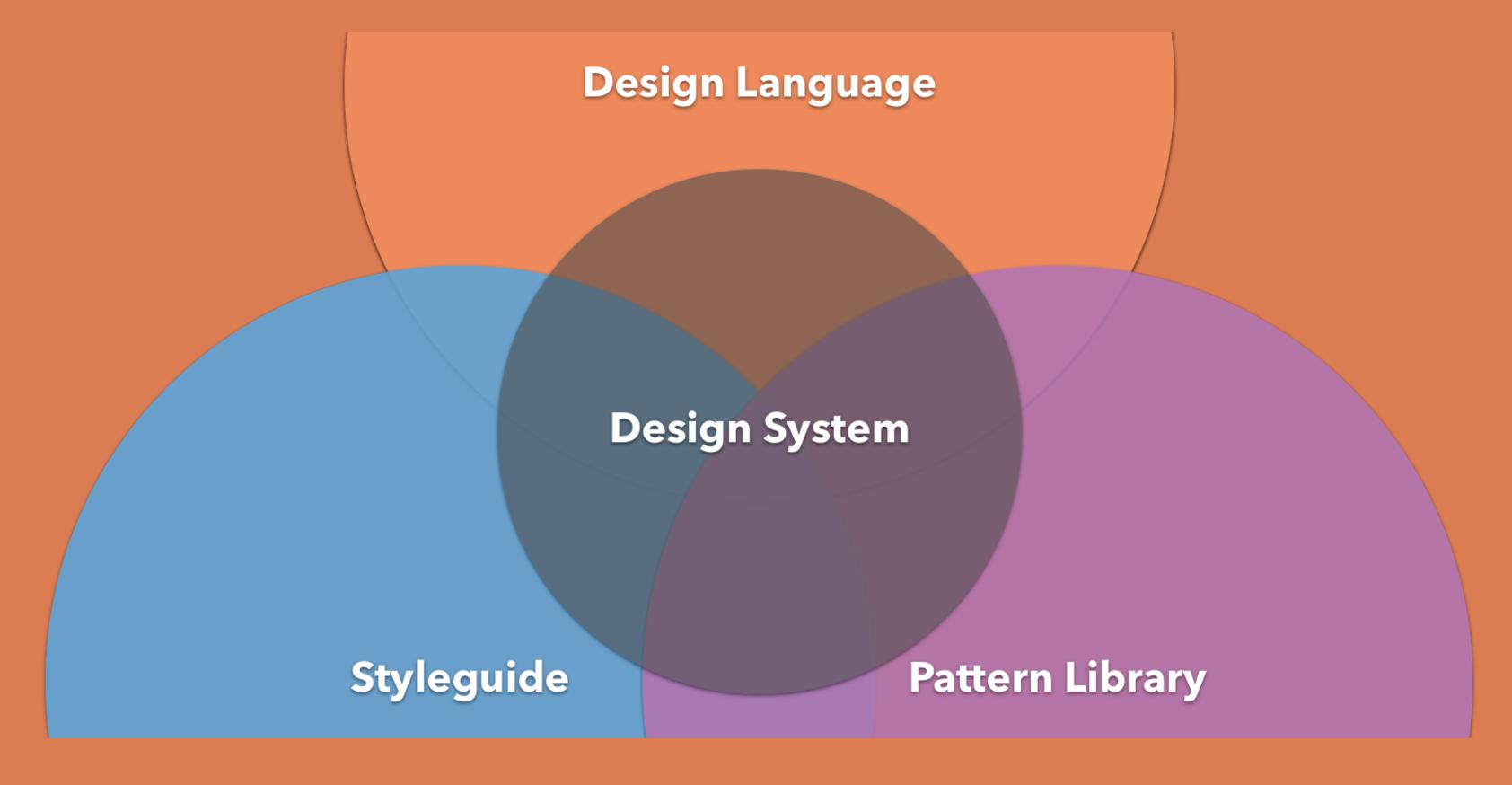
# Pattern Library The Who, The What.

### Style Guide

The How, Where, and When

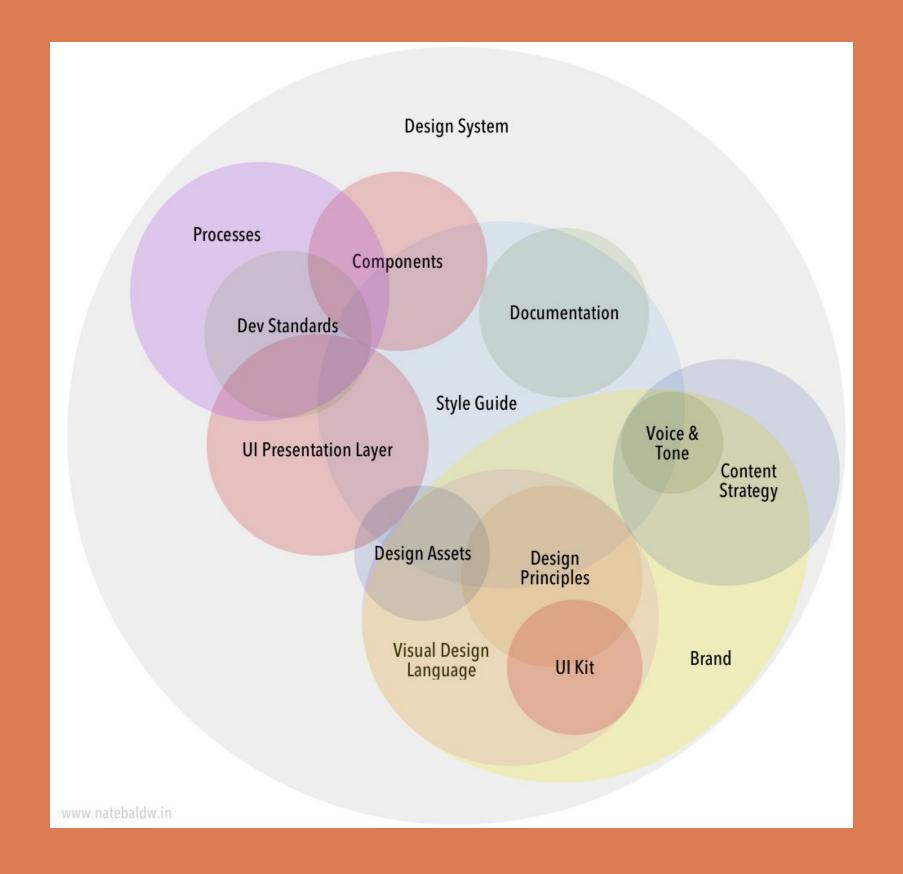
## Design Language

The Why

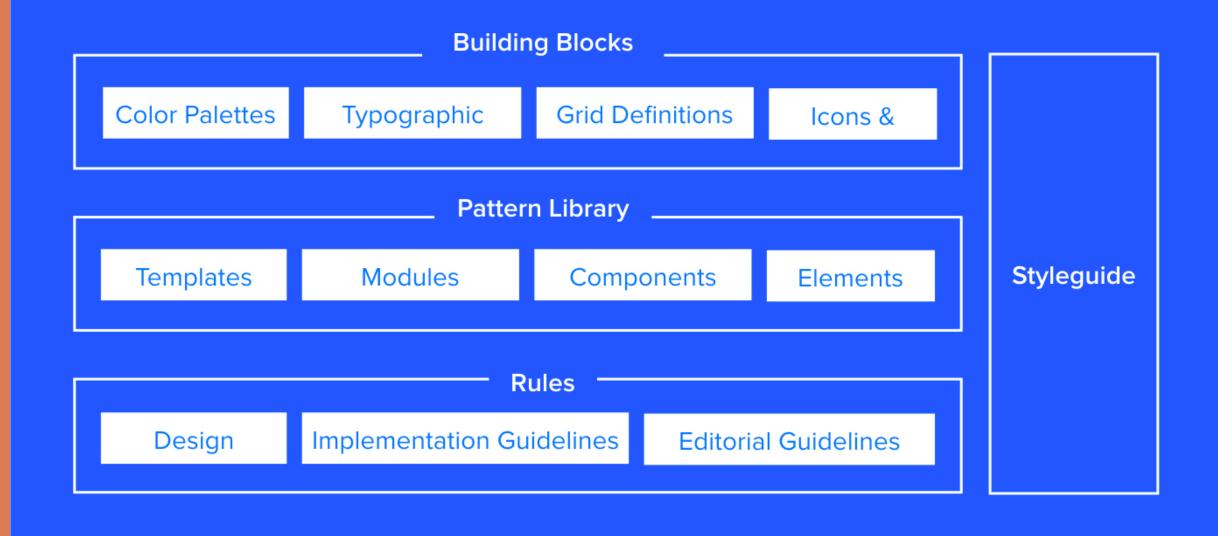


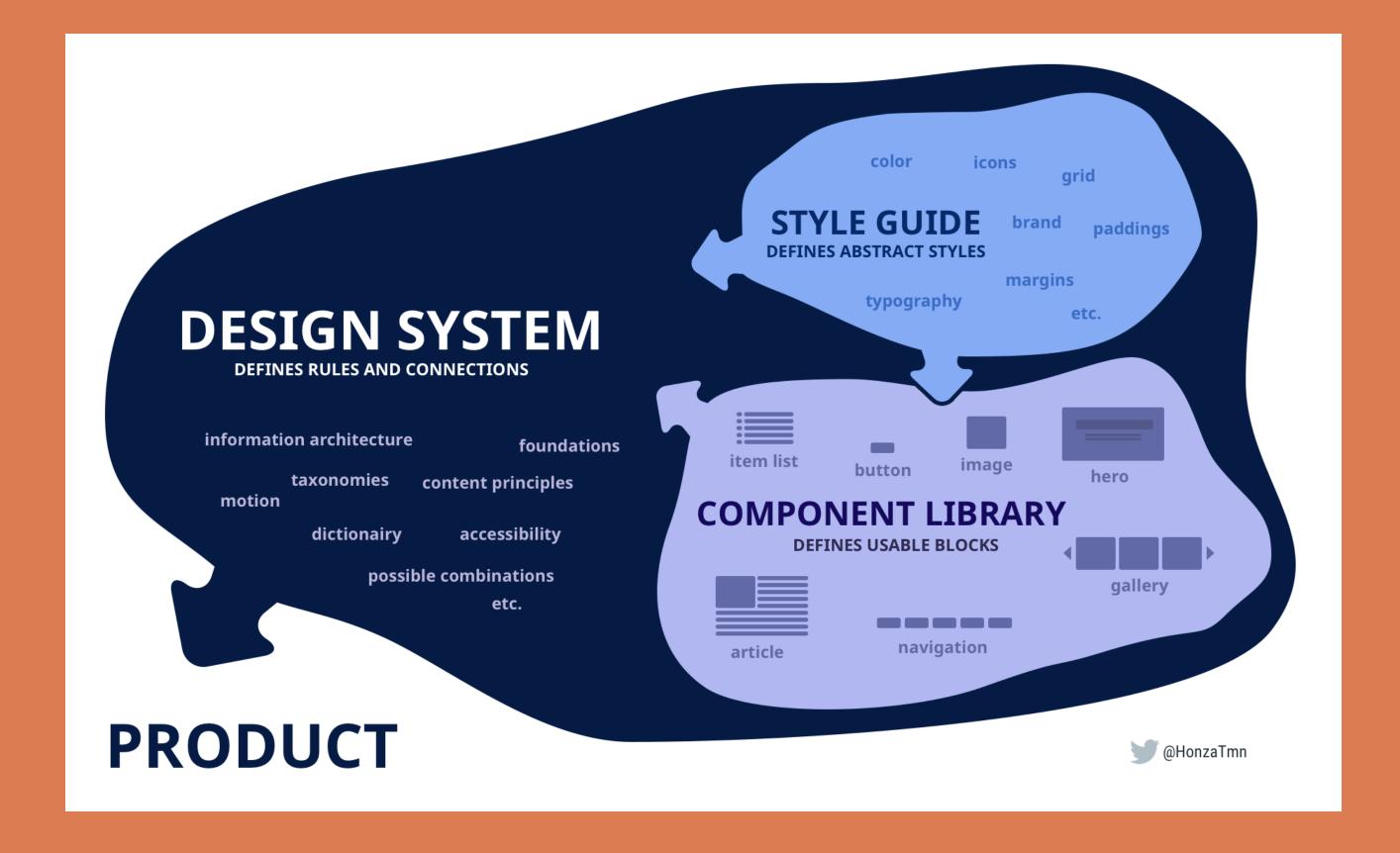
### That's a basic take.

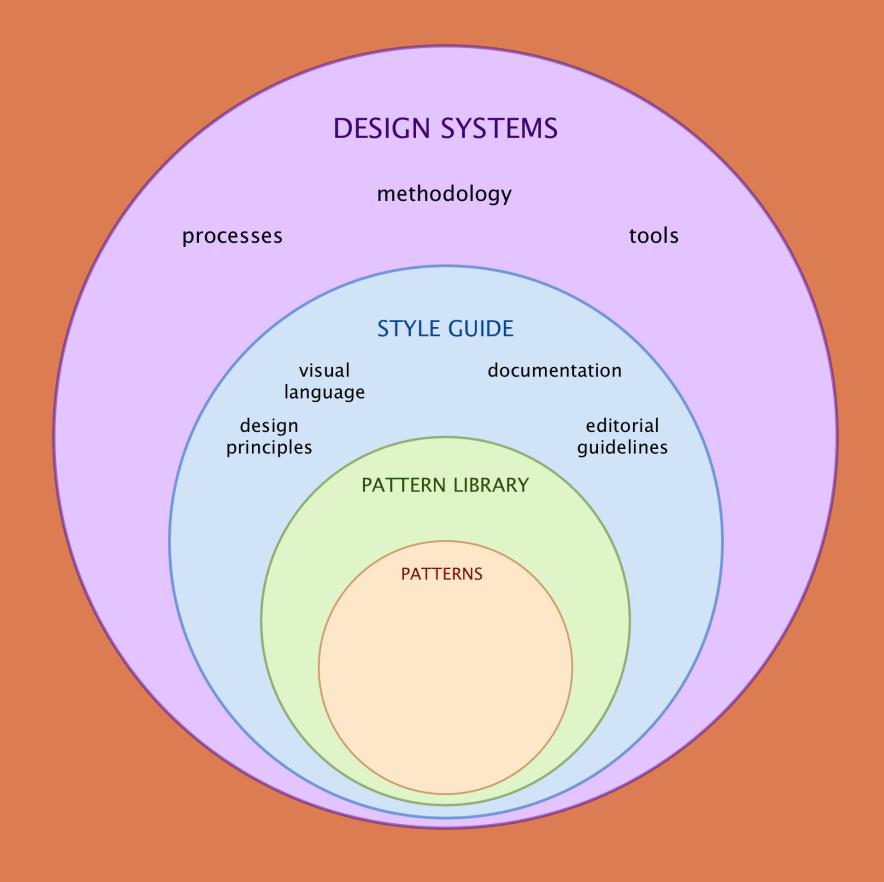
### What else could be in a Design System?



#### The Structure of a Design System



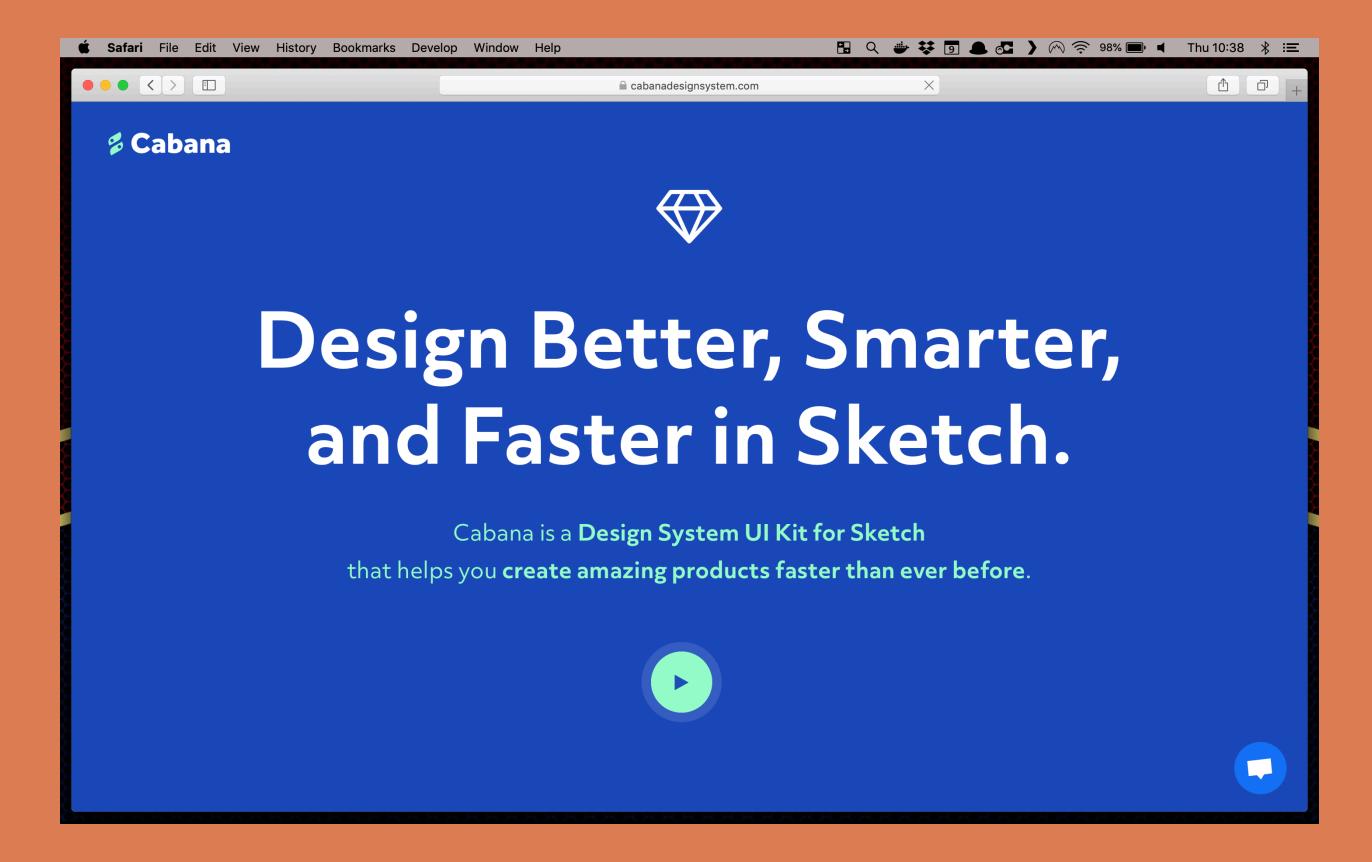


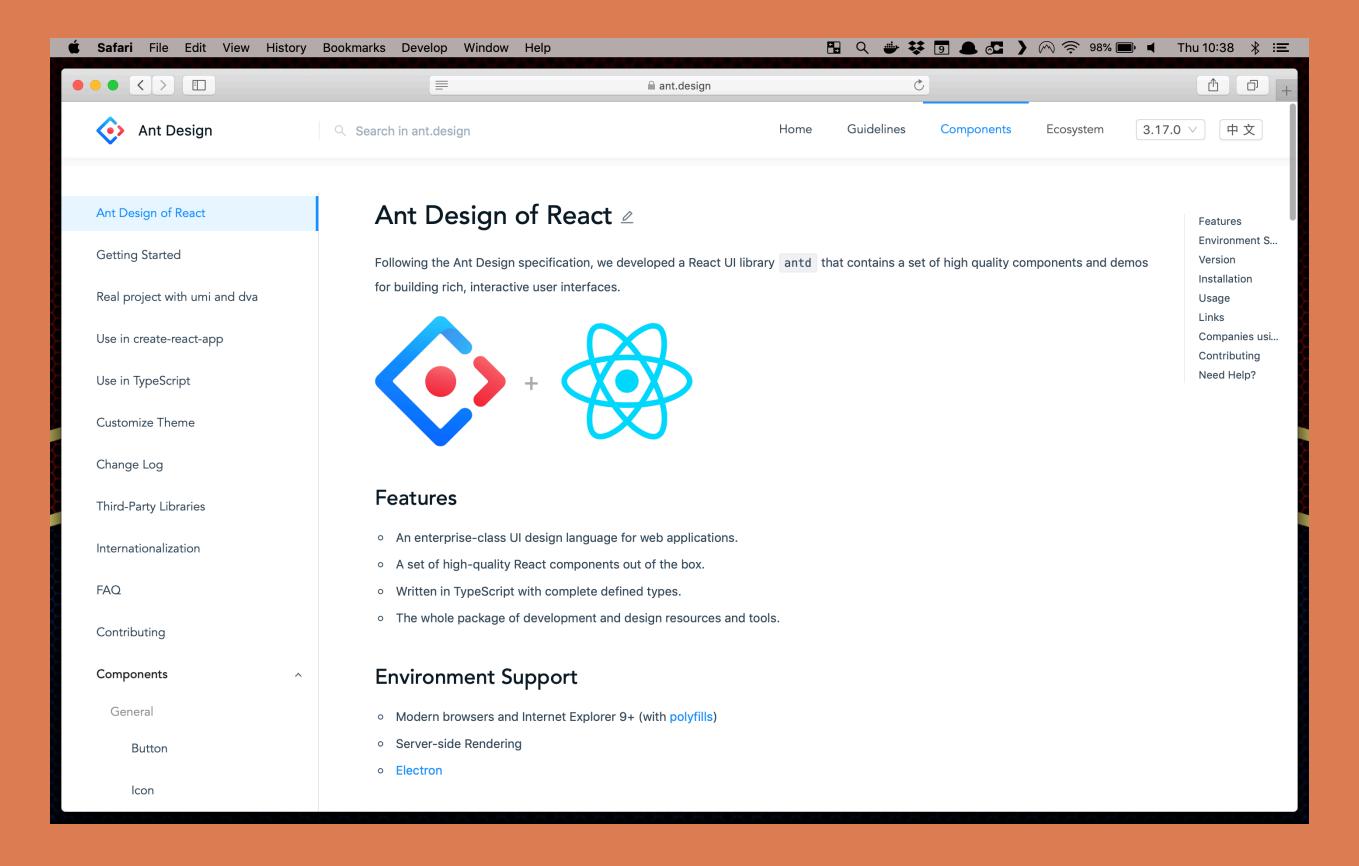


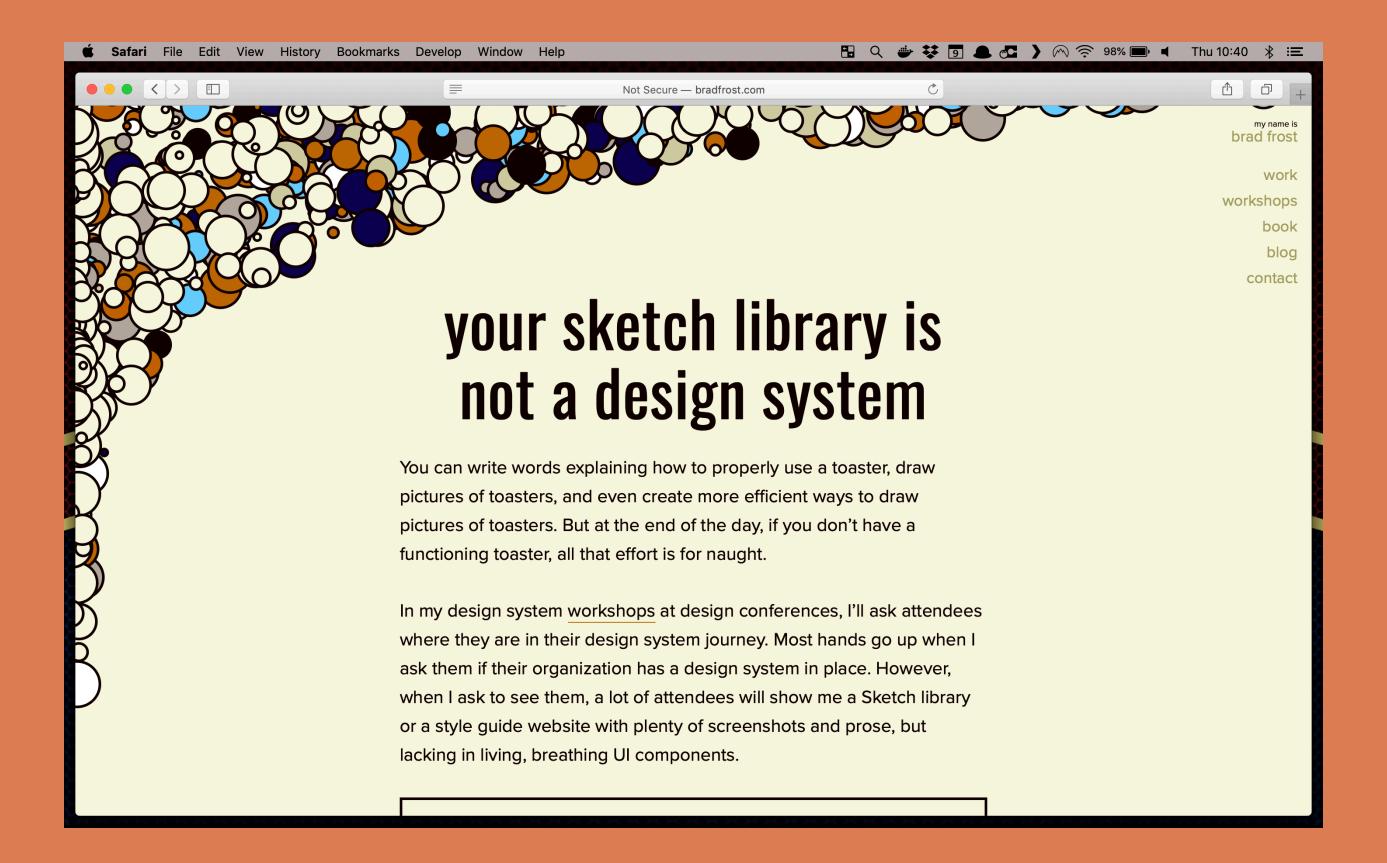


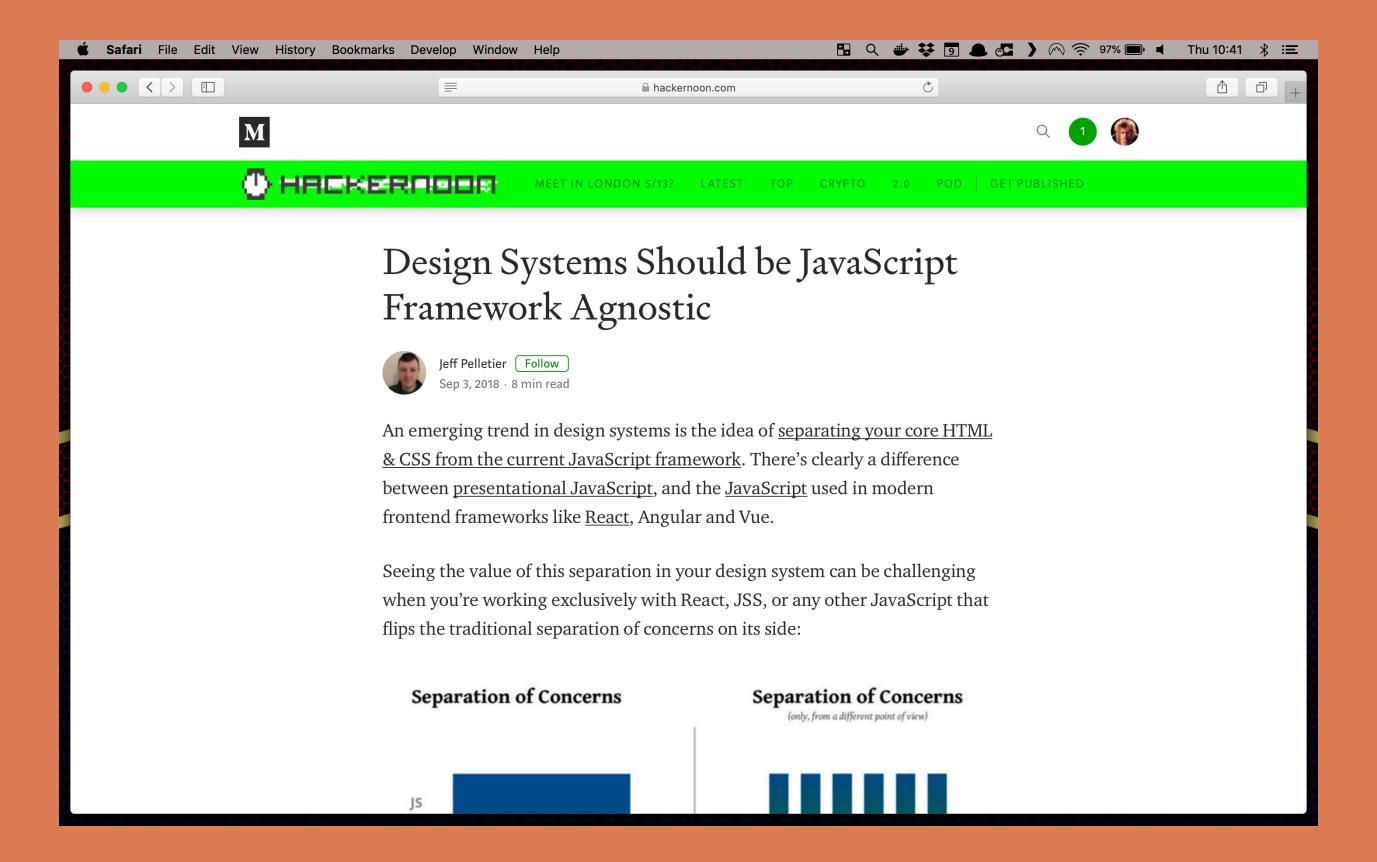
There isn't a standard definition of 'design system' within the web community, and people use the term in different ways — sometimes interchangeably with 'style guides' and 'pattern libraries'.

— Alla Kholmatova | @craftui











...as a community we're starting to get a bit dogmatic about what design systems are and are not.

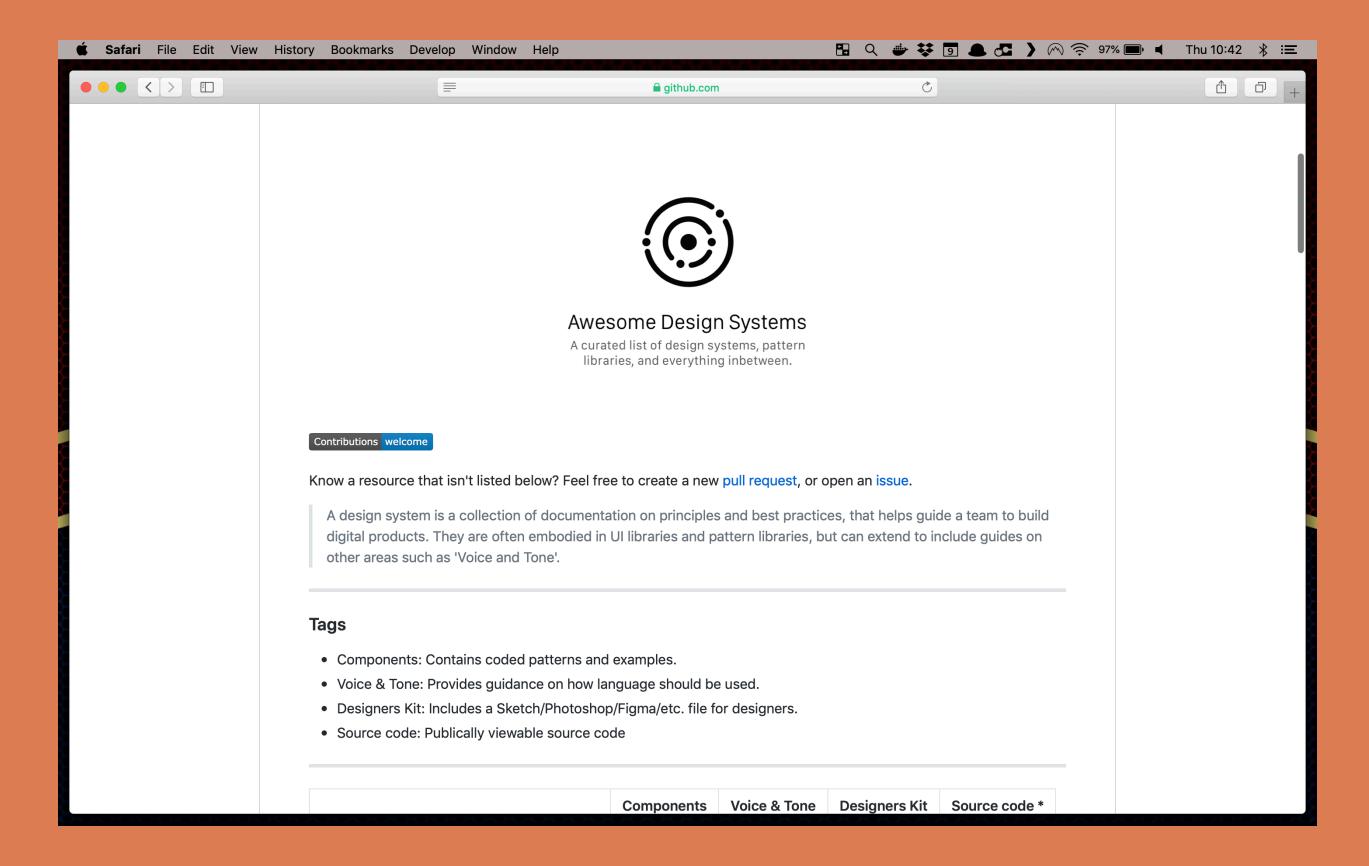
Sarah Federman @sarah\_federman

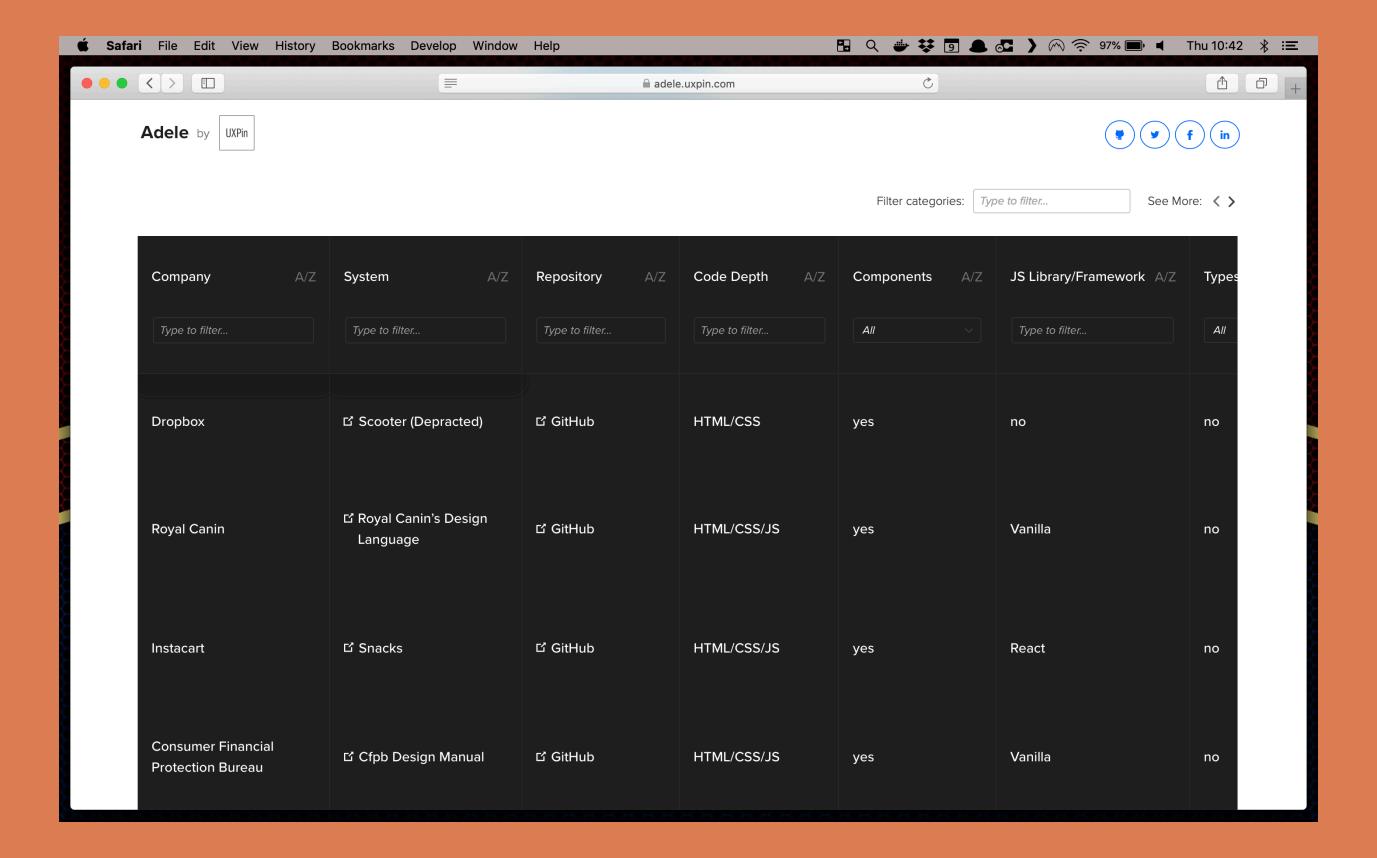


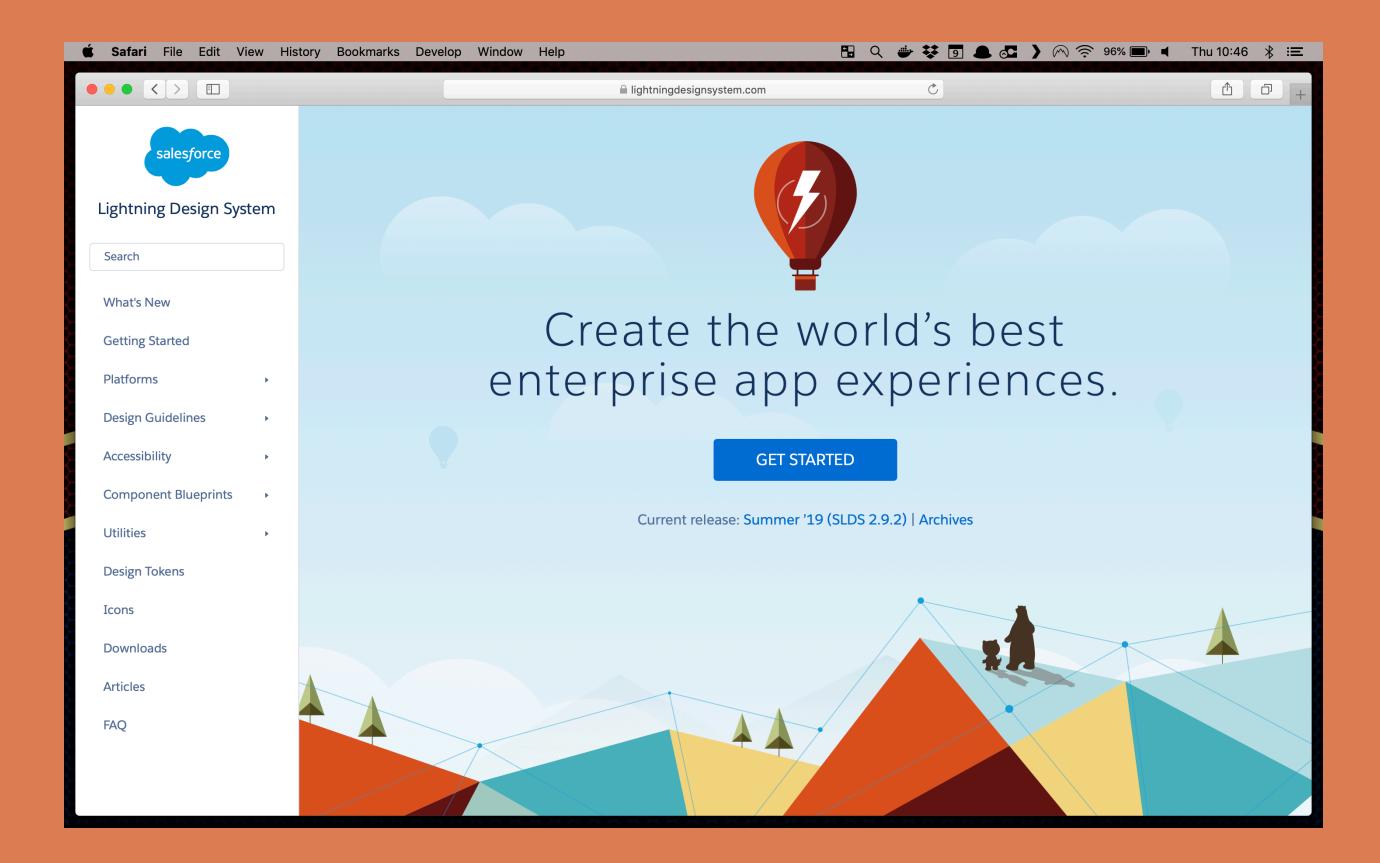
It's about systemizing the design. As a noun. That's literally all a design system means. That's not to say only designers can do it.

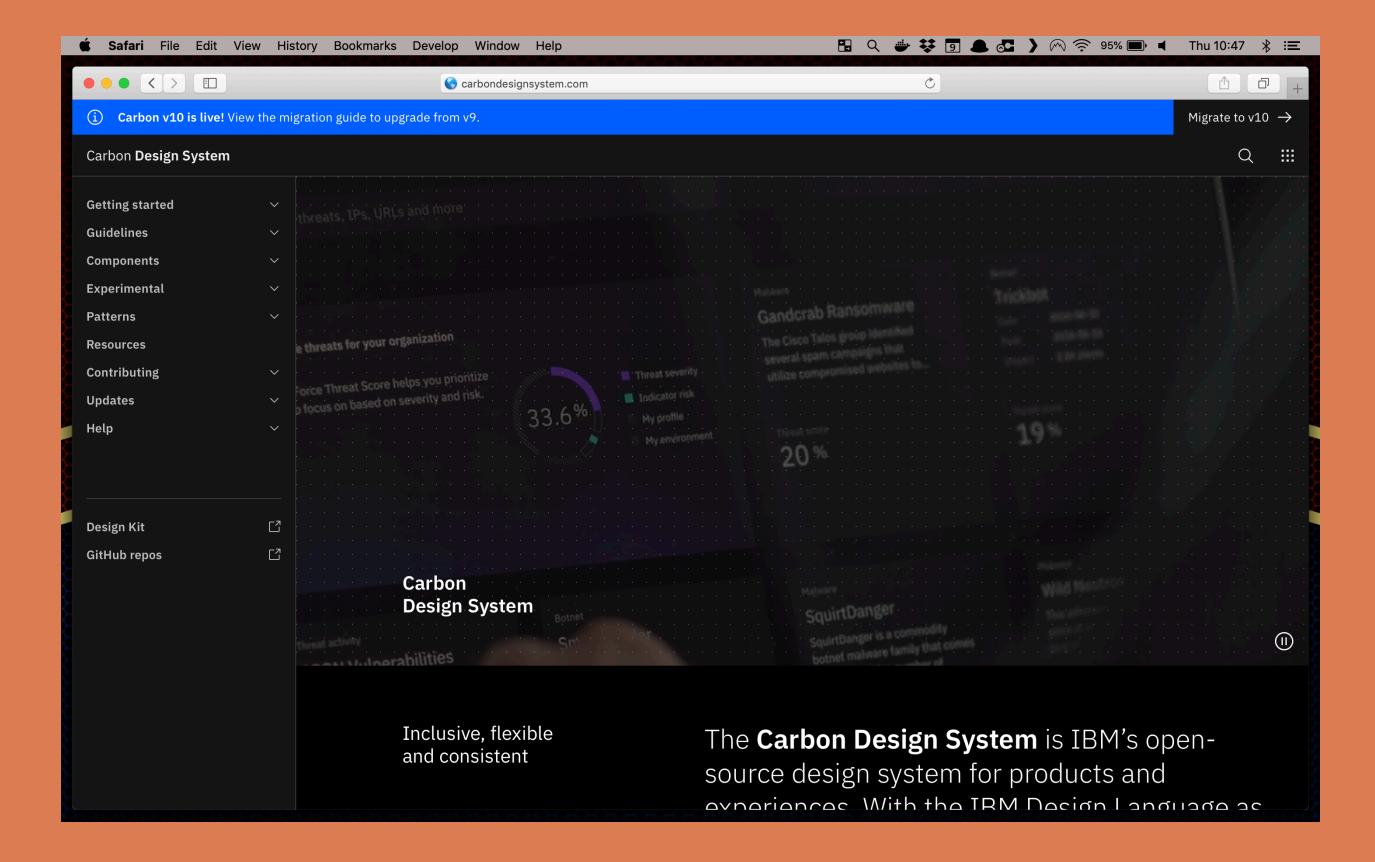
— Jina | @jina

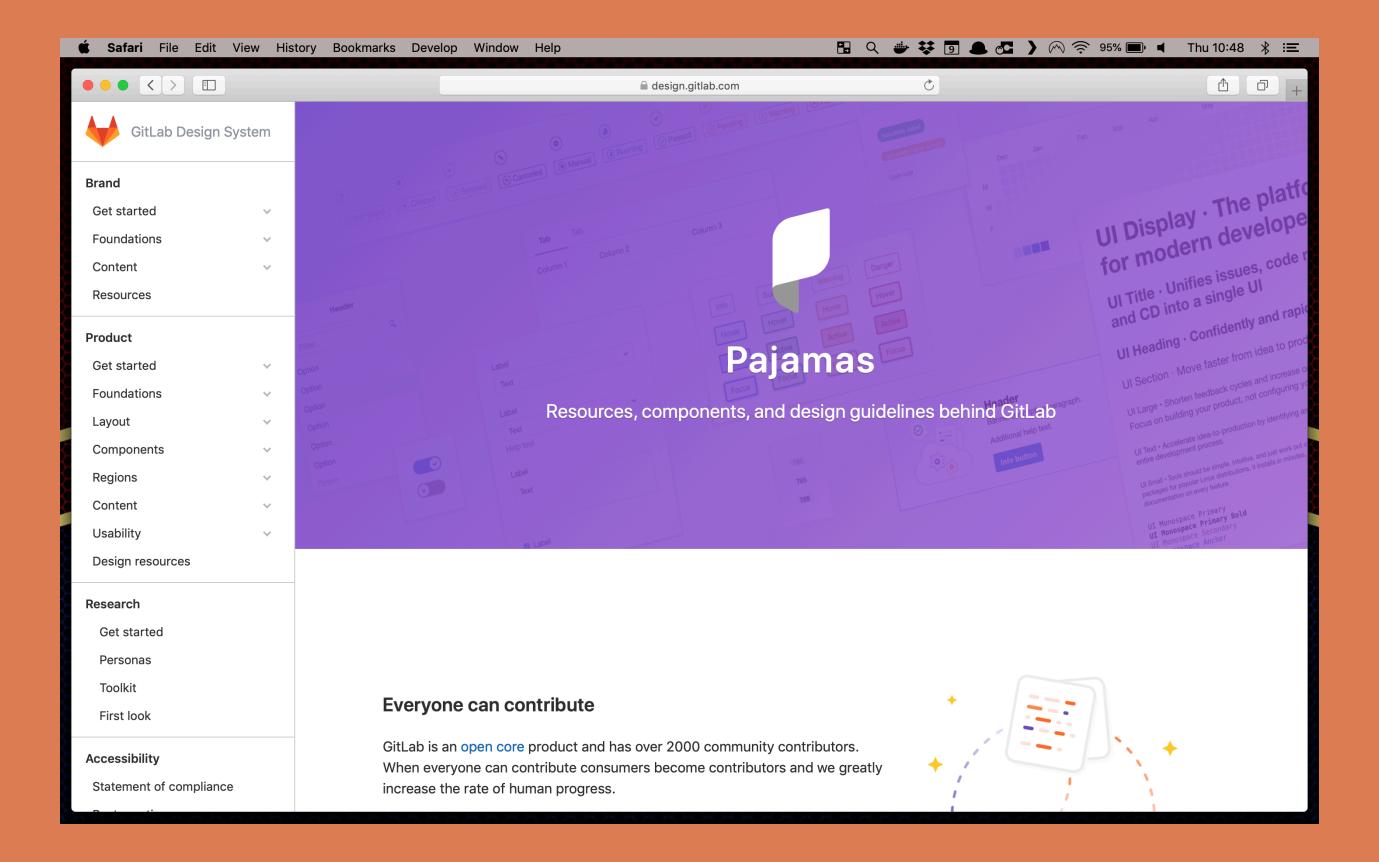
### What do they look like?

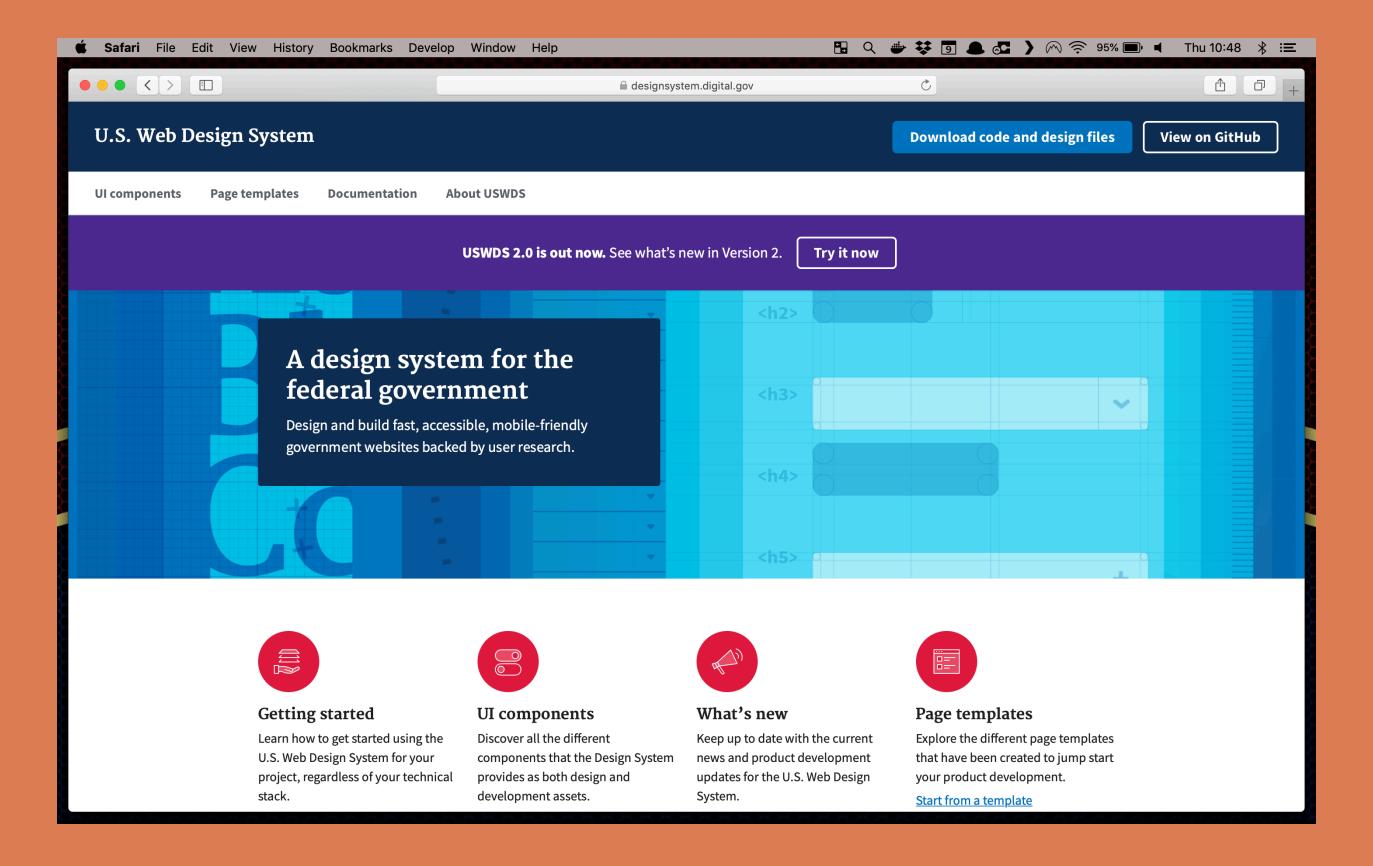


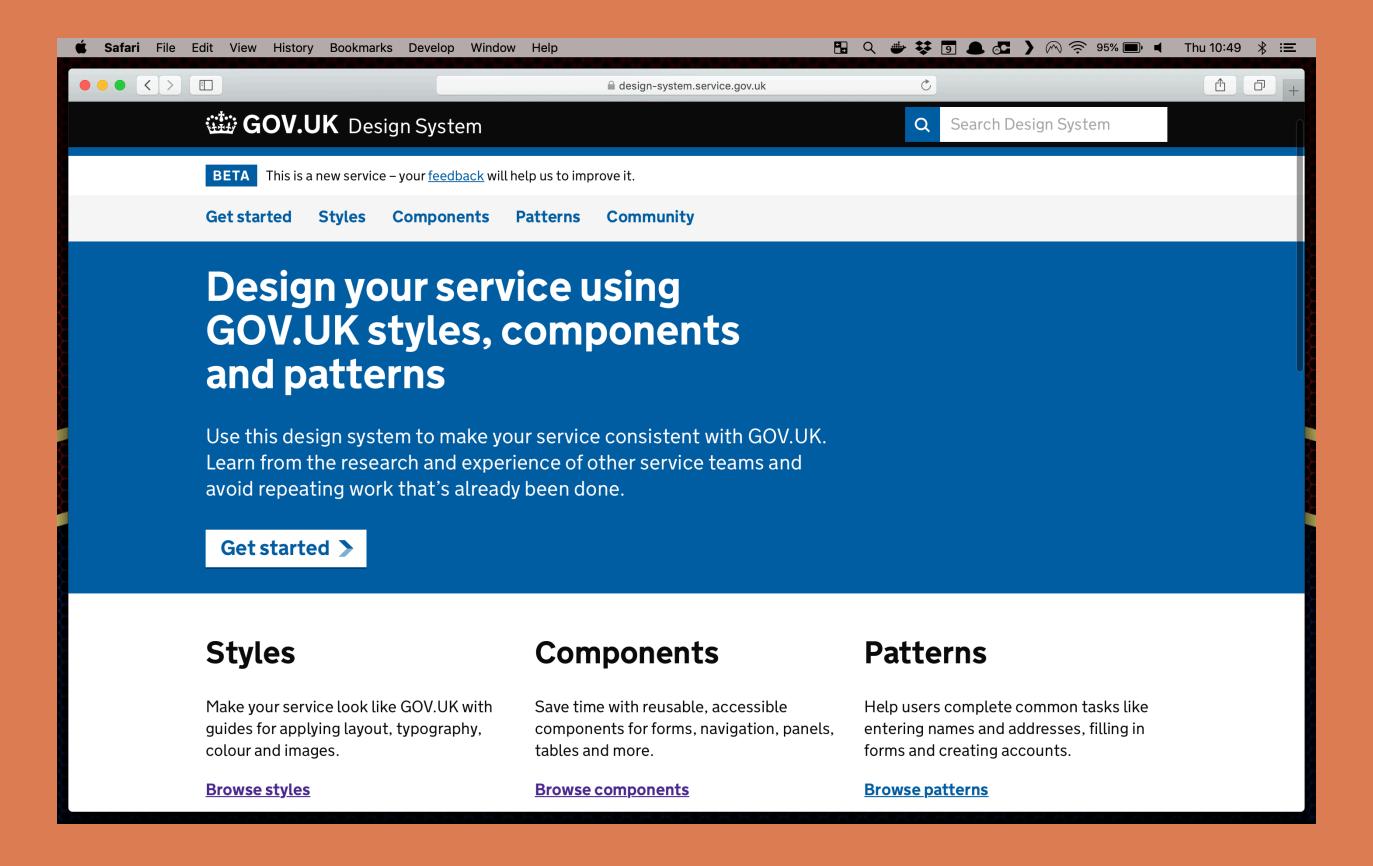


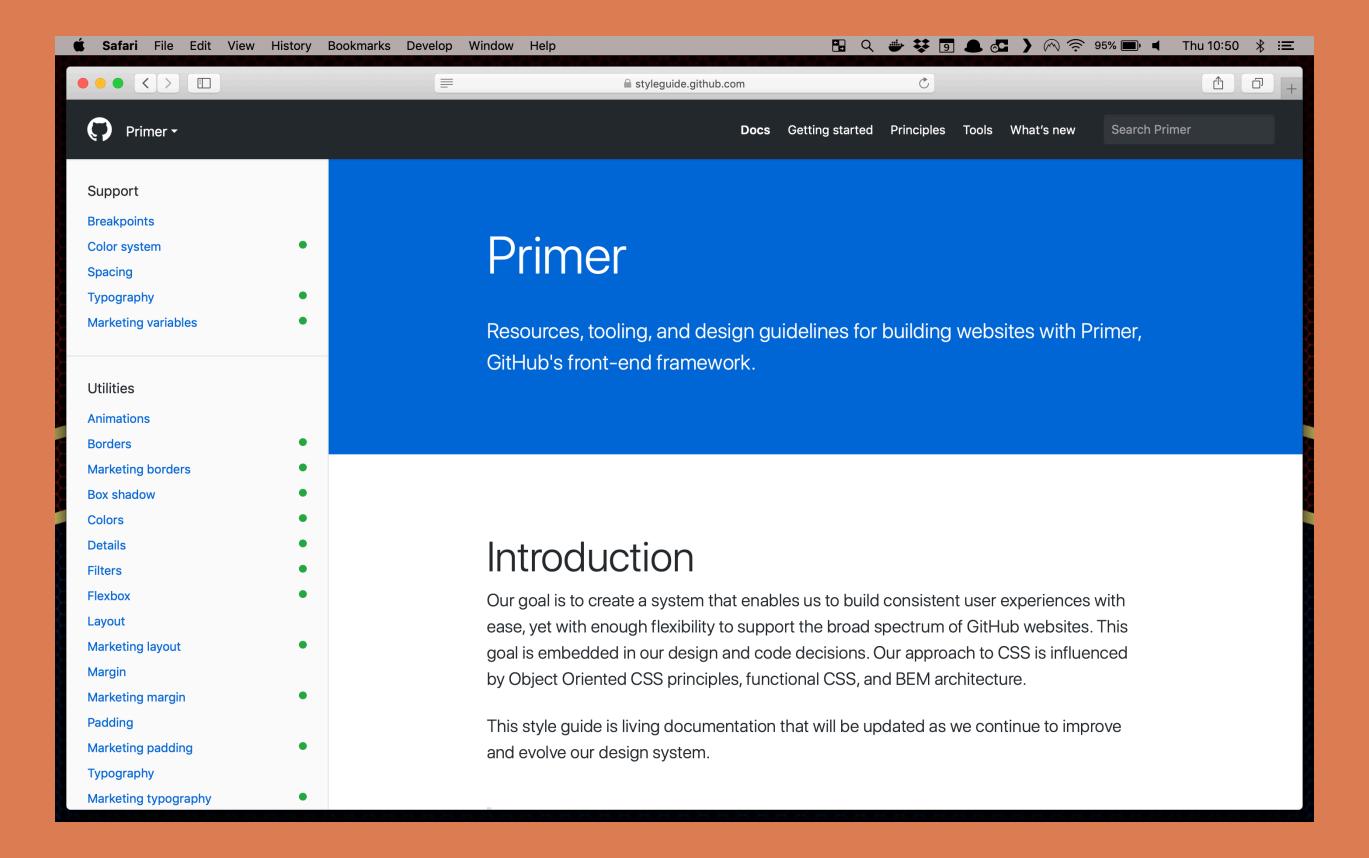


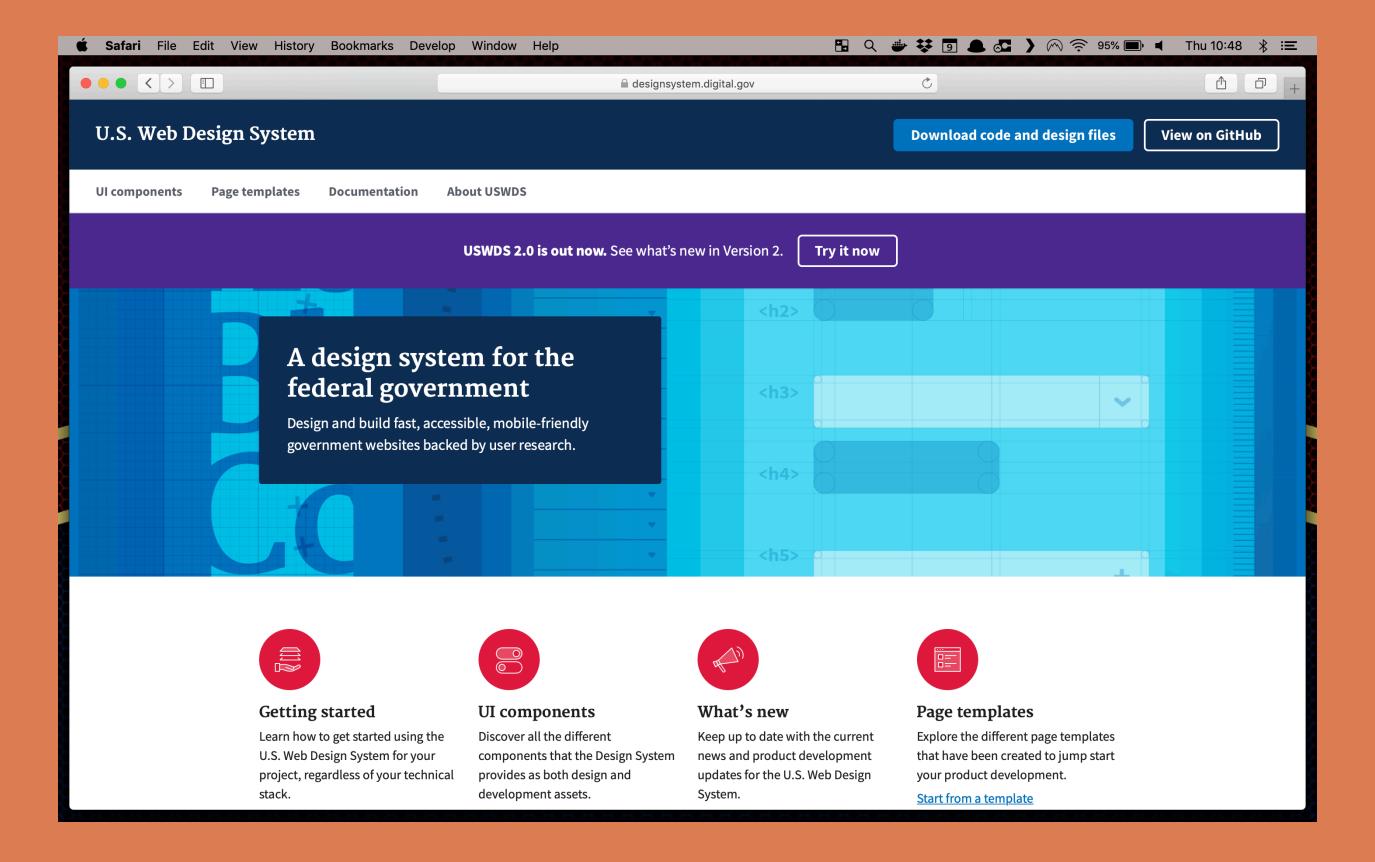


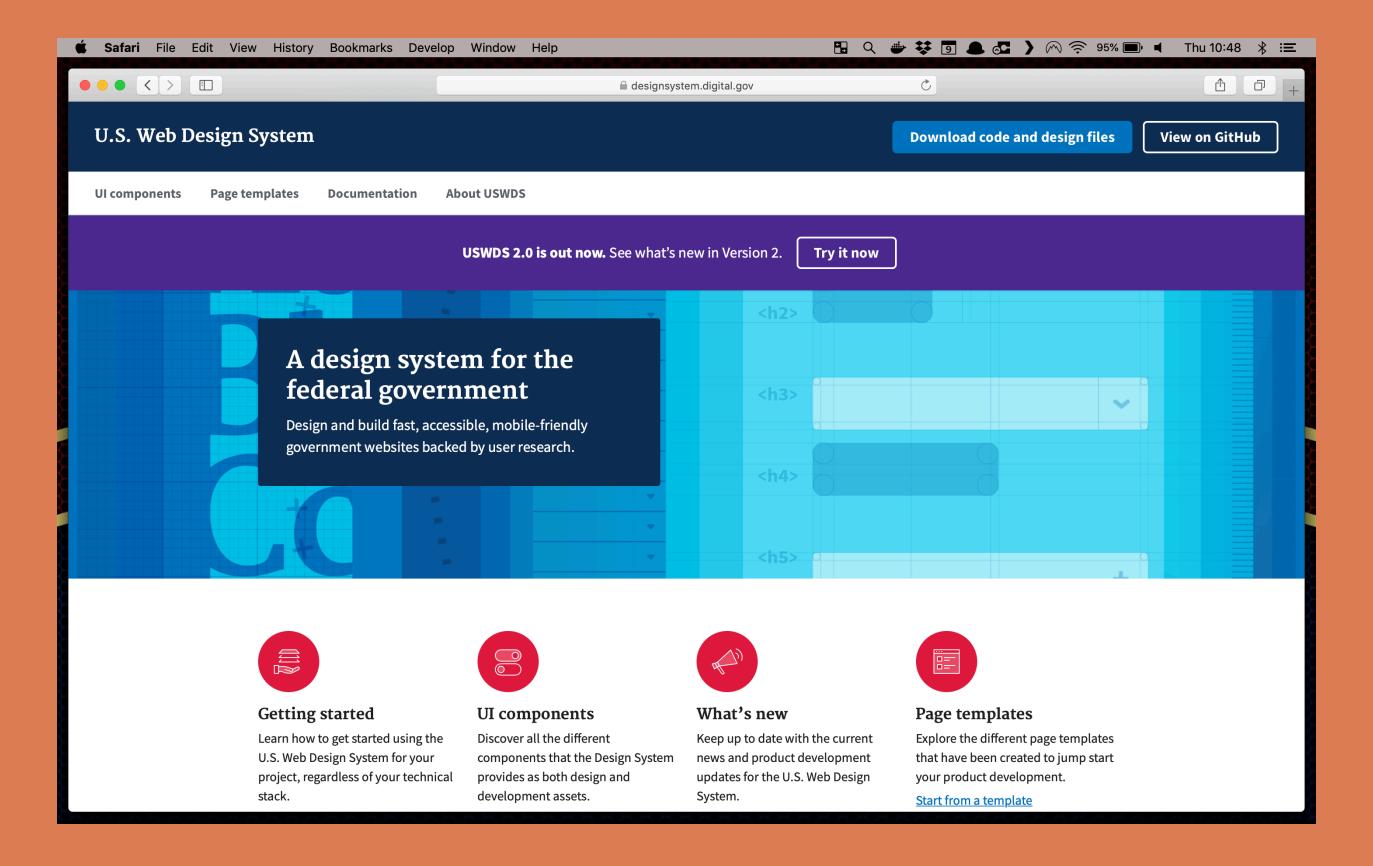


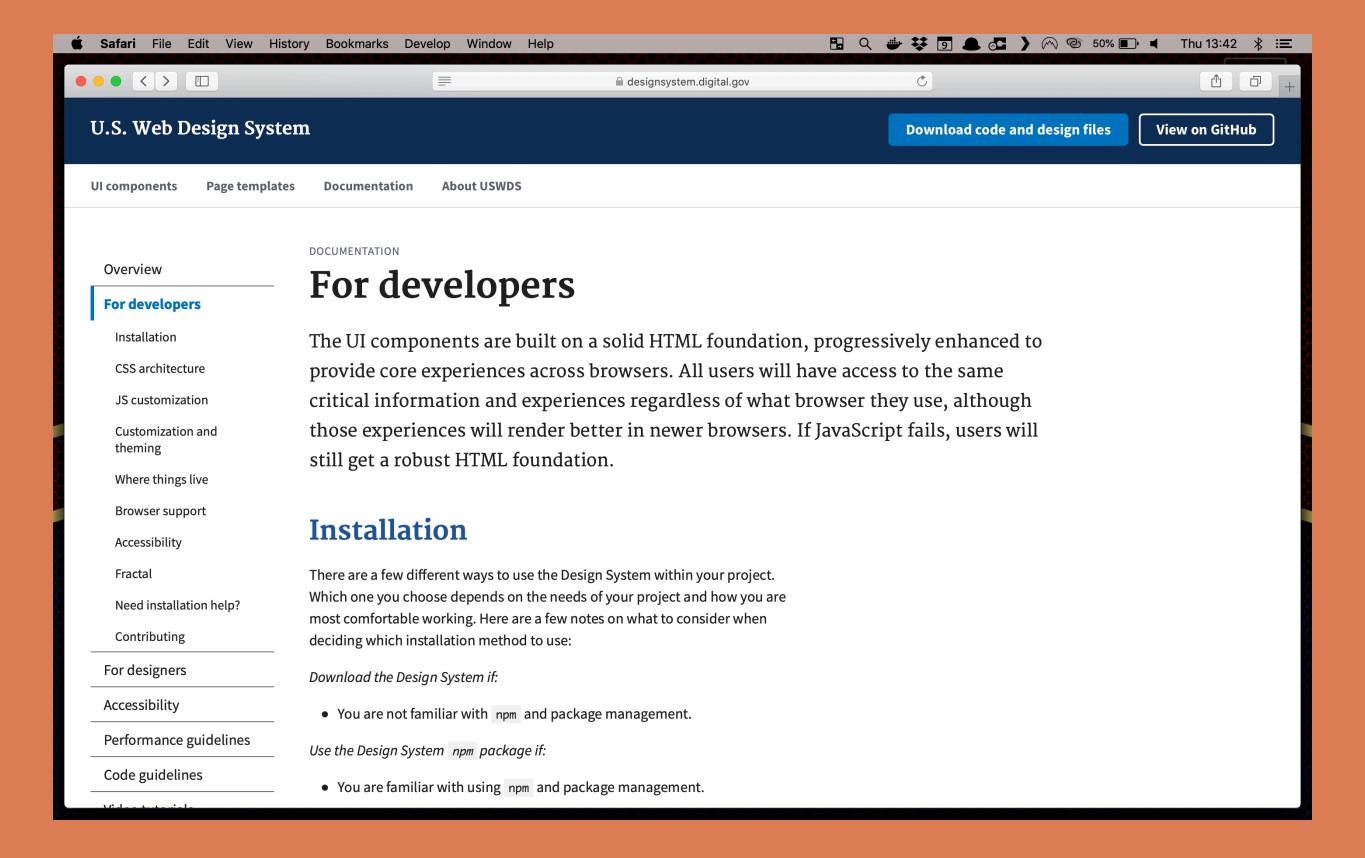


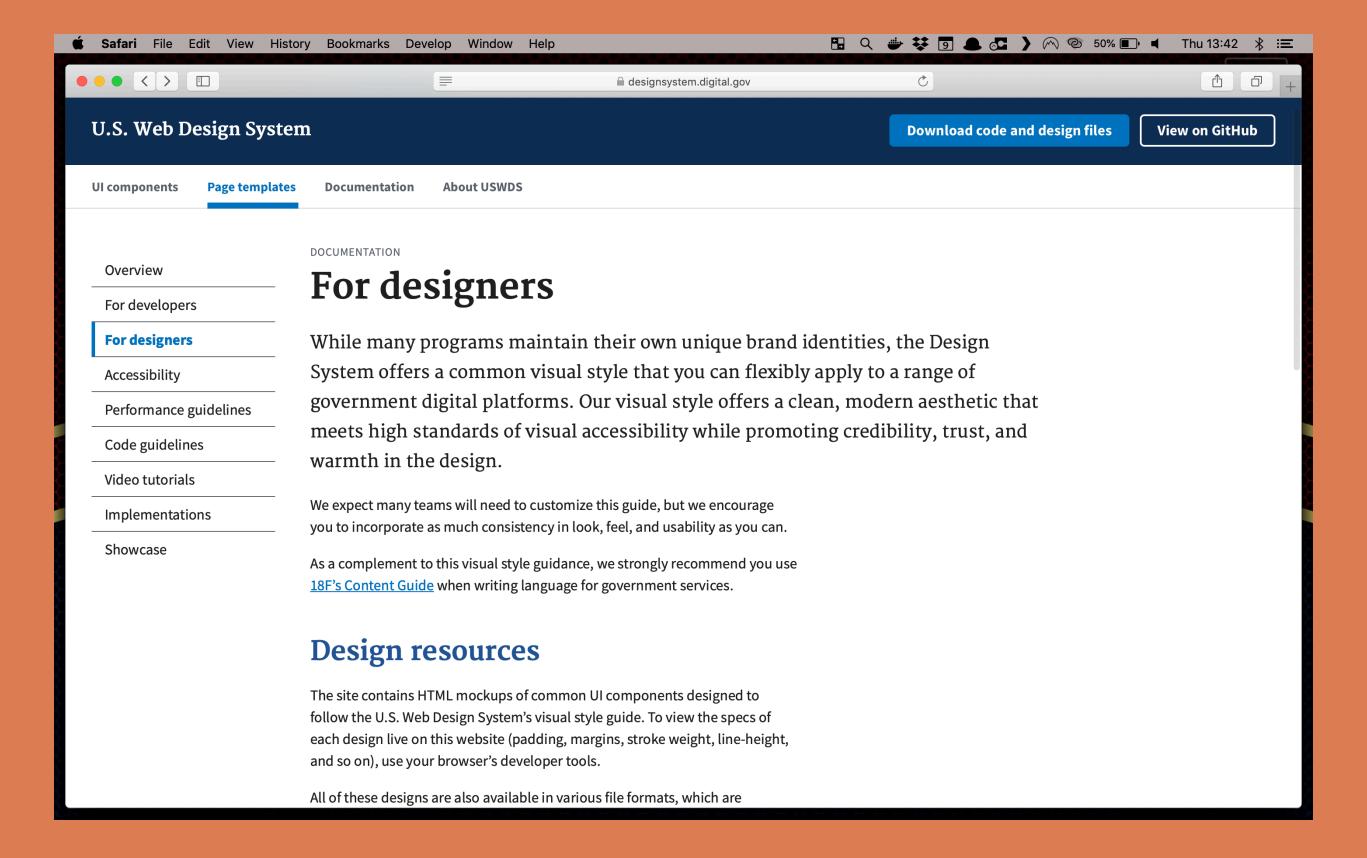


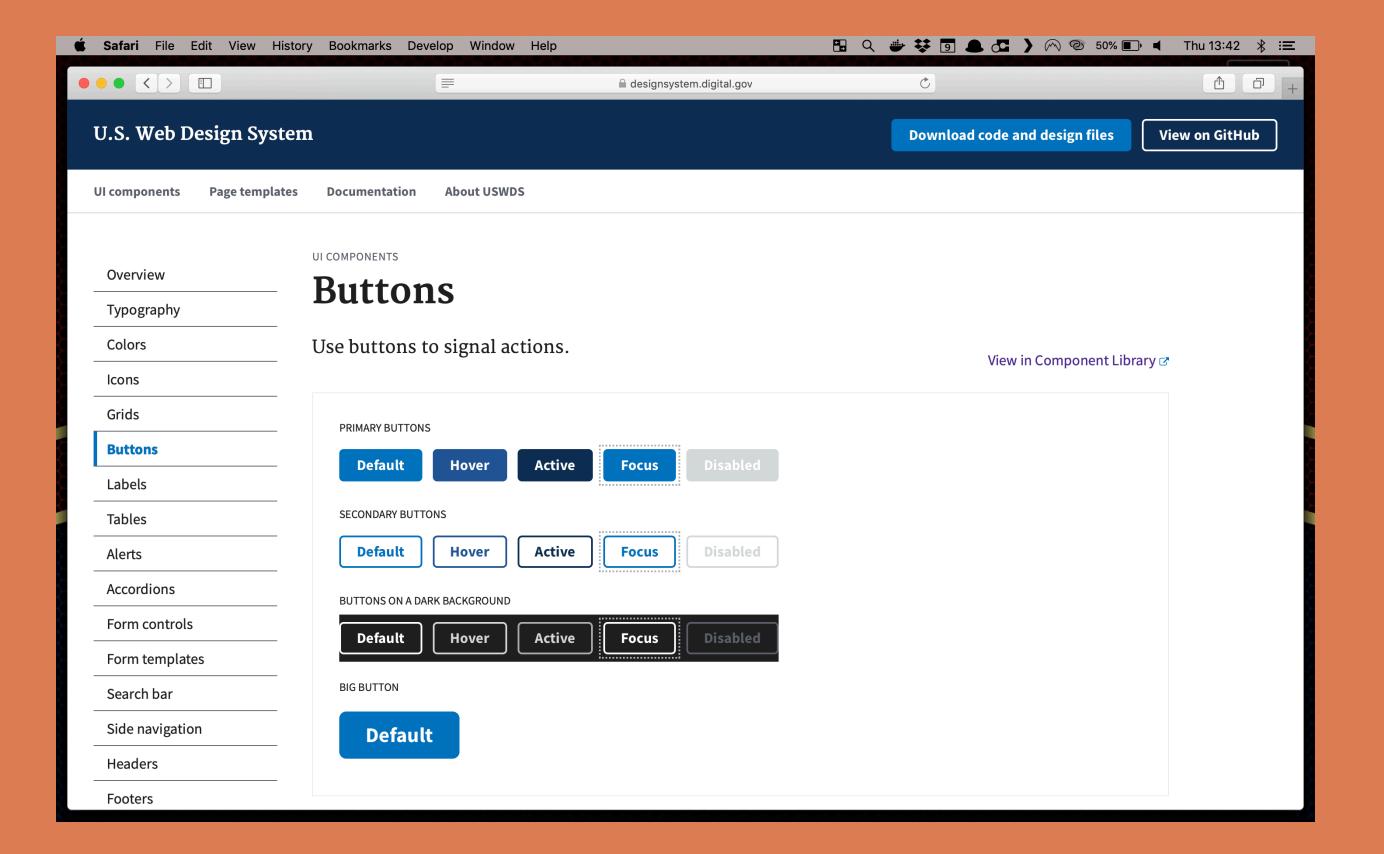


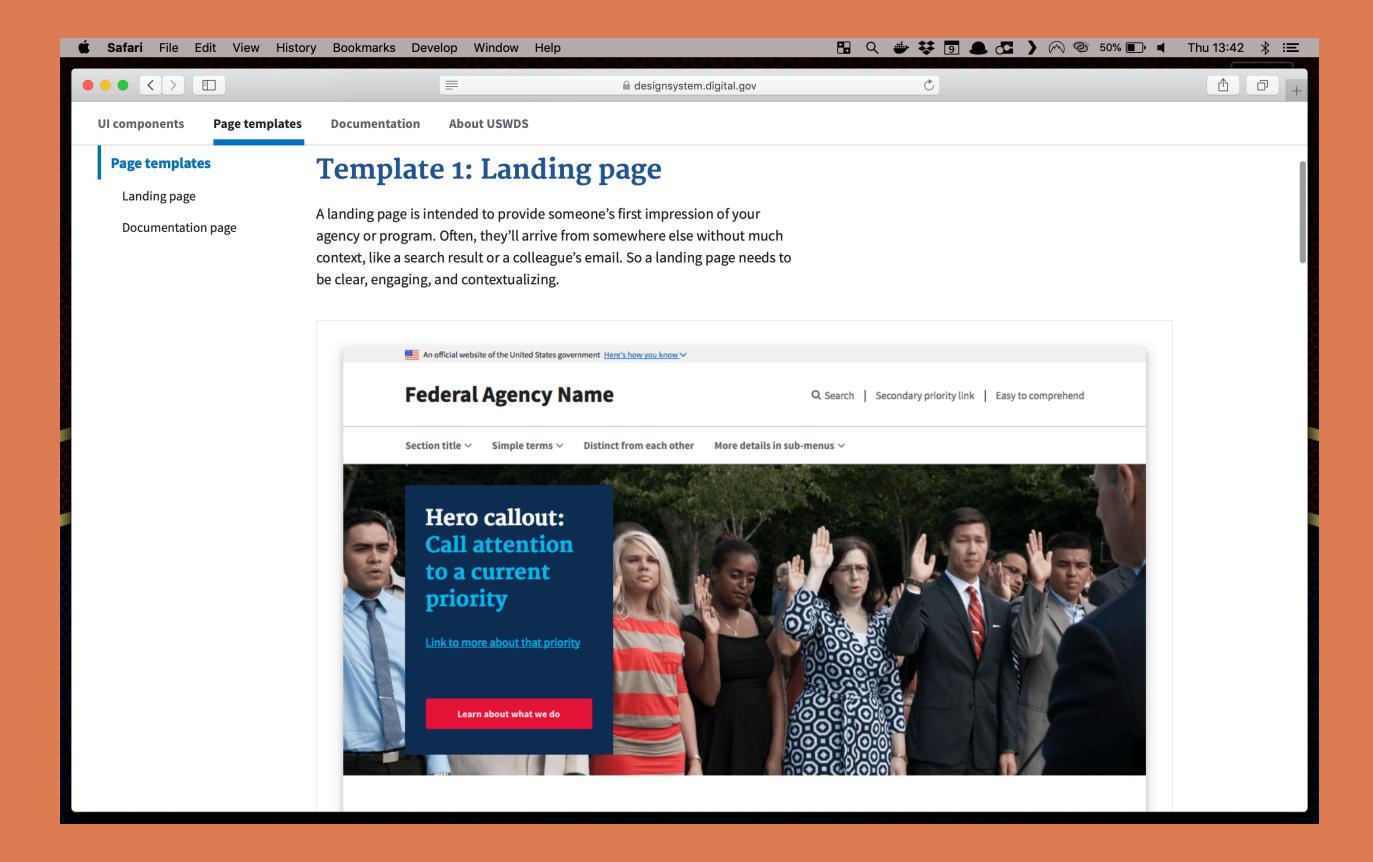


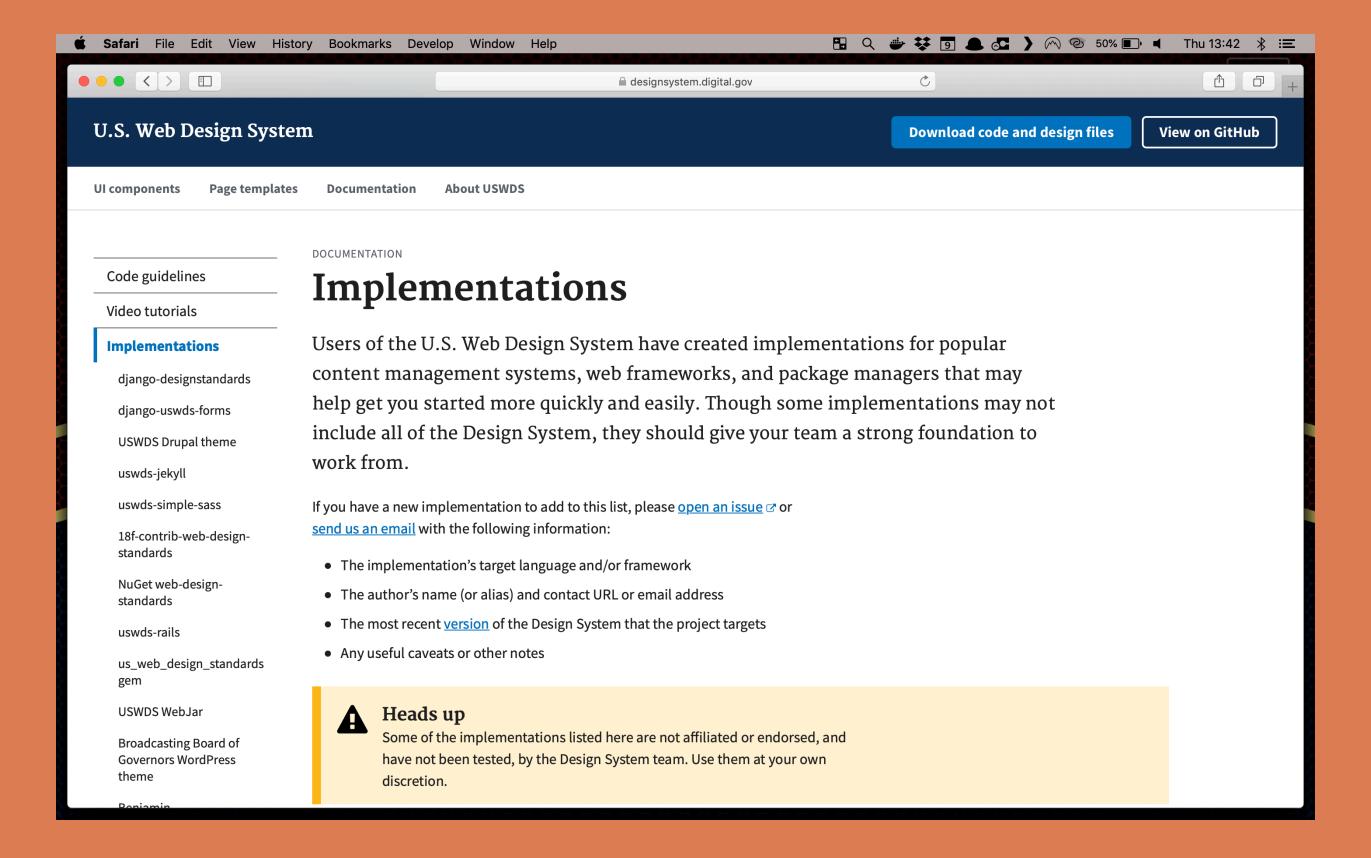














A Design System isn't a Project. It's a Product, Serving Products.

Nathan Curtis | @nathanacurtis



Real talk: don't compare your design system to others. The grass is always greener, and their goals aren't your goals

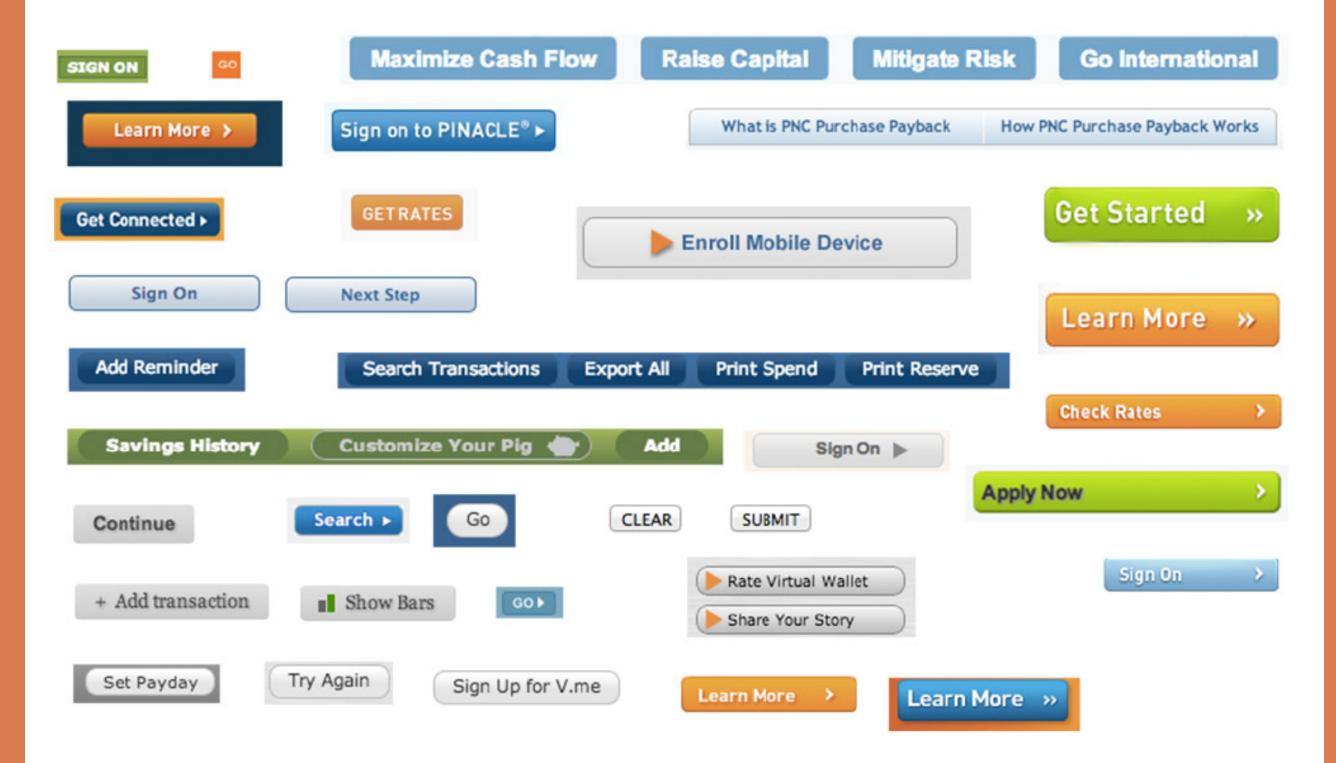
Diana Mounter | @brocollini

# Do we need a Design System?

### Consistency

## Maintainability

## Quality/





We're not designing pages. We're designing systems of components.

- Stephen Hay | @stephenhay

### Buy in



#### **Tiny Bootstraps**

- Dave Rupert | @davatron5000

#### Scalability

#### Creativity



Design systems take care of the boring 80% of what you need to design, freeing you to concentrate your creativity on the interesting and unique 20%.

— Dan Mall | @danmall



A design system is at its foundation, a set of rules. Rules and creativity are not mutually exclusive. Rules can be broken.

— Mina Markham | @minamarkham

#### Themes



#### On-boarding

### Updates

#### Communication

- be open
- don't dictate
- listen
- move within exitisting workflows

#### Be where the authors are





# Where should we start with a Design System?



...start with doorknobs and end up with cathedrals. ... start with cathedrals and work down to doorknobs.

– Jeffrey Zeldman | @zeldman

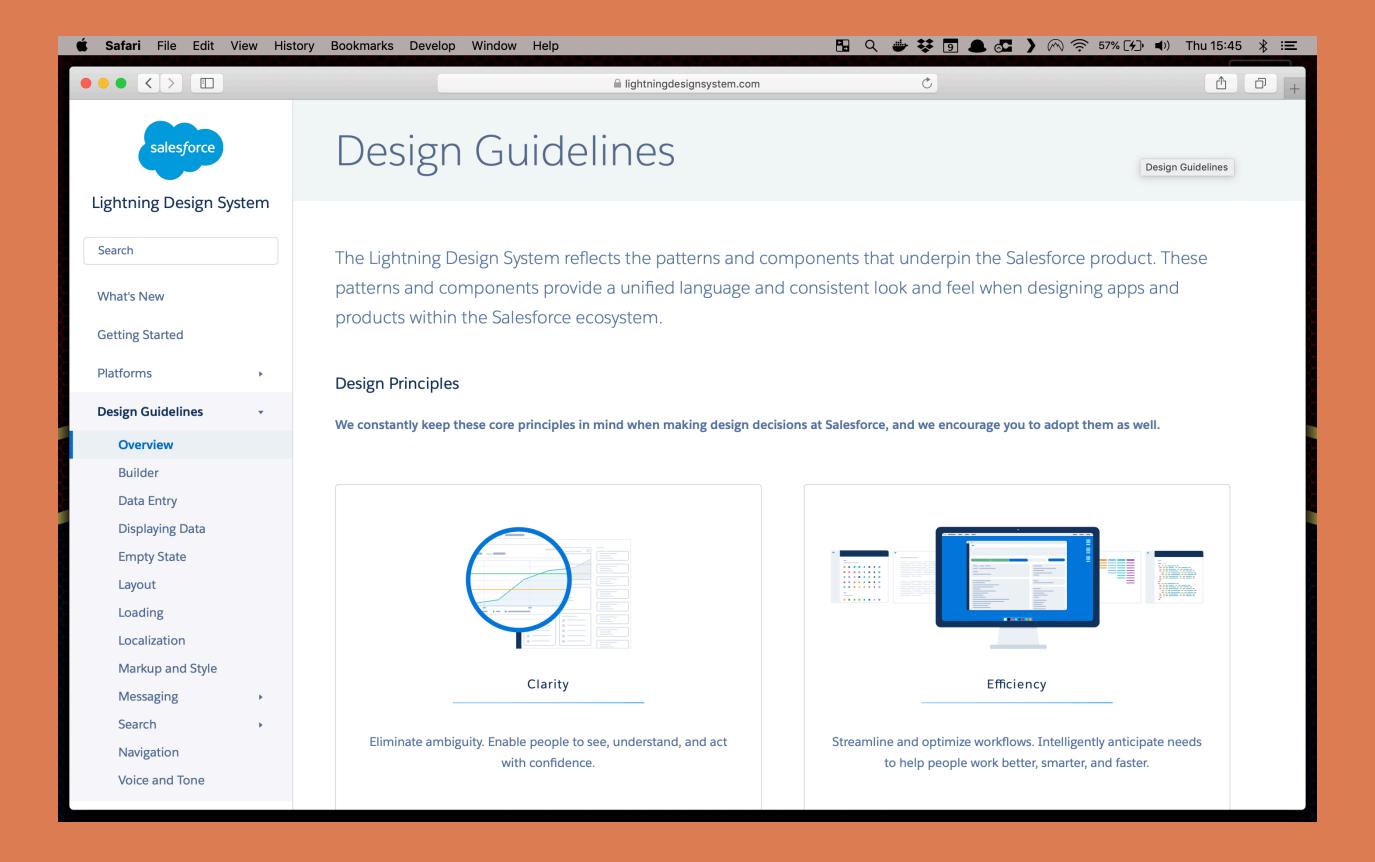
#### Design Principles

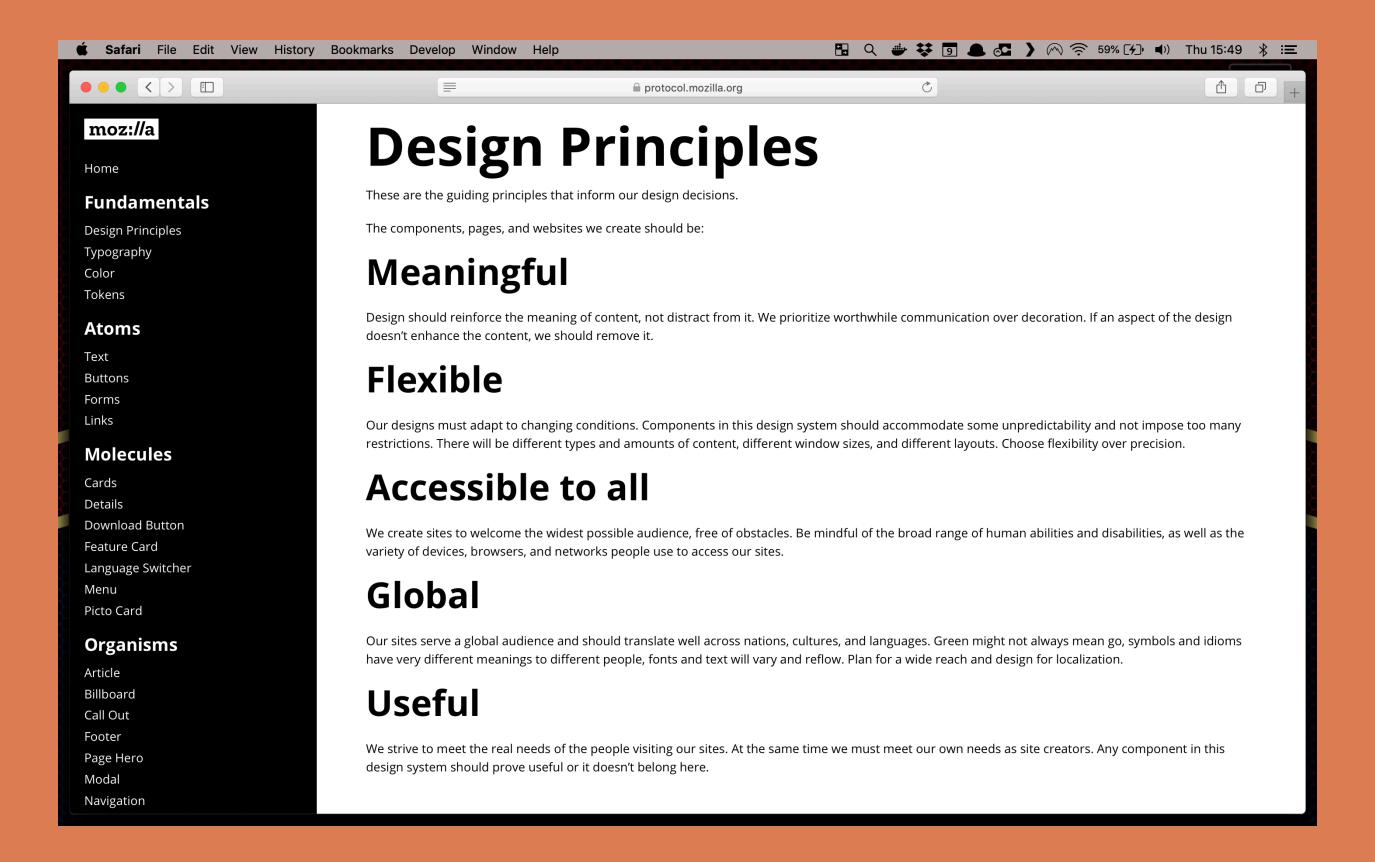


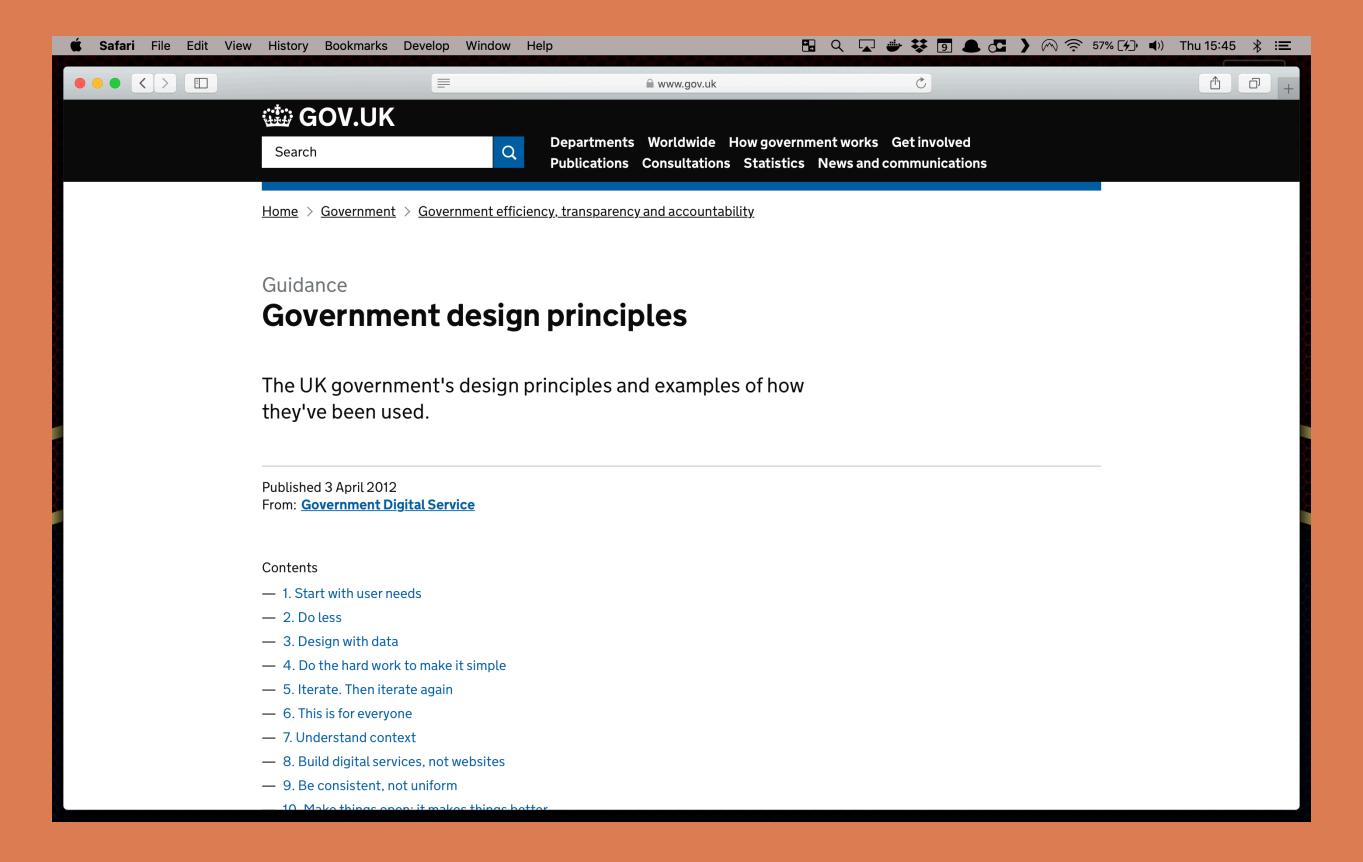
#### A robust design system should contain guiding design principles

- Sarrah Vesselov | @SVesselov
- Taurie Davis | @tauried









## Design Tokens

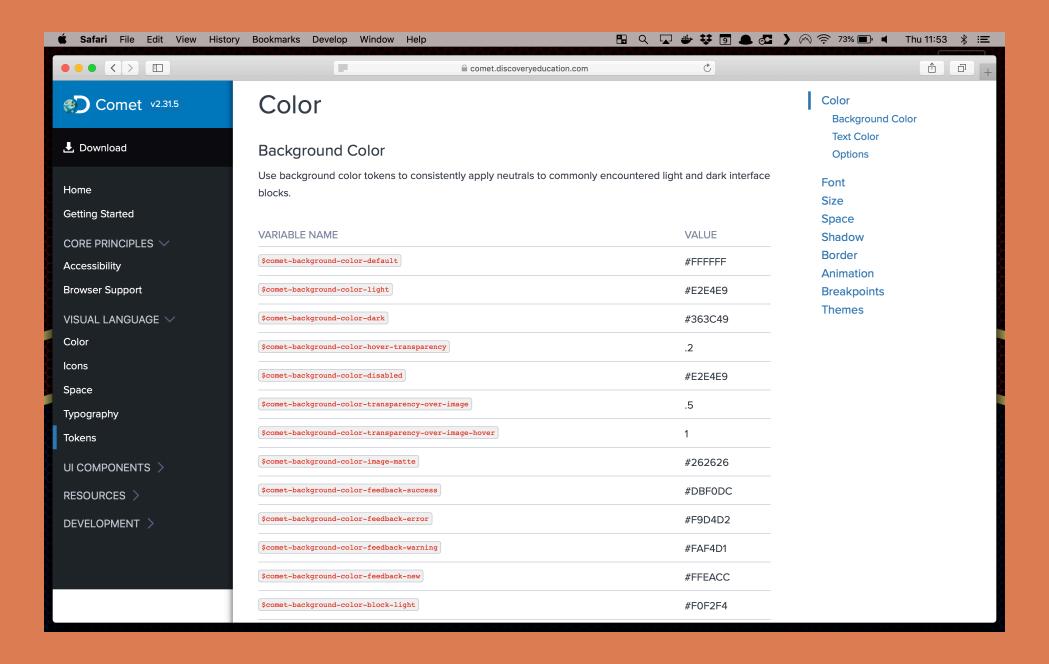


Design Tokens are the visual atoms of the design system – specifically, they are named entities that store visual design attributes.

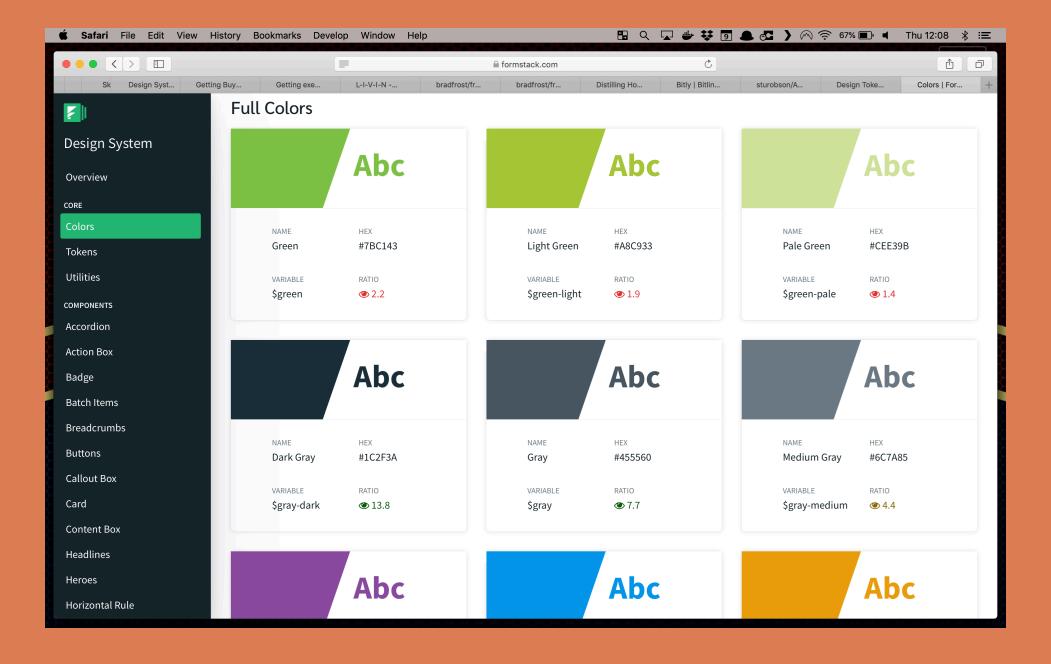
We use them in place of hard-coded values (such as hex values for colour or pixel values for spacing) in order to maintain a scalable and consistent visual system.

— Jina | @jina

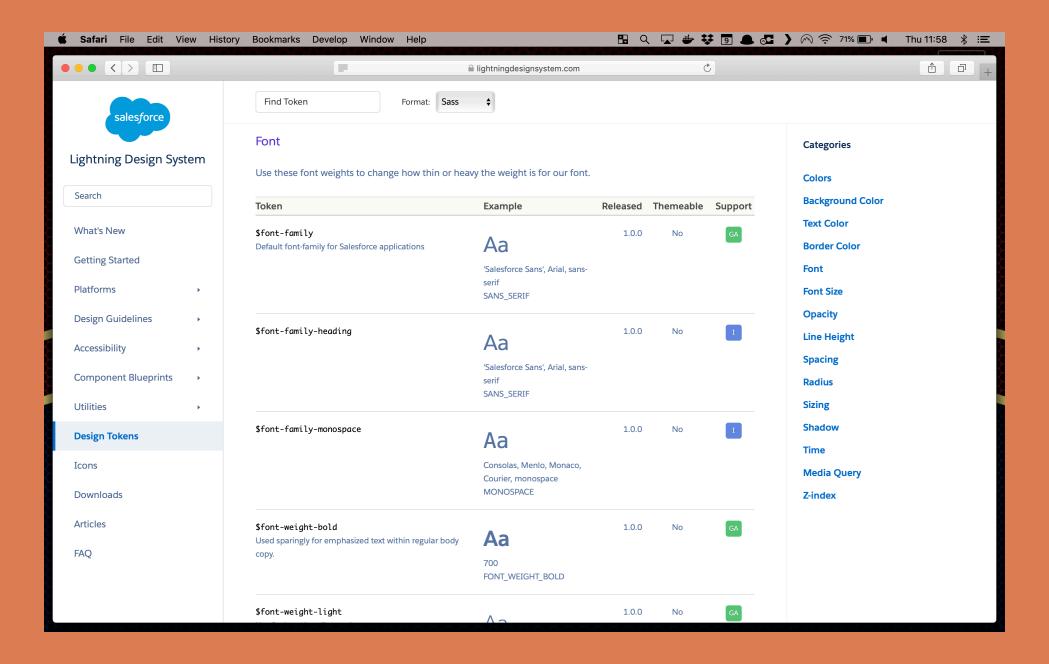
## Colour



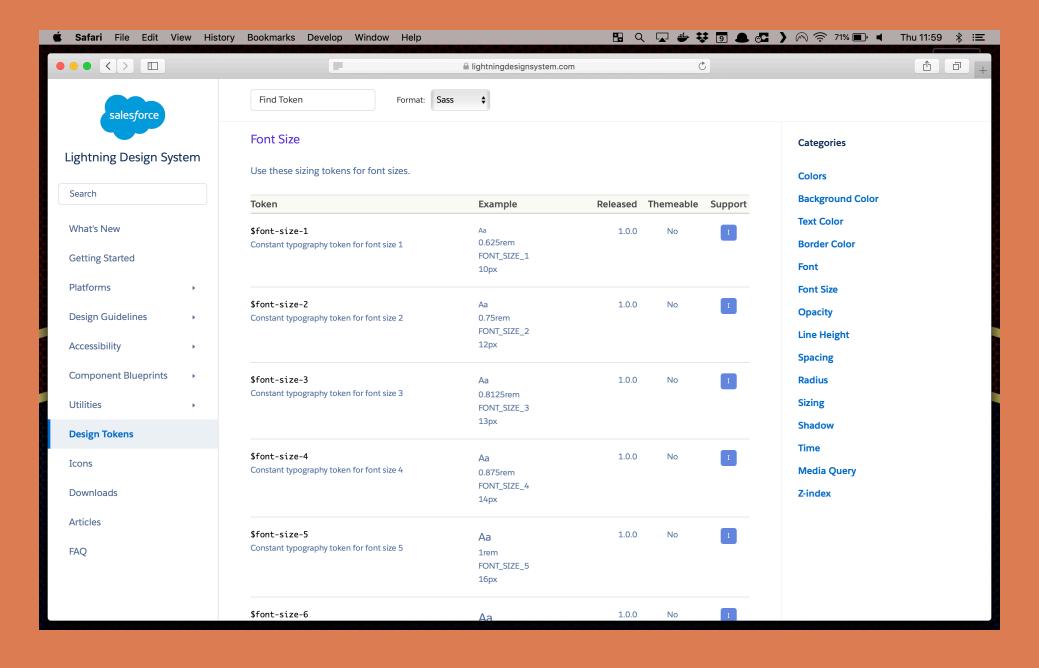
## Colour



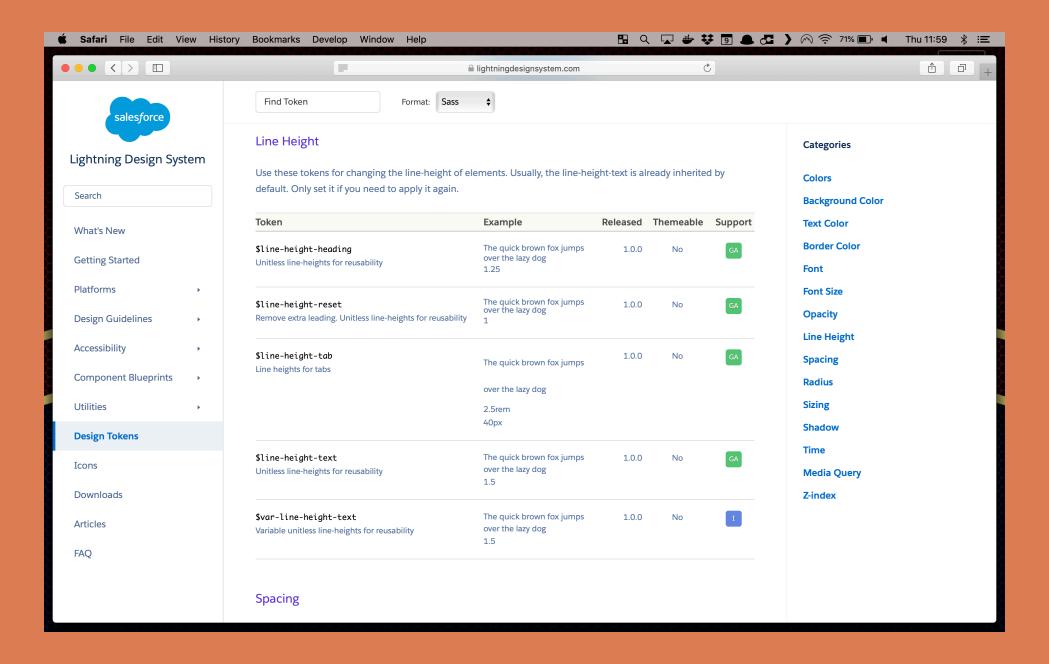
## Typography



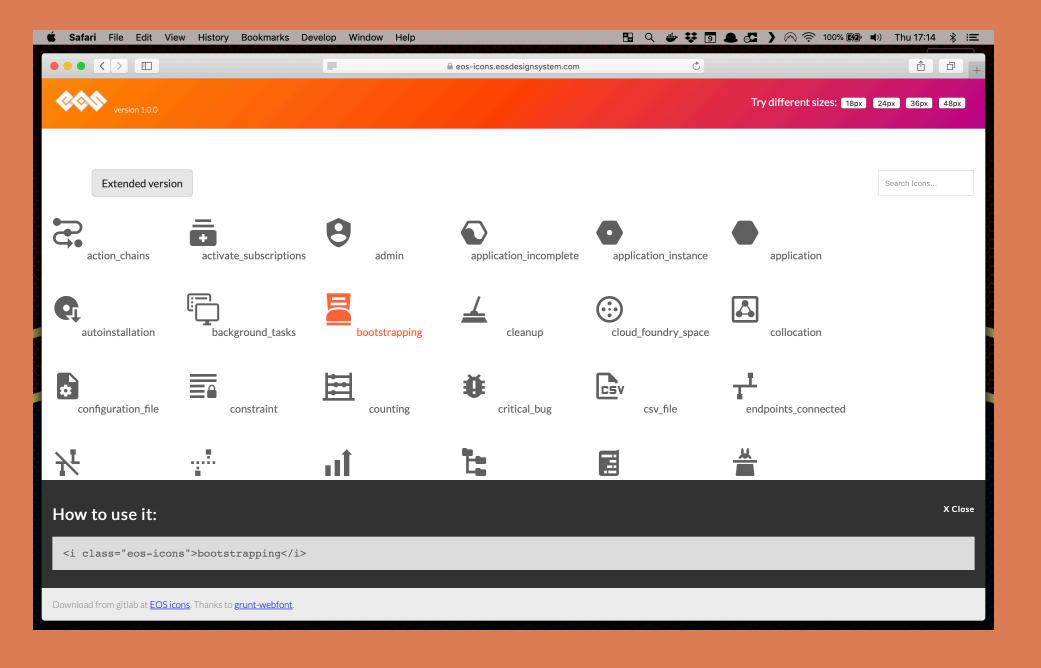
## Typography



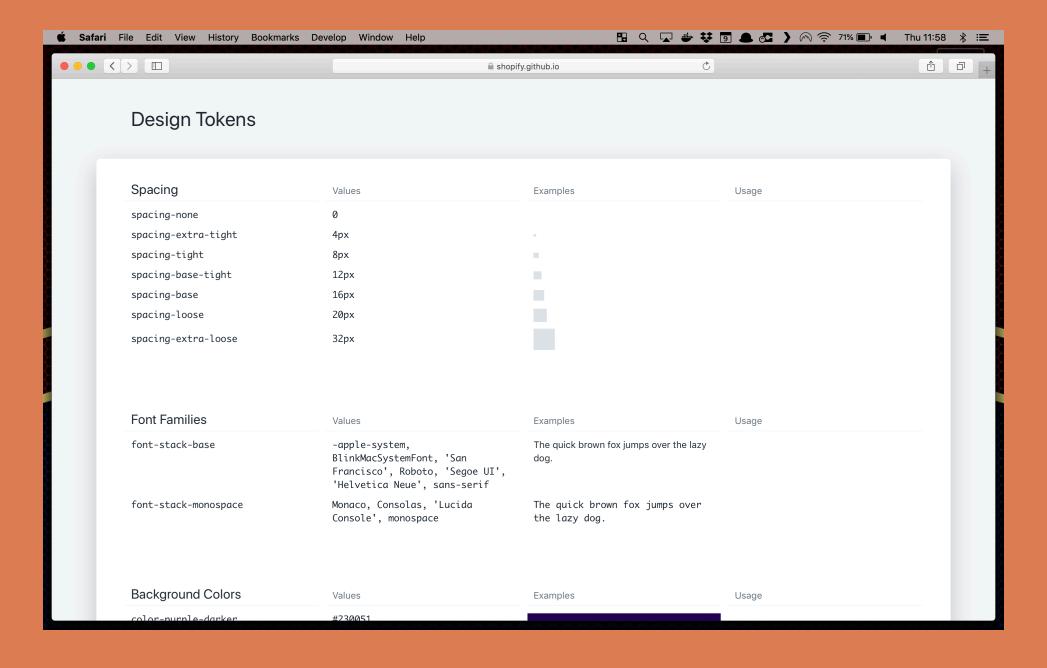
## Typography



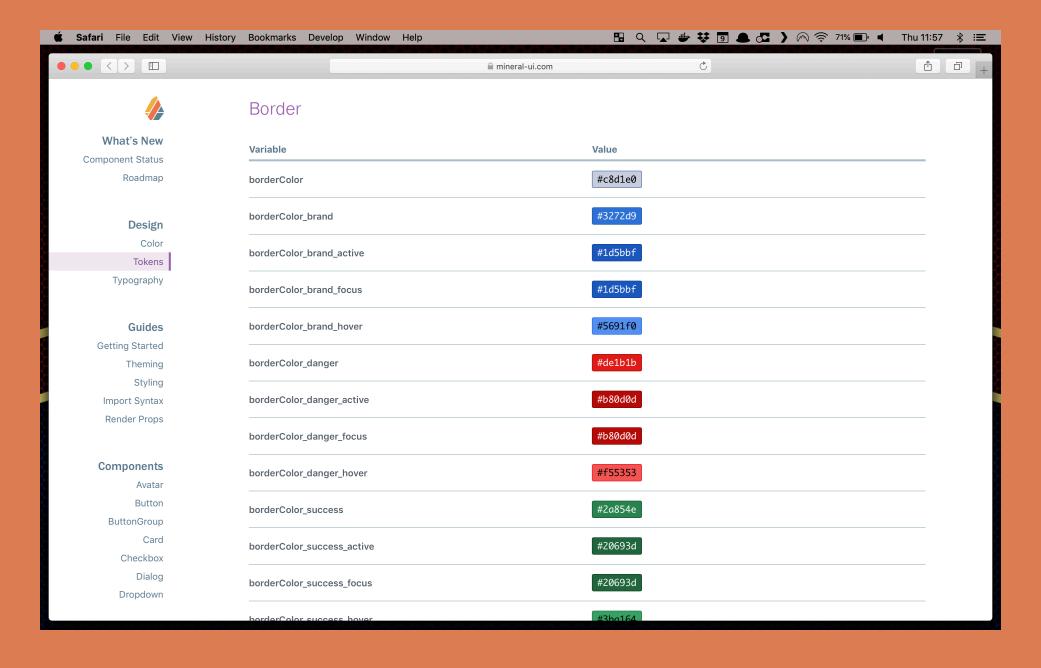
## Iconography



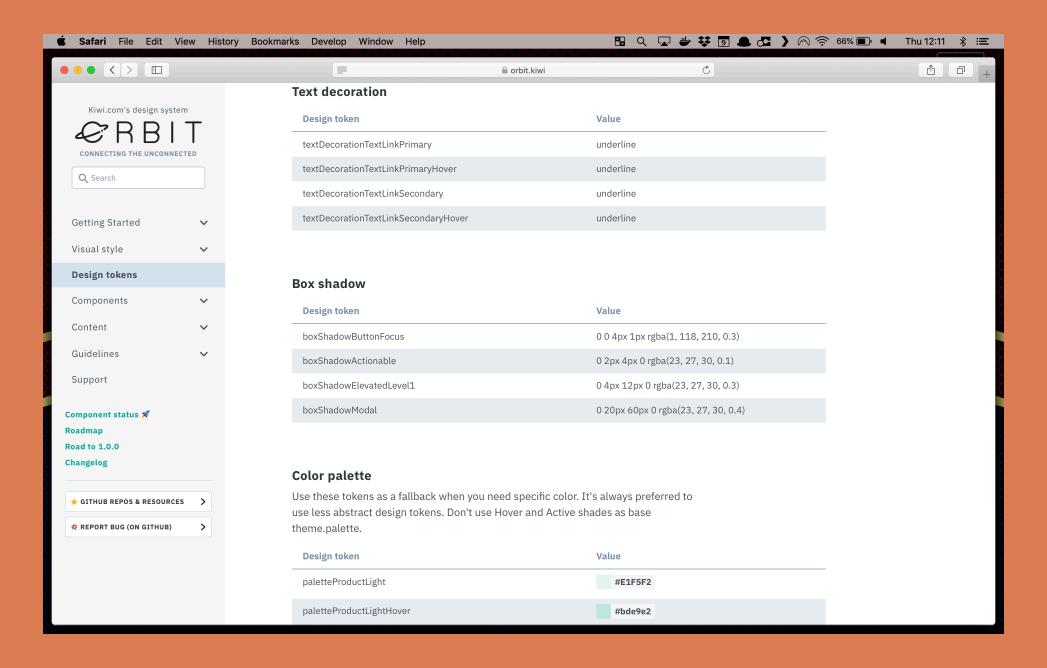
## Spacing



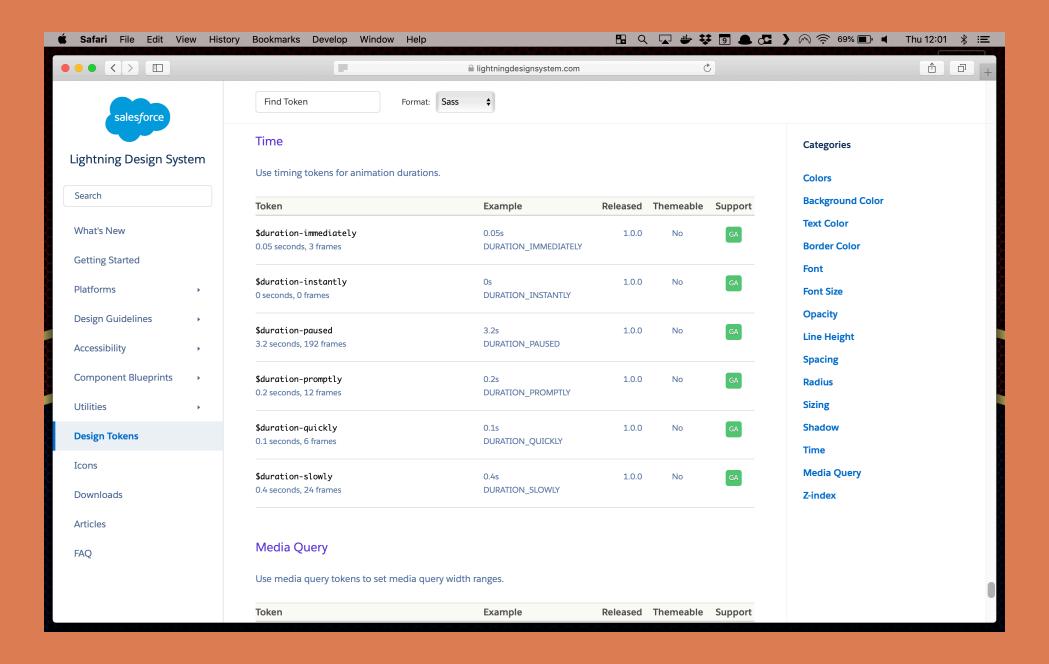
## Borders



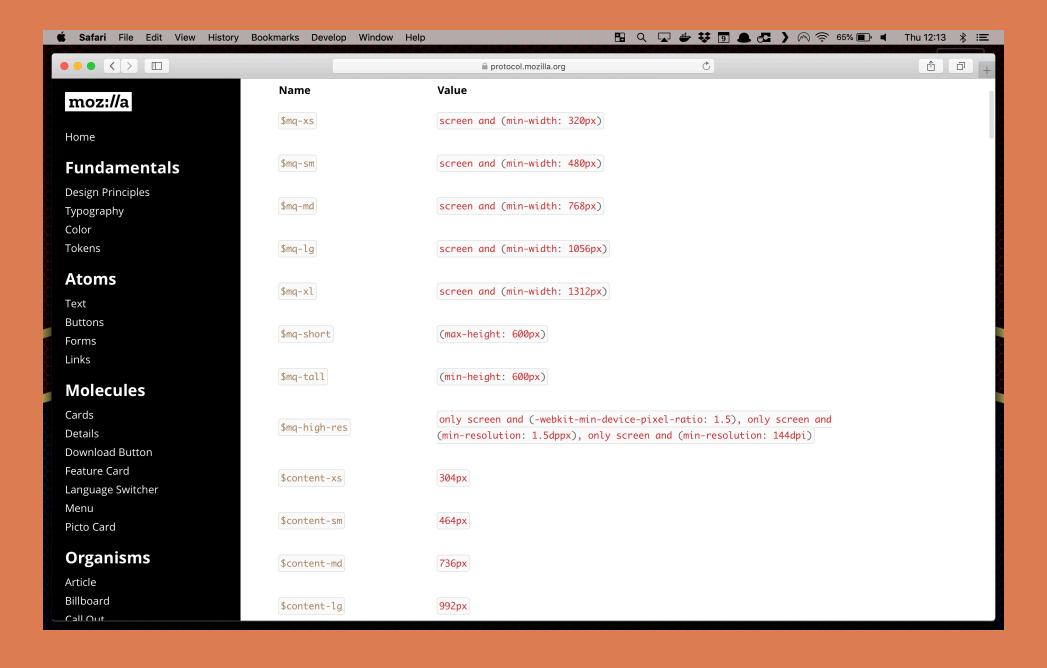
## **Shadows**



## Time



## Breakpoints

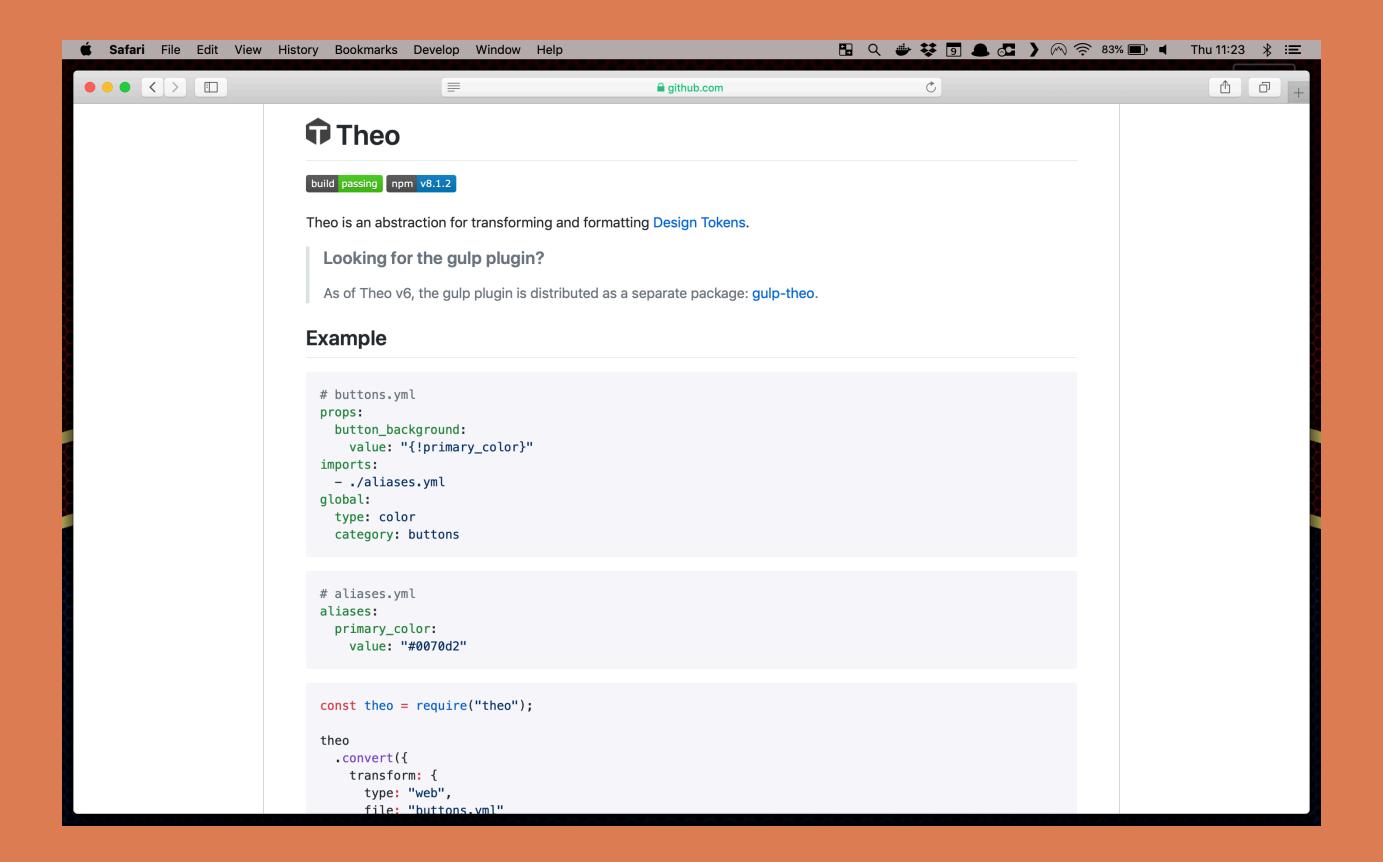


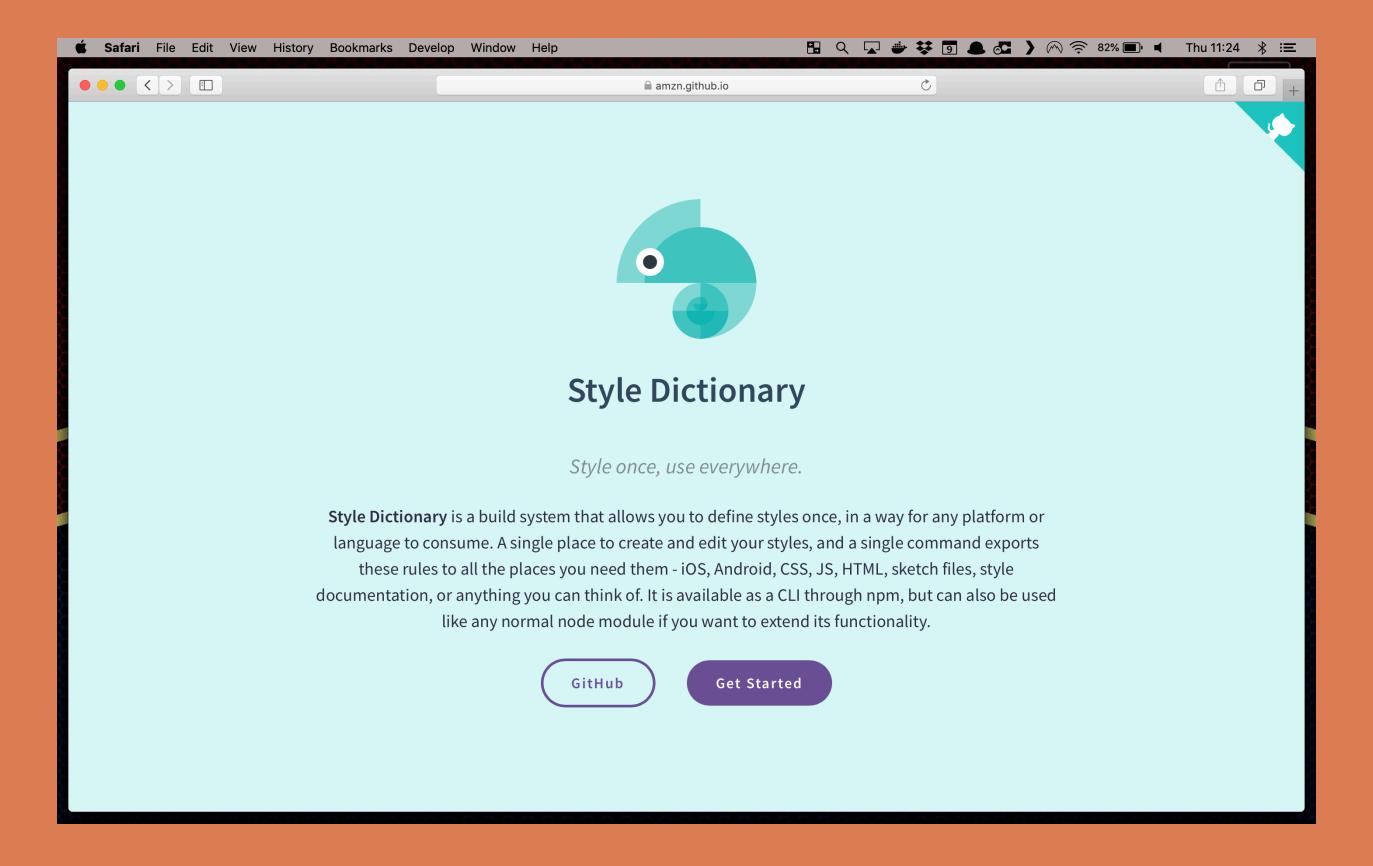
## Aren't they just Sass variables?

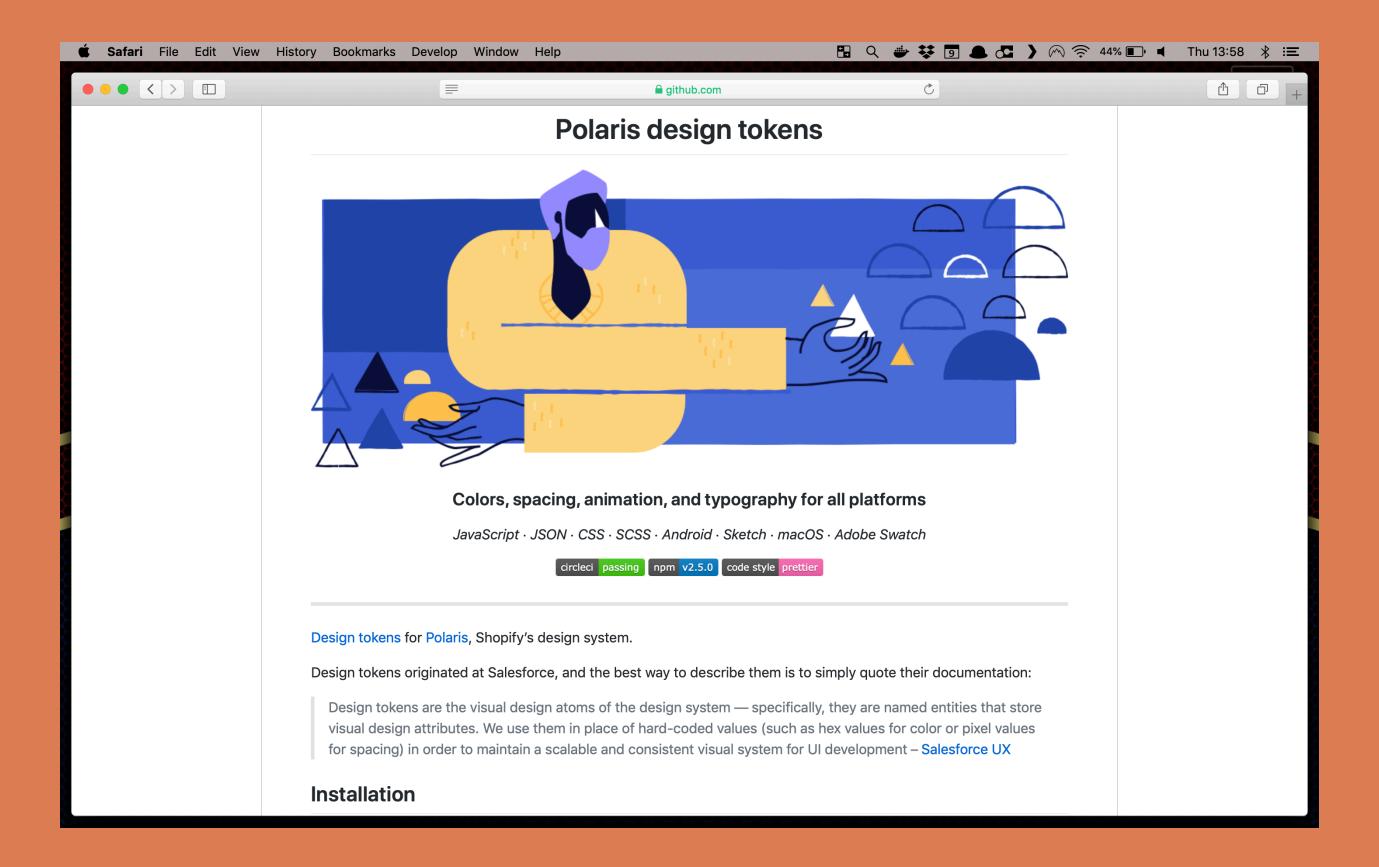


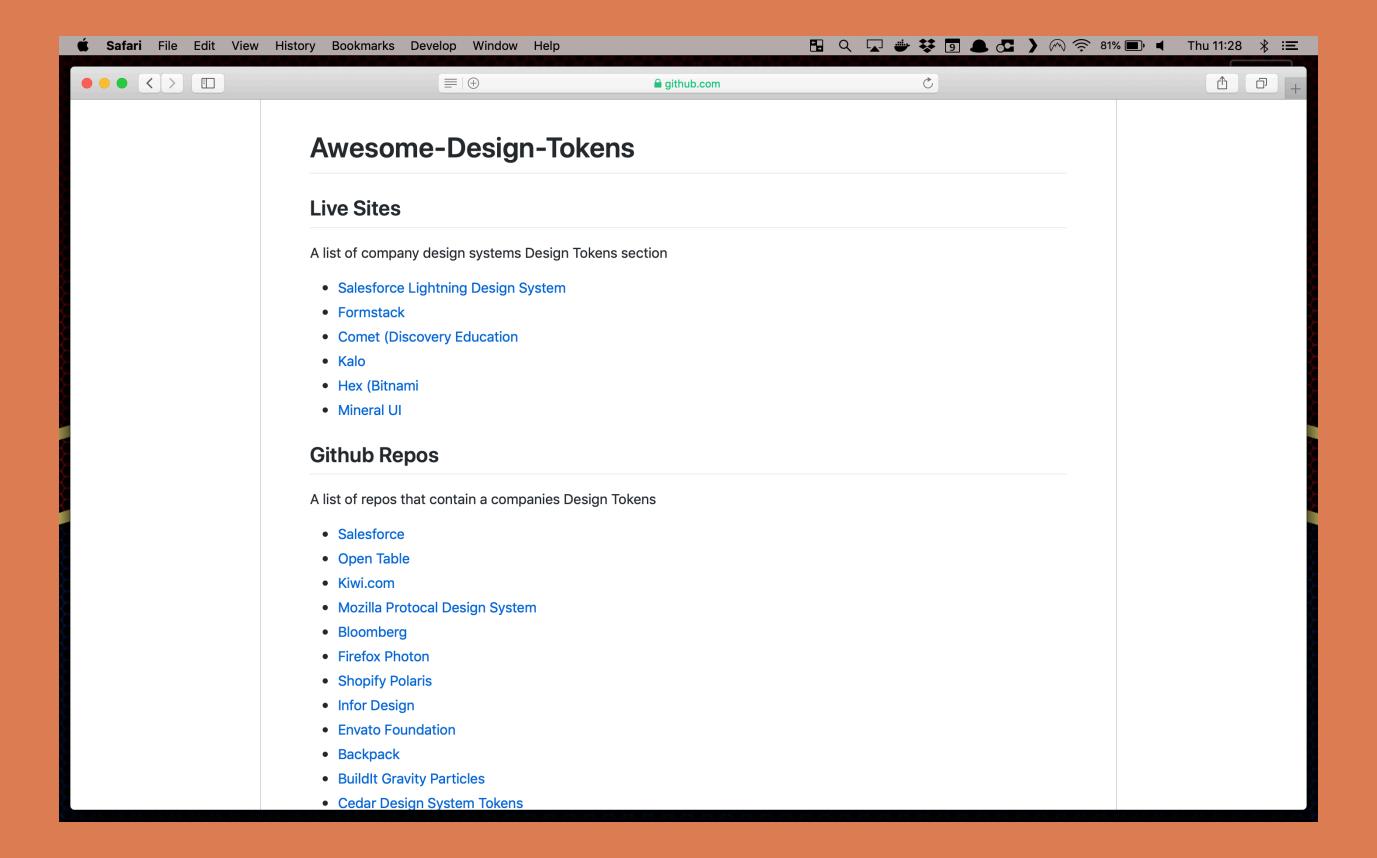
Design Tokens are an abstraction for everything impacting the visual design of an app/platform.

Sönke | @soenkerohde

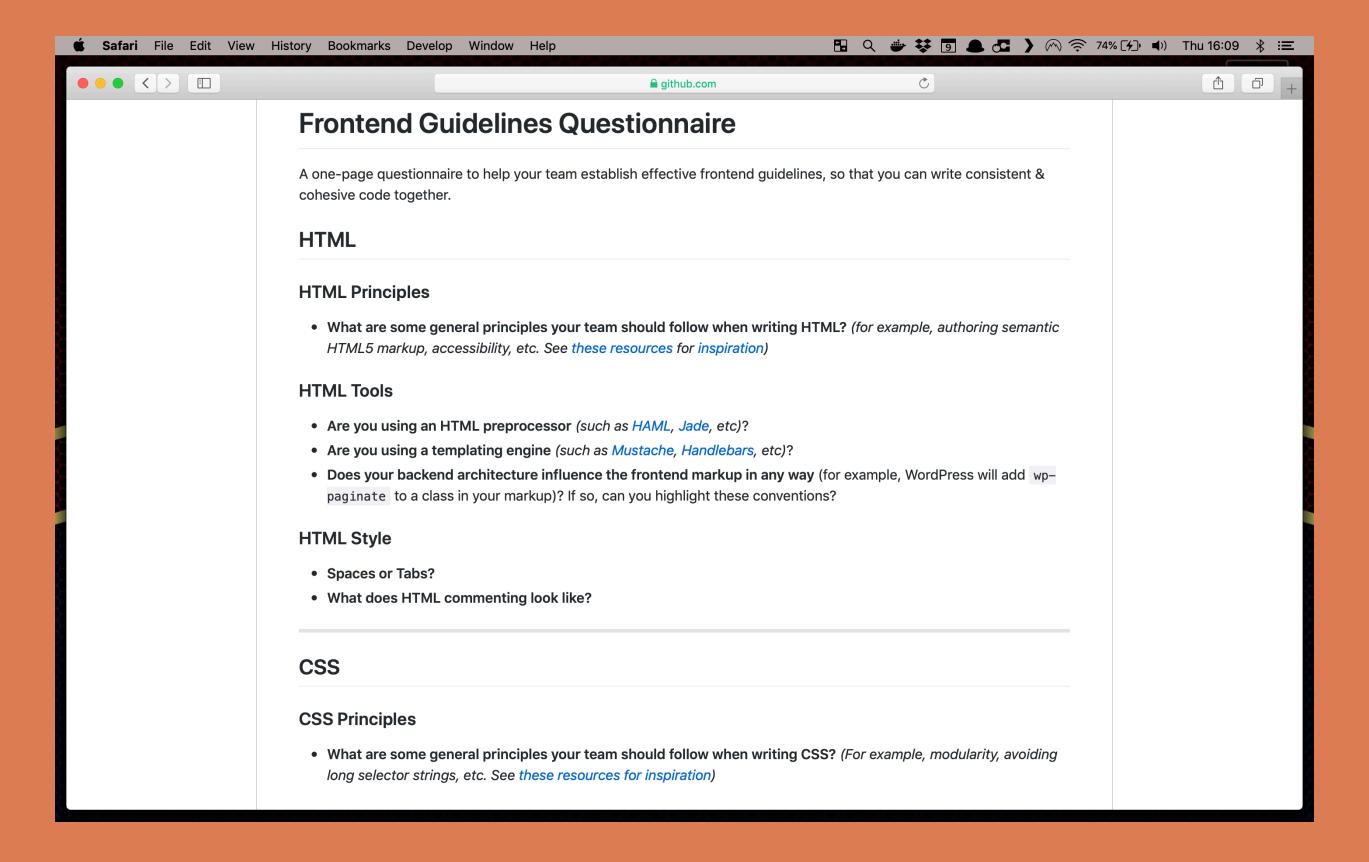








# How will we code components?



About

## UNJUCKS

powerful templating lan



Safe, customer facing template la



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atible with Mustache templates. In Handlebars and continue using yo und here.

Download I

Beautiful,

well-inden

templating

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%h1= pos inheritance,

%h2= posius control, and

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Templating Docs

fat is Liquid?

l is an open-source template langu

{% extends "basy. It is the backbone of Shopify the

{% block headent on storefronts.

<h1>{{ title }}

{% endblock %} I has been in production use since

{% block content other hosted web applications.

.content

{% for name, = postall 8K gzipped {| name | s in the browser

s in the browser {% endfor %} O USES Liquid?
@sturobson | alwaystwisted.com | Design Systems and Front-End Architecture | Colchester Digital 2019

Installation

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, some contents, followed by a 1331

Change Log

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<title> <script

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</head>

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</body>

</html>

%section.c

{% endblock %}

TALL LEARN SASS BLOG

ROBUST CSS

## with superpov

serif;

DOCI

Sass is the most morphology professional grade the world.

e (3.4.22) Release Notes Fork on Github

serif;

### FEATURE RICH

Sass boasts more features and abilities
than any other CSS extension language out
there. The Sass Core Team has worked
en@sturobson|alwaystwisted.com|Design Systems and Front-End Architecture | Colchester Digital 2019
stay ahead.



## rted

vnload and use, examples

### **PostCSS**

transforming CSS with ,

ode

S rules using values <u>xer</u> will use the data popularity and prefixes for you.

CSS input

### **Getting Started**

:-webkit-:full-scress is a CSS pre-processor, meaning that it extends the low variables, mixins, functions and many other techtic-moz-:full-screen more maintainable, themable and extendable.

} :ss runs inside Node, in the browser and inside Rhine in the low your files and watch for characteristics.

or example:

@base: #f938ab;



:fullscreen {

.box-shadow(@style, @c) when (iscol@@c))

-webkit-box-shadow: @style @c;
box-shadow: @style @c;



## Reackage FRUN he web he JavaScri

made of lots of thiny use a task runn utilities. Bower mana

hese packages and making sure when performing repetitive tasks li lower to the rescue!

components that contain HTML gured it through a Gruntfile, a task r

r works by fetching and installing

our tools and workflows.

One-line insependencies.

cation, compilation, unit testing, lint asier your job becomes. After you'v

or minify code or do anything eost of that mundane work for you-

-with basically zero effort.

m insta, and saving the stuff you're loo ison. How you use packages ailable Grunt plus

> of the tasks you need are already or the front-end. If multiple pack While the plugin listing is not com-I jQuery just once. This is known



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ponent-Based

encapsulated components that manage them to make the time the time to make the time the time to make the time time the time the time the ex Uls.

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your code and abilities to build d of templates, you can easily pass ric

Productive Out of 1



The Design System framework has to be platform-agnostic and meet the needs of users on a variety of different technology stacks..

- Stephanie Sullivan Rewis | @stefsull



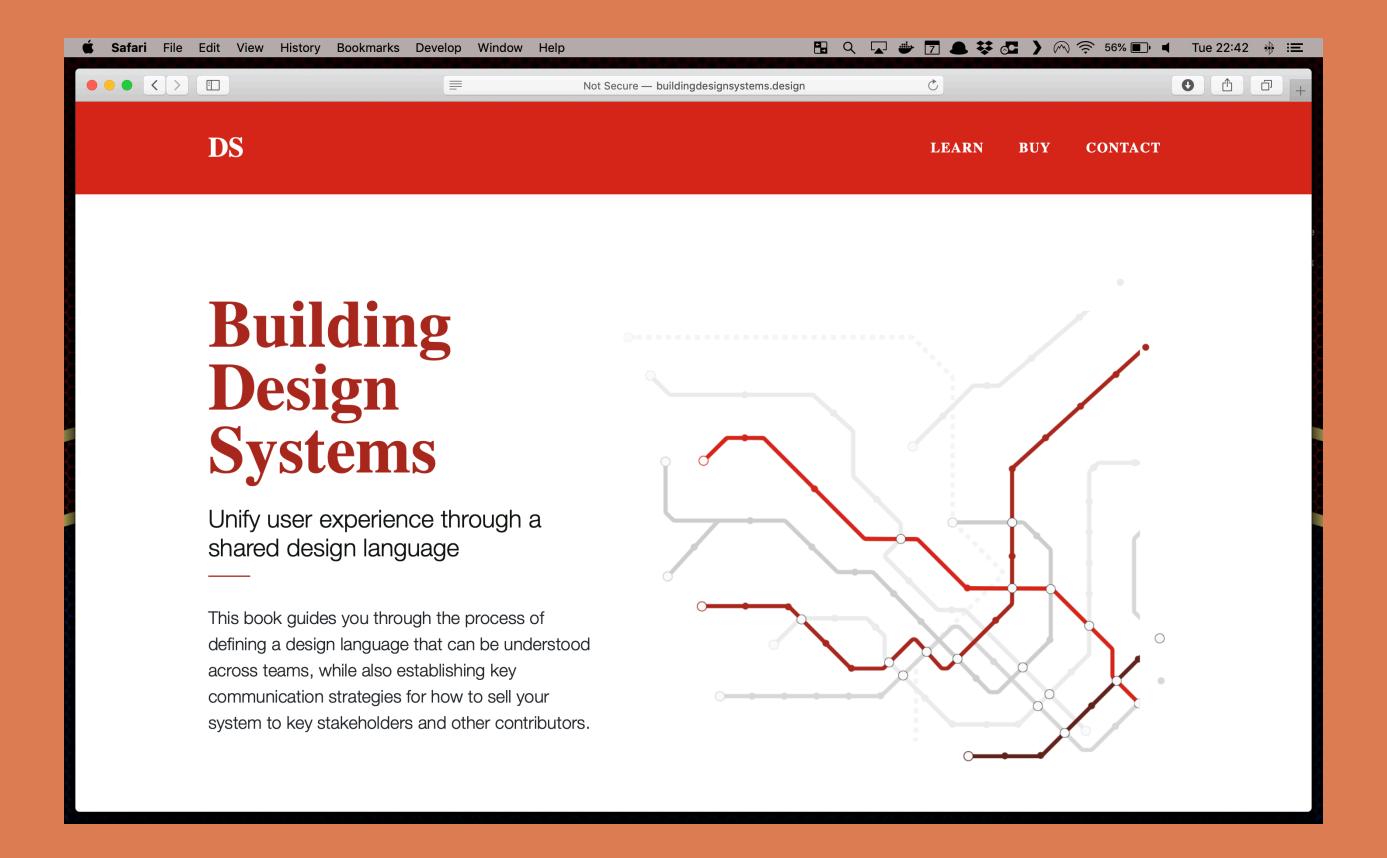
## Methodologies



# SIMACSS

## OOBEMITSCSS





# Namespacing Component Type

```
.a-button { ... }
.m-signup { ... }
.o-masthead { ... }
```



## Serving Many Teams

## Namespacing Product Type

```
.vf-heading { ... }
.vf-news-item__heading { ... }
.vf-news-group__heading { ... }
```

## Namespacing

```
.vf-grid { ... }
```

\_\_\_\_\_

.embl-grid { ... }

## Guidelines

# s Gyidelines de lines de lines

d styleguide for wind scalable Sass

that power GitHub.





veladvice an been translated into several langua nes for writing.

eable, scalabl

Open source

Available for use under the MIT license and built with open source projects like SCSS, Jekyll, Grunt, and more.

ıts

**About The Author** 

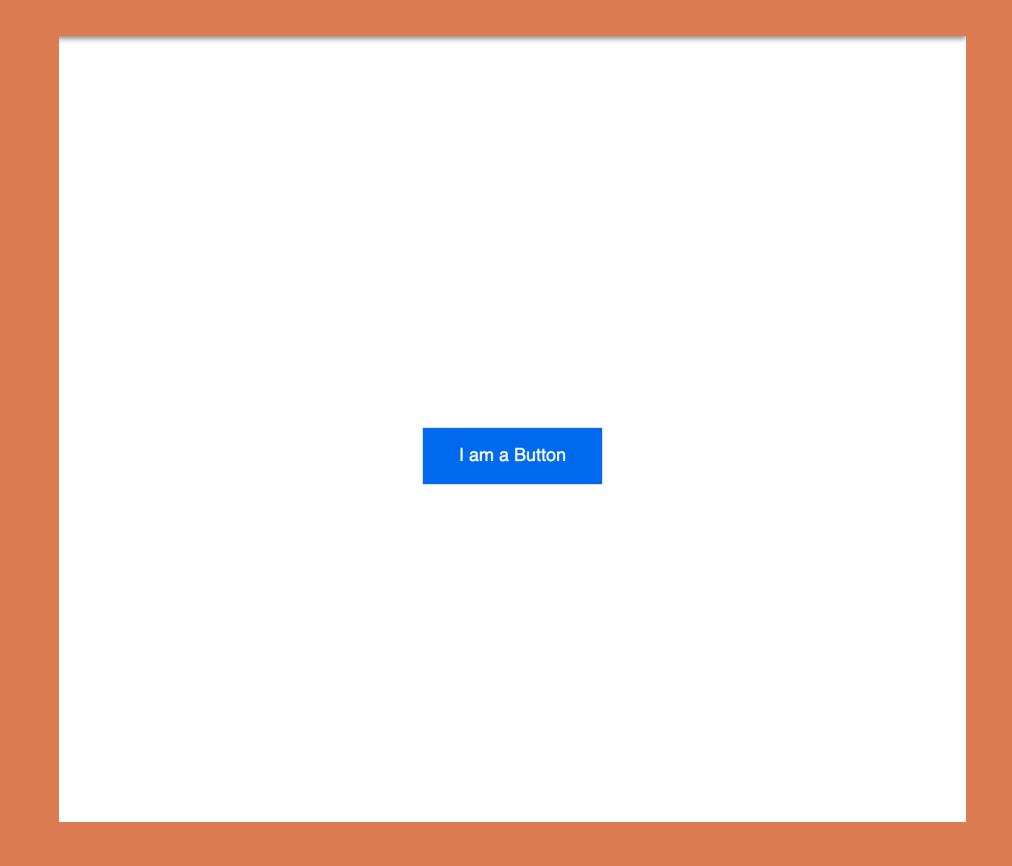
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-cc 118

# Linting



# What makes a component?



### **Variants**

- Typography
- Palette
- Borders
- Shadow
- Spacing
- Interaction: hover, focus, active states

### **Typography**

- font family
- font size
- font weight
- text transform

#### **Palette**

- text colour
- background colour

#### **Borders**

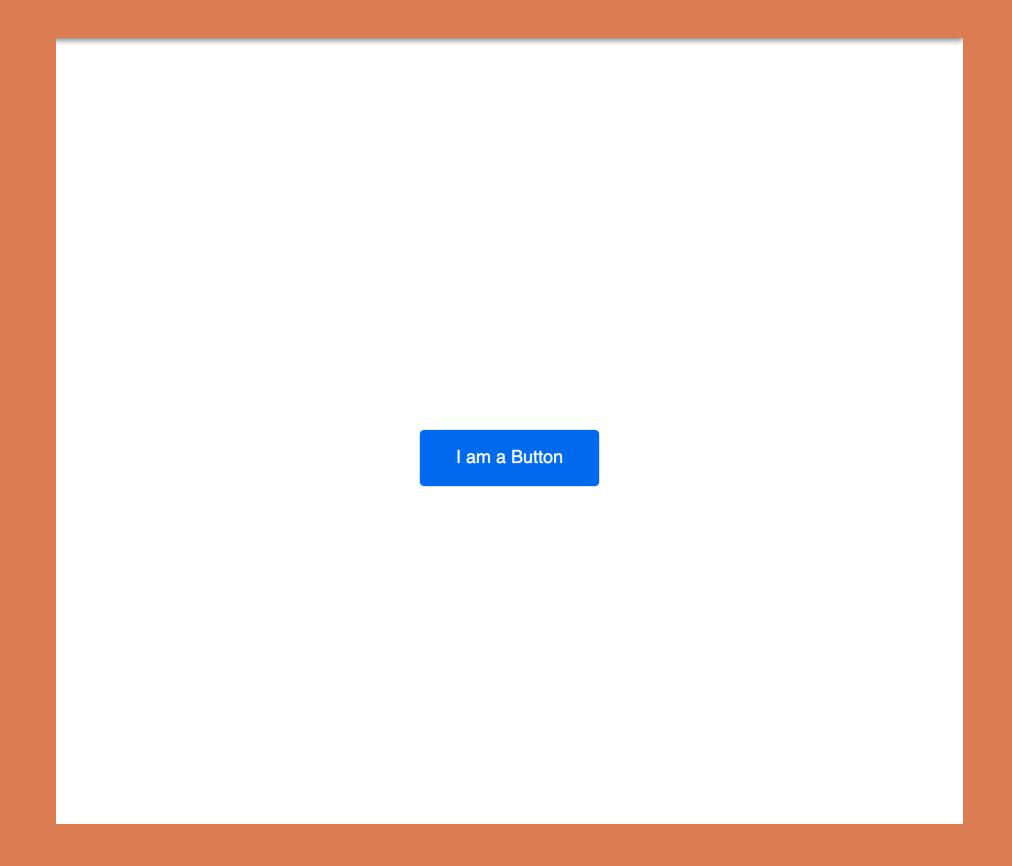
- border colour
- border style
- border width
- border radius

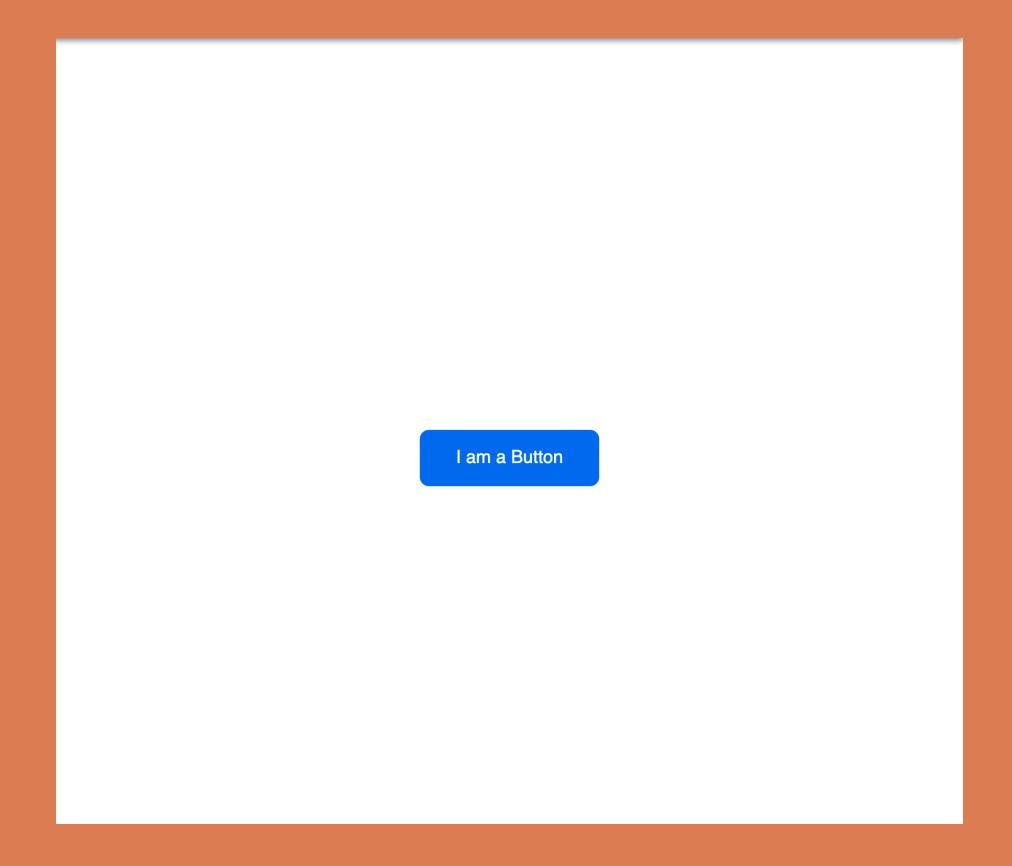
### **Spacing**

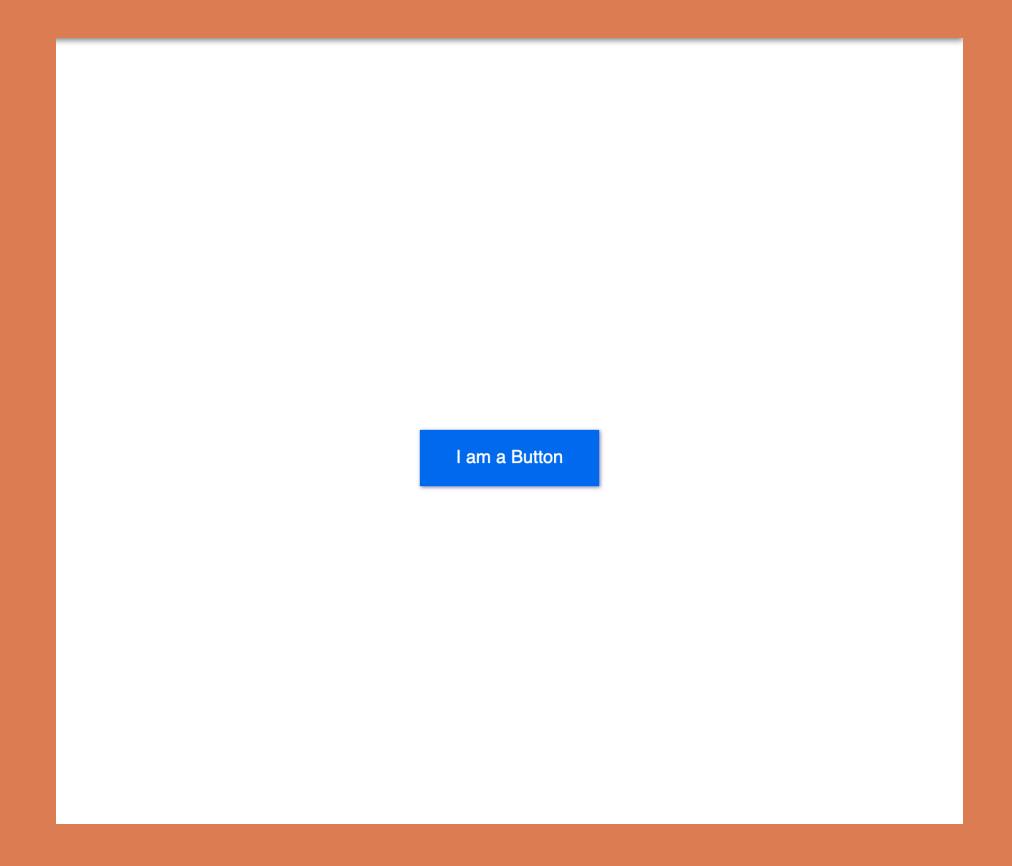
- padding top
- padding bottom
- padding left
- padding right
- margin top
- margin bottom
- margin left
- margin right

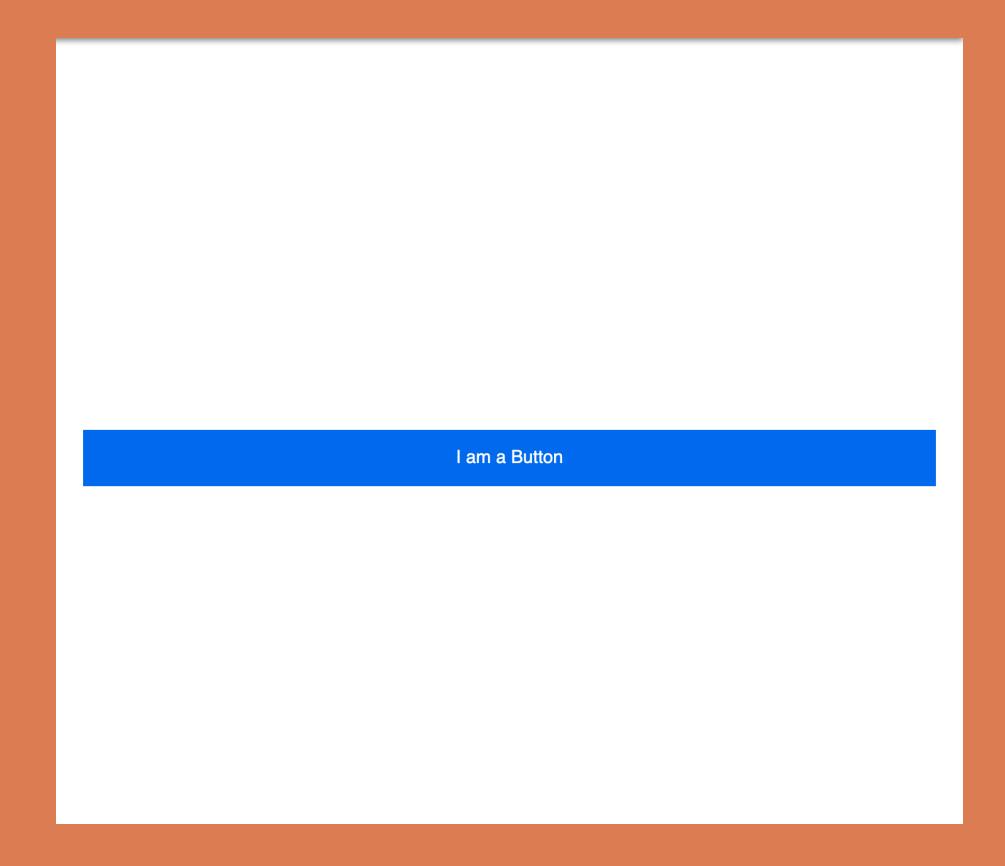
#### **Interactive States**

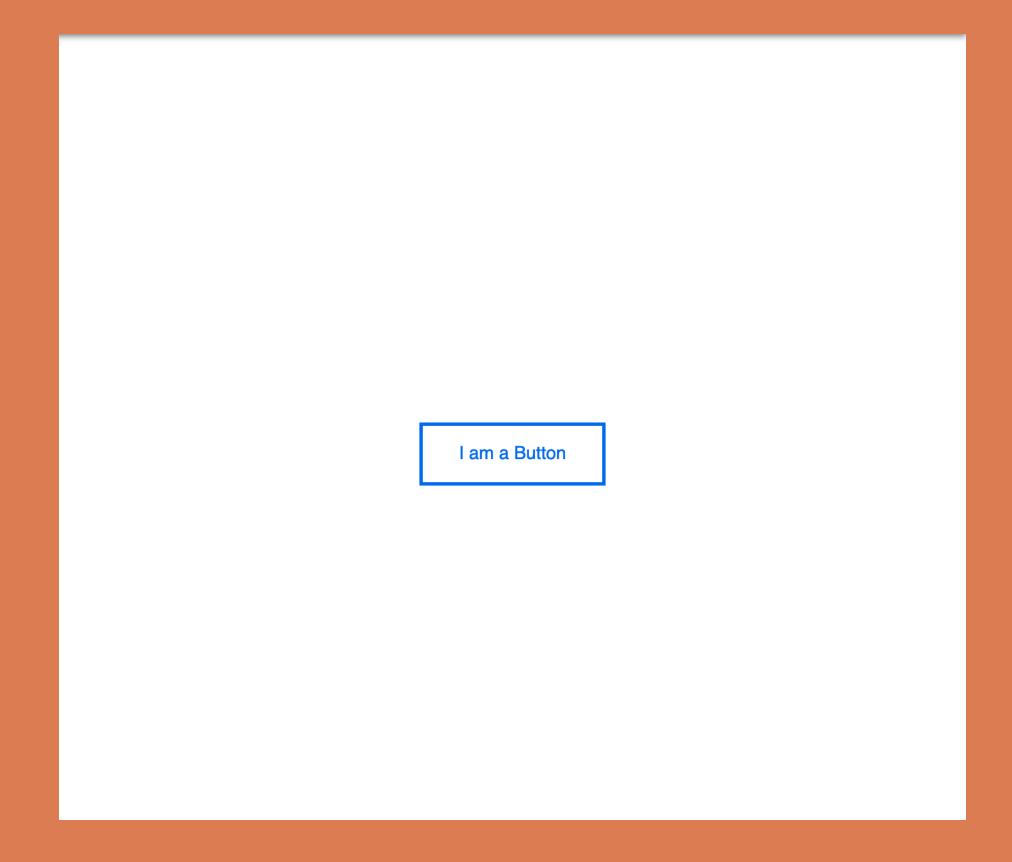
- hover text colour
- hover background colour
- hover box shadow
- focus text colour
- focus background colour
- focus box shadow
- focus border colour
- focus border width
- transition duration
- transition property
- transition timing function

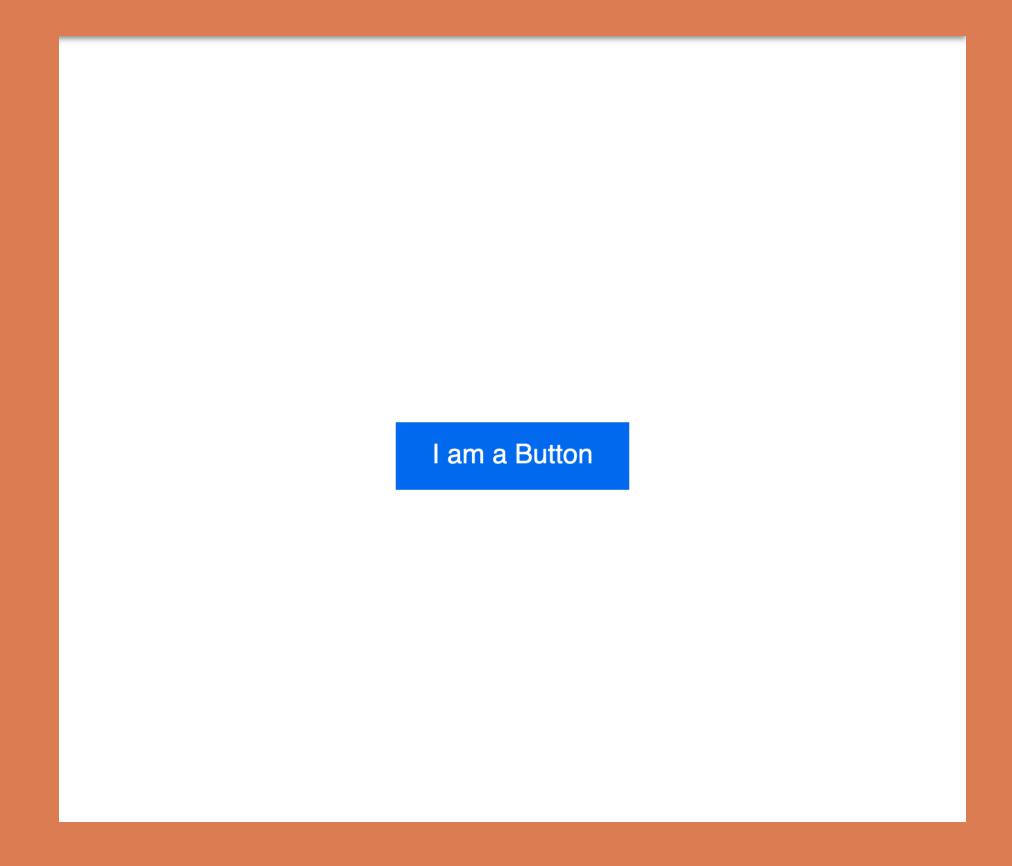








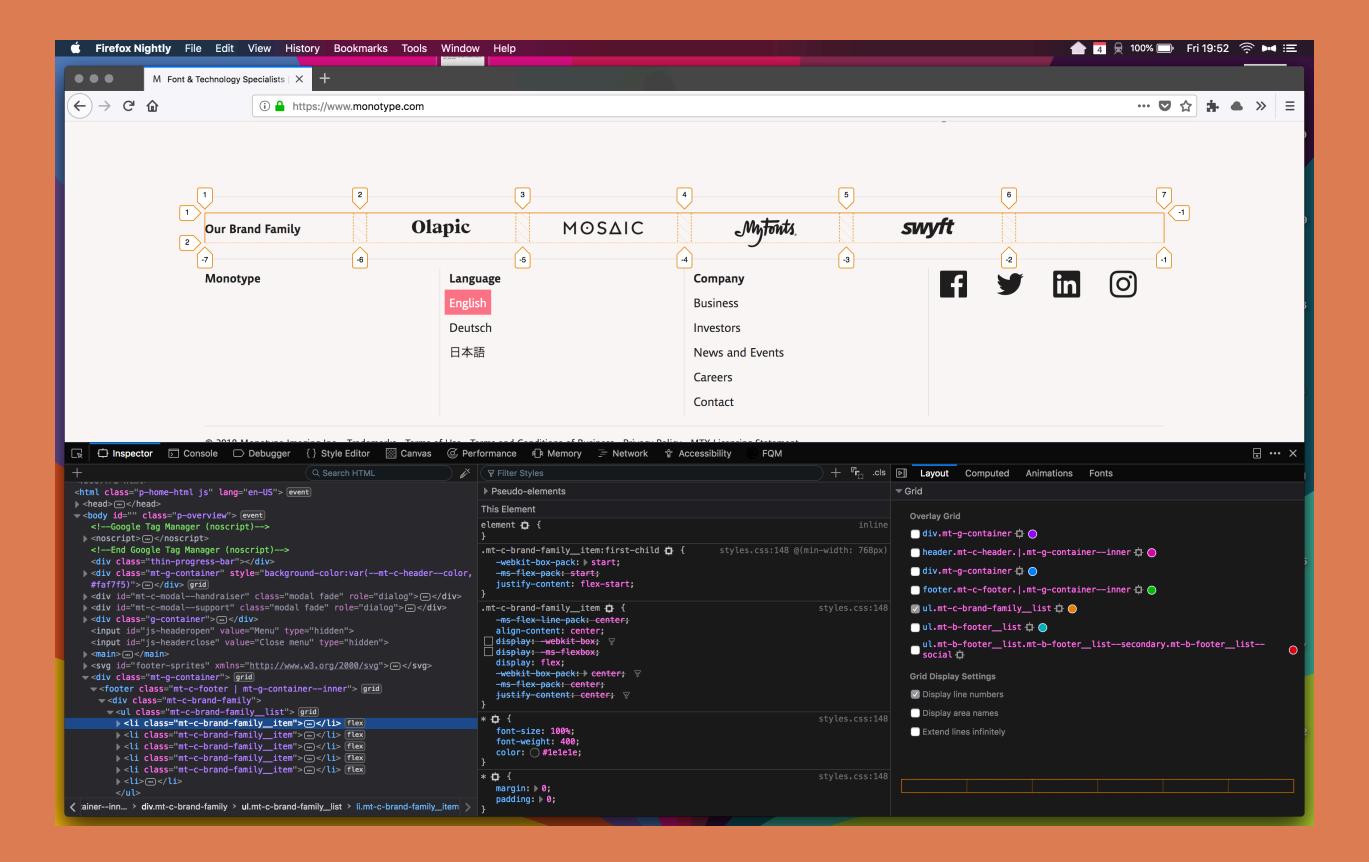






If you aren't explicit in the way an object's hover states, touch states, open or closed states, etc., then chances are they will be overlooked and not built.

— Jina | @jina



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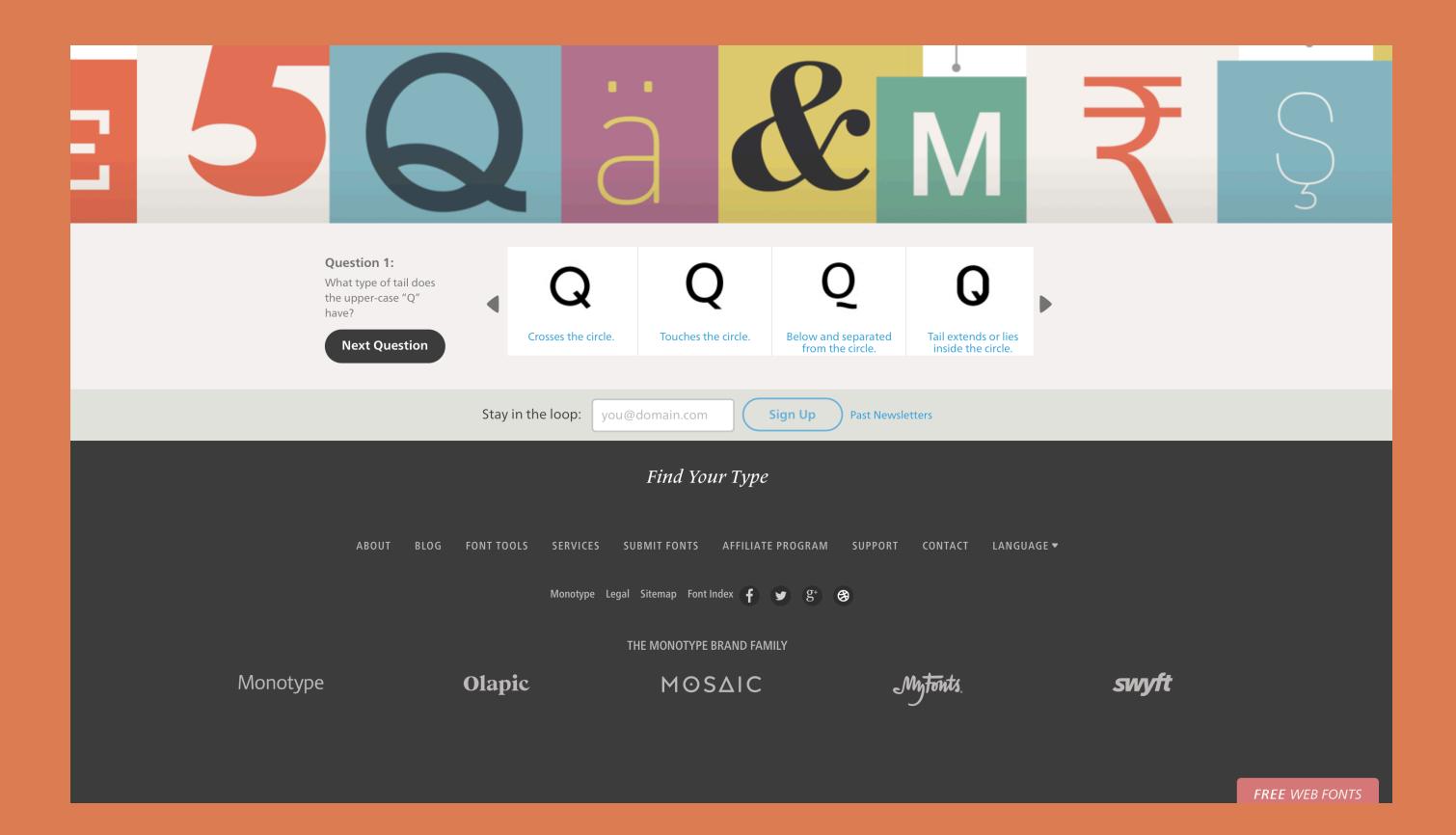
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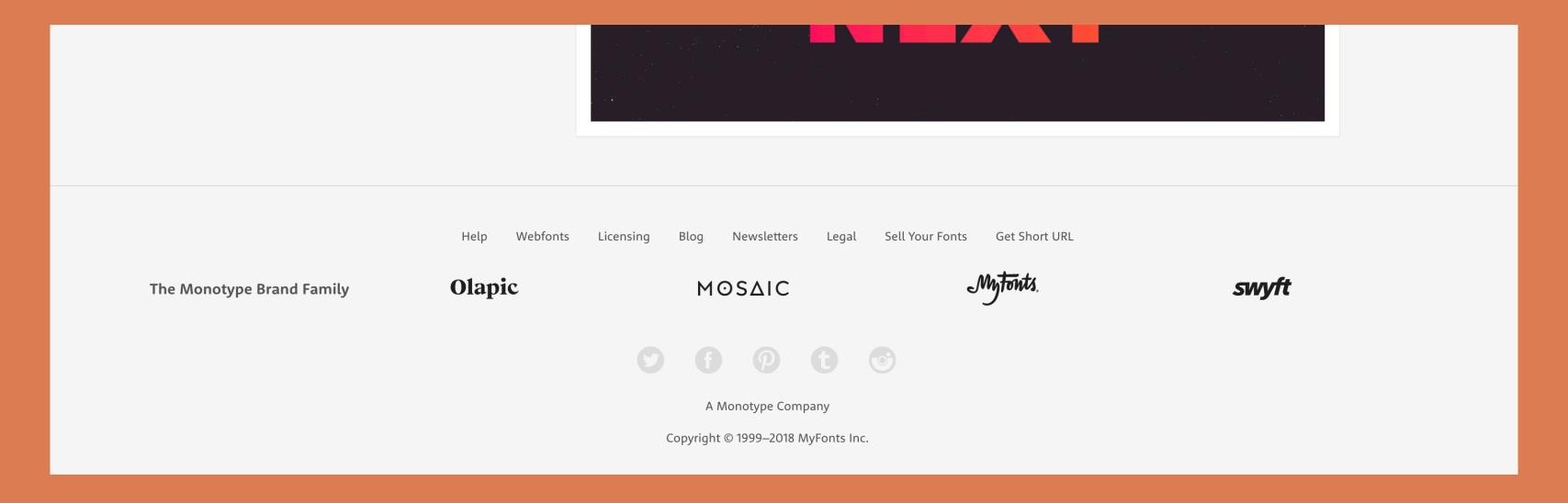






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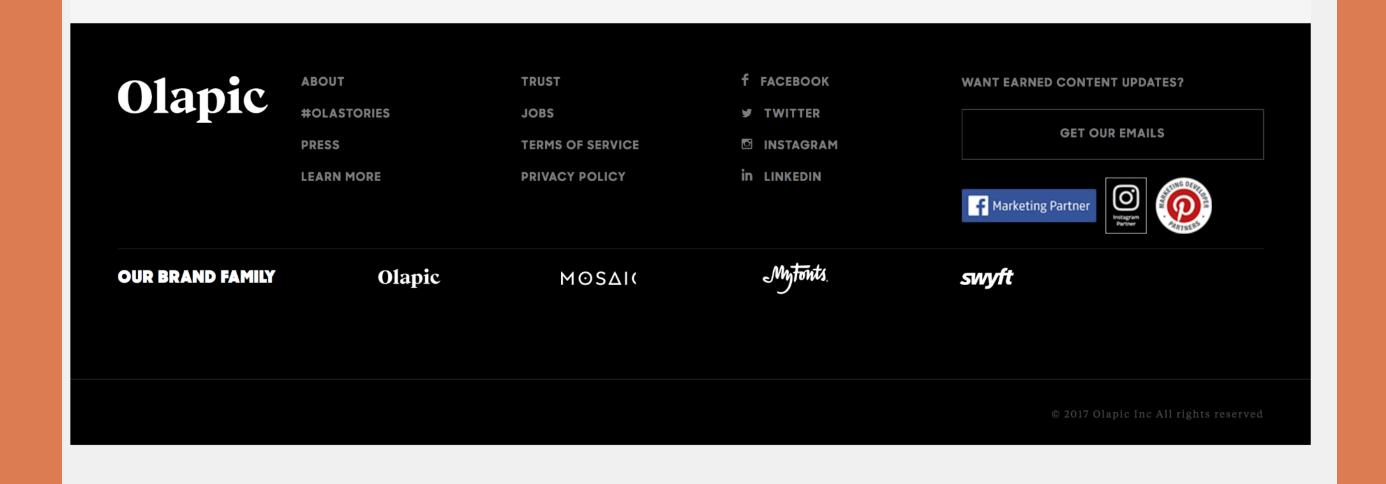




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... ending the week finding out the one product of my clients I would never expect to use any cross-product pattern is going to be implementing this too.

One pattern, 2 variants, 8 products.

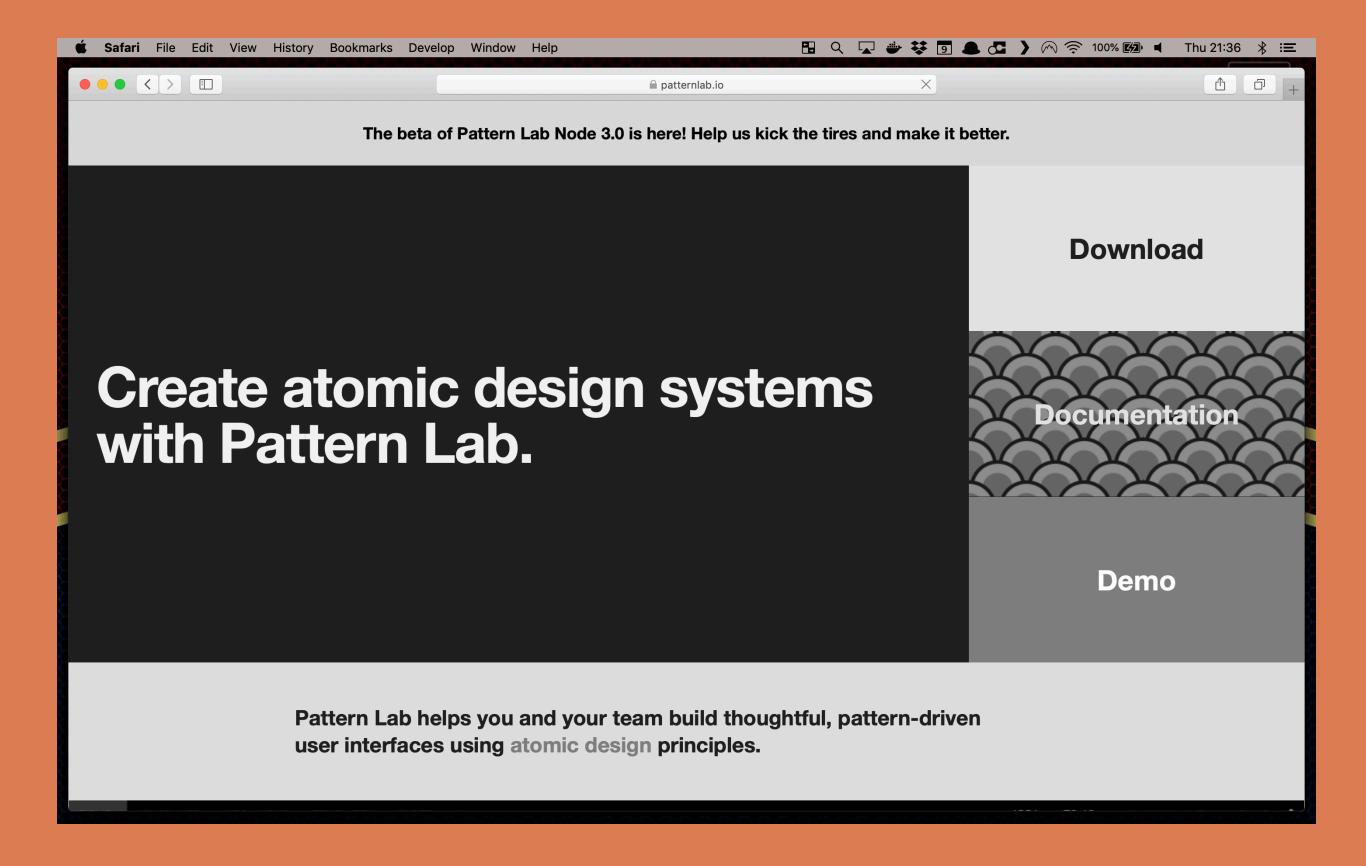
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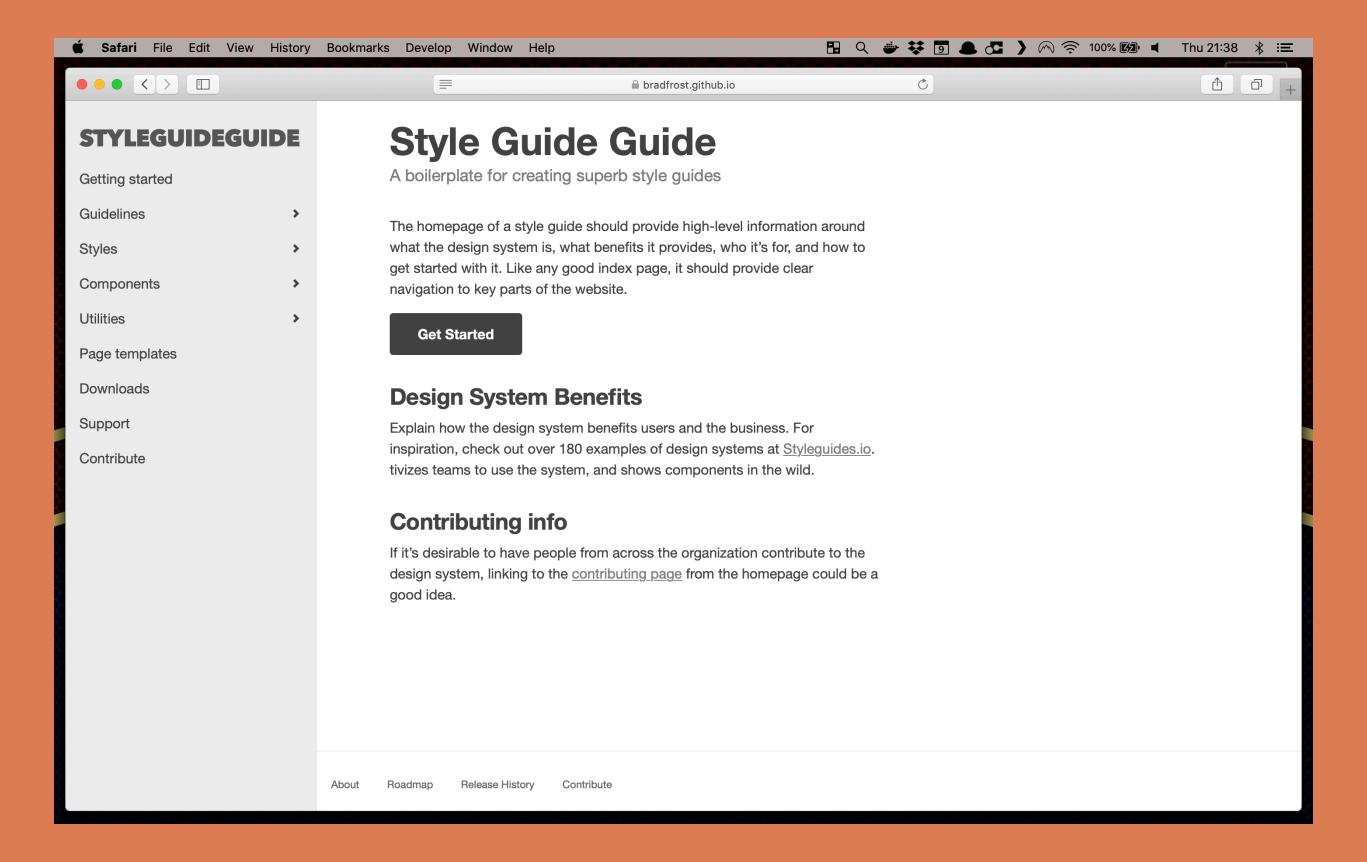
# How do we maintain a Design System?

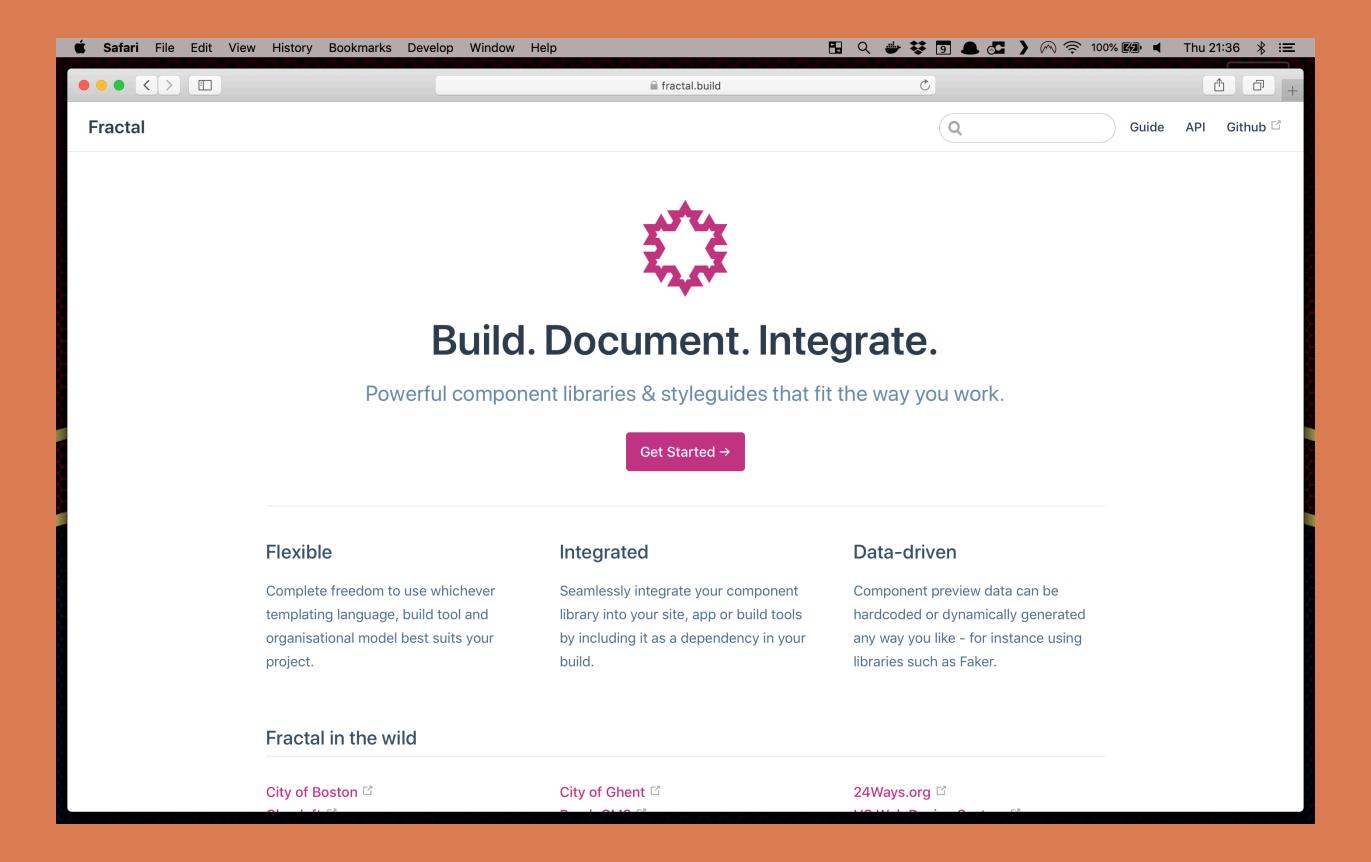


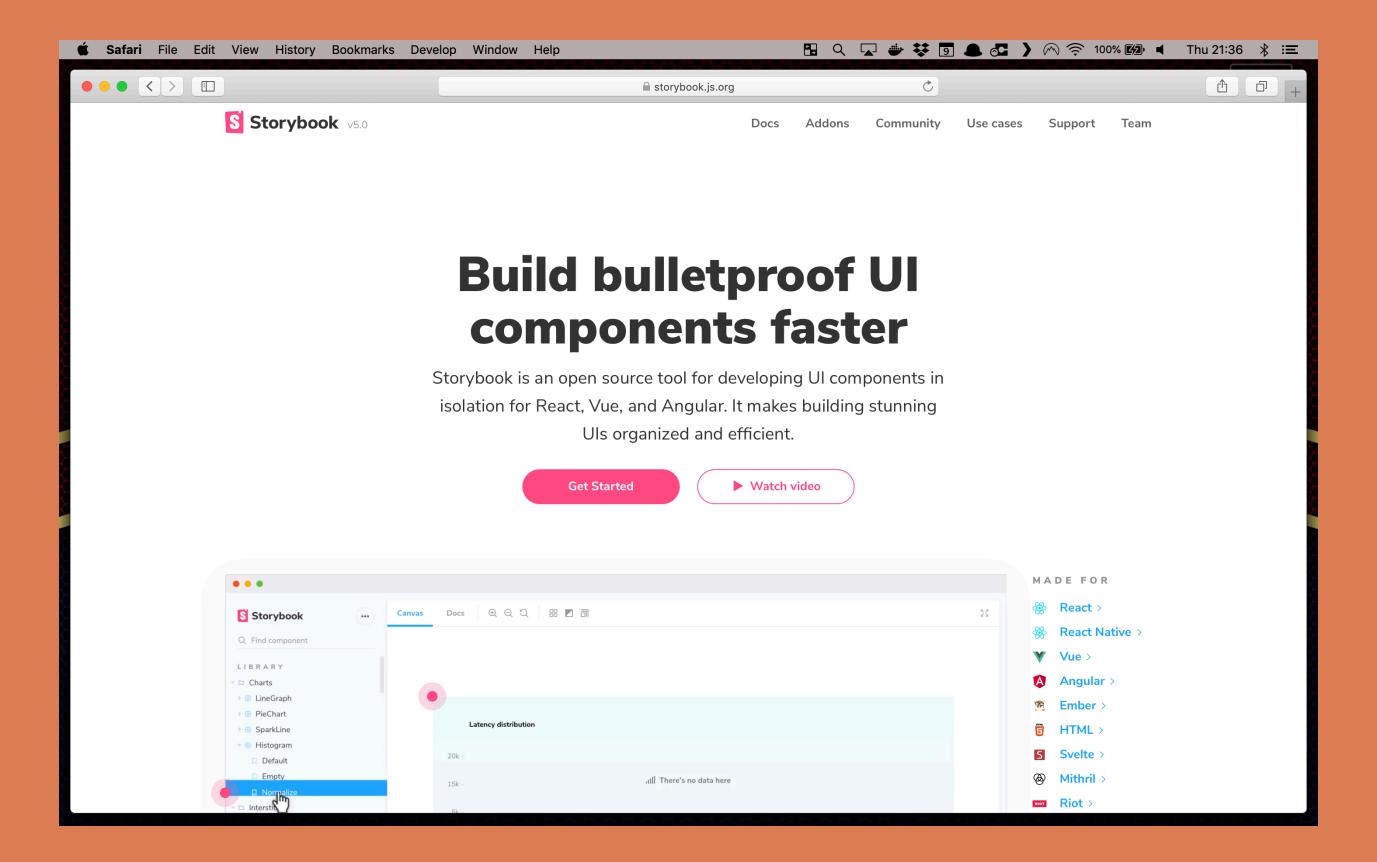
Design systems need be easy and desirable to use by the teams using them.

Charlotte Jackson | @lottejackson

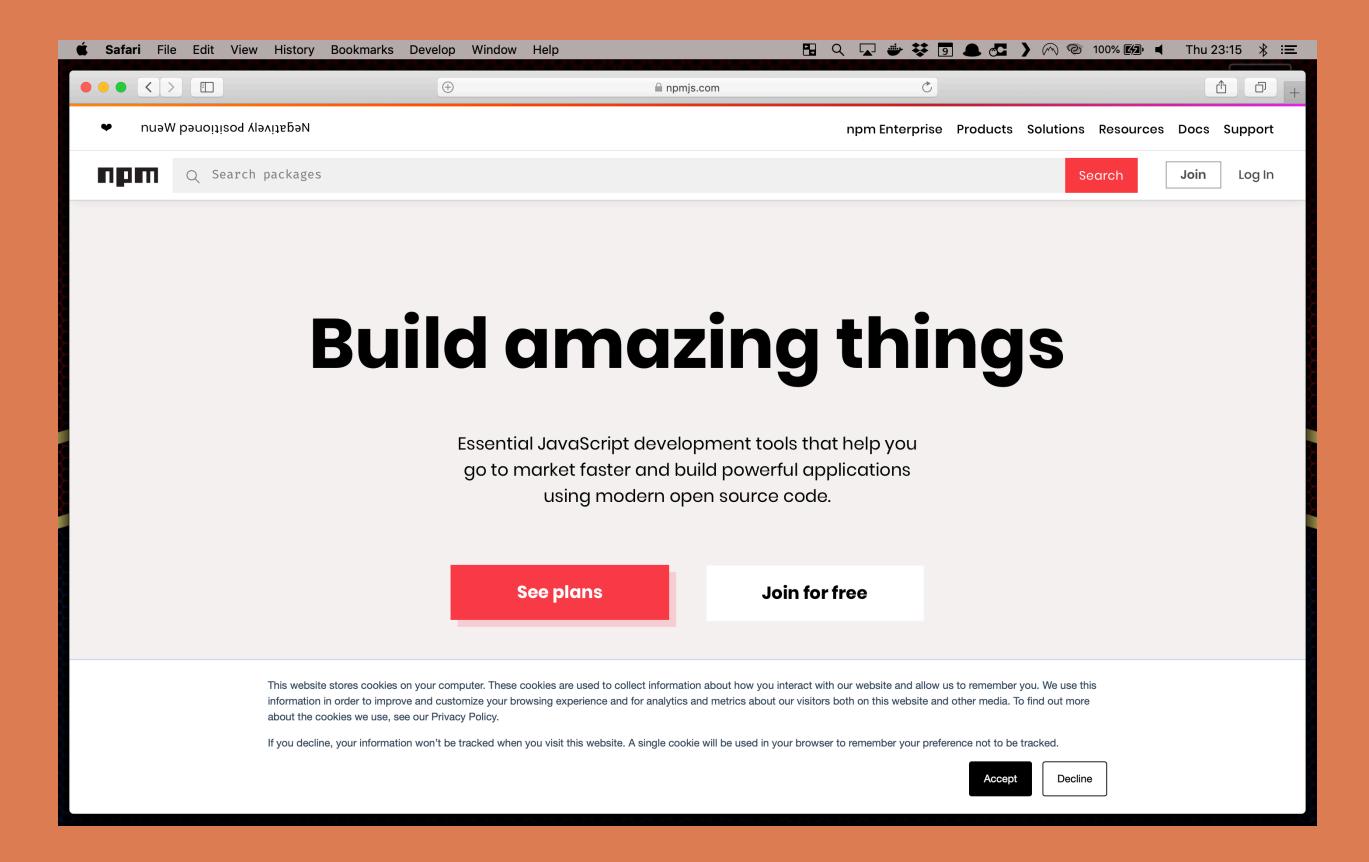


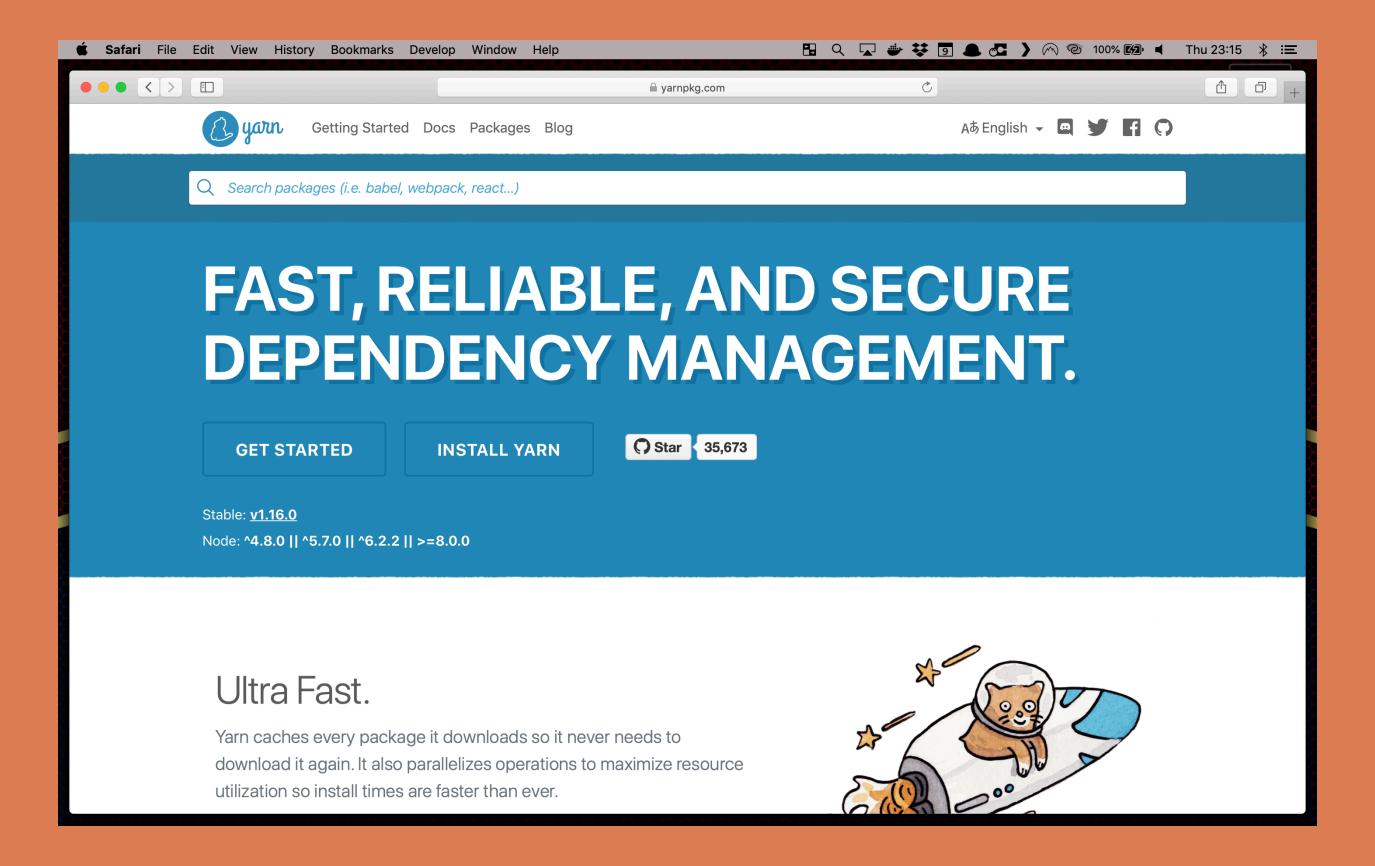


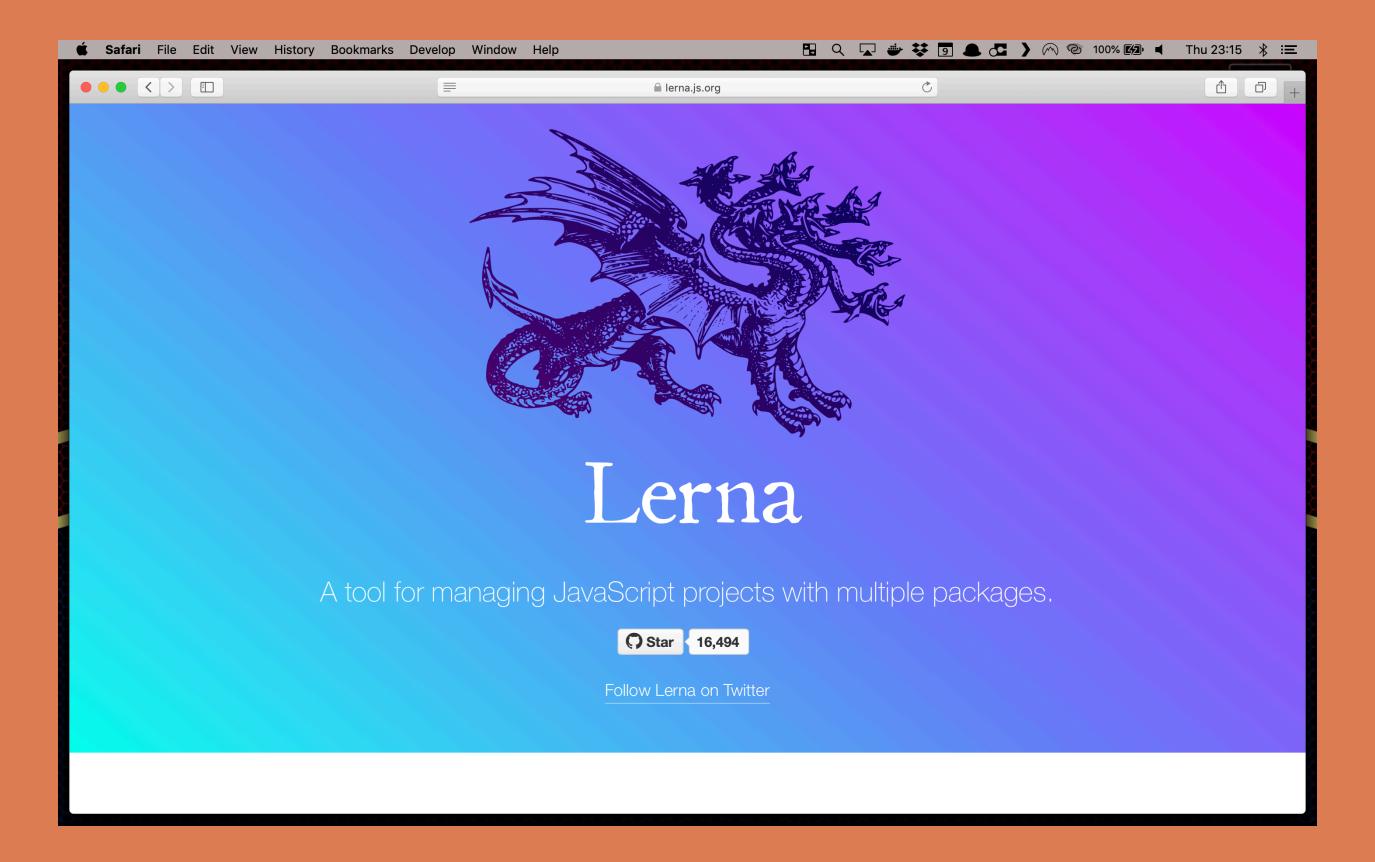


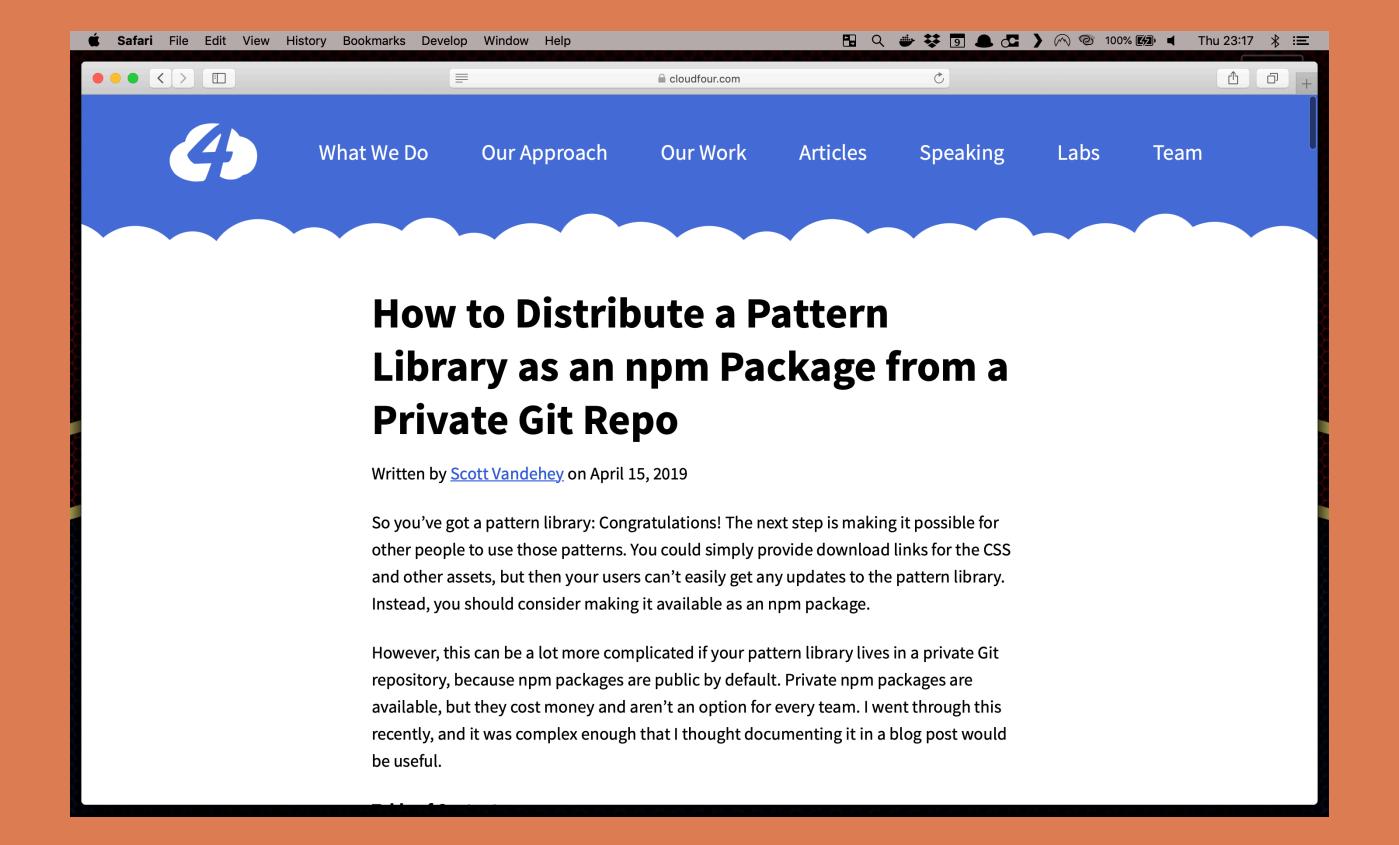


### Distribution





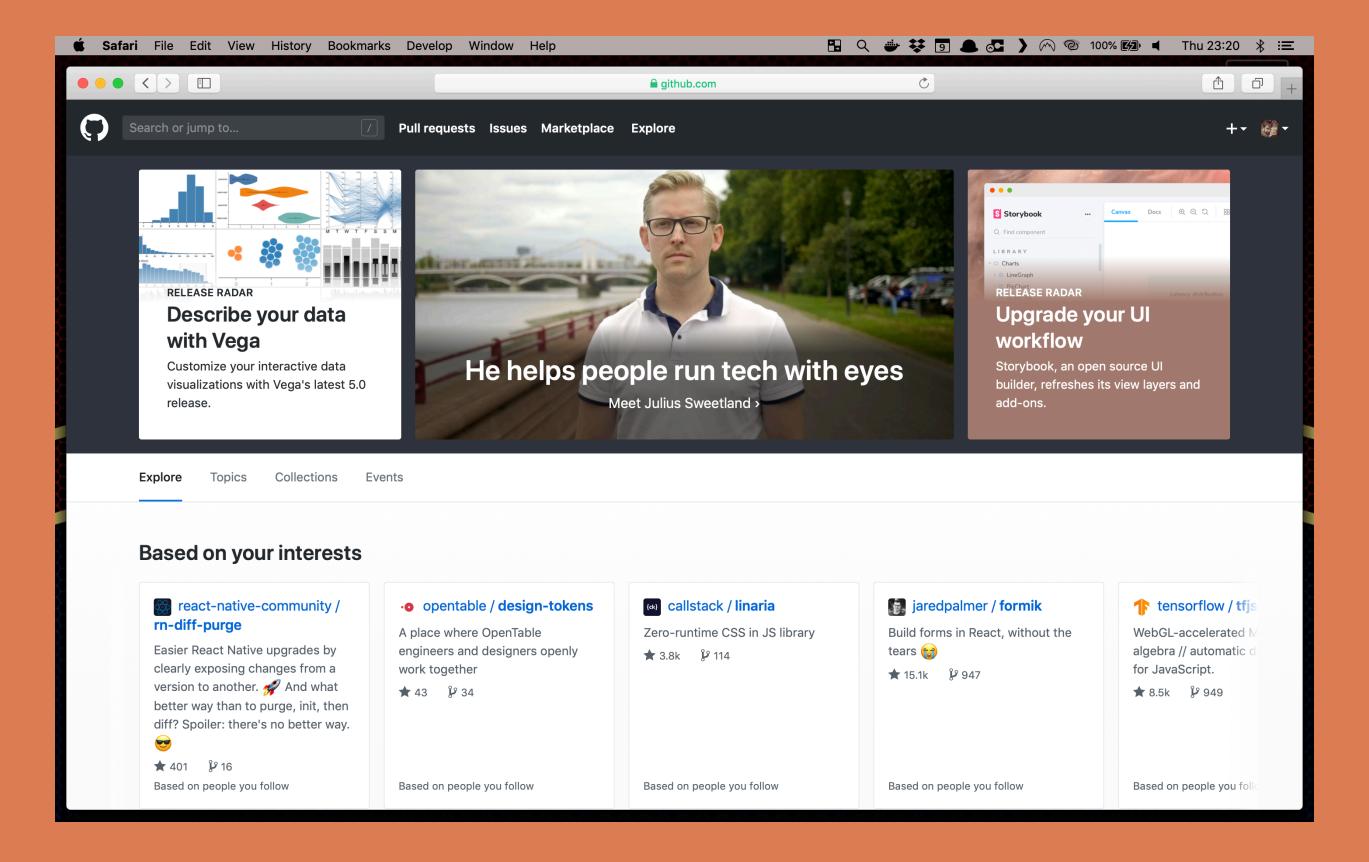


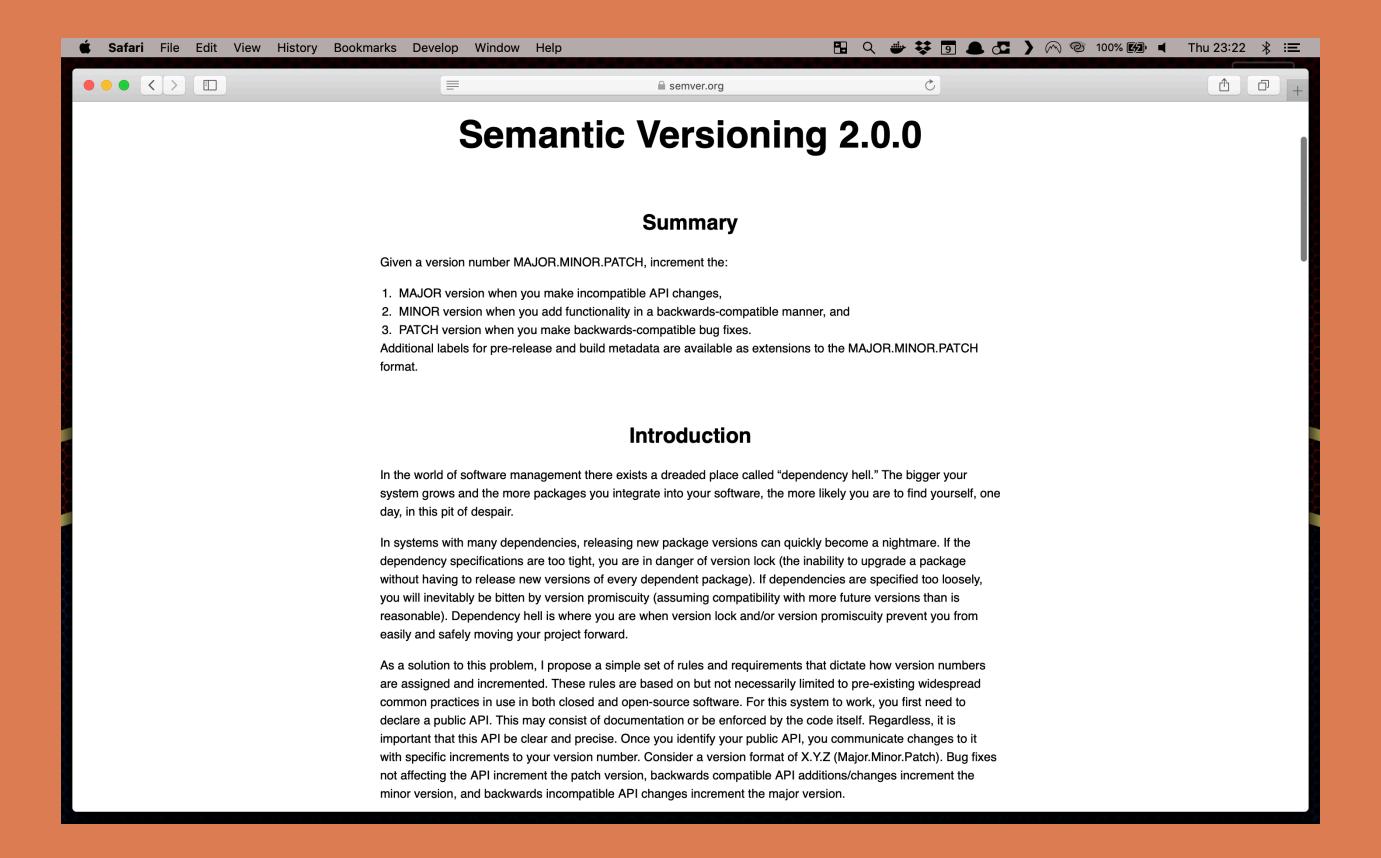


#### npm install my-components

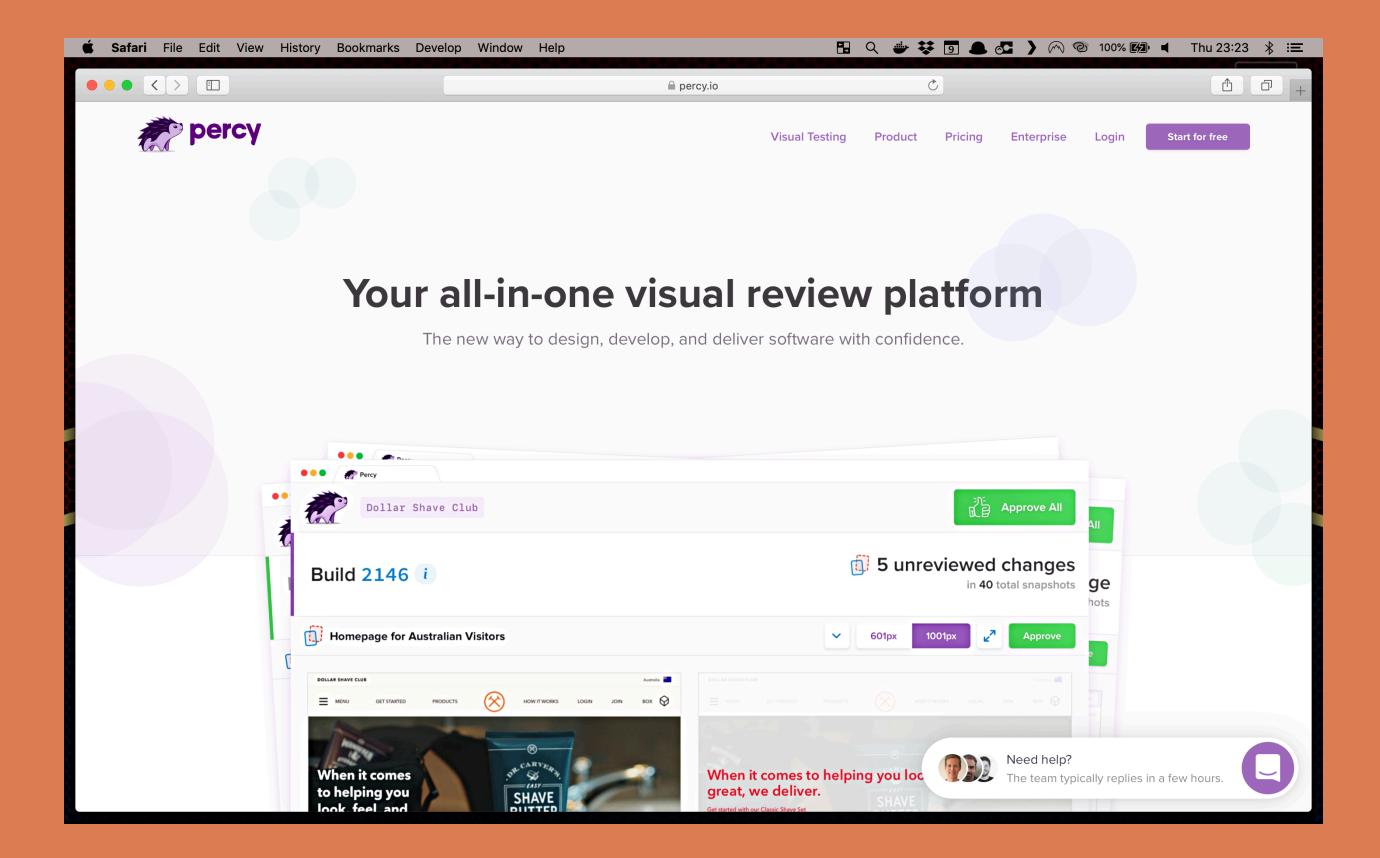
npm install my-components/my-button

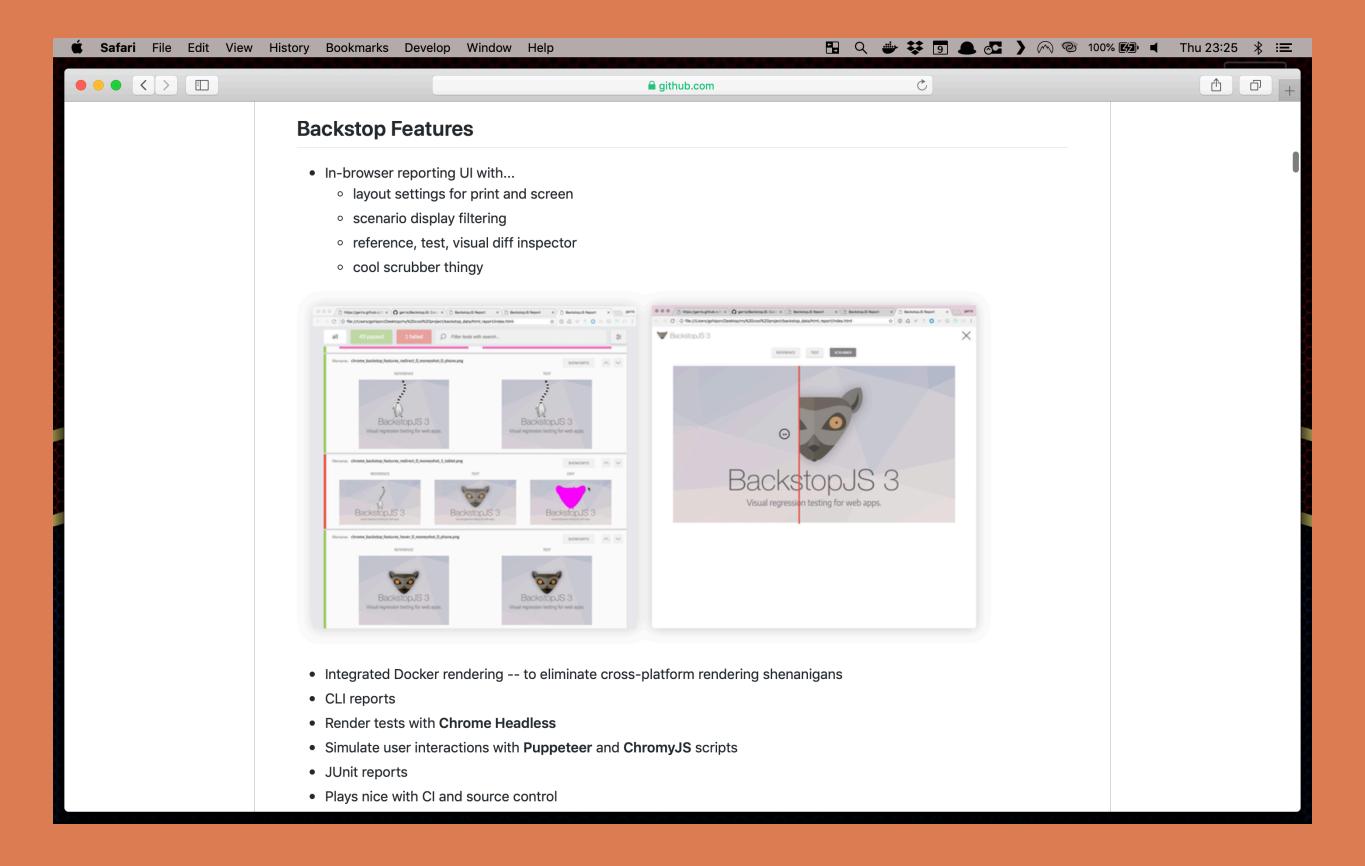
### Versioning

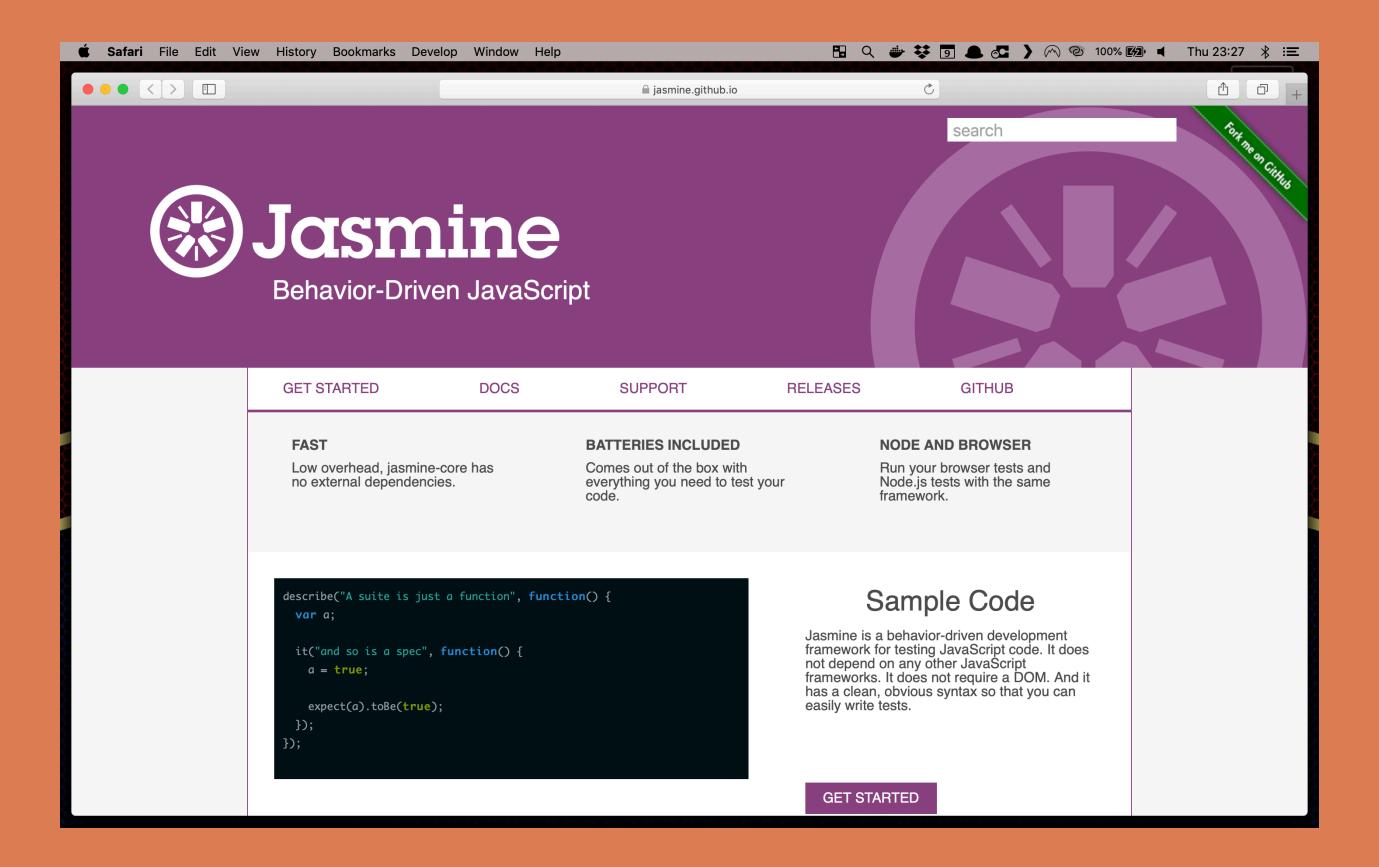


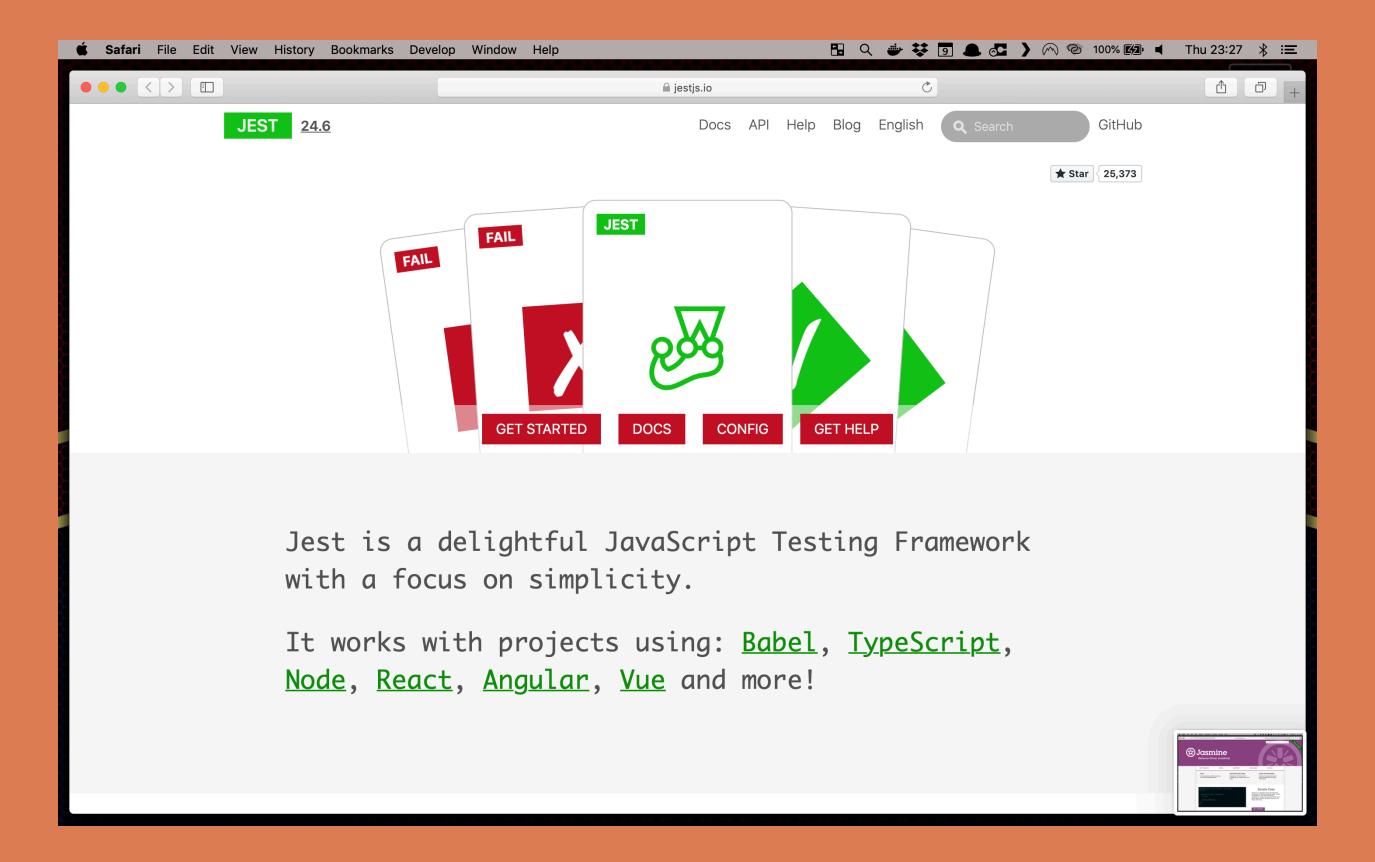


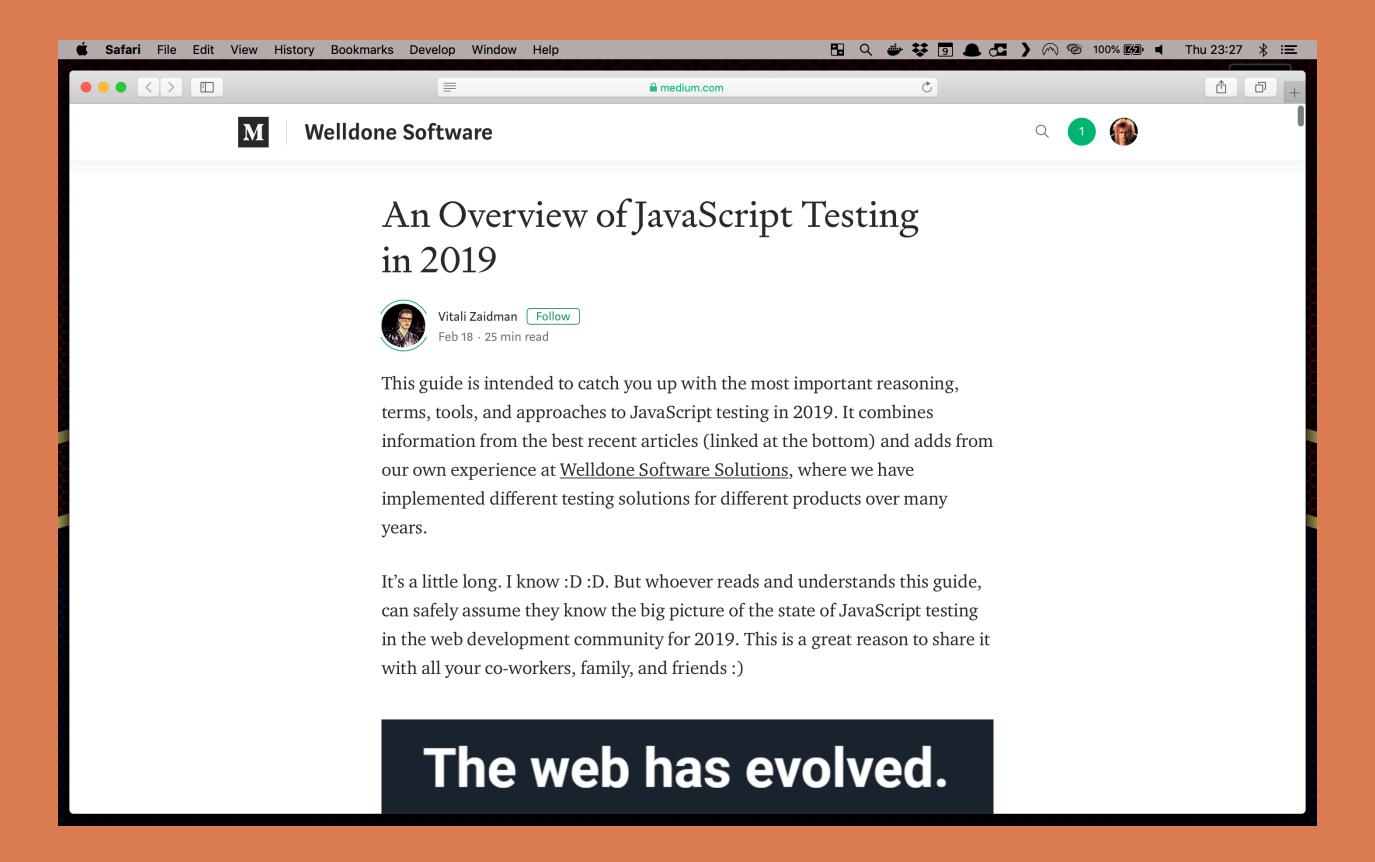
### Testing









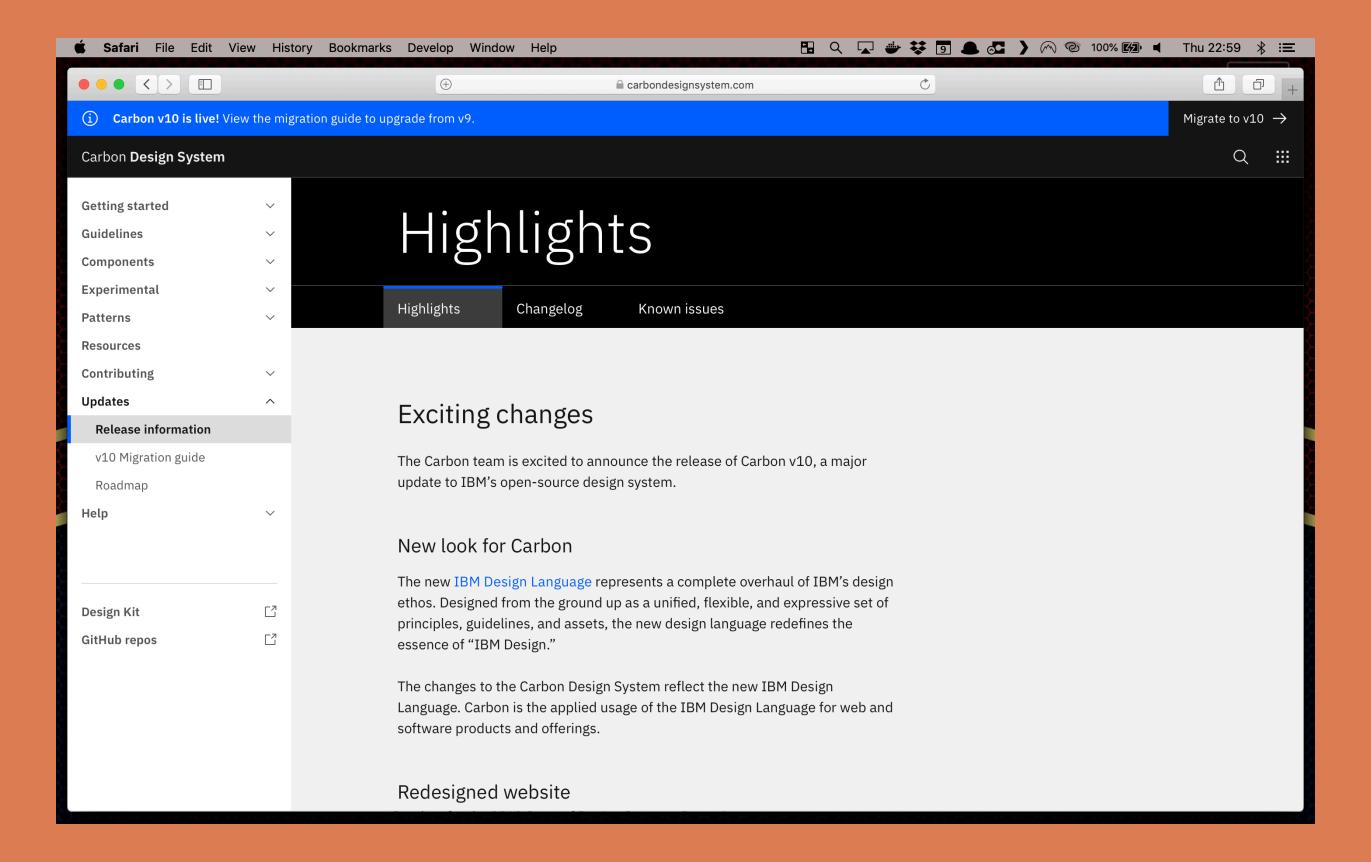


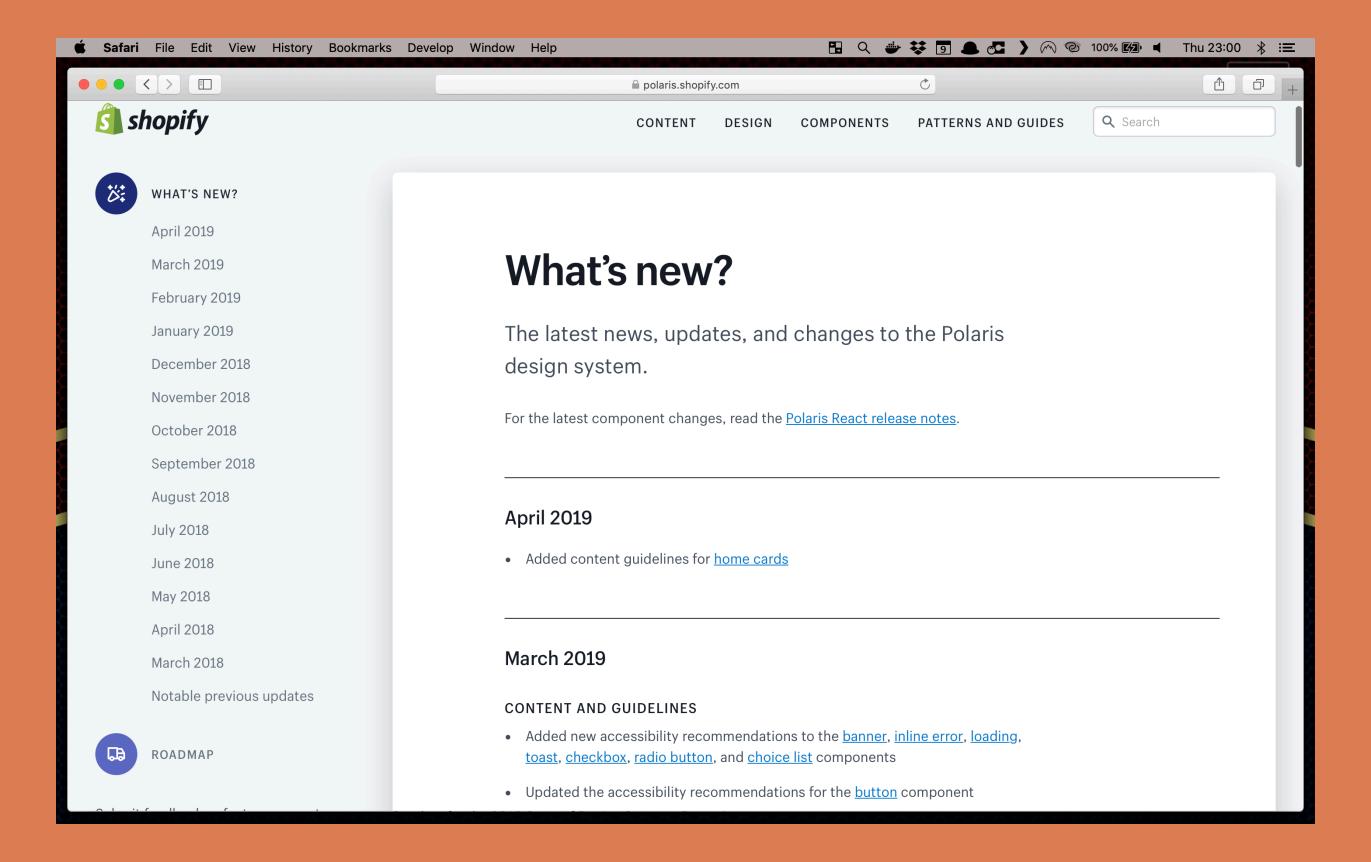
### Announcements

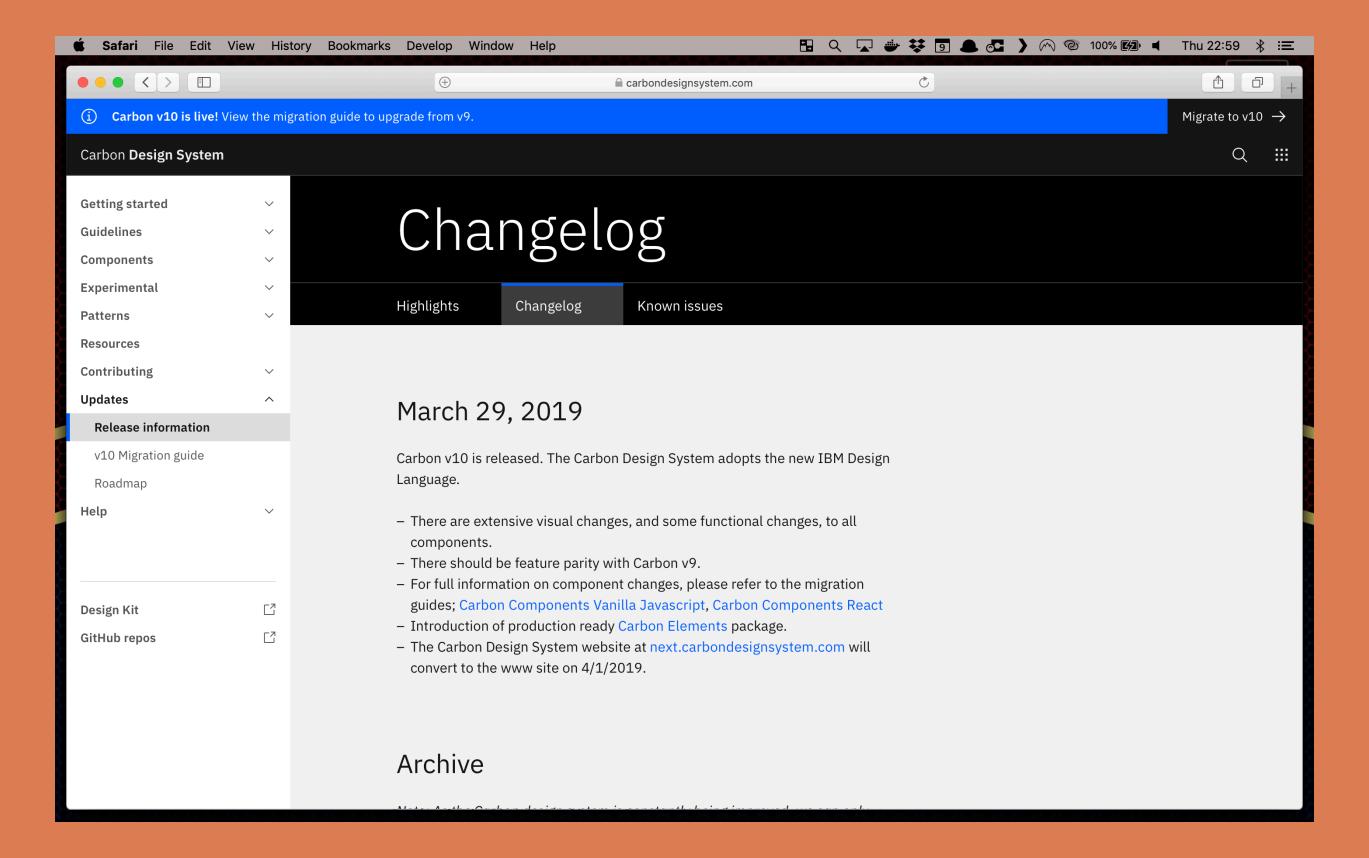


Successful design patterns don't exist in a vacuum.

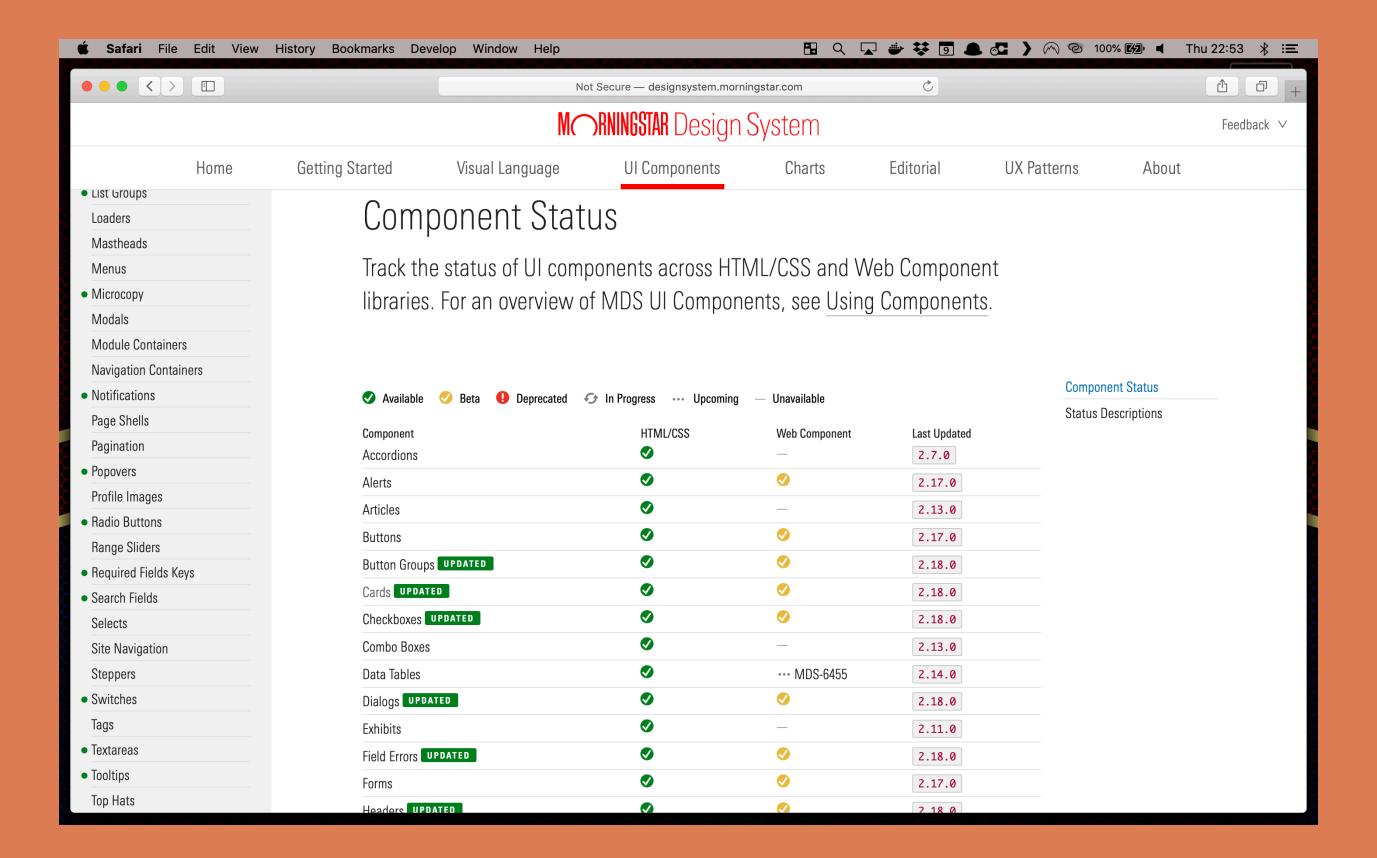
Yesenia Perez-Cruz | @yeseniaa

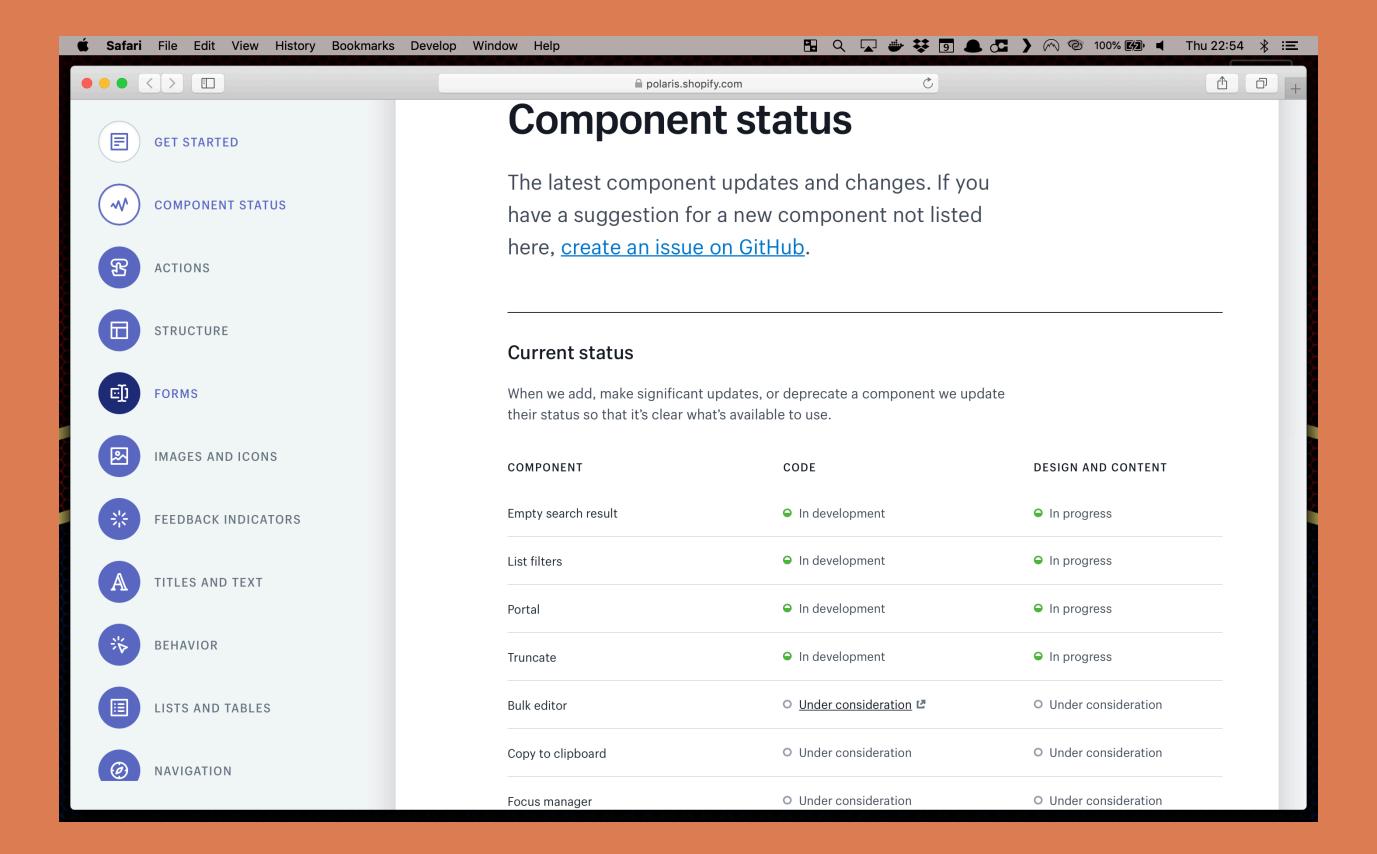


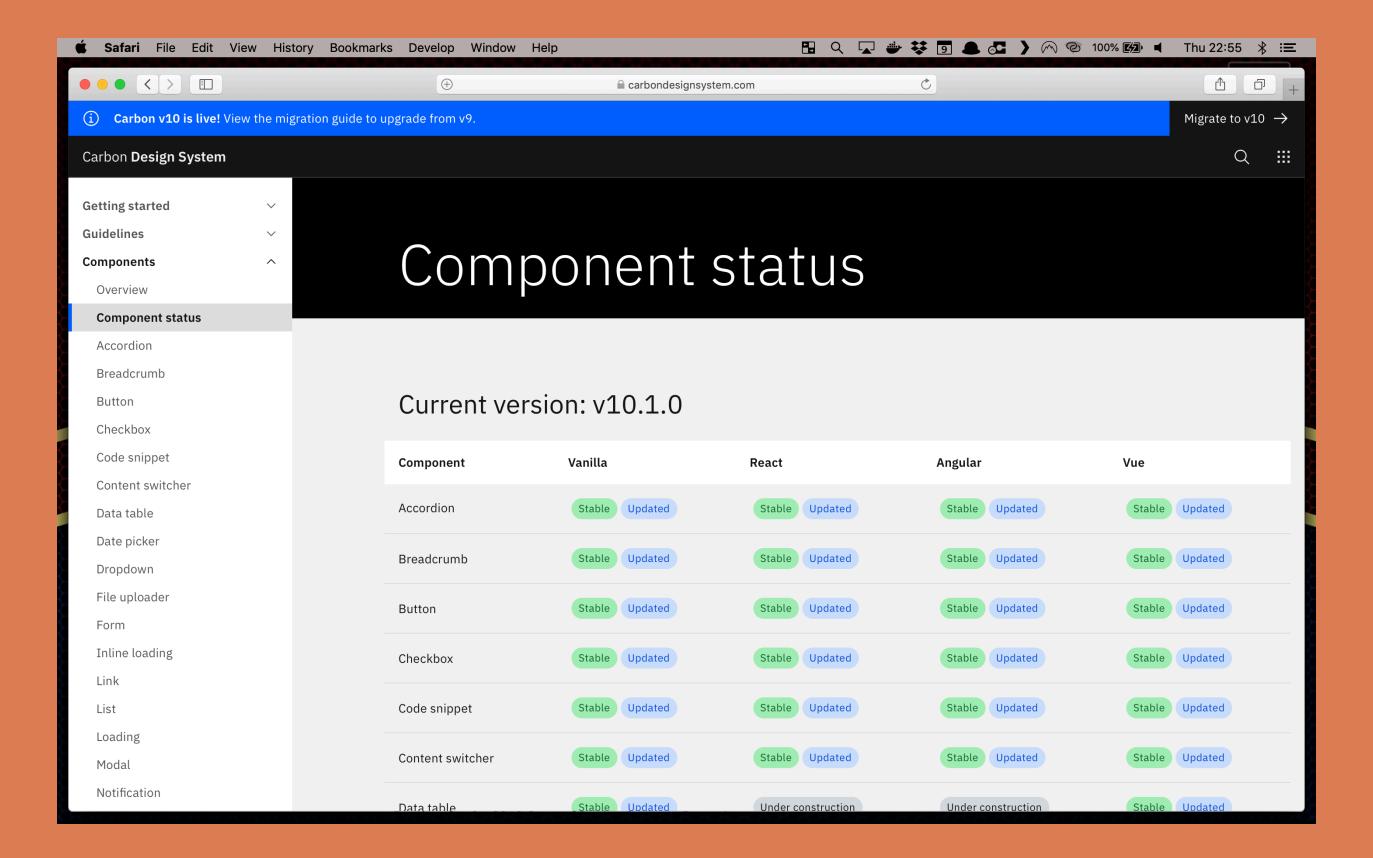




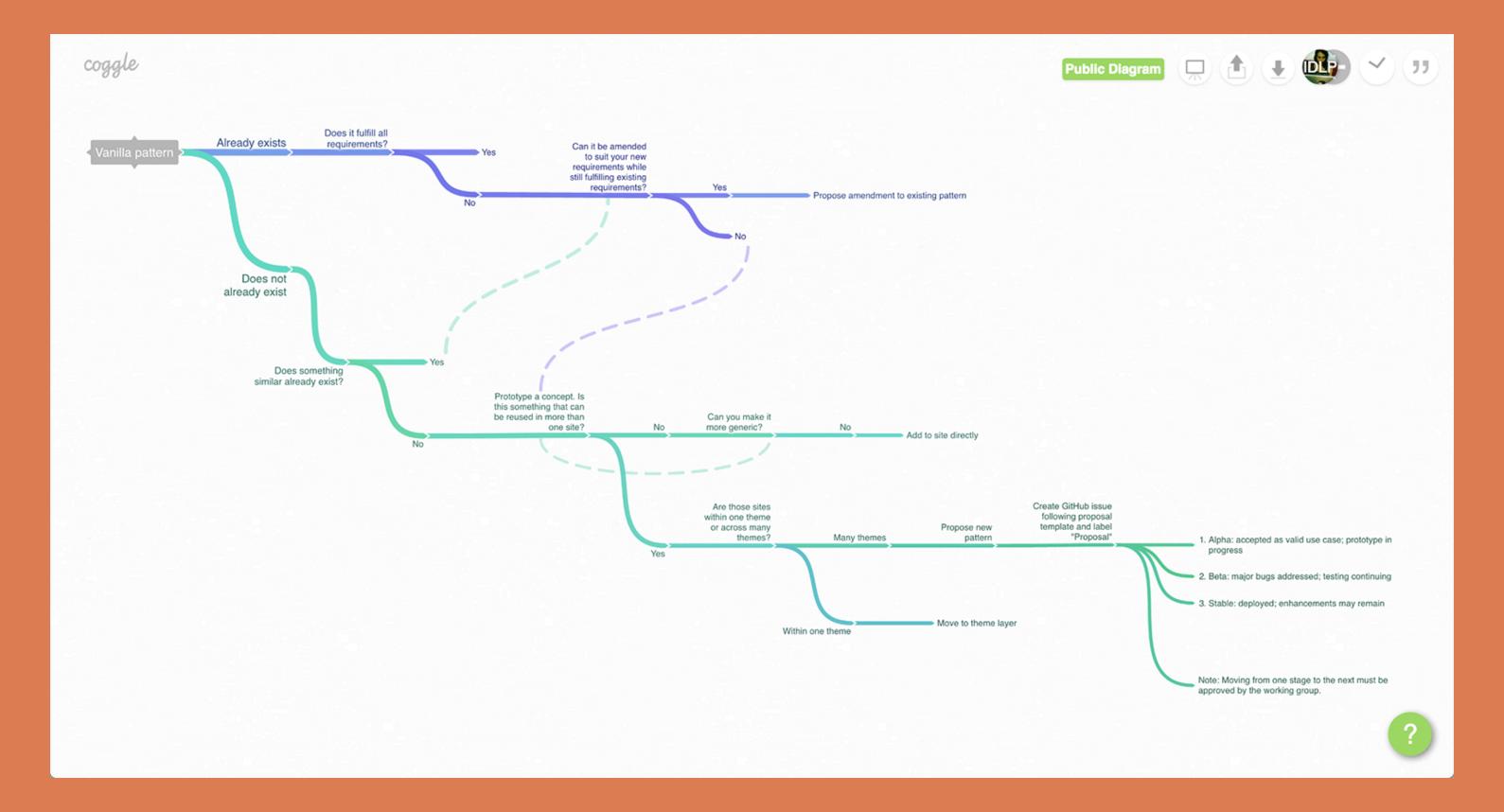
### Component Status



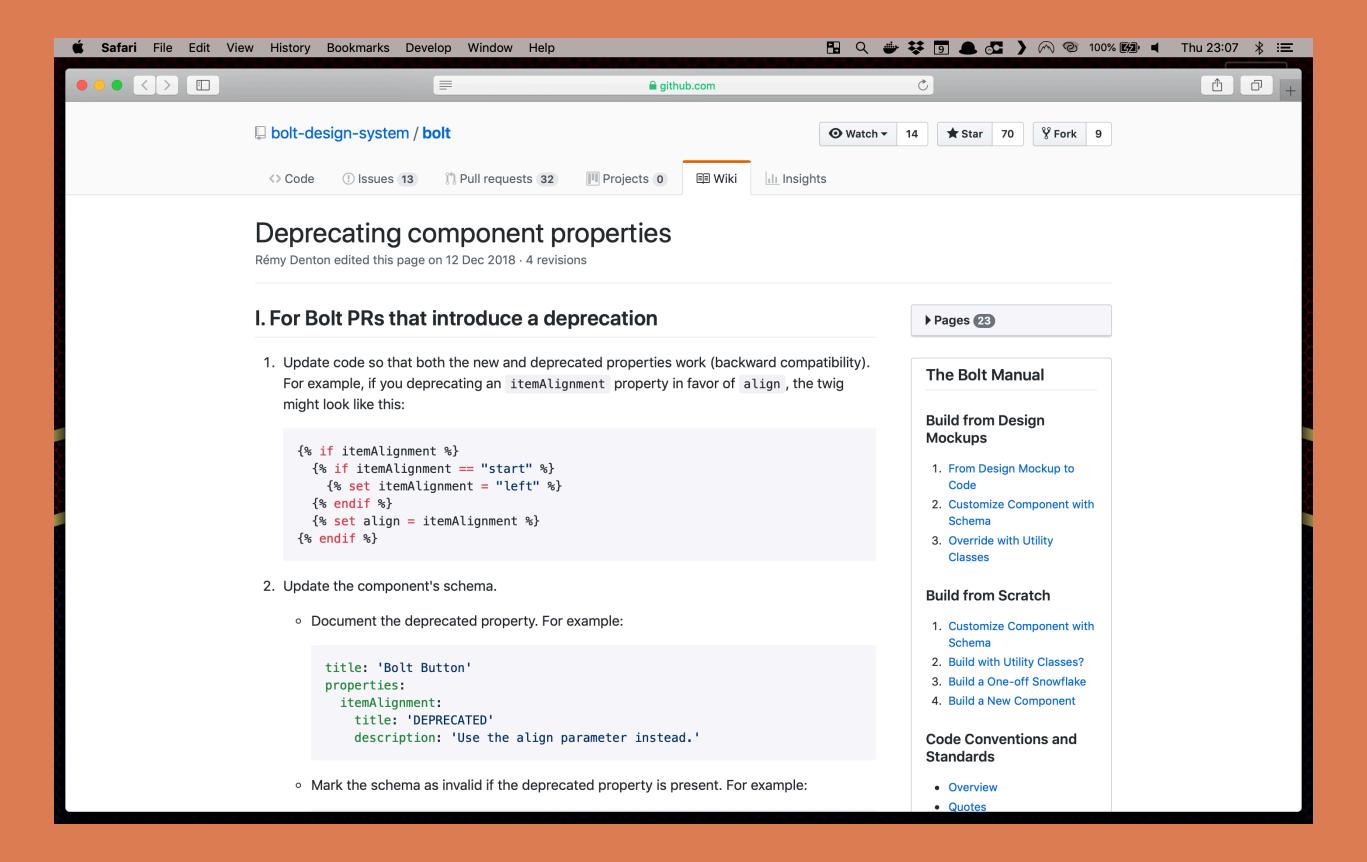


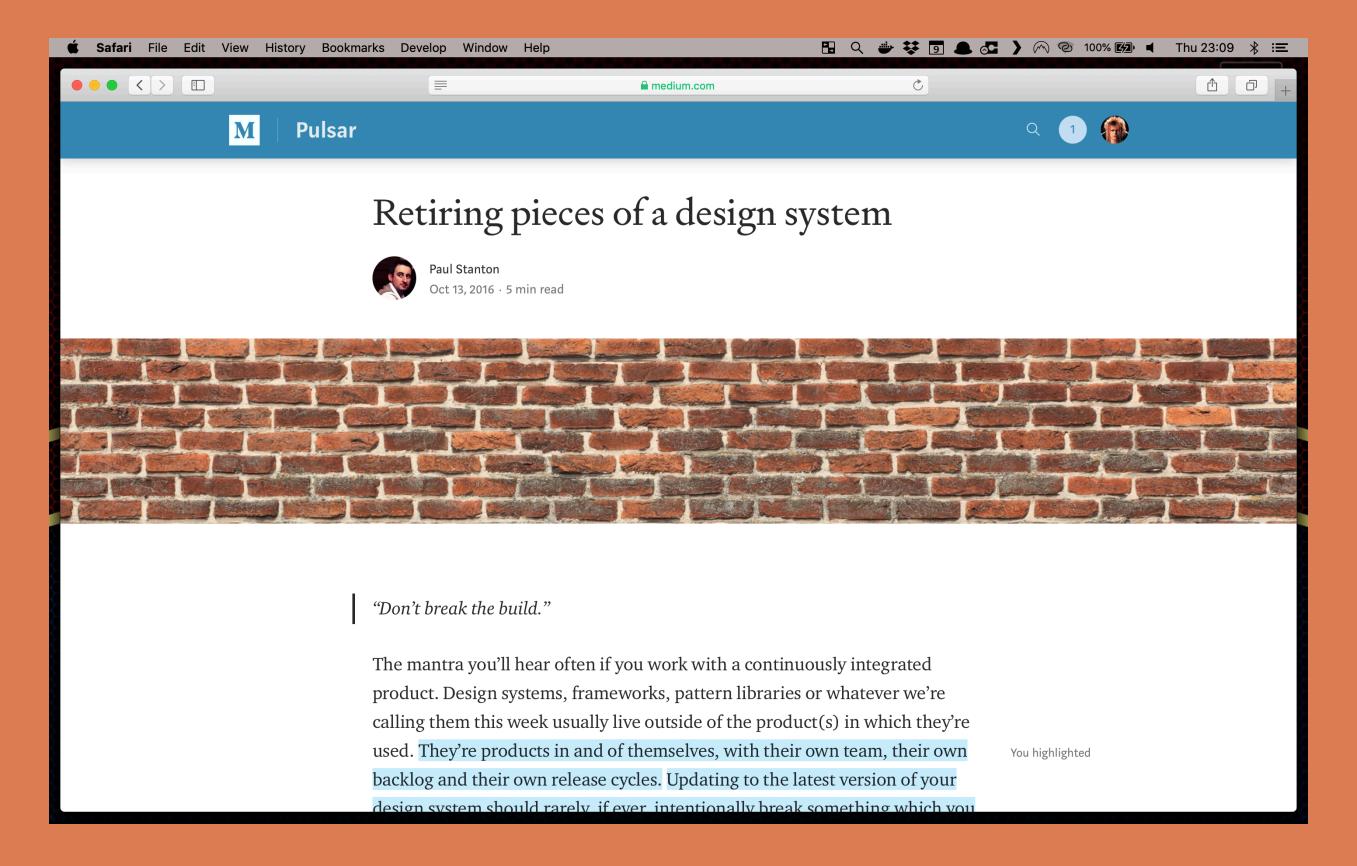


### New Components



### Deprecating





### Resources

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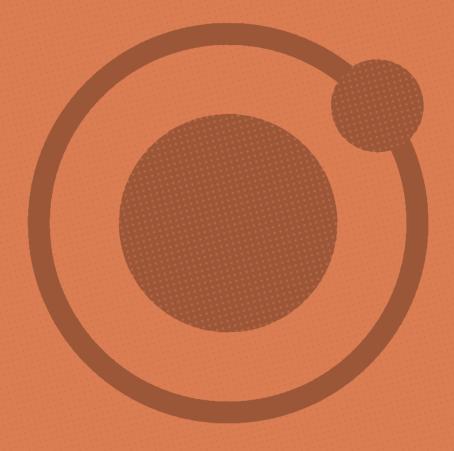
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