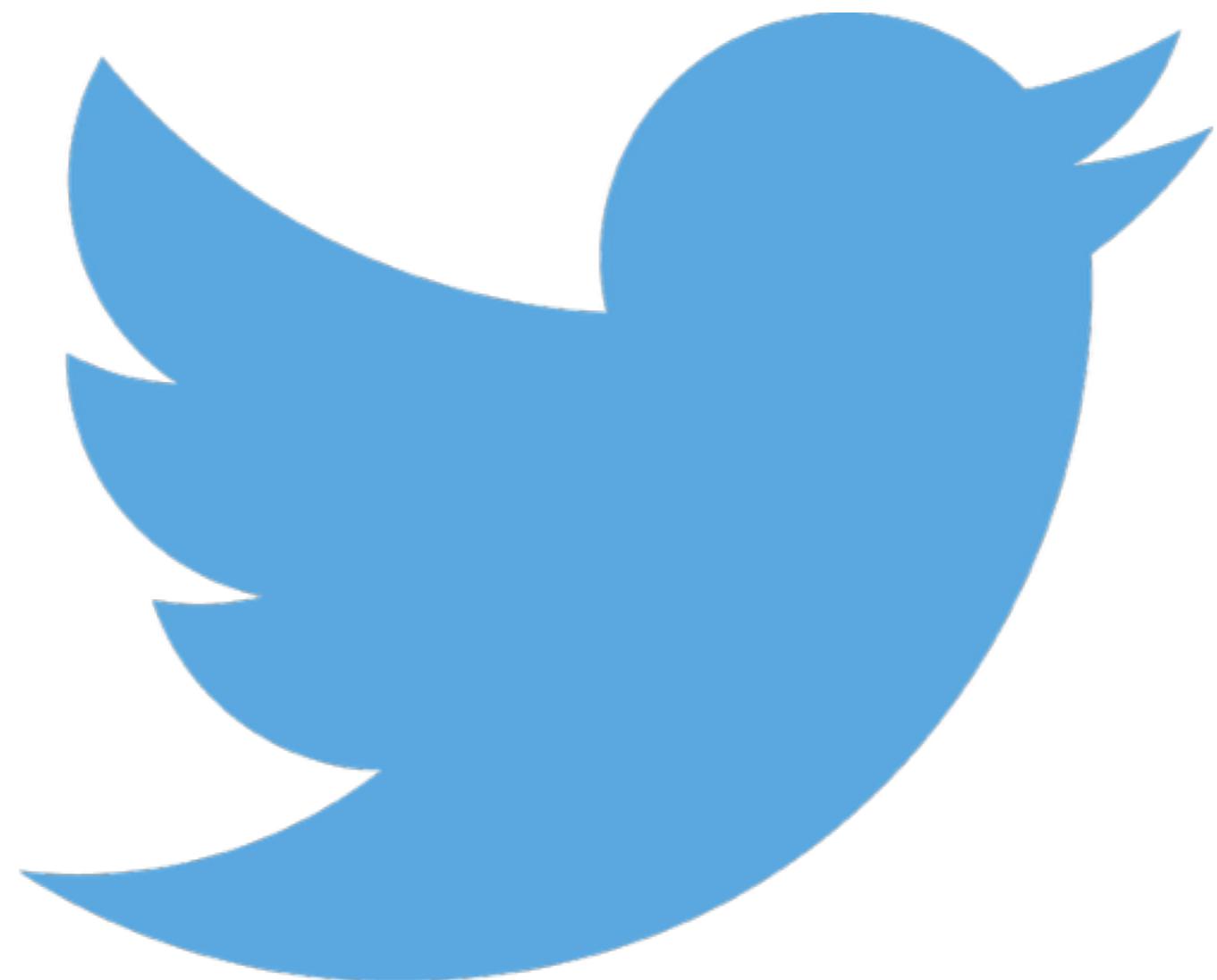


Why Web Components?

Fresno Summer Bootcamp 2015

Current landscape





Bootstrap is the most popular HTML, CSS, and JS framework for developing responsive, mobile first projects on the web.

[Download Bootstrap](#)

Currently v3.3.5



Slack - a messaging app
for teams, integrating with
the tools you already use.
ads via Carbon

facebook.[®]

React

A JAVASCRIPT LIBRARY FOR BUILDING USER INTERFACES

[Get Started](#)[Download React v0.13.3](#)

JUST THE UI

Lots of people use React as the V in MVC. Since React makes no assumptions about the rest of your technology stack, it's easy to try it out on a small feature in an existing project.

VIRTUAL DOM

React abstracts away the DOM from you, giving a simpler programming model and better performance. React can also render on the server using Node, and it can power native apps using [React Native](#).

DATA FLOW

React implements one-way reactive data flow which reduces boilerplate and is easier to reason about than traditional data binding.

YAHOO!



A set of small, responsive CSS modules
that you can use in every web project.

```
<link rel="stylesheet" href="http://yui.yahooapis.com/pure/0.6.0/pure-min.css">
```

[Get Started](#)[View on GitHub](#)

se KB	Grids 0.8KB	Forms 1.5KB	Buttons 0.8KB	Tables 0.5KB	Menus 0.8KB
----------	----------------	----------------	------------------	-----------------	----------------

CSS with a minimal footprint.

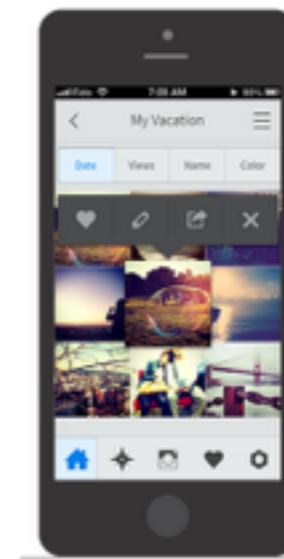
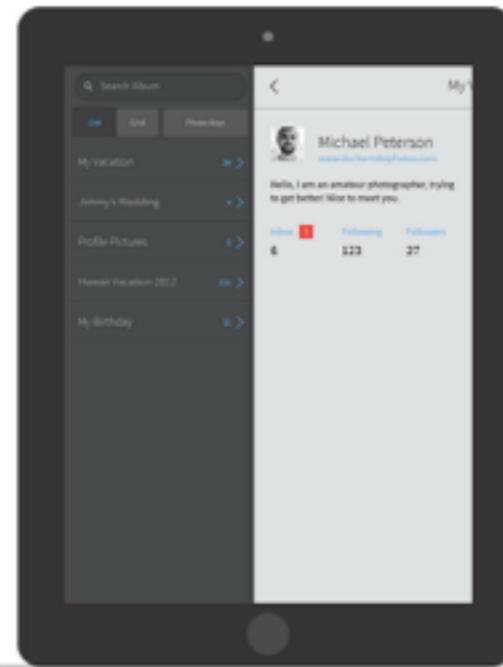
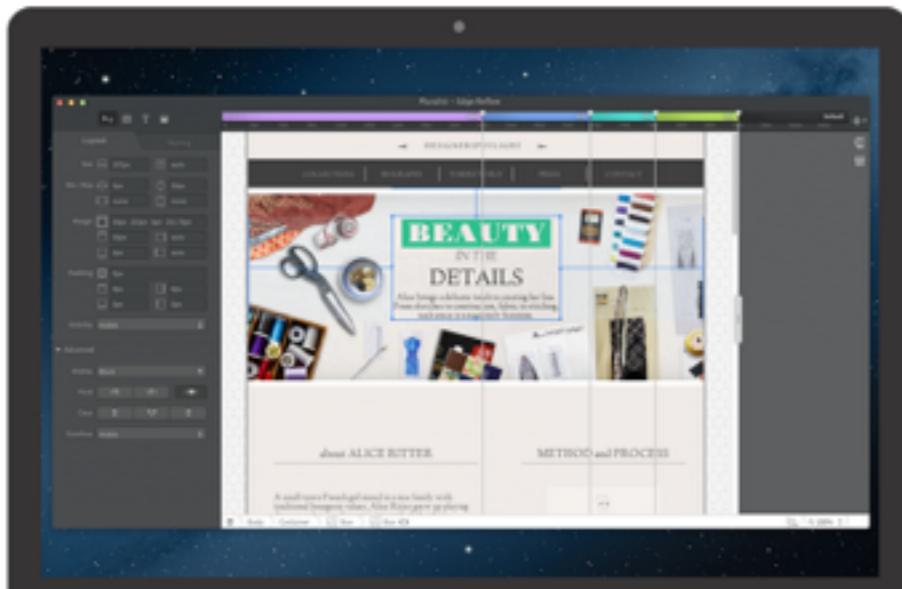
Pure is ridiculously tiny. The entire set of modules clocks in at **4.0KB* minified and gzipped**. Crafted with mobile devices in mind, it was important to us to keep our file sizes small, and every line of CSS was carefully considered. If you decide to only use a subset of these modules, you'll save even more bytes.

* We can add correctly :) the numbers above are individual module sizes; when grouped together they compress (gzip) even more.



Topcoat

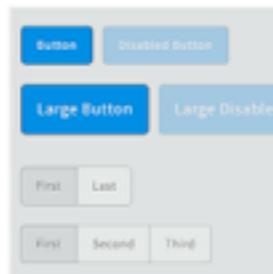
CSS for clean and fast web apps.

[Demo](#)[Benchmarks](#)[Blog](#)[Download](#)

Soooo Fast!



Performance is our #1 goal. Every component we design is [benchmarked for performance](#). You can see our results.



Components Galore

We have the building blocks to get you up and running fast. Our growing set of components were born from CSS.



Themeable

Is that even a word? It should be! We love our themes, but we don't want to hit you with them all the time.



BEM Architecture

We believe CSS is ready for primetime. We are basing our [architecture on BEM](#), making it easy to maintain and scale.

 Settings

 Account

 Messages 5

 Favorites

Me 

MENU BOX

 Messages 24

 Invites 3

 Events 5

 Account Settings

 Statistics

OS AUDIENCE STATS



Anne Hathaway

Lorem ipsum dolor sit amet
consectetuer adipiscing

 23

 841

 49

 CLUJ-NAPOCA / RO

FRI 29/06

24° 

SAT 29/06

25° 

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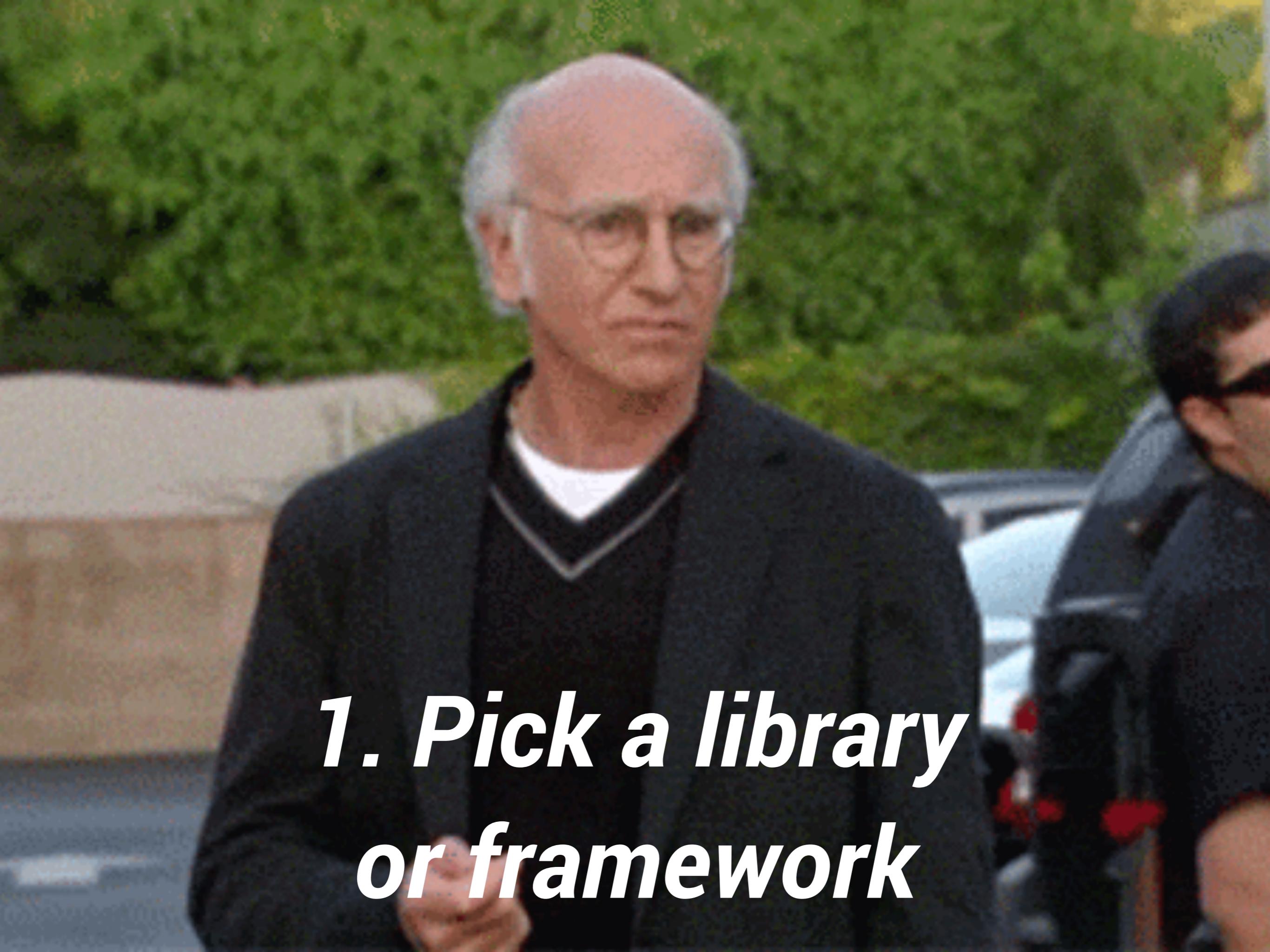
 Password

SIGN IN

[Forgot Password?](#)

 Sign in with Facebook

*How do we create a
component nowadays?*

A photograph of an older man with white hair and glasses, wearing a dark suit and tie, sitting in a chair outdoors with greenery in the background.

*1. Pick a library
or framework*



DOWNLOAD FREE VIRTUAL M
to test your jQuery across browsers.



Download

[Download](#) [API Documentation](#) [Blog](#) [Plugins](#) [Browser Support](#) Search

Lightweight Footprint

Only 32kB minified and gzipped. Can also be included as an AMD module



CSS3 Compliant

Supports CSS3 selectors to find elements as well as in style property manipulation



Cross-Browser

IE, Firefox, Safari, Opera, Chrome, and more



Download jQuery
v1.11.3 or v2.1.4

[View Source on GitHub →](#)

[How jQuery Works →](#)

What is jQuery?

jQuery is a fast, small, and feature-rich JavaScript library. It makes things like HTML document traversal and manipulation, event handling, animation, and Ajax much simpler with an easy-to-use API that works across a multitude of browsers. With a combination of versatility and extensibility, jQuery has changed the way that millions of people write JavaScript.

Corporate Members



famo.us



neobux

Resources

- [jQuery Core API Documentation](#)
- [jQuery Learning Center](#)
- [jQuery Blog](#)
- [Contribute to jQuery](#)
- [About the jQuery Foundation](#)
- [Browse or Submit jQuery Bugs](#)



Learn jQuery in your browser



Angular is a development platform for building
mobile and desktop web applications

LEARN IN 5 MINS

DOWNLOAD



NG-CONF 2015
The Official Angular Conference

WATCH NG-CONF

Build Incredible Applications

Angular is a development platform for creating applications using modern web standards. Angular includes a [wealth of essential features](#) such as mobile gestures,



A framework for creating ambitious web applications

```
npm install -g ember-cli  
ember new my-app
```

[More downloads](#)[Follow @emberjs](#)[Follow on g+](#)

MORE PRODUCTIVE OUT OF THE BOX.



Write dramatically less code with Ember's Handlebars integrated templates that update automatically when the underlying data changes.



Don't waste time making trivial choices. Ember.js incorporates common idioms so you can focus on what makes your app special, not reinventing the wheel.



Ember.js is built for productivity. Designed with developer ergonomics in mind, its friendly APIs help you get your job done—fast.



*2. Spend hours
learning that*



*3. Write your code
on top of that*

*How do we reuse a
component nowadays?*

[carousel plugin wordpress](#)[carousel plugin jquery free](#)[carousel plugin wordpress free](#)[carousel plugin bootstrap](#)

About 1,550,000 results (0.43 seconds)

[Responsive WordPress Carousel | WordPress Plugin](#)

<https://www.wonderplugin.com/wordpress-carousel/> ▾

WonderPlugin Carousel is a WordPress plugin that enables you to create carousel slider, image scroller and video LightBox. The plugin supports images, ...

[Screenshots - Upgrade To Commercial Version - WordPress Vertical Carousel](#)

[slick - the last carousel you'll ever need - Ken Wheeler](#)

kenwheeler.github.io/slick/ ▾

slick is a responsive carousel jQuery plugin that supports multiple breakpoints, CSS3 transitions, touch events/swiping & much more!

[carousel | jQuery Plugin Registry](#)

<https://plugins.jquery.com/tag/carousel/> ▾

jCarousel is a jQuery plugin for controlling a list of items in horizontal or vertical order. It provides a full-featured and flexible toolset for navigating any HTML ...

[jCarousel - Slick - Jquery.rs.carousel - Agile Carousel](#)

[30 Free Responsive Jquery Carousel Slider Plugins](#)

designscrazed.org/free-responsive-jquery-carousel-slider-plugins/ ▾

Apr 11, 2015 - Lots of examples and downloads for free responsive jQuery carousel sliders with HTML and CSS to make the webpage interesting with unique ...

[jQuery Image Sliders - 22 Free jQuery CSS3 Progress ...](#)

[60+ Best jQuery Carousel Slider Tutorial & Plugin with ...](#)

www.jqueryrain.com/example/jquery-carousel-example/ ▾

1. Try to find pretty one

```
1  /*
2   *  jQuery OwlCarousel v1.3.3
3   *
4   *  Copyright (c) 2013 Bartosz Wojciechowski
5   *  http://www.owlgraphic.com/owlcarousel/
6   *
7   *  Licensed under MIT
8   *
9   */
10
11 /*JS Lint helpers: */
12 /*global dragMove: false, dragEnd: false, $, jQuery, alert, window, document */
13 /*jslint nomen: true, continue:true */
14
15 if (typeof Object.create !== "function") {
16     Object.create = function (obj) {
17         function F() {}
18         F.prototype = obj;
19         return new F();
20     };
21 }
22 (function ($, window, document) {
23
24     var Carousel = {
25         init : function (options, el) {
26             var base = this;
27
28             base.$elem = $(el);
29             base.options = $.extend({}, $.fn.owlCarousel.options, base.$elem.data(), options);
30
31             base.userOptions = options;
32             base.loadContent();
33         }
34     };
35
36     $.fn.owlCarousel = Carousel;
37
38     Carousel.prototype = {
39         constructor: Carousel,
40         settings: {
41             items: 3,
42             loop: true,
43             margin: 10,
44             nav: true,
45             dots: false,
46             responsive: {
47                 0: { items: 1 },
48                 600: { items: 2 },
49                 1000: { items: 3 }
50             }
51         }
52     };
53
54     Carousel.options = Carousel.prototype.settings;
55
56     Carousel.fn = Carousel.prototype;
57
58     Carousel.noConflict = function () {
59         $.fn.owlCarousel = originalOwlCarousel;
60         return this;
61     };
62
63     var originalOwlCarousel = $.fn.owlCarousel;
64     $.fn.owlCarousel = Carousel;
65
66     Carousel.version = "1.3.3";
67
68     Carousel.transitions = {
69         "slide": {
70             duration: 300,
71             easing: "easeOutCirc"
72         },
73         "fade": {
74             duration: 300,
75             easing: "linear"
76         }
77     };
78
79     Carousel.modes = {
80         "single": {
81             duration: 0
82         },
83         "page": {
84             duration: 0
85         }
86     };
87
88     Carousel.responsive = {
89         "0": {
90             items: 1
91         },
92         "600": {
93             items: 2
94         },
95         "1000": {
96             items: 3
97         }
98     };
99 }
```

2. Copy & paste their code



3. *Hope it works*



*What are
Web Components?*

What are Web Components?

Web Components are a collection of emerging standards which can be used separately or all together:

- Custom Elements
- HTML Templates
- Shadow DOM
- HTML Imports

Rename XBL2 to something without X, B, or L?

This message: [[Message body](#)] [[Respond](#)] [[More options](#)]

Related messages: [[Next message](#)] [[Previous message](#)] [[Next in thread](#)] [[Replies](#)]

From: Dimitri Glazkov <dglazkov@google.com>

Date: Tue, 14 Dec 2010 13:24:21 -0800

Message-ID: <AANLkTikj8n1ss5=f_ghOxNqd8iAuXdDMpW-WTHk8OU8s@mail.gmail.com>

To: public-webapps <public-webapps@w3.org>

Dear all,

Looking at the use cases and the problems the current XBL2 spec is trying address, I think it might be a good idea to rename it into something that is less legacy-bound? Hixie already cleverly disguised the "X" as [X]engamous in the latest draft, and if this spec is to become part of HTML, it probably should lose an 'L'. As for 'B', describing what XBL2 aims to do as 'bindings' ain't super-accurate.

The way I look at it, the problems we're trying to solve are:

- a) templating -- for astoundingly fast creation of DOM chunks using declarative syntax;
- b) shadow DOM -- for maximum-pleasure encapsulation and leak-free component abstraction of DOM chunks;
- c) binding -- for joy-filled extension and decoration DOM elements.

Describing all these as just "Binding" just feels wrong. "Web Components" perhaps or something along these lines?

Who's with me? :)

:DG<

December, 2010



Introduction to Web Components

W3C Working Group Note 24 July 2014

This version

<http://www.w3.org/TR/2014/NOTE-components-intro-20140724/>

Latest version

<http://www.w3.org/TR/components-intro/>

Latest editor's draft

<http://w3c.github.io/webcomponents/explainer/>

Previous version

<http://www.w3.org/TR/2013/WD-components-intro-20130606/>

Revision history

<https://github.com/w3c/webcomponents/commits/gh-pages/explainer/>

Participate

Discuss on public-webapps@w3.org ([Web Applications Working Group](#))

[File bugs](#) (w3.org's [Bugzilla](#))

Editors

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Authors

Dominic Cooney, Google, <dominicc@google.com>

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Abstract

This document is a non-normative reference, which provides an overview of Web Components. It summarizes the normative information in the respective specification with illustrations.

Status of This Document

November, 2011



Web Components

a tectonic shift for web development

Eric Bidelman - Chrome Team
Google I/O - 5/16/2013



May, 2013

Custom Elements

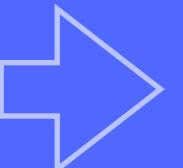
Custom Elements

- There's now a standard way of generating custom elements across framework, platform, and all other boundaries.
- The custom element API is incredibly trivial, and it's meant to be. This is the first step to building HTML into what our apps have always wanted to be.
- It's a contract that is already agreed upon, tolerated, and enjoyed by every web developer that exists.

Custom Elements

```
var element = Object.create(HTMLElement.prototype);

document.registerElement('fcc-fresno', {
  prototype: element
});
```



Custom Elements

<fcc-hello></fcc-fresno>



Exercise

Create a **<fcc-location>** element that displays Fresno City College's position on a map.

Custom Elements must be used.

HTML Templates

HTML Templates

- The concept of templating is not new to web development. In fact, server-side templating languages have been around for a long time.



Logic-less templates.

Available in [Ruby](#), [JavaScript](#), [Python](#), [Erlang](#), [node.js](#), [PHP](#), [Perl](#), [Perl6](#), [Objective-C](#), [Java](#), [C#/.NET](#), [Android](#), [C++](#), [Go](#), [Lua](#), [ooc](#), [ActionScript](#), [ColdFusion](#), [Scala](#), [Clojure](#), [Fantom](#), [CoffeeScript](#), [D](#), [Haskell](#), [XQuery](#), [ASP](#), [Io](#), [Dart](#), [Haxe](#), [Delphi](#), [Racket](#), [Rust](#), [OCaml](#), [Swift](#), and for [Bash](#)

Works great with [TextMate](#), [Vim](#), [Emacs](#), [Coda](#), and [Atom](#)

The Manual: [mustache\(5\)](#) and [mustache\(1\)](#)

[Demo](#)

IRC: [#{}](#) on Freenode

Mailing list: mustache@librelist.com



[overview](#) ~ [documentation](#) ~ [community](#)

Welcome

Jinja2 is a full featured template engine for Python. It has full unicode support, an optional integrated sandboxed execution environment, widely used and BSD licensed.

Jinja is Beautiful

```
{% extends "layout.html" %}  
{% block body %}  
  <ul>  
    {% for user in users %}  
      <li><a href="{{ user.url }}>{{ user.username }}</a></li>  
    {% endfor %}  
  </ul>  
{% endblock %}
```

And Powerful

Jinja2 is one of the most used template engines for Python. It is inspired by Django's templating system but extends it with an expressive language that gives template authors a more powerful set of tools. On top of that it adds sandboxed execution and optional automatic escaping for applications where security is important.

It is internally based on Unicode and runs on a wide range of Python versions from 2.4 to current versions including Python 3.



Velocity

- [General Overview](#)
- [Getting Started](#)
- [Web Applications](#)
- [Download](#)
- [FAQ \(Wiki\)](#)

Docs

- User Guide**
- [Developer Guide](#)
- [VTL Reference](#)
- [Anakia: XML->doc tool](#)
- [Texen: text generation](#)

Developers

- [License](#)
- [Javadoc](#)
- [Changes in 1.5](#)
- [Resolved Issues in 1.5](#)
- [Dependencies](#)
- [Source Code Repository](#)
- [Building from Source](#)

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Velocity Development

- [Road Map](#)
- [Coding Standards](#)
- [Documentation Guidelines](#)
- [Issues](#)
- [Who we are](#)

User Guide - Contents

1. About this Guide
2. What is Velocity?
3. What can Velocity do for me?
 1. The Mud Store example
4. Velocity Template Language (VTL): An Introduction
5. Hello Velocity World!
6. Comments
7. References
 1. Variables
 2. Properties
 3. Methods
 4. Property Lookup Rules
8. Formal Reference Notation
9. Quiet Reference Notation
10. Getting literal
 1. Currency
 2. Escaping Valid VTL References
11. Case Substitution
12. Directives
 1. Set
 2. Literals
 3. If-Else Statements
 1. Relational and Logical Operators
 4. Foreach Loops
 5. Include
 6. Parse

Liquid

Ruby library for rendering safe templates which cannot affect the security of the server they are rendered on.

Liquid is an extraction from the e-commerce system [Shopify](#). Shopify powers many thousands of e-commerce stores which all call for unique designs. For this we developed Liquid which allows our customers complete design freedom while maintaining the integrity of our servers.

Liquid has been in production use since June 2006 and is now used by many other hosted web applications.

It was developed for usage in Ruby on Rails web applications and integrates seamlessly as a plugin but it also works excellently as a stand alone library.

What does it look like?

Example snippet:

```
<ul id="products">
  {% for product in products %}
    <li>
      <h2>{{ product.title }}</h2>
      Only {{ product.price | format_as_money }}

      <p>{{ product.description | prettyprint | truncate: 200 }}</p>
    </li>
  {% endfor %}
</ul>
```

Code to render

```
Liquid::Template.parse(template).render 'products' => Product.find(:all)
```

How do I get it?



Rubygems

```
gem install liquid
```

Ruby on Rails plugin

General

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[Documentation](#)

Development

[GitHub](#)

[Issues](#)

Developers

[Shopify](#)

[Tobias Lütke](#)



handlebars



Handlebars provides the power necessary to let you build **semantic templates** effectively with no frustration.

Handlebars is largely compatible with Mustache templates. In most cases it is possible to swap out Mustache with Handlebars and continue using your current templates. Complete details can be found [here](#).

[Download: 3.0.3](#)

[Download: runtime-3.0.3](#)

Getting Started

Handlebars templates look like regular HTML, with embedded handlebars expressions.

```
<div class="entry">
  <h1>{{title}}</h1>
  <div class="body">
    {{body}}
  </div>
</div>
```

A handlebars expression is a `{} , some contents, followed by a {}`

[Learn More: Expressions](#)

You can deliver a template to the browser by including it in a `<script>` tag.

```
<script id="entry-template" type="text/x-handlebars-template">
```

HTML Templates

- In the last couple of years however, we've seen an explosion of MVC frameworks spring up. All of them are slightly different, yet most share a common mechanic for rendering their presentational layer (aka view): templates.

HTML Templates

- There is one way to write reusable HTML. Its usage can certainly differ, but one thing's for sure: you're going to be writing your templates and partials in **<template>** tags from now on.

HTML Templates

```
<template>
  
</template>
```



HTML Templates

```
var template = document.querySelector('template').content;
```

```
var clone = template.cloneNode(true);
```



Exercise

Create a **<fcc-logo>** element that displays Fresno City College's logo with a link to the site.

Custom Elements and HTML Templates must be used.

Shadow DOM

Shadow DOM

- The shadow DOM is the secret sauce to web components. It finally provides a way for us to isolate portions of the DOM for true protection from styling, access, and modification via common means.

Shadow DOM

```
var shadowRoot = this.createShadowRoot();
```

```
shadowRoot.innerHTML = '<h1>Heya!</h1>';
```



Exercise

Create a **<fcc-button>** element that will
hide its implementation details.

*Custom Elements, HTML Templates,
and Shadow DOM must be used.*

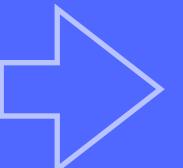
HTML Imports

HTML Imports

- The HTML import is another foolishly simple concept that accommodates a single interaction point for independent bundles to be loaded by. What has already been done for **<script>** and **<style>** tags has now been done for HTML.
- The bonus, on top of what was done for scripts and styles, is that the imported HTML can then infinitely link to all its own dependencies in the same formats that already exist.

HTML Imports

```
<link rel="import" href="my-element.html">
```

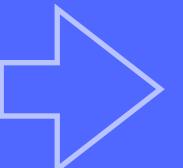


HTML Imports

The content of an import can be accessed by getting a reference to the import <link> and accessing the import property.

```
var parentDocument = document;
```

```
var importDocument = parentDocument.currentScript.ownerDocument;
```



Challenge

Create a **<fcc-toc>** element that will read all **<h1>**'s from a page and generate a table of contents with links to each title anchor.

*Custom Elements, HTML Templates, Shadow DOM,
and HTML Imports must be used.*

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When combined...

Declarative

meaningful, intuitive, powerful markup

Productivity

rapid development, high productivity

Composability

build big apps from small elements

Maintainability

read an app, understand it

Reusability

elements that can be shareable and reused

Extensibility

common way to extend native elements

Isolation

scoped markup and styles

Interoperability

just works, regardless of the framework you're using

Remember...

mozilla

X-Tag - The Custom Elements Polylib

What is X-Tag?



WEB COMPONENTS



X-Tag is a small JavaScript library, created and supported by Mozilla, that brings Web Components Custom Element capabilities to all modern browsers.

X-Tag Technology Stack

X-Tag allows you to easily create elements to encapsulate common behavior or use existing custom elements to quickly get the behavior you're looking for. For example, check out [Brick](#), which contains 14 custom elements optimized for Web Applications.

Creating custom elements has never been easier. X-Tag provides several powerful features that streamline element creation such as: Custom events and delegation, mixins, accessors, component lifecycle functions, pseudos and more.

X-Tag is built upon W3C Web Component polyfills provided by the Polymer project. We use [Custom Element](#), [HTMLImports](#), and [Mutation Observers](#). We also included a few other polyfills to ensure IE

X-Tag Custom Elements

Panel Map Flipbox Etc

X-Tag Core Library

Accessors Pseudos Mixins Events Utils

Web Components Polyfills

Welcome to Mozilla Brick!

Brick is a collection of UI components designed for the easy and quick building of web application UIs. Brick components are built using the Web Components standard to allow developers to describe the UI of their app using the HTML syntax they already know.

[Get Started](#)

DOCUMENTATION

- [What is Brick?](#)
- [Installation](#)
- [Introducing Brick 2.0 !\[\]\(3f2ca575e5234fa802c89e83c9812eaa_img.jpg\)](#)
- [Development](#)

COMPONENTS

- [brick-action](#)
- [brick-appbar](#)
- [brick-calendar \[Coming Soon\]](#)
- [brick-deck](#)
- [brick-flipbox](#)

[View All 10](#)

STAY UP TO DATE

- [Twitter \(@mozbrick\) !\[\]\(5883705a3ca1d1dfe4788cea1fabba3c_img.jpg\)](#)
- [Github \(mozbrick/brick\) !\[\]\(8d363db5d3da9e291a7fea63c0536958_img.jpg\)](#)

Google



Production ready

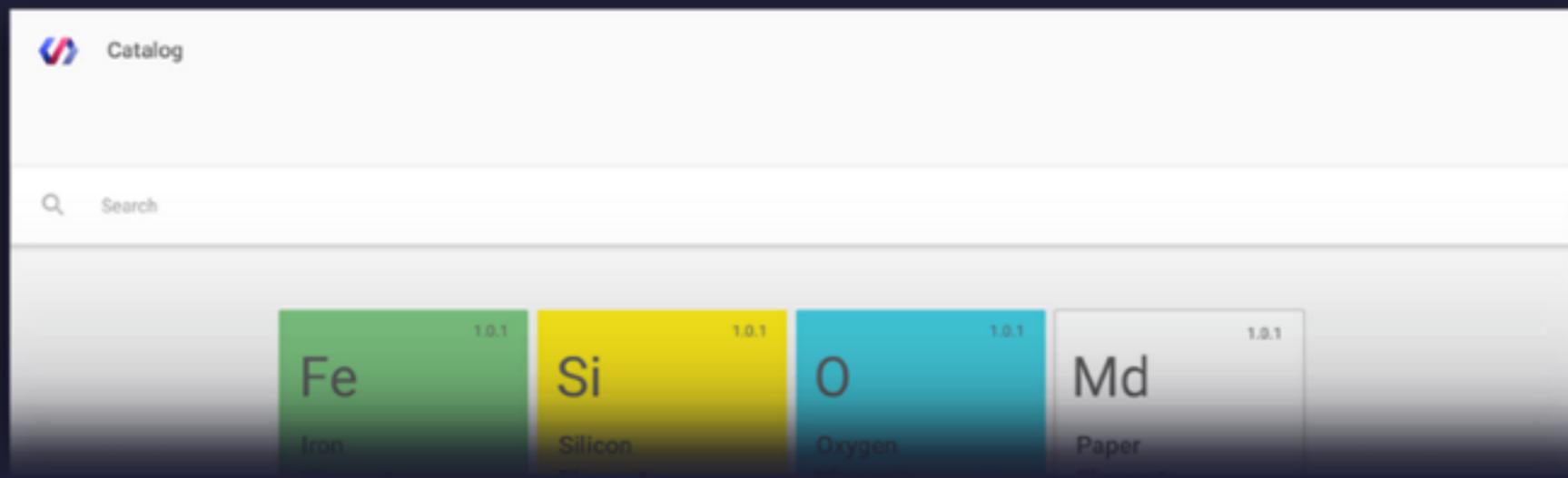
Polymer 1.0 has been rebuilt from the ground up for speed and efficiency. The new, leaner core library makes it easier than ever to make fast, beautiful, and interoperable web components. If you haven't used Polymer before, it's time to try it out. If you haven't tried it recently, time to take another look.

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Watch Google I/O 2015

Polymer and modern web APIs: In production at Google scale

Element Catalog



The screenshot shows a dark-themed catalog interface. At the top left is the Polymer logo and the word "Catalog". Below it is a search bar with the placeholder "Search". Four element cards are displayed in a row:

- Fe** 1.0.1
Iron
- Si** 1.0.1
Silicon
- O** 1.0.1
Oxygen
- Md** 1.0.1
Paper