

Architecture Decision Record: CSS framework

Summary

Issue

We want to use a CSS framework to create our web applications:

- We want user experience to be fast and reliable, on all popular browsers and screen sizes.
- We want rapid iteration on design, layout, UI/UX, etc.
- We want responsive applications, especially for smaller screens such as on mobile devices, larger screens such as on 4K widescreens, and dynamic screens such as rotatable displays.

Decision

Decided on Bulma.

Status

Decided on Bulma. Open to new CSS framework choices as they arrive.

Details

Assumptions

We want to create web apps that are modern, fast, reliable, responsive, etc.

Typical modern web apps are reducing/eliminating the use of jQuery because of multiple reasons:

- Modern JavaScript in phasing in many capabilities that jQuery has provided, so jQuery is less needed, and there are better/faster/smaller modules that provide specific implementations
- jQuery's broad approach is to do direct DOM manipulation, which is an anti-pattern for modern JavaScript frameworks (e.g. React, Vue, Svelte)
- jQuery interferes with itself if it's loaded twice, etc.

Constraints

If we choose a CSS framework that uses jQuery, then we're stuck importing jQuery. For example, Semantic UI uses jQuery, and Tachyons does not.

If we choose a CSS framework that is minimal, then we forego framework components that we may want now or soon. For example, Semantic UI provides an image carousel, and Tachyons does not.

Positions

We considered using no framework. This still seems viable, especially because CSS grid provides much of what we need for our project..

We considered many CSS frameworks using a quick shortlist triage: Bootstrap, Bulma, Foundation, Materialize, Semantic UI, Tachyons, etc. Our two selections for deeper review are Semantic UI (because it has the most-semantic approach) and Bulma (because it has the lightest-weight approach that provides the components we want now).

We considered Semantic UI. This provides many components, including ones we want for our project: tabs, grids, buttons, etc. We did a pilot with Semantic UI two ways: using typical CDN files, and using NPM repos. We achieved success with Semantic UI in a static HTML page, but did not achieve success within our timebox to build a JavaScript SPA (primarily because of jQuery load issues). We discovered that other coders have been asking the Semantic UI developers to create a jQuery-free version, for the same reasons we have. Other coders have been requesting a jQuery-free version for many years, yet the developers have said no, and stated that any jQuery-free version would be too hard to write e.g. ~"the Semantic UI project has more than 22,000 touchpoints that use jQuery".

Example with Semantic:

```
<div class="ui top attached tabular menu">
  <a class="item">Alpha</a>
  <a class="item">Bravo</a>
</div>
```

We considered Bulma. Bulma has many similar capabilities as Semantic UI, although not as many sophisticated components. Bulma is built with modern techniques, such as no jQuery. Bulma has some third-party components, some of which we may want to use.

Example with Bulma:

```
<div class="tabs">
  <ul>
    <li><a>Alpha</a></li>
    <li><a>Bravo</a></li>
  </ul>
</div>
```

Argument

As above.

Specifically, Semantic UI seems to have a caution flag both in terms of technology (i.e. so many jQuery touchpoints) and also in terms of leadership (i.e. jQuery-free was a hard no, rather than attempting a roadmap, or continous improvement, or donation fundraising, etc.).

Implications

If we find a good non-jQuery CSS framework, this is generally helpful and good overall.

Related

Related decisions

The CSS framework we choose may affect testability.

Related requirements

We want to ship a purely-modern app fast.

We do not want to spend time working on older frameworks (esp. Semantic UI) using older dependencies (esp. jQuery).

Related artifacts

Affects all the typical HTML that will use the CSS.

Related principles

Easily reversible.

Need for speed.

Notes

Any notes here.