

Bootstrap vs Foundation

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Bootstrap and Foundation are two popular front-end CSS frameworks. Either one has its pros and cons. This article will start with the introduction of two frameworks and mainly cover the comparison between Bootstrap4 and Foundation6 and tell how each feature makes web-design easier and more functional. What else, the article will also include some discussion on the history and the developing of Bootstrap and Foundation.

Bootstrap is developed by Twitter and released its first version in 2011. Foundation is built by ZURB, a product design company. And it was also released in 2011. CSS framework helps web developers not having to start every project or website completely from scratch. Having a good base or foundation can save you a lot of time.

CSS Preprocessor

Bootstrap is modular and in version 3 consists of LESS stylesheets. However, with Bootstrap4 they have switched over to the SASS CSS preprocessor. Foundation6 is also modular and consists mainly of SASS stylesheets. Preprocessor makes your CSS Dry. Other advantage includes easier to maintain code with snippets and libraries, able to do calculations, make codes more organized and easy to setup.

LESS is JavaScript based and SASS is Ruby based. SASS is much more activity and I think it is one of the reason that Bootstrap switches from LESS to SASS.

Both CSS preprocessor have following advantages. Variables can store things like colors, fonts, or pretty much any value you want to reuse later. Mixins are used to include a bunch of properties or group declarations together. Nesting is a huge advantage over CSS because it creates a visual hierarchy, like what you are used to with HTML. Extend lets you share properties from one selector to another. In a nutshell, CSS preprocessors make your CSS more maintainable, themeable and extendable.

CSS Reset

Bootstrap uses reboot.css and Foundation uses normalize.css. A CSS Reset (or “Reset CSS”) is a short, often compressed (minified) set of CSS rules that resets the styling of all HTML elements to a consistent baseline. Using a CSS Reset, CSS authors can force every browser to have all its styles reset to null, thus avoiding cross-browser differences as much as possible.

Grids

Both Bootstrap and Foundation support up to 12 columns with fluid widths up to 75em. Both Bootstrap and Foundation have support for responsive grids and flexible breakpoints. Foundation may have a better grid system when it comes to cleanliness.

The fact that Foundation has no containers and relies heavily on rows is a plus, as you end up with a cleaner DOM. Foundation has support for responsive gutters, which are so easy to setup that seem like magic. You can either have or remove gutters in specific cases that don't require them by simply adding a

class. Other stuff like centered columns and block grids make Foundation the winner when it comes to grids.

Regarding backwards compatibility, both Foundation and Bootstrap use the same class convention as their previous versions. This makes migration as painless as possible. Flexbox grids are also available on both Foundation and Bootstrap as a separate setting that you can enable/disable depending on your target browser support.

Forms

Bootstrap has one of the prettiest forms you will find out there. There are special classes for radios and checkboxes that will make them look much better than the browser default ones. Inline forms, validation icons and icon labels are also very powerful on Bootstrap.

Foundation has a simpler form layout that relies heavily on the grid. Inline forms don't exist in Foundation which is almost missed. Also, prettified fields are a no-go on Foundation so you must rely on external CSS to prettify your select boxes, radio buttons and checkboxes.

Menus

While Bootstrap4 has the same old dropdowns, tabs and basic navigation menus we have come to know from version 3, Foundation has dramatically improved their dropdowns by including other variants that might come in handy in some cases.

Foundation includes stuff like off-canvas navigation, drilldown menus, vertical dropdowns and responsive menus, which changes their behavior depending on the resolution. This makes Foundation leaps and bounds ahead of Bootstrap when it comes to components designed to navigate across multiple sections.

Sizing Units

When we calculate widths, typography, Bootstrap uses pixels (Before bootstrap4) and Foundation uses rems. There are functional differences, rem performed better in responsive. Pixels are an absolute unit, but in the age of responsive design, a relative unit like rems helps people think in terms of proportions. Now, bootstrap4 also replace pixels with rem, em. So now Bootstrap and Foundation are in same level.

Other features

Foundation has built-in form validation through Abide. That's not to say that Bootstrap couldn't also have form validation, but for some, the pre-made Foundation solution might be a nice head start. Foundation also includes Interchange, which is a robust solution for responsive images, although it might be more than you need. In addition to these two, there's other handy features like right-to-left support, pricing tables, tours.

The default look of Bootstrap components seems more suited to quickly building a one-off website and adding a theme. Bootstrap also now includes responsive embeds, which makes it easy to add responsiveness to elements like `<iframe>`, `<embed>`, and `<object>`.

Community

Bootstrap is way ahead of Foundation when it comes to community contributed plugins and support. Bootstrap is used almost everywhere and there are plugins for everything. It has become the default CSS framework for the web.

Bootstrap 4 shouldn't be any different as most class names were kept the same, which means that porting plugins to v4 shouldn't be too difficult.

Speed and Compatibility

Foundation is better, since Bootstrap cannot work well on mobile client. The main reason is that Foundation use mobile-first approach. Bootstrap use JQuery as the JS library and Foundation use Zepto as the JS library. Zepto is much smaller than JQuery and it can reduce the latency of browser loading.

Conclusion

Foundation has slightly more robust grid system. When I design new web projects, I always start by thinking about the mobile experience before I move on to larger screen sizes, and I personally feel like Foundation has a slight edge with block grids and collapsible rows.

However, I think Bootstrap is a quick learner. In fact, many popular thoughts are origin from foundation, like using Sass as CSS preprocessor, changing the sizing unit from pixels to ems, rems, etc. What else, Bootstrap is more suitable for building a quick site without much customization, Bootstrap is easier to theme.

In a nut shell, neither one is perfect. So, in the future, I would like to choose the CSS framework based on the needs.

Reference

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