Session 1

Introduction to Bootstrap 5

Using Basic Styles in Bootstrap 5

Bootstrap is a free and open-source front-end framework (library) for designing websites and web applications. It contains HTML- and CSS-based design templates for typography, forms, buttons, navigation and other interface components, as well as optional JavaScript extensions.[1]

Bootstrap was developed by Mark Otto and Jacob Thornton at Twitter, and released as an open source product in August 2011 on GitHub.

In June 2014 Bootstrap was the No.1 project on GitHub!

Why Use Bootstrap?

Advantages of Bootstrap:

- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- **Mobile-first approach:** In Bootstrap 3, mobile-first styles are part of the core framework
- **Browser compatibility:** Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Edge, Safari, and Opera)[2]

Installing Bootstrap

There are different ways to install Bootstrap. Bootstrap can be installed as a local CSS file linked to the website project or an external URL link.
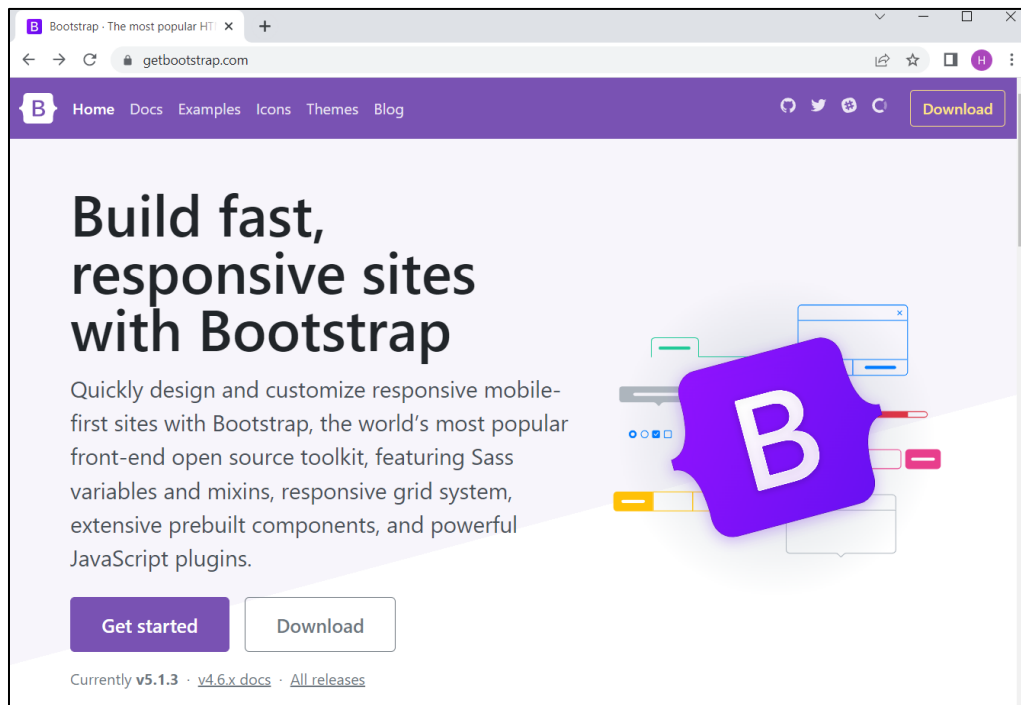
Using a Bootstrap as a local file, you download the pre compiled Bootstrap CSS and JavaScript files and same them in your local project folder. It works really well if you need to install a copy of Bootstrap that will work even without an internet connection.

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[1] Bootstrap, Wikipedia.com, https://en.wikipedia.org/wiki/Bootstrap_(front-end_framework), retrieved April 2022
[2] Bootstrap, w3school.com, https://www.w3schools.com/bootstrap/bootstrap_get_started.asp, retrieved April 2022

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Another way is to use CDNs. A **CDN, Content Delivery Network,** is a link which needs a place that hosts common libraries like Bootstrap. You can also download the source files. This way, you download not just the CSS and JavaScript, but all the files that the developers use to create Bootstrap.

Now to get instructions and to download a copy of Bootstrap manually, first go to getbootstrap.com website and click on this **Download** button.
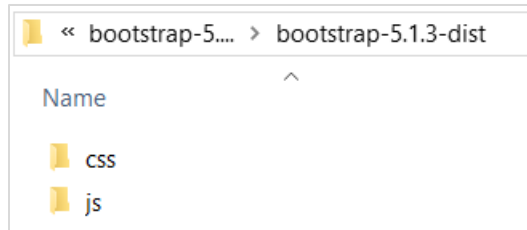

On the Download page, it shows the different ways that you can download Bootstrap, let us explore the compiled CSS and JS, CDN, and Started Template download options.

Compiled CSS and JS

This option allows user to Download ready-to-use compiled code for **Bootstrap v5.1.3** to easily drop into your project, which includes:

- Compiled and minified CSS bundles (see CSS files comparison)
- Compiled and minified JavaScript plugins (see JS files comparison)

This doesn't include documentation, source files, or any optional JavaScript dependencies like Popper. If you open up the folder, you see a CSS folder and a JavaScript folder:

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CSS Folder

The CSS folder has a number of different versions of the CSS use for the Bootstrap framework. Now if you look at this folder, you'll notice that there are three types of files: regular css files, minimized version, and map files.

- **Map files** are files that are useful if you're using Bootstrap in development mode so that they could point you not to the CSS, but to the original SAS code that was used to create the CSS. Some people like to use only the grid features of Bootstrap for a layout so you can get just that if you want to.
- There's also a Bootstrap **reboot file**. The reboot files are the special Bootstrap code that resets the CSS and browsers so that they work more consistently in different platforms.

- The **regular version** of Bootstrap contains the grid, the reset, and everything else in Bootstrap. You can choose the regular version if you're going to customize Bootstrap, or just choose **bootstrap.min.css** if you just want to use that file.

Name	Type
bootstrap.rtl	Cascading Style Sheet Document
bootstrap.rtl.css.map	MAP File
bootstrap.rtl.min	Cascading Style Sheet Document
bootstrap.rtl.min.css.map	MAP File
bootstrap-grid	Cascading Style Sheet Document
bootstrap-grid.css.map	MAP File
bootstrap-grid.min	Cascading Style Sheet Document
bootstrap-grid.min.css.map	MAP File
bootstrap-grid.rtl	Cascading Style Sheet Document
bootstrap-grid.rtl.css.map	MAP File
bootstrap-grid.rtl.min	Cascading Style Sheet Document
bootstrap-grid.rtl.min.css.map	MAP File
bootstrap-reboot	Cascading Style Sheet Document
bootstrap-reboot.css.map	MAP File
bootstrap-reboot.min	Cascading Style Sheet Document
bootstrap-reboot.min.css.map	MAP File
bootstrap-reboot.rtl	Cascading Style Sheet Document
bootstrap-reboot.rtl.css.map	MAP File
bootstrap-reboot.rtl.min	Cascading Style Sheet Document
bootstrap-reboot.rtl.min.css.map	MAP File
bootstrap-utilities	Cascading Style Sheet Document
bootstrap-utilities.css.map	MAP File
bootstrap-utilities.min	Cascading Style Sheet Document
bootstrap-utilities.min.css.map	MAP File
bootstrap-utilities.rtl	Cascading Style Sheet Document
bootstrap-utilities.rtl.css.map	MAP File
bootstrap-utilities.rtl.min	Cascading Style Sheet Document
bootstrap-utilities.rtl.min.css.map	MAP File

JavaScript Folder

In the JavaScript folder, you'll also find several files as well.

Name	Type
bootstrap.bundle	JavaScript File
bootstrap.bundle.js.map	MAP File
bootstrap.bundle.min	JavaScript File
bootstrap.bundle.min.js.map	MAP File
bootstrap.esm	JavaScript File
bootstrap.esm.js.map	MAP File
bootstrap.esm.min	JavaScript File
bootstrap.esm.min.js.map	MAP File
bootstrap	JavaScript File
bootstrap.js.map	MAP File
bootstrap.min	JavaScript File
bootstrap.min.js.map	MAP File

JavaScript also has maps. Since most people write in a version of JavaScript, it gets translated so that it works with older browsers.

There are regular and minimized versions of the JavaScript as well. Other than that, there are two types of files: the regular Bootstrap and the Bootstrap bundle. The Bootstrap bundle has all the Bootstrap code plus an additional library called 'popper.js'. **Popper.js** is a positioning engine, its purpose is to calculate the position of an element to make it possible to position it near a given reference element.

Most of time you're going to need just the regular Bootstrap file, however you also use the minimized version since you don't want to edit any of the Bootstrap JavaScript yourself.
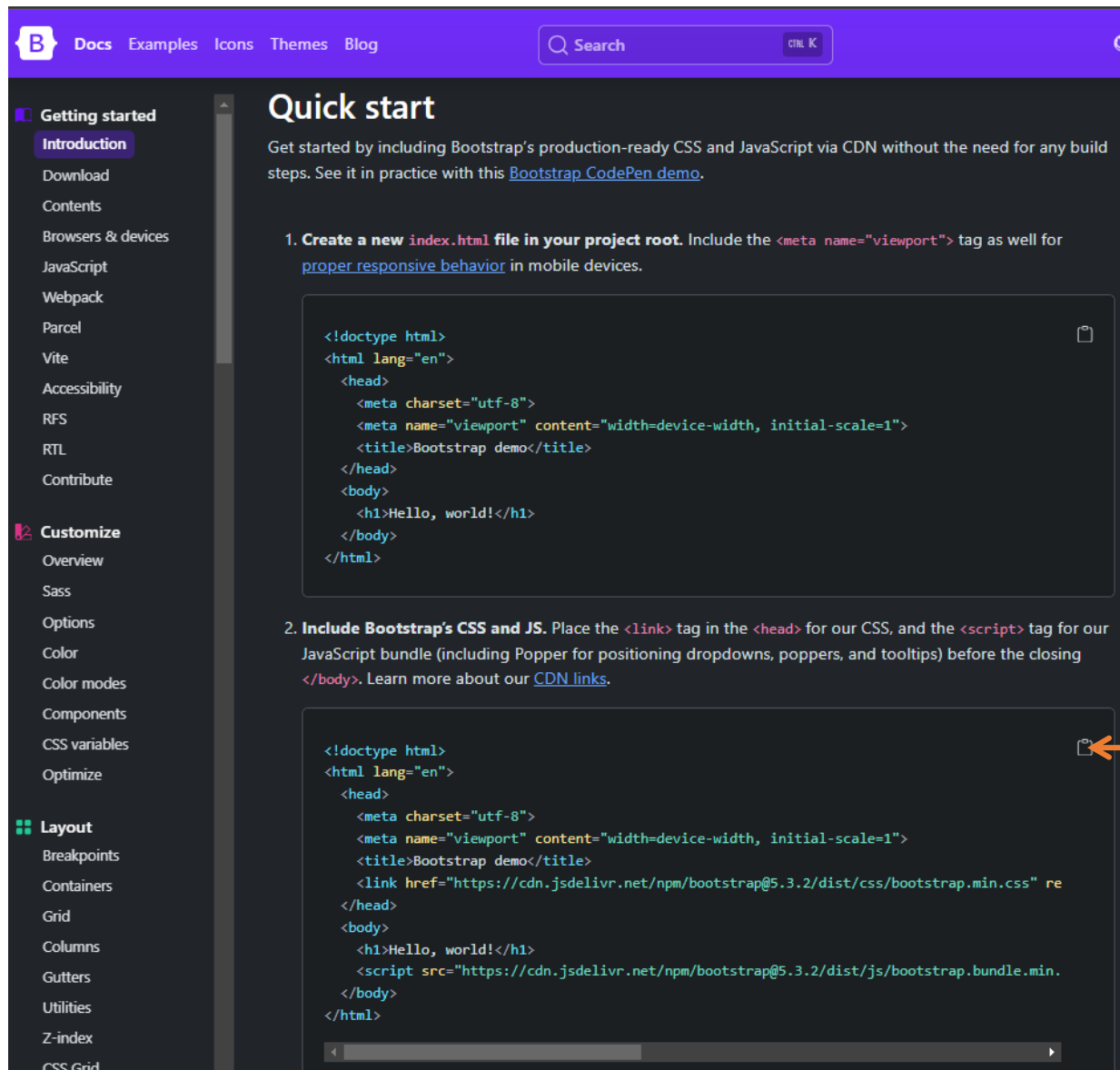
CDN

When someone visits a site that uses a CDN link, their browser will check its cache or memory to see if the visitor has been to a similar site that's also using the same link. If that's the case, then the browser will load the cached version of the library. Since it's already stored in memory, that makes the new site load faster since the browser will not have to request the file. You can download the CDN version of bootstrap at https://www.bootstrapcdn.com/

Starter Template: All together

In order to get start a project using bootstrap, you will need the following file links to your project document:

- Bootstrap
- jQuery
- popper.js
- basic HTML document

To get all the templates at once, you can go to: https://getbootstrap.com/docs/5.3/getting-started/introduction/, scroll down to step 2 under the **Quick Start,** and click on the **Copy** link to copy the Starter template at the clipboard

When copy the starter template, you will also need to add important global styles and settings to your project files. The global set-ups are:

- **HTML5 doctype**

  Bootstrap requires the use of the HTML5 doctype. Without it, you'll see some funky incomplete styling, but including it shouldn't cause any considerable hiccups.

  ```html
  <!doctype html>
  <html lang="en">
    ...
  </html>
  ```

- **Responsive meta tag**

  Bootstrap is developed *mobile first*, a strategy in which we optimize code for mobile devices first and then scale up components as necessary using CSS media queries. To ensure proper rendering and touch zooming for all devices, **add the responsive viewport meta tag** to your `<head>`.

  ```html
  <meta name="viewport" content="width=device-width, initial-scale=1">
  ```

  You can see an example of this in action in the starter template.

- **Box-sizing**

  For more straightforward sizing in CSS, we switch the global box-sizing value from content-box to border-box. This ensures padding does not affect the final computed width of an element, but it can cause problems with some third-party software like Google Maps and Google Custom Search Engine.

  On the rare occasion you need to override it, use something like the following:

  ```css
  .selector-for-some-widget {
    box-sizing: content-box;
  }
  ```

  With the above snippet, nested elements—including generated content via ::before and ::after—will all inherit the specified box-sizing for that .selector-for-some-widget.

  Learn more about box model and sizing at CSS Tricks.

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