What is Bootstrap?

- Bootstrap is a free front-end framework for faster and easier web development
- Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins
- Bootstrap also gives you the ability to easily create responsive designs

What is Responsive Web Design?

Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops.

Bootstrap 4 Example

```
<div class="jumbotron text-center">
  <h1>My First Bootstrap Page</h1>
  <p>Resize this responsive page to see the effect!</p>
</div>

<div class="container">
  <div class="row">
    <div class="col-sm-4">
      <h3>Column 1</h3>
      <p>Lorem ipsum dolor..</p>
    </div>
    <div class="col-sm-4">
      <h3>Column 2</h3>
      <p>Lorem ipsum dolor..</p>
    </div>
    <div class="col-sm-4">
      <h3>Column 3</h3>
      <p>Lorem ipsum dolor..</p>
    </div>
  </div>
</div>
```

Bootstrap Versions

This tutorial follows **Bootstrap 4**, which was released in 2018, as an upgrade to Bootstrap 3, with new components, faster stylesheetc, more responsiveness, etc.

Bootstrap 5 (released 2021) is the newest version of Bootstrap; It supports the latest, stable releases of all major browsers and platforms. However, Internet Explorer 11 and down is not supported.

The main differences between Bootstrap 5 and Bootstrap 3 & 4, is that Bootstrap 5 has switched to JavaScript instead of jQuery.

Note: Bootstrap 3 and Bootstrap 4 is still supported by the team for critical bugfixes and documentation changes, and it is perfectly safe to continue to use them. However, new features will NOT be added to them.

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, mobile-first styles are part of the core framework
- **Browser compatibility:** Bootstrap 4 is compatible with all modern browsers (Chrome, Firefox, Internet Explorer 10+, Edge, Safari, and Opera)

Where to Get Bootstrap 4?

There are two ways to start using Bootstrap 4 on your own web site.

You can:

- Include Bootstrap 4 from a CDN
- Download Bootstrap 4 from getbootstrap.com

Bootstrap 4 CDN

If you don't want to download and host Bootstrap 4 yourself, you can include it from a CDN (Content Delivery Network).

jsDelivr provides CDN support for Bootstrap's CSS and JavaScript. You must also include jQuery:

jsDelivr:

```
<!-- Latest compiled and minified CSS -->
<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css">
```

```
<!-- jQuery library -->
<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.
slim.min.js"></script>

<!-- Popper JS -->
<script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.1/dist/umd
/popper.min.js"></script>

<!-- Latest compiled JavaScript -->
<script src="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/js/
bootstrap.bundle.min.js"></script>
```

One advantage of using the Bootstrap 4 CDN:
Many users already have downloaded Bootstrap 4 from jsDelivr when visiting another site. As a result, it will be loaded from cache when they visit your site, which leads to faster loading time. Also, most CDN's will make sure that once a user requests a file from it, it will be served from the server closest to them, which also leads to faster loading time.

jQuery and Popper?
Bootstrap 4 use jQuery and Popper.js for JavaScript components (like modals, tooltips, popovers etc). However, if you just use the CSS part of Bootstrap, you don't need them.

Downloading Bootstrap 4

If you want to download and host Bootstrap 4 yourself, go to https://getbootstrap.com/, and follow the instructions there.

Create First Web Page With Bootstrap 4

1. Add the HTML5 doctype

Bootstrap 4 uses HTML elements and CSS properties that require the HTML5 doctype.

Always include the HTML5 doctype at the beginning of the page, along with the lang attribute and the correct character set:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
  </head>
</html>
```

2. Bootstrap 4 is mobile-first

Bootstrap 4 is designed to be responsive to mobile devices. Mobile-first styles are part of the core framework.

To ensure proper rendering and touch zooming, add the following `<meta>` tag inside the `<head>` element:

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

The `width=device-width` part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

The `initial-scale=1` part sets the initial zoom level when the page is first loaded by the browser.

3. Containers

Bootstrap 4 also requires a containing element to wrap site contents.

There are two container classes to choose from:

1. The `.container` class provides a responsive **fixed width container**
2. The `.container-fluid` class provides a **full width container**, spanning the entire width of the viewport

The following example shows the code for a basic Bootstrap 4 page (with a responsive fixed width container):

Container Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Bootstrap 4 Example</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css">
  <script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"></script>
  <script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.1/dist/umd/popper.min.js"></script>
  <script src="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/js/bootstrap.bundle.min.js"></script>
</head>
<body>

<div class="container">
  <h1>My First Bootstrap Page</h1>
  <p>This is some text.</p>
```

```
  </div>

</body>
</html>
```

The following example shows the code for a basic Bootstrap 4 page (with a full width container):

Container Fluid Example

```html
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Bootstrap 4 Example</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css">
  <script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"></script>
  <script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.1/dist/umd/popper.min.js"></script>
  <script src="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/js/bootstrap.bundle.min.js"></script>
</head>
<body>

<div class="container-fluid">
  <h1>My First Bootstrap Page</h1>
  <p>This is some text.</p>
</div>

</body>
</html>
```

```
Bootstrap 4 Grids
```

Bootstrap 4 Grid System

Bootstrap's grid system is built with flexbox and allows up to 12 columns across the page.

If you do not want to use all 12 columns individually, you can group the columns together to create wider columns:

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1

span 4	span 4	span 4

span 4	span 8

span 6	span 6

span 12

The grid system is responsive, and the columns will re-arrange automatically depending on the screen size.

Make sure that the sum adds up to 12 or fewer (it is not required that you use all 12 available columns).

Grid Classes

The Bootstrap 4 grid system has five classes:

- `.col-` (extra small devices - screen width less than 576px)
- `.col-sm-` (small devices - screen width equal to or greater than 576px)
- `.col-md-` (medium devices - screen width equal to or greater than 768px)
- `.col-lg-` (large devices - screen width equal to or greater than 992px)
- `.col-xl-` (xlarge devices - screen width equal to or greater than 1200px)

The classes above can be combined to create more dynamic and flexible layouts.

Tip: Each class scales up, so if you wish to set the same widths for sm and md, you only need to specify sm.

Basic Structure of a Bootstrap 4 Grid

The following is a basic structure of a Bootstrap 4 grid:

```
<!-- Control the column width, and how they should appear on
different devices -->
<div class="row">
  <div class="col-*-*"></div>
  <div class="col-*-*"></div>
</div>
<div class="row">
  <div class="col-*-*"></div>
```

```
  <div class="col-*-*"></div>
  <div class="col-*-*"></div>
</div>

<!-- Or let Bootstrap automatically handle the layout -->
<div class="row">
  <div class="col"></div>
  <div class="col"></div>
  <div class="col"></div>
</div>
```

First example: create a row (`<div class="row">`). Then, add the desired number of columns (tags with appropriate `.col-*-*` classes). The first star (*) represents the responsiveness: sm, md, lg or xl, while the second star represents a number, which should add up to 12 for each row.

Second example: instead of adding a number to each `col`, let bootstrap handle the layout, to create equal width columns: two `"col"` elements = 50% width to each col. three cols = 33.33% width to each col. four cols = 25% width, etc. You can also use `.col-sm|md|lg|xl` to make the columns responsive.

Below we have collected some examples of basic Bootstrap 4 grid layouts.

Three Equal Columns

.col

.col

.col

The following example shows how to create three equal-width columns, on all devices and screen widths:

Example

```
<div class="row">
  <div class="col">.col</div>
  <div class="col">.col</div>
  <div class="col">.col</div>
</div>
```

Responsive Columns

.col-sm-3

.col-sm-3

.col-sm-3

.col-sm-3

The following example shows how to create four equal-width columns starting at tablets and scaling to extra large desktops. **On mobile phones or screens that are less than 576px wide, the columns will automatically stack on top of each other**:

Example

```
<div class="row">
  <div class="col-sm-3">.col-sm-3</div>
  <div class="col-sm-3">.col-sm-3</div>
  <div class="col-sm-3">.col-sm-3</div>
  <div class="col-sm-3">.col-sm-3</div>
</div>
```

Two Unequal Responsive Columns

.col-sm-4

.col-sm-8

The following example shows how to get two various-width columns starting at tablets and scaling to large extra desktops:

Example

```
<div class="row">
  <div class="col-sm-4">.col-sm-4</div>
  <div class="col-sm-8">.col-sm-8</div>
</div>
```

Bootstrap 4 uses a default `font-size` of 16px, and its `line-height` is 1.5.

The default `font-family` is "Helvetica Neue", Helvetica, Arial, sans-serif.

In addition, all `<p>` elements have `margin-top: 0` and `margin-bottom: 1rem` (16px by default).

<h1> - <h6>

Bootstrap 4 styles HTML headings (`<h1>` to `<h6>`) with a bolder font-weight and an increased font-size:

Example

h1 Bootstrap heading (2.5rem = 40px)

h2 Bootstrap heading (2rem = 32px)

h3 Bootstrap heading (1.75rem = 28px)

h4 Bootstrap heading (1.5rem = 24px)

h5 Bootstrap heading (1.25rem = 20px)

h6 Bootstrap heading (1rem = 16px)

Display Headings

Display headings are used to stand out more than normal headings (larger font-size and lighter font-weight), and there are four classes to choose from: `.display-1`, `.display-2`, `.display-3`, `.display-4`

Display 1

Display 2

Display 3

Display 4

\<small\>

In Bootstrap 4 the HTML \<small\> element is used to create a lighter, secondary text in any heading:

h1 heading secondary text

h2 heading secondary text

h3 heading secondary text

h4 heading secondary text

h5 heading secondary text

h6 heading secondary text

\<mark\>

Bootstrap 4 will style the HTML \<mark\> element with a yellow background color and some padding:

Use the mark element to text.

\<abbr\>

Bootstrap 4 will style the HTML `<abbr>` element with a dotted border bottom:

Example

The was founded in 1948.

<blockquote>

Add the `.blockquote` class to a `<blockquote>` when quoting blocks of content from another source:

Example

For 50 years, WWF has been protecting the future of nature. The world's leading conservation organization, WWF works in 100 countries and is supported by 1.2 million members in the United States and close to 5 million globally.

<dl>

Bootstrap 4 will style the HTML `<dl>` element in the following way:

Example

Coffee
- black hot drink
Milk
- white cold drink

<code>

Bootstrap 4 will style the HTML `<code>` element in the following way:

Example

The following HTML elements: `span`, `section`, and `div` defines a section in a document.

<kbd>

Bootstrap 4 will style the HTML `<kbd>` element in the following way:

Example

Use `ctrl + p` to open the Print dialog box.

<pre>

Bootstrap 4 will style the HTML `<pre>` element in the following way:

Example

```
Text in a pre element
is displayed in a fixed-width
font, and it preserves
both      spaces and
line breaks.
```

More Typography Classes

The Bootstrap 4 classes below can be added to style HTML elements further:

Class	Description	Example
`.font-weight-bold`	Bold text	Try it
`.font-weight-bolder`	Bolder text	Try it
`.font-italic`	Italic text	Try it
`.font-weight-light`	Light weight text	Try it
`.font-weight-lighter`	Lighter weight text	Try it
`.font-weight-normal`	Normal text	Try it
`.lead`	Makes a paragraph stand out	Try it
`.small`	Indicates smaller text (set to 80% of the size of the parent)	Try it
`.text-left`	Indicates left-aligned text	Try it
`.text-*-left`	Indicates left-aligned text on small, medium, large or xlarge screens	Try it
`.text-break`	Prevents long text from breaking layout	Try it
`.text-center`	Indicates center-aligned text	Try it
`.text-*-center`	Indicates center-aligned text on small, medium, large or xlarge screens	Try it
`.text-decoration-none`	Removes the underline from a link	Try it
`.text-right`	Indicates right-aligned text	Try it
`.text-*-right`	Indicates right-aligned text on small, medium, large or xlarge screens	Try it
`.text-justify`	Indicates justified text	Try it
`.text-monospace`	Monospaced text	Try it
`.text-nowrap`	Indicates no wrap text	Try it
`.text-lowercase`	Indicates lowercased text	Try it
`.text-reset`	Resets the color of a text or a link (inherits the color from	Try it

	its parent)	
`.text-uppercase`	Indicates uppercased text	Try it
`.text-capitalize`	Indicates capitalized text	Try it
`.initialism`	Displays the text inside an `<abbr>` element in a slightly smaller font size	Try it
`.list-unstyled`	Removes the default list-style and left margin on list items (works on both `<ul>` and `<ol>`). This class only applies to immediate children list items (to remove the default list-style from any nested lists, apply this class to any nested lists as well)	Try it
`.list-inline`	Places all list items on a single line (used together with `.list-inline-item` on each elements)	Try it
`.pre-scrollable`	Makes a `<pre>` element scrollable	Try it