

# Bootstrap

## 3.1 Basics of bootstrap

### 3.1.1 Introduction of 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 others, as well as optional JavaScript plugins. Bootstrap also gives you the ability to easily create responsive designs.

Bootstrap 4 is a popular and widely used front-end framework for building responsive and mobile-first websites and web applications. Developed by Twitter, it provides a set of HTML, CSS, and JavaScript components, styles, and utilities that make it easier to create visually appealing and functional user interfaces.

It was originally created by Twitter and has since become one of the most widely used tools in web development. Bootstrap simplifies the process of designing and developing websites by providing a set of pre-designed HTML, CSS, and JavaScript components that can be easily customized to create modern and professional-looking interfaces.

### 3.1.2 Use of bootstrap: -

- **Responsive Design:** Bootstrap is built on a responsive grid system, which allows developers to create layouts that adapt to various screen sizes, from desktops to mobile devices. This helps ensure a consistent and user-friendly experience across different devices.
- **Grid System:** The grid system in Bootstrap enables developers to create complex layouts using rows and columns. This makes it easier to organize content and control the positioning of elements on a webpage.
- **Pre-Designed Components:** Bootstrap provides a wide range of pre-designed UI components such as navigation bars, buttons, forms, modals, carousels, and more. These components can be easily customized and integrated into your project, saving time and effort in design and development.
- **Typography:** Bootstrap offers a set of typography styles and utility classes that help ensure consistent and attractive typography across your website. This includes font sizes, headings, lists, and more.
- **CSS Styles and Themes:** Bootstrap comes with a set of CSS styles that provide a cohesive and modern appearance to your web project. Additionally, there are numerous Bootstrap themes available that can be applied to give your site a specific look and feel.
- **JavaScript Plugins:** Bootstrap includes a variety of JavaScript plugins that enhance the functionality of your website. These plugins cover features like modals, carousels, tooltips, popovers, and more. They are easy to integrate and customizable to match your design needs.
- **Customization:** While Bootstrap provides a set of default styles and components, it's also highly customizable. You can modify the framework's variables and styles to create a unique design that aligns with your brand and project requirements.
- **Development Speed:** One of the key advantages of using Bootstrap is the speed it offers in development. By leveraging its ready-made components and styles, developers can save a significant amount of time compared to building everything from scratch.
- **Community and Resources:** Bootstrap has a large and active community of developers, which means you can find tutorials, documentation, forums, and third-party resources to help you learn and troubleshoot any issues.
- **Compatibility:** Bootstrap is compatible with various modern browsers, ensuring that your website or application works smoothly across different platforms.

### 3.1.3 Structure of bootstrap: -

For use bootstrap in your website you have to add CSS and js in your file.

- CSS

Copy-paste the stylesheet <link> into your <head> before all other stylesheets to load our CSS.

```
<link rel="stylesheet"
href="https://cdn.jsdelivr.net/npm/bootstrap@4.0.0/dist/css/bootstrap.min.css" integrity="sha384-
Gn5384xqQ1aoWXA+058RXPxPg6fy4IWvTNh0E263XmFcJlSAwi GgFAW/d
Ai S6JXm" crossorigin="anonymous">
```

- JS

Many of bootstrap components require the use of JavaScript to function. Specifically, they require [jQuery](#), [Popper.js](#), and our own JavaScript plugins. Place the following <script>s near the end of your pages, right before the closing </body> tag, to enable them. jQuery must come first, then Popper.js, and then our JavaScript plugins.

```
<script src="https://code.jquery.com/jquery-
3.2.1.slim.min.js" integrity="sha384-
KJ3o2DKtI kvYI K3UENzmM7KCKRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93h
XpG5KkN" crossorigin="anonymous"></script>
```

```
<script
src="https://cdn.jsdelivr.net/npm/popper.js@1.12.9/dist/um
d/popper.min.js" integrity="sha384-
ApNbgh9B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUi bX39j 7fakFPskvXus
vfa0b4Q" crossorigin="anonymous"></script>
```

```
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@4.0.0/dist/js
/bootstrap.min.js" integrity="sha384-
JZR6Spej h4U02d8j Ot6vLEHfe/JQGi RRSQ0xSfFWpi 1MquVdAyj Uar5+7
6PVCmYI " crossorigin="anonymous"></script>
```

- Starter templet

```
<!doctype html>
<html lang="en">
<head>
  <!-- Required meta tags -->
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width,
    initial-scale=1, shrink-to-fit=no">

  <!-- Bootstrap CSS -->
  <link rel="stylesheet"
    href="https://cdn.jsdelivr.net/npm/bootstrap@4.0.0/dist/css/bootstrap.min.css" integrity="sha384-
    Gn5384xqQ1aoWXA+058RXPxPg6fy4IWvTNh0E263XmFcJlSAwiGgFAW/d
    AiS6JXm" crossorigin="anonymous">

  <title>Hello, world!</title>
</head>
<body>
  <h1>Hello, world!</h1>

  <!-- Optional JavaScript -->
  <!-- jQuery first, then Popper.js, then Bootstrap JS -->
  <script src="https://code.jquery.com/jquery-
    3.2.1.slim.min.js" integrity="sha384-
    KJ3o2DKtIkvYIK3UEZmM7KCKRr/rE9/Qpg6aAZGJwFDMVNA/GpGFF93h
    XpG5KkN" crossorigin="anonymous"></script>

  <script
    src="https://cdn.jsdelivr.net/npm/popper.js@1.12.9/dist/umd/popper.min.js" integrity="sha384-
    ApNbgh9B+Y1QKtv3Rn7W3mgPxhU9K/ScQsAP7hUi bX39j 7fakFPskvXus
    vfa0b4Q" crossorigin="anonymous"></script>

  <script
    src="https://cdn.jsdelivr.net/npm/bootstrap@4.0.0/dist/js
    /bootstrap.min.js" integrity="sha384-
    JZR6Spejh4U02d8jOt6vLEHfe/JQGiRRSQQxSfFWpi1MquVdAyj Uar5+7
    6PVCmYI" crossorigin="anonymous"></script>
</body>
</html>
```

➤ Grid system: -

Bootstrap's grid system uses a series of containers, rows, and columns to layout and align content. It's built with [flexbox](#) and is fully responsive. Below is an example and an in-depth look at how the grid comes together.

➤ Different grid classes: -

- Extra small (<576px) :- .col-
- Small (>=576px) :- .col-sm-
- Medium (>=768px) :- .col-md-
- Large (>=992px) :- .col-lg-
- Extra large (>=1200px) :- .col-xl-

➤ Typography: -

Class	Description
<b>.font-weight-bold</b>	Bold text
<b>.font-weight-bolder</b>	Bolder text
<b>.font-italic</b>	Italic text
<b>.font-weight-light</b>	Light weight text
<b>.font-weight-lighter</b>	Lighter weight text
<b>.font-weight-normal</b>	Normal text
<b>.lead</b>	Makes a paragraph stand out
<b>.small</b>	Indicates smaller text (set to 80% of the size of the parent)

<b>.text-left</b>	Indicates left-aligned text
<b>.text-*-left</b>	Indicates left-aligned text on small, medium, large or xlarge screens
<b>.text-break</b>	Prevents long text from breaking layout
<b>.text-center</b>	Indicates center-aligned text
<b>.text-*-center</b>	Indicates center-aligned text on small, medium, large or xlarge screens
<b>.text-decoration-none</b>	Removes the underline from a link
<b>.text-right</b>	Indicates right-aligned text
<b>.text-*-right</b>	Indicates right-aligned text on small, medium, large or xlarge screens
<b>.text-justify</b>	Indicates justified text
<b>.text-monospace</b>	Monospaced text
<b>.text-nowrap</b>	Indicates no wrap text
<b>.text-lowercase</b>	Indicates lowercased text
<b>.text-reset</b>	Resets the color of a text or a link (inherits the color from its parent)
<b>.text-uppercase</b>	Indicates uppercased text

<b>.text-capitalize</b>	Indicates capitalized text
<b>.initialism</b>	Displays the text inside an <abbr> element in a slightly smaller font size
<b>.list-unstyled</b>	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)
<b>.list-inline</b>	Places all list items on a single line (used together with .list-inline-item on each <li> elements)
<b>.pre-scrollable</b>	Makes a <pre> element scrollable

➤ Bootstrap colors: -

- -primary,
- -success,
- -info,
- -warning,
- -danger,
- -secondary,
- -dark,
- -light

➤ Bootstrap utilities: -

- Borders
- Border colors
- Border radius
- Float and Clearfix
- Center align
- Width (.w-25, .w-50, .w-75, .w-100, .mw-100)
- Height (.h-25, .h-50, .h-75, .h-100, .mh-100)
- Spacing

The classes are used in the format: **{property}{sides}-{size}**

Where property is

- m -sets margin
- p -sets padding

Where side is

- t - sets margin-top or padding-top
- b - sets margin-bottom or padding-bottom
- l - sets margin-left or padding-left
- r - sets margin-right or padding-right
- x - sets both padding-left and padding-right or margin-left and margin-right
- y - sets both padding-top and padding-bottom or margin-top and margin-bottom
- blank - sets a margin or padding on all 4 sides of the element

Where size is

- 0 - sets margin or padding to 0
- 1 - sets margin or padding to .25rem (4px if font-size is 16px)
- 2 - sets margin or padding to .5rem (8px if font-size is 16px)
- 3 - sets margin or padding to 1rem (16px if font-size is 16px)
- 4 - sets margin or padding to 1.5rem (24px if font-size is 16px)
- 5 - sets margin or padding to 3rem (48px if font-size is 16px)
- auto - sets margin to auto

- i. Shadow
- j. Vertical align
- k. Visibility
- l. Position
- m. Block elements
- n. Flex