**Bootstrap 5**

Bootstrap 5 is the newest version of bootstrap with new components, faster stylesheet & more responsiveness. It supports latest releases of all major browsers & platforms. Only IE11 and down is not supported. The main difference between Bootstrap 5 and 3&4 is that Bootstrap 5 has switched to Javascript instead of JQuery.

**Features of Bootstrap:-**

* It is free front end framework for faster & easier web development.
* Bootstrap includes HTML & CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other Javascript plugins.
* Bootstrap gives you ability to easily create responsive designs.

**Responsive web design:-**

It is about creating web sites which automatically adjust themselves to look good on all devices from mobiles to desktops.

**Advantages of Bootstrap:-**

* Easy to use.
* Responsive features
* Mobile first approach
* Compatible with all browsers

**Bootstrap versions:-**

Bootstrap 3 released in 2013, Bootstrap 4 released in 2018 and Bootstrap 5 released in 2021.

There are two ways to start using Bootstrap:-

1. Download from getbootstrap.com
2. Include from CDN(Content Delivery Network)

**Containers:-**

Bootstrap requires containing element to wrap site contents. There are two container classes to choose from

1. .container:- It provides a responsive fixed width container.
2. .container-fluid:- It provides a full width container, spanning entire width of the viewport.

**Bootstrap Grid System:-**

It allows up to 12 columns across the page. You can group the columns to create wider columns.

**Grid classes:-**

Bootstrap grid system has four classes:-

1. **.**xs:-for phones-screens less than 768px wide
2. **.**sm:-for tablets-screens =>768px wide
3. **.**md:-for small laptops-screens => 992px wide
4. **.**lg:-for laptops & desktops-screens =>1200px wide

**Basic structure of Bootstrap Grid:-**

<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>

First create a row & then add the desired number of columns. The .col-\*-\* should always add up to 12 columns for each row.

**For 3 equal columns:-**

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

**For two unequal columns:-**

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

**Typography:-**

Bootstrap’s global font size is 14px with line height 1.428. It is applied to <body> element & all paragraphs. All <p> elements have a bottom margin that equals half their computed line height (10px by default)

**HTML elements which are styled little bit differently by Bootstrap than browser defaults:-**

Bootstrap 5 uses a default font-size of 1rem (16px by default), and its line-height is 1.5.

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

1. **<h1>-<h6>:-**Bootstrap 5 styles HTML headings (<h1> to <h6>)  with a bolder font-weight and a responsive font-size.
2. **<small>:-**In Bootstrap 5 the HTML <small> element (and the .small class) is used to create a smaller, secondary text in any heading: e.g. <h1>h1 heading <small>secondary text</small></h1>
3. **<mark>:-** Bootstrap 5 will style <mark> and .mark with a yellow background color and some padding:
4. **<abbr>:**- Bootstrap 5 will style the HTML <abbr> element with a dotted border bottom and a cursor with question mark on hover
5. **<blockquote>:**-Add the .blockquote class to a <blockquote> when quoting blocks of content from another source. And when naming a source use the .blockquote-footer class:
6. **<dl>:**-Bootstrap 5 will style the HTML <dl> element in the following way:

<dl>

<dt>Coffee</dt>

<dd>- black hot drink</dd>

<dt>Milk</dt>

<dd>- white cold drink</dd>

</dl>

1. **<code>:-**Displays embedded text differently in red color. E.g. <p>The following HTML elements: <code>span</code>, <code>section</code>, and <code>div</code> defines a section in a document.</p>
2. **<kbd>:**- It displays keyboard elements differently. E.g. <p>Use <kbd>ctrl + p</kbd> to open the Print dialog box.</p>
3. **<pre>:**- Displays preformatted text.

**Contextual colors and backgrounds:-** The classes for text colors are: .text-muted, .text-primary, .text-success, .text-info, .text-warning, .text-danger, .text-secondary, .text-white, .text-dark, .text-body (default body color/often black) and .text-light:

* text-muted:- This text is muted.
* text-primary:-This text is important.
* text-info:-This text represents some information.
* text-warning:-This text represents a warning.
* text-danger:-This text represents danger.
* text-secondary:-Secondary text
* text-dark:-This text is dark grey
* text-body:-Default body color (often black).
* text-light:-This text is light grey (on white background).
* text-white:-This text is white (on white background).

**Background Colors:-**

The classes for background colors are: .bg-primary, .bg-success, .bg-info, .bg-warning, .bg-danger, .bg-secondary, .bg-dark and .bg-light.

Note that background colors do not set the text color, so in some cases you'll want to use them together with a .text-\* color class.

**Tables:-** Different types of tables you can create by using table class in Bootstrap. Following types of tables can be created:-

**Basic Table:-** A basic table has a light padding and horizontal dividers.

The .table class adds basic styling to a table.

e.g. <table class="table">

<thead>

<tr>

<th>Firstname</th>

<th>Lastname</th>

<th>Email</th>

</tr>

</thead>

<tbody>

<tr>

<td>John</td>

<td>Doe</td>

<td>john@example.com</td>

</tr>

<tr>

<td>Mary</td>

<td>Moe</td>

<td>mary@example.com</td>

</tr>

<tr>

<td>July</td>

<td>Dooley</td>

<td>july@example.com</td>

</tr>

</tbody>

</table>

**Striped table:-** The .table-striped class adds zebra-stripes to a table

**Bordered table:-** The .table-bordered class adds borders on all sides of the table and cells.

**Hover rows:-** The .table-hover class adds a hover effect (grey background color) on table rows.

**Black/Dark table:-** The .table-dark class adds a black background to the table.

**Dark striped table:-** Combine .table-dark and .table-striped to create a dark, striped table.

**Hoverable Dark table:-** The .table-hover class adds a hover effect (grey background color) on table rows.

**Borderless table:-** The .table-borderless class removes borders from the table.

**Contextual classes:-** Contextual classes are used to color the table, rows or cells.

**Table head colors:-** Use contextual classes to add background color to table header.

**Small table:-** The .table-sm class makes the table smaller by cutting cell padding in half.

**Responsive tables:-** The .table-responsive class adds a scrollbar to the table when needed (when it is too big horizontally)

You can also decide when the table should get a scrollbar, depending on the screen width:

| **Class** | **Screen width** |
| --- | --- |
| .table-responsive-sm | < 576px |
| .table-responsive-md | < 768px |
| .table-responsive-lg | < 992px |
| .table-responsive-xl | < 1200px |
| .table-responsive-xxl | < 1400px |

**Images:-** You can display images by using rounded corners, in circle or as thumbnail.

To display image with rounded corners use .rounded class.

e.g. <img src="abc.jpg" class="rounded" alt="abc">

To display image in circle shape use .rounded-circle class.

e.g. <img src="cinqueterre.jpg" class="rounded-circle" alt="Cinque Terre">

To display image as thumbnail use .img-thumbnail class.

e.g. <img src="cinqueterre.jpg" class="img-thumbnail" alt="Cinque Terre">

**Aligning Images:-**

Float an image to the left with the .float-start class or to the right with .float-end.

e.g. <img src="abc.jpg" class="float-start">  
 <img src="abc.jpg" class="float-end">

**Centered Image:-**

Center an image by adding the utility classes .mx-auto (margin:auto) and .d-block (display:block) to the image

e.g. <img src="paris.jpg" class="mx-auto d-block">

## Responsive Images:-

Images come in all sizes. So do screens. Responsive images automatically adjust to fit the size of the screen.

Create responsive images by adding an .img-fluid class to the <img> tag. The image will then scale nicely to the parent element.

The .img-fluid class applies max-width: 100%; and height: auto; to the image:

<img class="img-fluid" src="abc.jpg" alt="abc">

**Buttons:-** Bootstrap 5 provides different styles of buttons by using contextual colors.

e.g. <button type="button" class="btn">Basic</button>  
<button type="button" class="btn btn-primary">Primary</button>  
<button type="button" class="btn btn-secondary">Secondary</button>  
<button type="button" class="btn btn-success">Success</button>  
<button type="button" class="btn btn-info">Info</button>  
<button type="button" class="btn btn-warning">Warning</button>  
<button type="button" class="btn btn-danger">Danger</button>  
<button type="button" class="btn btn-dark">Dark</button>  
<button type="button" class="btn btn-light">Light</button>  
<button type="button" class="btn btn-link">Link</button>

All the button classes can be used with <a>, <button> & <input> elements.

e.g. <a href="#" class="btn btn-success">Link Button</a>  
<button type="button" class="btn btn-success">Button</button>  
<input type="button" class="btn btn-success" value="Input Button">  
<input type="submit" class="btn btn-success" value="Submit Button">  
<input type="reset" class="btn btn-success" value="Reset Button">

**Button Outline:-**

Bootstrap 5 also provides eight outline/bordered buttons.

Move the mouse over them to see an additional "hover" effect

e.g. <button type="button" class="btn btn-outline-primary">Primary</button>  
<button type="button" class="btn btn-outline-secondary">Secondary</button>  
<button type="button" class="btn btn-outline-success">Success</button>  
<button type="button" class="btn btn-outline-info">Info</button>  
<button type="button" class="btn btn-outline-warning">Warning</button>  
<button type="button" class="btn btn-outline-danger">Danger</button>  
<button type="button" class="btn btn-outline-dark">Dark</button>  
<button type="button" class="btn btn-outline-light text-dark">Light</button>

**Button Sizes:-**

Use the .btn-lg class for large buttons or .btn-sm class for small buttons.

e.g. <button type="button" class="btn btn-primary btn-lg">Large</button>  
<button type="button" class="btn btn-primary">Default</button>  
<button type="button" class="btn btn-primary btn-sm">Small</button>

**Block level buttons:-** To create a block level button that spans the entire width of the parent element, use the .d-grid "helper" class on the parent element

e.g. <div class="d-grid">  
  <button type="button" class="btn btn-primary btn-block">Full-Width Button</button>  
</div>

If you have many block-level buttons, you can control the space between them with the .gap-\* class

e.g. <div class="d-grid gap-3">  
  <button type="button" class="btn btn-primary btn-block">Full-Width Button</button>  
  <button type="button" class="btn btn-primary btn-block">Full-Width Button</button>  
  <button type="button" class="btn btn-primary btn-block">Full-Width Button</button>  
</div>

**Active/Disabled buttons:-** The class .active makes a button active, and the disabled attribute makes a button unclickable. Note that <a> elements do not support the disabled attribute and must therefore use the .disabled class to make it visually appear disabled.

e.g. <button type="button" class="btn btn-primary active">Active Primary</button>  
<button type="button" class="btn btn-primary" disabled>Disabled Primary</button>  
<a href="#" class="btn btn-primary disabled">Disabled Link</a>

**Spinner buttons:-** You can also add "spinners" to a button.

e.g. <button class="btn btn-primary">  
  <span class="spinner-border spinner-border-sm"></span>  
</button>  
  
<button class="btn btn-primary">  
  <span class="spinner-border spinner-border-sm"></span>  
  Loading..  
</button>  
  
<button class="btn btn-primary" disabled>  
  <span class="spinner-border spinner-border-sm"></span>  
  Loading..  
</button>  
  
<button class="btn btn-primary" disabled>  
  <span class="spinner-grow spinner-grow-sm"></span>  
  Loading..  
</button>

**Button groups:-** Use a <div> element with class .btn-group to create a button group

e.g. <div class="btn-group">  
  <button type="button" class="btn btn-primary">Apple</button>  
  <button type="button" class="btn btn-primary">Samsung</button>  
  <button type="button" class="btn btn-primary">Sony</button>  
</div>

Instead of applying button sizes to every button in a group, use class .btn-group-lg for a large button group or the .btn-group-sm for a small button group

e.g. <div class="btn-group btn-group-lg">  
  <button type="button" class="btn btn-primary">Apple</button>  
  <button type="button" class="btn btn-primary">Samsung</button>  
  <button type="button" class="btn btn-primary">Sony</button>  
</div>

**Vertical Button Groups:-**

Use the class .btn-group-vertical to create a vertical button group

e.g. <div class="btn-group-vertical">  
  <button type="button" class="btn btn-primary">Apple</button>  
  <button type="button" class="btn btn-primary">Samsung</button>  
  <button type="button" class="btn btn-primary">Sony</button>  
</div>

**Nesting Button Groups & Dropdown Menus:-**

e.g. <div class="btn-group">  
  <button type="button" class="btn btn-primary">Apple</button>  
  <button type="button" class="btn btn-primary">Samsung</button>  
  <div class="btn-group">  
    <button type="button" class="btn btn-primary dropdown-toggle" data-bs-toggle="dropdown">Sony</button>  
    <div class="dropdown-menu">  
      <a class="dropdown-item" href="#">Tablet</a>  
      <a class="dropdown-item" href="#">Smartphone</a>  
    </div>  
  </div>  
</div>

**Forms:-**

**Stacked Forms:-** To style all text elements like <input> & <textarea> .form-control class is used. We add a .form-label class to each label element to ensure correct padding.

Checkboxes have different markup. They are wrapped around a container element with .form-check, and labels have a class of .form-check-label, while checkboxes and radio buttons use .form-check-input.

e.g. <form action="/action\_page.php">  
  <div class="mb-3 mt-3">  
    <label for="email" class="form-label">Email:</label>  
    <input type="email" class="form-control" id="email" placeholder="Enter email" name="email">  
  </div>  
  <div class="mb-3">  
    <label for="pwd" class="form-label">Password:</label>  
    <input type="password" class="form-control" id="pwd" placeholder="Enter password" name="pswd">  
  </div>  
  <div class="form-check mb-3">  
    <label class="form-check-label">  
      <input class="form-check-input" type="checkbox" name="remember"> Remember me  
    </label>  
  </div>  
  <button type="submit" class="btn btn-primary">Submit</button>  
</form>

To add <textarea> use following code:-

<label for="comment">Comments:</label>  
<textarea class="form-control" rows="5" id="comment" name="text"></textarea>

**Form Row/Grid (Inline Forms):-**

If you want your form elements to appear side by side, use .row and .col.

<form>  
  <div class="row">  
    <div class="col">  
      <input type="text" class="form-control" placeholder="Enter email" name="email">  
    </div>  
    <div class="col">  
      <input type="password" class="form-control" placeholder="Enter password" name="pswd">  
    </div>  
  </div>  
</form>

**Form Control Size:-**

You can change the size of .form-control inputs with .form-control-lg or .form-control-sm

e.g. <input type="text" class="form-control form-control-lg" placeholder="Large input">  
<input type="text" class="form-control" placeholder="Normal input">  
<input type="text" class="form-control form-control-sm" placeholder="Small input">

**Disabled and Readonly:-**

Use the disabled and/or readonly attributes to disable the input field

e.g. <input type="text" class="form-control" placeholder="Normal input">  
<input type="text" class="form-control" placeholder="Disabled input" disabled>  
<input type="text" class="form-control" placeholder="Readonly input" readonly>

**Plain text Inputs:-**

Use the .form-control-plaintext class to style an input field without borders, but keep proper marigins and padding

e.g. <input type="text" class="form-control-plaintext" placeholder="Plaintext input">  
<input type="text" class="form-control" placeholder="Normal input">

**Color Picker:-**

To style an input with type="color" properly, use the .form-control-color class

e.g. <input type="color" class="form-control form-control-color" value="#CCCCCC">

**Select Menu:-** To style a select menu in Bootstrap 5, add the .form-select class to the <select> element

e.g. <select class="form-select">  
  <option> Item 1</option>  
  <option> Item 2</option>  
  <option> Item 3</option>  
  <option> Item 4</option>  
</select>

To create multiple option list use select tag as following:

<select multiple class="form-select" id=”list” name=”list”>

**Select menu size:-**

Use the .form-select-lg or .form-select-sm class to change the size of the select menu

e.g. <select class="form-select form-select-lg">  
<select class="form-select">  
<select class="form-select form-select-sm">

**Disabled Select Menu:-**

Use the disabled attribute to disable the select menu

e.g. <select class="form-select" disabled>  
  <option>Item 1</option>  
  <option>Item 2</option>  
  <option>Item 3</option>  
  <option>Item 4</option>  
</select>

**Data Lists:-**

Bootstrap will also style data lists, which is a list of pre-defined options for an <input> element

<label for="browser" class="form-label">Choose your browser from the list:</label>  
<input class="form-control" list="browsers" name="browser" id="browser">  
<datalist id="browsers">  
  <option value="Edge">  
  <option value="Firefox">  
  <option value="Chrome">  
  <option value="Opera">  
  <option value="Safari">  
</datalist>

**Checkboxes:-**

To style checkboxes, use a wrapper element with class="form-check" to ensure proper margins for labels and checkboxes.

Then, add the .form-check-label class to label elements, and .form-check-input to style checkboxes properly inside the .form-check container.

Use the checked attribute if you want the checkbox to be checked by default.

e.g. <div class="form-check">  
  <input class="form-check-input" type="checkbox" id="check1" name="option1" value="something" checked>  
  <label class="form-check-label">Option 1</label>  
</div>

**Radio buttons:-**

<div class="form-check">  
  <input type="radio" class="form-check-input" id="radio1" name="optradio" value="option1" checked>Option 1  
  <label class="form-check-label" for="radio1"></label>  
</div>  
<div class="form-check">  
  <input type="radio" class="form-check-input" id="radio2" name="optradio" value="option2">Option 2  
  <label class="form-check-label" for="radio2"></label>  
</div>  
<div class="form-check">  
  <input type="radio" class="form-check-input" disabled>Option 3  
  <label class="form-check-label"></label>  
</div>

**Toggle Switches:-**

If you want your checkbox to be styled as a toggle switch, use the .form-switch class together with the .form-check container

e.g.<div class="form-check form-switch">  
  <input class="form-check-input" type="checkbox" id="mySwitch" name="darkmode" value="yes" checked>  
  <label class="form-check-label" for="mySwitch">Dark Mode</label>  
</div>

**Jumbotron:-** It is a big padded box for calling extra attention to some special content or information. It was introduced in Bootstrap3. Bootstrap 5 does not support it because you can use a <div> element and add special helper classes together with a color class to get the same effect

**e.g.** <div class="mt-4 p-5 bg-primary text-white rounded">  
  <h1> Heading </h1>  
  <p> Paragraph </p>  
</div>