

## MODULE: 6 (Bootstrap Basic & Advance)

- What are the advantages of Bootstrap?

### **Ans. Top 10 Advantages of Bootstrap for Web Development**

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#### **1. Easy initiation**

Coding is a hurricane task for a person who is unbeknownst to web development. But the greatest use of Bootstrap in web development is it makes coding hassle-free. Bootstrap handles everything for you. Despite having no extensive knowledge of coding, one can design an enticing landing page using Bootstrap. The only criterion is to have moderate experience of CSS and HTML. Alongside this, the integration process of Bootstrap is easy on existing and newer websites. In your current CSS, you can incorporate diverse platforms, frameworks, elements of Bootstrap without any hassles.

#### **2. Responsiveness**

Statistics highlight over 6.4 billion smartphone users worldwide. This study infers smartphone penetration of over 80 percent. And the numbers do not stop here; in fact, they are rising rapidly. Due to this extensive demand, having a mobile-responsive website has become a prerequisite, and this task is a cakewalk with Bootstrap by your side. It has a fluid grid layout, which adapts as per the screen resolution.

#### **3. Highly customizable**

You can find an array of templates in Bootstrap. However, if you find them unappealing, you can concoct your customization using the CSS file. Besides, if you cannot spare time to start everything from scratch, you can blend the customization with the existing code and enhance the functionality. All this can be undertaken under the customization page.

#### **4. Extremely user-centric**

While creating landing pages, it is very important to design from the user's point of view. If a landing page is engaging, only then does it appeal to the audience. One of the prominent advantages of Bootstrap is you can design landing pages complementing the audience's requirements. It comes up with suggestions regarding elements like photos, Call-to-actions (CTA) that look best for your audience and enhance user experience. Moreover, it helps in making easy edits to the landing page elements for reaching out to more audiences.

#### **5. Top-notch support**

When using Bootstrap, the only requirement is basic knowledge of coding. However, as a newbie, you might come across an array of problems. It might lead to hesitancy when using Bootstrap. To overcome this problem, Bootstrap comes with a huge support community. Having a support community is a blessing in disguise when using any technology. You get answers to every query. You share the query, and the community will actively help in solving it.

Besides, the creators are always on their toes updating Bootstrap to offer a better experience to the users. With this, you can always avail the best assistance in every circumstance.

#### **6. Cross-browser compatibility**

Every user is different, and so is their device. Along with the device, they use varied browsers too. Bootstrap is compatible with the latest versions of all modern browsers and platforms. One of the biggest advantages of using Bootstrap is compatibility across browsers. With Bootstrap by your

side, heave a sigh of relief when it comes to displaying your landing page across multiple browsers. Its compatibility with Google Chrome, Firefox, Safari, and Internet Explorer makes it more versatile.

## **7. JavaScript plugins to your rescue**

To make the pages more interactive, one needs elements, like sliders, drop-down menus, tabs, etc. The hunt begins to find complementing plugins to include these elements. But with Bootstrap by your side, you can easily incorporate these components as numerous JavaScript plugins are bundled in the Bootstrap package. Also, adding these functionalities is easy as you just need to write a few lines of code and you are all set. Moreover, with the customization option, you have the liberty to choose particular plugins, helping to maintain minimize file size.

## **8. Far-reaching popularity**

The most crucial advantage of using Bootstrap is its widespread presence. A multinational and global company like Apple utilizes Bootstrap for its Apple Maps and Apple Music web apps. Not just this, but Dropbox, Coursera, and Airbnb have acknowledged the prowess of Bootstrap and are using it to maintain robustness.

## **9. Ample documentation**

When using a framework, the support from the community is priceless, but some prefer referring to written notes. Fortunately, Bootstrap satiates this requirement by providing easy-to-read and efficient documentation on the Bootstrap website. The framework is easy, and the documentation makes it easier to work on UI designing.

## **10. Updates at the doorstep**

Staying updated is the core of any technology. The same thumb rule applies to Bootstrap, which is fully attuned. Its core developers constantly keep the framework updated. They keep a close eye on future web requirements and make changes accordingly. Whenever there is a

new update, Bootstrap considers the users to get hold of the latest and most advanced technology available in the industry.

So, these are some vital reasons to use Bootstrap for your web development projects. Apart from this, it offers a chaos-free ambiance and minimal coding, making it extremely easy for a newbie to utilize it. Choosing this framework will ease your life and complement all your requirements.

- **What is a Bootstrap Container, and how does it work?**

**Ans. Bootstrap Containers** are the most basic layout element in Bootstrap. Bootstrap **Containers** are very essential and basic building blocks of bootstrap that wrap a page's content. It's responsible for setting and aligning content within it according to viewport or given device. Containers are defined within the container class (**.container**). In other words, we can say that containers are established the width for the layout to give the content. Elements and content are added within the container.

**Containers are used for many purposes such as –**

- It requires use with the default grid system.
- To establish width for the layout to give web content.
- To provide responsive fixed behavior of any web project.
- To sets the content margin dealing with the responsive behavior of your layout.

Bootstrap has the default class or predefined class is **“.container”** & **“.container-fluid”** class for layout. Containers are used to contain, pad, and (sometimes) center the content within them. While containers can be nested, most layouts do not require a nested container.

Basically, there are three types of container classes available in bootstrap:

1. Default-Container(container)
2. Responsive-Container(along with sm, md, lg, xl, xxl)
3. Fluid-Container(container-fluid)

**1. Default-Container:** The default container uses ‘.container’ class. It provides a responsive fixed-width container.

**Syntax:**

```
<div class="container">
  <!-- Content here -->
</div>
```

**2. Responsive-Container:** Responsive containers are responsive in nature. Responsive containers allow you to specify a class that is wide until the specified breakpoint is reached, after which we apply max-widths for each of the higher breakpoints.

**Syntax:**

```
<div class="container-sm">Wide for small breakpoint</div>
<div class="container-md">Wide for medium
breakpoint</div>
<div class="container-lg">Wide for large breakpoint</div>
<div class="container-xl">Wide for extr large
breakpoint</div>
<div class="container-xxl">Wide for extra large
breakpoint</div>
```

**3. Fluid-Container:** Fluid-container uses the '.container-fluid' class. It is used for a full-width container, spanning the entire width of the viewport.

**Syntax:**

```
<div class="fluid-container">
  <!-- Content here -->
</div>
```

- What are the default Bootstrap text settings?

Ans. Bootstrap 5 Default Settings

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).

- What do you know about the Bootstrap Grid System?

## Ans. Bootstrap Grid System

Bootstrap's grid system allows up to 12 columns across the page.

If you do not want to use all 12 column 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											

Bootstrap's grid system is responsive, and the columns will re-arrange depending on the screen size: On a big screen it might look better with the content organized in three columns, but on a small screen it would be better if the content items were stacked on top of each other.

**Tip:** Remember that grid columns should add up to twelve for a row. More than that, columns will stack no matter the viewport.

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## Grid Classes

The Bootstrap grid system has four classes:

- xs (for phones - screens less than 768px wide)
- sm (for tablets - screens equal to or greater than 768px wide)
- md (for small laptops - screens equal to or greater than 992px wide)
- lg (for laptops and desktops - screens equal to or greater than 1200px wide)

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 xs and sm, you only need to specify xs.

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## Grid System Rules

Some Bootstrap grid system rules:

- Rows must be placed within a `.container` (fixed-width) or `.container-fluid` (full-width) for proper alignment and padding
- Use rows to create horizontal groups of columns
- Content should be placed within columns, and only columns may be immediate children of rows
- Predefined classes like `.row` and `.col-sm-4` are available for quickly making grid layouts
- Columns create gutters (gaps between column content) via padding. That padding is offset in rows for the first and last column via negative margin on `.rows`
- Grid columns are created by specifying the number of 12 available columns you wish to span. For example, three equal columns would use three `.col-sm-4`
- Column widths are in percentage, so they are always fluid and sized relative to their parent element

## Grid Options

The following table summarizes how the Bootstrap grid system works across multiple devices:

	Extra small <768px	Small ≥768px	Medium ≥992px	Large ≥1200px
Class prefix	<code>.col-xs-</code>	<code>.col-sm-</code>	<code>.col-md-</code>	<code>.col-lg-</code>

<b>Suitable for</b>	Phones	Tablets	Small Laptops	Laptops & Desktops
<b>Grid behaviour</b>	Horizontal at all times	Collapsed to start, horizontal above breakpoints	Collapsed to start, horizontal above breakpoints	Collapsed to start, horizontal above breakpoints
<b>Container width</b>	None (auto)	750px	970px	1170px
<b># of columns</b>	12	12	12	12
<b>Column width</b>	Auto	~62px	~81px	~97px
<b>Gutter width</b>	30px (15px on each side of a column)	30px (15px on each side of a column)	30px (15px on each side of a column)	30px (15px on each side of a column)
<b>Nestable</b>	Yes	Yes	Yes	Yes
<b>Offsets</b>	Yes	Yes	Yes	Yes
<b>Column ordering</b>	Yes	Yes	Yes	Yes



# Examples

The next chapters shows examples of grid systems for different devices:

- [Stacked-to-horizontal](#)
- [Small devices](#)
- [Medium devices](#)
- [Large devices](#)
- [More grid examples](#)
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## • What is the difference between Bootstrap 4 and Bootstrap5?

Ans.

BASIS OF	BOOTSTRAP 4	BOOTSTRAP 5
<b>Grid System</b>	It has 5 tier (xs, sm, md, lg, xl).	It has 6 tier (xs, sm, md, lg, xl, xxl).
<b>Color</b>	It has limited colors.	Extra colors added with the looks, A card improved color palette. there are various shades available to choose.
<b>Jquery</b>	It has jquery and all related plugins.	Jquery is removed and switched to vanilla JS with some working plugins
<b>Internet Explorer</b>	Bootstrap 4 supports both IE 10 and 11.	Bootstrap 5 doesn't support IE 10 and 11.
<b>Form elements</b>	Radio buttons, checkboxes have different look in different OS and browsers. The form uses whatever default browsers provide.	The look of form elements will not change, on different OS or browser. The forms can be customized and form controls can be added, they would not depend on browser.

BASIS OF	BOOTSTRAP 4	BOOTSTRAP 5
<b>Utilities API</b>	We cannot modify utilities in bootstrap 4	Bootstrap 5 gave freedom to modify and also create our own utility
<b>Gutter</b>	We use .glutter with fontsize in px	We use .g* with fontsize in rem
<b>Vertical Classes</b>	Columns can be positioned relative	Columns cannot be positioned relative
<b>Bootstrap Icons</b>	Bootstrap 4 doesn't have its own SVG icons, we have to use font-awesome for icons.	Bootstrap 5 have its own SVG icons
<b>Jumbotron</b>	It supports.	It doesn't support jumbotron.
<b>Card deck</b>	The card deck is used to create an isset of cards with equal width and height.	Card deck class in removed in bootstrap
<b>Navbar</b>	We have inline-block property and we will get white dropdown as default for dropdown-menu-dark class.	Inline-block property is removed and we will get black dropdown as default for dropdown-menu-dark class.
<b>Static Site Generator</b>	Bootstrap 4 uses Jekyll software.	Bootstrap 5 uses Hugo software as it is fast static site generator.
<b>flexbox grid</b>	this makes easier to implement vertical designs, and the columns and rows can easily be implemented. the classes justify-center-content can directly be used to align according to the requirement.	advanced grid system is made available , also columns don't have relative positions.

- What is a Button Group, and what is the class for a basic Button Group?

Ans. "Button Groups" in Bootstrap is a class of name **"btn-group"** which is used to create series of buttons in groups (without spaces) vertically or horizontally. This is the basic syntax of the button group class where each button has its own class of "btn".

- How can you use Bootstrap to make thumbnails?

Ans.

Step 1: Include Bootstrap and jQuery CDN into the <head> tag before all other stylesheets to load our CSS.

Step 2: Add <div> tag in the HTML body with class row. In that <div> create four div sections to create four images.

Step 3: Add "col-sm-6" and "col-md-3" to four div sections which creates webpage responsive.

- In Bootstrap 4, what is flexbox?

Ans. **Bootstrap 4 now uses flexbox, instead of floats, to handle the layout.** The Flexible Box Layout Module, makes it easier to design flexible responsive layout structure without using float or positioning.

- How can one create an alert in Bootstrap?

Ans. **Alerts:-**

Provide contextual feedback messages for typical user actions with the handful of available and flexible alert messages.

Examples:-

Alerts are available for any length of text, as well as an optional dismiss button. For proper styling, use one of the eight **required** contextual classes (e.g., `.alert-success`). For inline dismissal, use the [alerts jQuery plugin](#).

```
<div class="alert alert-primary" role="alert">
  This is a primary alert—check it out!
</div>
<div class="alert alert-secondary" role="alert">
  This is a secondary alert—check it out!
</div>
<div class="alert alert-success" role="alert">
  This is a success alert—check it out!
</div>
<div class="alert alert-danger" role="alert">
  This is a danger alert—check it out!
</div>
<div class="alert alert-warning" role="alert">
  This is a warning alert—check it out!
</div>
```

- What is a bootstrap card and how would you create one?

**Ans.** A **card** is a flexible and extensible content container. It includes options for headers and footers, a wide variety of content, contextual background colors, and powerful display options. If you're familiar with Bootstrap 3, cards replace our old panels, wells, and thumbnails. Similar functionality to those components is available as modifier classes for cards.

## Example

Cards are built with as little markup and styles as possible, but still manage to deliver a ton of control and customization. Built with flexbox, they offer easy alignment and mix well with other Bootstrap components. They have no `margin` by default, so use spacing utilities as needed.

Below is an example of a basic card with mixed content and a fixed width. Cards have no fixed width to start, so they'll naturally fill the full width of its parent element. This is easily customized with our various sizing options.

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta http-equiv="X-UA-Compatible" content="IE=edge">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/css/bootstrap.min.css" rel="stylesheet"
8     integrity="sha384-Zenh87qX5JnK2Jl0vwa8Ck2rdkQ2BzepsIDxbcnCeu0xjzrPF/et3URy9Bv1WTRi" crossorigin="anonymous">
9   <script src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.11.6/dist/umd/popper.min.js" integrity="sha384-oBqDVmMz9ATKxIep9tiCxS/
10     Z9fNfEXiDAYtUjMAeBAsjFuCZSmKbSSUnQlmlh/jp3" crossorigin="anonymous"></script>
11   <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.2/dist/js/bootstrap.min.js" integrity="sha384-IDwe1+LCz02ROU9k972gdyvl+AESN10
12     +x7tBKgc9ISHFtuNz0WwNpClzo6p9vxnk" crossorigin="anonymous"></script>
13   <title>Document</title>
14 </head>
15 <body>
16   <div class="card" style="width: 18rem;">
17     
19     <div class="card-body">
20       <h5 class="card-title">Card title</h5>
21       <p class="card-text">Some quick example text to build on the card title and make up the bulk of the card's content.</p>
22       <a href="#" class="btn btn-primary">click</a>
23     </div>
24   </div>
25 </body>
26 </html>
```