



**CET-223**

**Web Technologies**

**Experiment # 11**

**Experiment Title**

Bootstrap Basics: Responsive Layouts and Components

**Assessment of CLO(s): 03**

**Performed on \_\_\_\_\_**

<b>Student Name:</b>			
<b>Roll No.</b>		<b>Group</b>	
<b>Semester</b>		<b>Session</b>	

<b>Total (Max)</b>	<b>Performance (03)</b>	<b>Viva (03)</b>	<b>File (04)</b>	<b>Total (10)</b>
<b>Marks Obtained</b>				
<b>Remarks (if any)</b>				

**Experiment evaluated by**

<b>Instructor's Name</b>	Engr. Bilal Iqbal		
<b>Date</b>		<b>Signature</b>	

### Objective:

To understand and utilize Bootstrap, an open-source front-end framework, to efficiently design responsive, mobile-first websites by leveraging its pre-designed templates, components, and utilities, thereby reducing the need for extensive custom CSS

### Bootstrap:

Bootstrap is a popular, open-source front-end framework used to create responsive and mobile-first websites easily. It provides pre-designed templates and components, like navigation bars, buttons, forms, and more, which help developers design web pages without writing extensive CSS or JavaScript from scratch.

### Features of Bootstrap:

**Responsive Grid System:** Bootstrap uses a 12-column grid system to create flexible, responsive layouts that adjust to different screen sizes.

**Pre-built Components:** It offers ready-to-use components like navigation bars, modals, buttons, cards, and forms.

**Customizable:** Developers can customize Bootstrap's styles to suit their design needs by modifying the default CSS.

**Cross-browser Compatibility:** Ensures consistent performance across modern browsers.

**JavaScript Plugins:** Comes with built-in JavaScript components, such as carousels, modals, and tooltips, for interactive elements.

**Mobile-first Design:** Prioritizes mobile responsiveness, ensuring web pages look good on all devices.

**Extensive Documentation:** Offers detailed, well-organized documentation with examples.

#### Setting Up Bootstrap:

Create a new file called **index.html** and then use the basic HTML template structure.

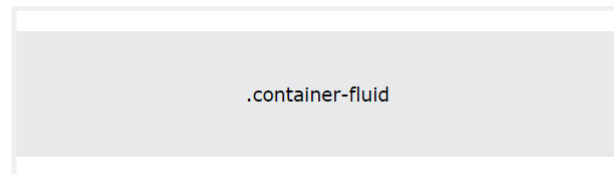
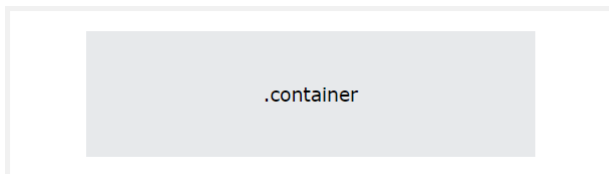
#### Include Bootstrap via CDN

Add the following inside the `<head>` tag of your HTML file:

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css" rel="stylesheet"
integrity="sha384-QWTKZyjpPEjLSv5WaRU9OFeRpok6YctnYmDr5pNlyT2bRjXh0JMhY6hW+ALEwIH"
crossorigin="anonymous">
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js" integrity="sha384-
YvpcrYf0tY3lHB60NNkmXc5s9fDVZLESaAA55NDzOxhy9GkcldslK1eN7N6jleHz"
crossorigin="anonymous"></script>
```

### .Container and .container-fluid Classes

Bootstrap provides two main classes for layout containers: `.container` and `.container-fluid`. These classes are used to wrap the content and align it properly within the page.



#### .Container Class:

The `.container` class creates a fixed-width layout. It adjusts its width based on the screen size but maintains specific maximum widths at different breakpoints. `.Container` class is a responsive, fixed-width container, meaning its max-width changes at each breakpoint.

This is an example of container class

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

.Container class will adjust at specific breakpoints

- Small devices ( $\leq 576\text{px}$ ): Full width (100%)
- Medium devices ( $\geq 576\text{px}$ ): 540px
- Large devices ( $\geq 768\text{px}$ ): 720px
- Extra-large devices ( $\geq 992\text{px}$ ): 960px
- XXL devices ( $\geq 1200\text{px}$ ): 1140px

	Extra small <576px	Small ≥576px	Medium ≥768px	Large ≥992px	X-Large ≥1200px	XX-Large ≥1400px
.container	100%	540px	720px	960px	1140px	1320px
.container-sm	100%	540px	720px	960px	1140px	1320px
.container-md	100%	100%	720px	960px	1140px	1320px
.container-lg	100%	100%	100%	960px	1140px	1320px
.container-xl	100%	100%	100%	100%	1140px	1320px
.container-xxl	100%	100%	100%	100%	100%	1320px
.container-fluid	100%	100%	100%	100%	100%	100%

```
<div class="container-sm">100% wide until small breakpoint</div>
<div class="container-md">100% wide until medium breakpoint</div>
<div class="container-lg">100% wide until large breakpoint</div>
<div class="container-xl">100% wide until extra large breakpoint</div>
<div class="container-xxl">100% wide until extra extra large breakpoint</div>
```

.Container-fluid Class:

The .container-fluid class creates a full-width layout, meaning it spans the entire width of the viewport without any fixed widths. This is useful when you want content to stretch across the entire width of the screen, regardless of screen size.

This is a full-width container

```
<div class="container-fluid">
  ...
</div>
```

### .Row Class

The .row class in Bootstrap is used to create horizontal groups of columns within a container. It works with the grid system to align and position content in a structured way. The .row class ensures that the columns inside it are properly aligned and spaced.

Row 1

Row 2

Row 3

### .Col Class

The .col class in Bootstrap is a flexible and responsive way to create columns within the grid system. It allows you to divide content into different sections within a .row. Bootstrap's grid system is based on 12 columns, meaning you can customize your layout by specifying how many columns each element should take up.

Column 1

Column 2

```
<div class="container text-center">
  <div class="row">
    <div class="col">
      Column
    </div>
    <div class="col">
      Column
    </div>
    <div class="col">
      Column
    </div>
  </div>
</div>
```

```
<div class="container text-center">
  <div class="row">
    <div class="col">
      Column
    </div>
    <div class="col">
      Column
    </div>
    <div class="col">
      Column
    </div>
  </div>
</div>
```

Col 1	Col 2	col 3
col 4	col 5	col 6
col 7	col 8	

The Bootstrap 5 grid system has six 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)
- .col-xxl- (xxlarge devices - screen width equal to or greater than 1400px)

### Setting one column width

```
<div class="container text-center">
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col-6">
      2 of 3 (wider)
    </div>
    <div class="col">
      3 of 3
    </div>
  </div>
  <div class="row">
    <div class="col">
      1 of 3
    </div>
    <div class="col-5">
      2 of 3 (wider)
    </div>
    <div class="col">
      3 of 3
    </div>
  </div>
</div>
```

1 of 3	2 of 3 (wider)	3 of 3
1 of 3	2 of 3 (wider)	3 of 3

```
<div class="container text-center">
  <div class="row">
    <div class="col">col</div>
    <div class="col">col</div>
    <div class="col">col</div>
    <div class="col">col</div>
  </div>
  <div class="row">
    <div class="col-8 co">col-8</div>
    <div class="col-4 co">col-4</div>
  </div>
</div>
```

col	col	col	col
col-8			col-4

**Task:**  
Design the below webpages using bootstrap

<b>Sidebar</b> <a href="#">Link 1</a> <a href="#">Link 2</a> <a href="#">Link 3</a>	<b>Main Content</b> <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Eum est et vel, nihil esse quia qui? Sequi, repudiandae. Autem voluptatibus veniam temporibus provident, iure assumenda.</p> <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Ut nemo reiciendis quasi, harum, laudantium blanditiis perferendis possimus ex et rerum facere earum culpa. Officiis, velit!</p> <p><b>Important Note</b></p> <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Ab praesentium tenetur voluptas incidunt nulla accusantium.</p>	<b>Right Sidebar</b> <a href="#">Link A</a> <a href="#">Link B</a> <a href="#">Link C</a>
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<b>Website Name</b>	
<a href="#">Home</a>   <a href="#">About Us</a>   <a href="#">Gallery</a>   <a href="#">Contact Us</a>	
<b>Sub heading</b> <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Maecenas luctus porttitor libero, eget maximus augue efficitur non...</p> <p>Fusce consequat porttitor nisl, at interdum diam ullamcorper sit amet...</p>	<ul style="list-style-type: none"><li>• <a href="#">Home</a></li><li>• <a href="#">About Us</a></li><li>• <a href="#">Gallery</a></li><li>• <a href="#">Contact Us</a></li></ul>
Website name@copyright.	