BOOTSTRAP FRAMEWORK

What is Bootstrap?

Definition:

Bootstrap is a free, open-source front-end framework used to create responsive and mobile-first websites easily.

In Simple Words:

Bootstrap gives you:

- Ready-made **CSS classes**
- Pre-designed **components**
- A powerful **grid system**

So you don't need to write CSS from scratch.

Why Bootstrap is Used?

✓ Faster development
✓ Responsive by default
✓ Consistent design
✓ Easy to learn
✓ Works on all browsers

How to Include Bootstrap (IMPORTANT)

Using CDN

```
<!DOCTYPE html>
<html>
<head>
    <title>Bootstrap Example</title>
```

```
        <!-- Bootstrap CSS -->
        <link

href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
            rel="stylesheet">

</head>
<body>

</body>
</html>
```

Bootstrap Grid System

Definition:

Bootstrap Grid System divides the webpage into 12 columns to create layouts.

Key Concepts:

- Page is divided into **12 columns**
- Uses **rows** and **columns**
- Fully **responsive**

◆ **Basic Grid Structure**

```
<div class="container">
    <div class="row">
        <div class="col">Column 1</div>
        <div class="col">Column 2</div>
    </div>
</div>
```

📝 Example: 3 Column Layout

```html
<div class="container">
  <div class="row">
    <div class="col-4 bg-light">Column 1</div>
    <div class="col-4 bg-secondary text-white">Column 2</div>
    <div class="col-4 bg-light">Column 3</div>
  </div>
</div>
```

📐 Column Sizes

Class	Meaning
col-6	6/12 width
col-4	4/12 width
col-3	3/12 width

Bootstrap Components

Bootstrap provides **pre-built UI components**.

4.1 Buttons

Definition:

Bootstrap buttons are styled using predefined classes.

Example:

```html
<button class="btn btn-primary">Primary</button>
<button class="btn btn-success">Success</button>
<button class="btn btn-danger">Danger</button>
```

Button Types

Class	Color
btn-primary	Blue
btn-success	Green
btn-danger	Red
btn-warning	Yellow

Bootstrap Framework

4.2 Navigation (Nav)

Definition:

Used to create navigation links.

Example:

```html
<ul class="nav">
  <li class="nav-item">
    <a class="nav-link active" href="#">Home</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">About</a>
  </li>
</ul>
```

4.3 Navbar (VERY IMPORTANT)

Definition:

A **responsive navigation header**.

Example:

```html
<nav class="navbar navbar-expand-lg navbar-dark bg-dark">
  <div class="container">
    <a class="navbar-brand" href="#">MySite</a>
    <div class="collapse navbar-collapse">
      <ul class="navbar-nav">
        <li class="nav-item"><a class="nav-link"
href="#">Home</a></li>
        <li class="nav-item"><a class="nav-link"
href="#">Services</a></li>
      </ul>
    </div>
  </div>
```

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```
</nav>
```

4.4 Dropdown

Definition:

Dropdown is a toggleable menu.

Example:

```
<div class="dropdown">
  <button class="btn btn-secondary dropdown-toggle" data-bs-
toggle="dropdown">
    Dropdown
  </button>
  <ul class="dropdown-menu">
    <li><a class="dropdown-item" href="#">Option 1</a></li>
    <li><a class="dropdown-item" href="#">Option 2</a></li>
  </ul>
</div>
```

⚠️ Dropdown needs Bootstrap JS:

```
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.
bundle.min.js"></script>
```

4.5 Bootstrap Forms

Definition:

Bootstrap provides classes to make forms clean and responsive.

Example:

```
<form>
  <div class="mb-3">
```

Bootstrap Framework

```
    <label class="form-label">Email</label>
    <input type="email" class="form-control">
  </div>

  <div class="mb-3">
    <label class="form-label">Password</label>
    <input type="password" class="form-control">
  </div>

  <button class="btn btn-primary">Submit</button>
</form>
```

Responsive Design in Bootstrap

Definition:

Responsive design means the webpage adjusts automatically for different screen sizes.

Bootstrap Breakpoints

Device	Class Prefix
Mobile	col-
Tablet	col-md-
Laptop	col-lg-
Large Screen	col-xl-

Example: Responsive Columns

```
<div class="row">
  <div class="col-sm-12 col-md-6 col-lg-4">Box 1</div>
  <div class="col-sm-12 col-md-6 col-lg-4">Box 2</div>
  <div class="col-sm-12 col-md-12 col-lg-4">Box 3</div>
</div>
```

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Building a Complete Bootstrap Page

Full Example (Mini Website)

```html
<!DOCTYPE html>
<html>
<head>
  <title>Bootstrap Page</title>
  <link

href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
    rel="stylesheet">
</head>
<body>

<!-- Navbar -->
<nav class="navbar navbar-dark bg-dark">
  <div class="container">
    <a class="navbar-brand">TechSite</a>
  </div>
</nav>

<!-- Main Content -->
<div class="container mt-4">
  <div class="row">
    <div class="col-md-8">
      <h2>Welcome</h2>
      <p>This is a Bootstrap page.</p>
      <button class="btn btn-primary">Learn More</button>
    </div>

    <div class="col-md-4">
      <h3>Login</h3>
      <form>
        <input class="form-control mb-2" placeholder="Username">
        <input class="form-control mb-2" type="password"
placeholder="Password">
        <button class="btn btn-success">Login</button>
      </form>
    </div>
```

```
    </div>
</div>

<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.
bundle.min.js"></script>
</body>
</html>
```