

Bootstrap Full Notes for Web Development

◆ 1. Introduction

- **What is Bootstrap?**
 - Bootstrap is a **front-end framework** for responsive web design.
 - It includes **HTML, CSS, and JavaScript** components.
 - Originally created by Twitter developers.
 - Uses a **Mobile-first approach** (responsive by default).
- **Setup Methods**
 - **Option 1: CDN (most common)**

HTML

```
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/css/bootstrap.min.css" rel="stylesheet">
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/bootstrap.bundle.min.js"></script>
```

- **Option 2: Download and include locally**
 - Download from <https://getbootstrap.com>.
 - Add CSS and JS files manually to your project.

◆ 2. Container

Used to center and pad your content.

Class	Description
.container	Fixed width , changes with screen size.
.container-fluid	100% width (full viewport width).
.container-{breakpoint}	Fixed width <i>from</i> that breakpoint (e.g., .container-sm).

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Example:

HTML

```
<div class="container">Fixed width</div>
<div class="container-fluid">Full width</div>
```

◆ 3. Grid System (The Core)

-  **12-column layout system:** You divide your row into 12 parts.

Example:

HTML

```
<div class="container">
  <div class="row">
    <div class="col-6">Column 1 (6/12)</div>
    <div class="col-6">Column 2 (6/12)</div>
  </div>
</div>
```

- **Responsive Column Sizes**

Class	Min Width (Screen Size)	Description
.col-	<576px (Extra small)	Always takes effect (Mobile)
.col-sm-	≥576px (Small)	Mobile
.col-md-	≥768px (Medium)	Tablet
.col-lg-	≥992px (Large)	Laptop
.col-xl-	≥1200px (Extra large)	Desktop
.col-xxl-	≥1400px (Extra extra large)	Large desktop

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◆ 4. Text Utilities

Class	Description
.text-start	Left align
.text-center	Center align
.text-end	Right align
.text-uppercase	Uppercase
.text-lowercase	Lowercase
.text-capitalize	Capitalize first letter of each word
.fw-bold	Bold text
.fst-italic	Italic text
.text-primary	Blue text (Theme color)
.text-danger	Red text (Theme color)

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◆ 5. Colors

Color	Text Class	Background Class
Blue	.text-primary	.bg-primary
Green	.text-success	.bg-success
Red	.text-danger	.bg-danger
Yellow	.text-warning	.bg-warning
Teal	.text-info	.bg-info
Black/Dark Gray	.text-dark	.bg-dark

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Example:

HTML

```
<p class="text-success">Success text</p>
<div class="bg-primary text-white p-3">Primary background</div>
```

◆ 6. Spacing Utilities

Used for **Margin (m)** and **Padding (p)**.

- **Syntax:** {property}{sides}-{breakpoint}-{size}

Property Description Side Code Sides Affected

m	Margin	t	Top
p	Padding	b	Bottom
		s	Start (Left)
		e	End (Right)
		x	Left and Right
		y	Top and Bottom
		(none)	All sides

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- **Size Values:** 0 (0), 1 (0.25rem), 2 (0.5rem), 3 (1rem), 4 (1.5rem), 5 (3rem), auto.

Examples:

- .mt-3: Margin top of 1rem.
- .p-5: Padding on all sides of 3rem.
- .mx-auto: Centers an element horizontally (sets left/right margin to auto).

◆ 7. Display & Flex Utilities

- **Display Classes**
 - .d-block, .d-inline, .d-inline-block
 - .d-none (hides element)
 - .d-flex (enables Flexbox)
 - *Responsive versions:* .d-md-none, .d-lg-block, etc.
 - **Flexbox Utilities (used on parent/container with .d-flex)**
 - .justify-content-center
 - .justify-content-between
 - .align-items-center
 - .flex-column
 - .flex-row
-

◆ 8. Buttons

Variant	Example Class
Primary	.btn-primary
Secondary	.btn-secondary
Success	.btn-success
Outline	.btn-outline-danger
Large Size	.btn-lg
Block/Full Width	.d-grid .gap-2 (wrap with these)
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Example:

HTML

```
<button class="btn btn-primary">Primary</button>
<button class="btn btn-outline-danger">Outline</button>
```

◆ 9. Forms

Forms require specific classes for proper styling and responsiveness.

Structure:

HTML

```
<form>
  <div class="mb-3">
    <label class="form-label">Email address</label>
    <input type="email" class="form-control" placeholder="Enter email">
  </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>
```

Other Form Elements:

- `.form-check` (for checkbox/radio)
 - `.form-select` (for dropdown `<select>`)
 - `.input-group` (for form add-ons like text or icons)
-

◆ **10. Navbar**

The Navbar is a powerful, responsive component for site navigation.

Key Classes:

- `.navbar`: Base class.
 - `.navbar-expand-lg`: Determines when to switch to the collapsible hamburger menu (here, it expands on large screens and up).
 - `.navbar-dark/.navbar-light`: Sets color scheme for text/icons.
 - `.bg-dark/.bg-light/.bg-primary`: Sets background color.
 - `.navbar-brand`: Logo/Site name.
 - `.navbar-toggler`: Hamburger button (needs `data-bs-toggle="collapse"`).
 - `.collapse .navbar-collapse`: The menu items container.
 - `.ms-auto`: Moves menu items to the right.
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◆ **11. Cards**

A flexible content container, great for showcasing information.

Example Structure:

HTML

```
<div class="card" style="width: 18rem;">
  
  <div class="card-body">
    <h5 class="card-title">Card title</h5>
    <p class="card-text">Some text inside card.</p>
    <a href="#" class="btn btn-primary">Go somewhere</a>
  </div>
</div>
```

◆ **12. Alerts**

Provide contextual feedback messages for user actions.

Classes:

- .alert (base class)
- .alert-success: Green
- .alert-danger: Red
- .alert-warning: Yellow

Example:

HTML

```
<div class="alert alert-success">Success message</div>
<div class="alert alert-warning">Warning!</div>
```

◆ 13. Modal

A pop-up dialog box that requires user interaction.

Activation Button:

HTML

```
<button class="btn btn-primary" data-bs-toggle="modal" data-bs-target="#myModal">Open</button>
```

Modal Structure:

- The main modal element needs: .modal .fade and a unique id (#myModal in this case).
 - The closing button needs data-bs-dismiss="modal".
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◆ 14. Tables

Class	Description
.table	Basic styling
.table-striped	Zebra-striping on rows
.table-bordered	Borders on all sides
.table-hover	Row hover state
.table-dark/.table-light	Dark or light theme for the table
.table-primary, etc.	Contextual color on a single row/cell

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Example:

HTML

```
<table class="table table-striped table-bordered table-hover">
  <thead class="table-dark">
    <tr><th>#</th><th>Name</th><th>Email</th></tr>
  </thead>
```

```
<tbody>
  <tr><td>1</td><td>Umakant</td><td>umakant@example.com</td></tr>
</tbody>
</table>
```

◆ 15. Images

Class	Description
.img-fluid	Responsive image (max-width: 100%; height: auto;)
.rounded	Rounded corners
.rounded-circle	Circular image
.img-thumbnail	Border + padding

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Example:

HTML

```

```

◆ 16. Responsive Utilities

Classes to easily show or hide elements based on screen size.

Class Combination	Description
.d-none .d-sm-block	Hide on extra small devices, show on small and up.
.d-md-none	Hide on medium devices and up.
.d-lg-block	Show only on large screens and up.

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◆ 17. Icons (Bootstrap Icons)

- **Setup:** Add the following line in your `<head>` tag:

HTML

```
<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.11.3/font/bootstrap-icons.css">
```

- **Use:**

HTML

```
<i class="bi bi-alarm"></i>
<i class="bi bi-facebook text-primary"></i>
```

◆ 18. Accordion

A collapsible element for showing and hiding content.

Key Components:

- The container needs `.accordion` and an `id`.
 - Each item is wrapped in an `.accordion-item`.
 - The **button** uses `data-bs-toggle="collapse"` and targets the `body`'s `id`.
 - The **body** uses `.accordion-collapse .collapse` and a matching `id`.
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◆ 19. Carousel (Slider)

A slideshow component for cycling through elements.

Key Components:

- Container needs `.carousel .slide` and an `id (#carouselExample)`.
 - Images/Slides are placed inside `.carousel-inner` and must have the class `.carousel-item`. The first slide needs `.active`.
 - The image element needs `d-block w-100`.
 - Navigation buttons use `data-bs-target` to point to the carousel's `id`.
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◆ 20. Common Breakpoints (Responsive)

Breakpoint	Class Prefix	Min Width
Extra Small (none)		<576px
Small	<code>.col-sm-</code>	≥576px
Medium	<code>.col-md-</code>	≥768px
Large	<code>.col-lg-</code>	≥992px
Extra Large	<code>.col-xl-</code>	≥1200px
XXL	<code>.col-xxl-</code>	≥1400px