

# Bootstrap Full Notes for Web Development

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## ◆ 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/boo
tstrap.min.css" rel="stylesheet">
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0/dist/js/boots
trap.bundle.min.js"></script>
```

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

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## ◆ 2. Container

Used to center and pad your content.

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

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**Example:**

HTML

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

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## ◆ 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 ( <b>Extra small</b> )	Always takes effect (Mobile)
.col-sm-	≥576px ( <b>Small</b> )	Mobile
.col-md-	≥768px ( <b>Medium</b> )	Tablet
.col-lg-	≥992px ( <b>Large</b> )	Laptop
.col-xl-	≥1200px ( <b>Extra large</b> )	Desktop
.col-xxl-	≥1400px ( <b>Extra extra large</b> )	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	<code>.text-primary</code>	<code>.bg-primary</code>
Green	<code>.text-success</code>	<code>.bg-success</code>
Red	<code>.text-danger</code>	<code>.bg-danger</code>
Yellow	<code>.text-warning</code>	<code>.bg-warning</code>
Teal	<code>.text-info</code>	<code>.bg-info</code>
Black/Dark Gray	<code>.text-dark</code>	<code>.bg-dark</code>

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### Example:

#### HTML

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

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## ◆ 6. Spacing Utilities

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

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

Property	Description	Side	Code	Sides Affected
m	<b>Margin</b>	t		Top
p	<b>Padding</b>	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`).

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## ◆ 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	<code>.btn-primary</code>
Secondary	<code>.btn-secondary</code>
Success	<code>.btn-success</code>
Outline	<code>.btn-outline-danger</code>
Large Size	<code>.btn-lg</code>
Block/Full Width	<code>.d-grid .gap-2</code> (wrap with these)
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### Example:

#### HTML

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

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## ◆ 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>
```

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## ◆ 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>
```

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## ◆ 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
<code>.table</code>	Basic styling
<code>.table-striped</code>	Zebra-stripping on rows
<code>.table-bordered</code>	Borders on all sides
<code>.table-hover</code>	Row hover state
<code>.table-dark/.table-light</code>	Dark or light theme for the table
<code>.table-primary, etc.</code>	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>
```

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## ◆ 15. Images

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

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### Example:

#### HTML

```

```

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## ◆ 16. Responsive Utilities

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

Class Combination	Description
<code>.d-none .d-sm-block</code>	Hide on extra small devices, show on small and up.
<code>.d-md-none</code>	Hide on medium devices and up.
<code>.d-lg-block</code>	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>
```

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## ◆ 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
<b>Extra Small</b>	(none)	<576px
<b>Small</b>	<code>.col-sm-</code>	≥576px
<b>Medium</b>	<code>.col-md-</code>	≥768px
<b>Large</b>	<code>.col-lg-</code>	≥992px
<b>Extra Large</b>	<code>.col-xl-</code>	≥1200px
<b>XXL</b>	<code>.col-xxl-</code>	≥1400px