



# CSS & BOOTSTRAP 5

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Study Guide

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## Introduction to CSS

CSS stands for Cascading Style Sheets. CSS is used to design and style HTML webpages.

HTML creates the webpage structure, while CSS controls colors, fonts, spacing, layout, and responsiveness.

CSS helps developers create modern, professional, and attractive user interfaces.

Without CSS, webpages would appear plain and difficult to use.

CSS is one of the core technologies used in frontend web development.

## Features of CSS

CSS provides several useful features for webpage design.

1. Controls webpage appearance and layout.
2. Supports responsive design for mobile devices.
3. Allows reusable styles across multiple pages.
4. Improves website maintainability.
5. Supports animations, transitions, and hover effects.
6. Works with all modern browsers.

## Types of CSS

CSS can be applied in three different ways.

Inline CSS is written directly inside HTML tags.

Internal CSS is written inside the style tag within the HTML page.

External CSS is stored in separate .css files and linked to webpages.

External CSS is the preferred method in professional applications.

```
<style>
h1{
    color:blue;
}
</style>
```

## CSS Selectors

Selectors are used to target HTML elements for styling.

Element selectors target tags like h1 or p.

Class selectors use a dot (.) symbol.

ID selectors use the hash (#) symbol.

Selectors help organize and reuse styles efficiently.

```
h1{
    color:red;
}

.title{
    font-size:30px;
}

#header{
    background-color:black;
}
```

## Colors, Fonts and Backgrounds

CSS allows customization of colors, fonts, and backgrounds.

The color property changes text color.

The background-color property changes background color.

Font properties control text appearance and readability.

```
body{
    background-color:#f5f5f5;
    font-family:Calibri;
}

h1{
    color:blue;
}
```

## Margins, Padding and Borders

Margins create space outside an element.

Padding creates space inside an element.

Borders create outlines around elements.

Proper spacing improves webpage readability and design.

```
div{  
  margin:20px;  
  padding:15px;  
  border:1px solid gray;  
}
```

## CSS Flexbox

Flexbox is a modern CSS layout system.

It helps align items horizontally and vertically.

Flexbox is commonly used for navigation bars, cards, and responsive layouts.

The display:flex property activates flexbox.

```
container{  
  display:flex;  
  gap:20px;  
}
```

## Responsive Design

Responsive design allows webpages to work properly on desktops, tablets, and mobile devices.

Media queries help apply styles based on screen size.

Responsive design is essential for modern websites.

```
@media (max-width:768px) {  
  
  h1{  
    font-size:20px;  
  }  
  
}
```

## Introduction to Bootstrap 5

Bootstrap 5 is a popular frontend CSS framework.

It provides ready-made components, layouts, and utility classes.

Bootstrap helps developers create responsive websites quickly.

Bootstrap 5 no longer depends on jQuery.

It is widely used in admin portals, dashboards, and business websites.

## Bootstrap Grid System

Bootstrap uses a 12-column grid system.

Rows and columns help create responsive layouts.

The container class centers webpage content.

Grid classes automatically adjust based on screen size.

```
<div class="container">
  <div class="row">

    <div class="col-md-6">
      Left Section
    </div>

    <div class="col-md-6">
      Right Section
    </div>

  </div>
</div>
```

## Bootstrap Components

Bootstrap provides many ready-to-use UI components.

Common components include cards, alerts, buttons, modals, tables, and navigation bars.

These components help developers reduce design time.

```
<button class="btn btn-primary">  
  Save  
</button>
```

## Bootstrap Utility Classes

Bootstrap utility classes provide quick styling options.

Spacing, text alignment, colors, shadows, and flex utilities are available.

Utility classes help developers write less custom CSS.

```
<div class="p-3 text-center bg-light shadow">  
  Welcome  
</div>
```

## Forms and Buttons

Bootstrap provides attractive form controls and buttons.

Input fields automatically become responsive.

Bootstrap form classes improve consistency across webpages.

```
<input type="text"  
  class="form-control"  
  placeholder="Enter Name">  
  
<button class="btn btn-success">  
  Submit  
</button>
```

## Cards and Navigation Bars

Cards are commonly used to display grouped content.

Navigation bars help users navigate websites.

Bootstrap provides responsive navbar components.

```
<div class="card p-3">  
  <h3>Student Portal</h3>  
</div>
```

## Bootstrap Responsive Layout

Bootstrap automatically adjusts layouts for different devices.

Responsive classes like col-sm, col-md, and col-lg are used.

This helps create mobile-friendly websites efficiently.

```
<div class="col-lg-4 col-md-6 col-sm-12">  
    Content  
</div>
```

## Example Responsive Page

The following example shows a simple Bootstrap responsive page.

```
<!DOCTYPE html>  
<html>  
<head>  
  
<link  
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.m  
in.css" rel="stylesheet">  
  
</head>  
  
<body>  
  
<div class="container mt-5">  
  
    <div class="card p-4 shadow">  
  
        <h1 class="text-primary">  
            TechRacine Academy  
        </h1>  
  
        <button class="btn btn-primary">  
            Login  
        </button>  
  
    </div>  
  
</div>
```

</body>

</html>

## Best Practices

Use external CSS files for better maintenance.

Avoid excessive inline CSS.

Use Bootstrap utility classes whenever possible.

Keep layouts responsive for all devices.

Write clean and properly indented code.

Optimize CSS for better performance.

## Summary

CSS and Bootstrap 5 are important technologies for frontend web development.

CSS provides complete control over webpage design and styling.

Bootstrap 5 helps developers create responsive and professional websites quickly.

Learning CSS and Bootstrap together provides a strong foundation for UI development.