

Bootstrap Training Module

A Comprehensive Guide for Beginners

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1 Introduction to Bootstrap

Bootstrap is an open-source front-end framework for building responsive, mobile-first websites. It provides pre-styled components and a grid system to streamline web development. This module introduces Bootstrap fundamentals with practical HTML examples.

1.1 Why Use Bootstrap?

- **Responsiveness:** Adapts layouts to different screen sizes.
- **Consistency:** Provides uniform styling across browsers.
- **Efficiency:** Speeds up development with reusable components.

1.2 Setting Up Bootstrap

Include Bootstrap via CDN or download it from <https://getbootstrap.com>. Use the following CDN links in your HTML:

```
1 <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/
  bootstrap.min.css" rel="stylesheet">
2 <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/
  bootstrap.bundle.min.js"></script>
```

2 Grid System

Bootstrap's grid system uses rows and columns for responsive layouts.

2.1 Basic Grid Example

Create a responsive layout with three columns.

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale
6     =1.0">
7   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/
8     css/bootstrap.min.css" rel="stylesheet">
9   <title>Grid Example</title>
10 </head>
11 <body>
12   <div class="container">
13     <div class="row">
14       <div class="col-md-4 bg-light p-3">Column 1</div>
15       <div class="col-md-4 bg-light p-3">Column 2</div>
16       <div class="col-md-4 bg-light p-3">Column 3</div>
```

```
15     </div>
16   </div>
17 </body>
18 </html>
```

Explanation:

- container: Centers and pads content.
- row: Defines a row in the grid.
- col-md-4: Columns that span 4 units on medium screens.

3 Typography and Utilities

Bootstrap provides classes for styling text and spacing.

3.1 Text Styling Example

Apply typography and utility classes.

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale
6     =1.0">
7   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/
8     css/bootstrap.min.css" rel="stylesheet">
9   <title>Typography Example</title>
10 </head>
11 <body>
12   <div class="container">
13     <h1 class="display-4">Welcome to Bootstrap</h1>
14     <p class="lead">This is a lead paragraph.</p>
15     <p class="text-muted">Muted text example.</p>
16     <div class="mt-4 p-3 bg-primary text-white">Primary
17       background</div>
18   </div>
19 </body>
20 </html>
```

4 Components: Buttons and Cards

Bootstrap offers pre-styled components like buttons and cards.

4.1 Button and Card Example

Create a card with buttons.

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale
6     =1.0">
7   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/
8     css/bootstrap.min.css" rel="stylesheet">
9   <title>Card Example</title>
10 </head>
11 <body>
12   <div class="container">
13     <div class="card" style="width: 18rem;">
14       <div class="card-body">
15         <h5 class="card-title">Sample Card</h5>
16         <p class="card-text">This is a Bootstrap card
17           component.</p>
18         <a href="#" class="btn btn-primary">Primary Button</
19           a>
20         <a href="#" class="btn btn-secondary">Secondary
21           Button</a>
22       </div>
23     </div>
24   </div>
25 </body>
26 </html>
```

5 Navigation Bars

Bootstrap's navbar component creates responsive menus.

5.1 Navbar Example

Build a responsive navigation bar.

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale
6     =1.0">
7   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/
8     css/bootstrap.min.css" rel="stylesheet">
9   <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/
10     js/bootstrap.bundle.min.js"></script>
11   <title>Navbar Example</title>
```

```
9 </head>
10 <body>
11   <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
12     <div class="container-fluid">
13       <a class="navbar-brand" href="#">MySite</a>
14       <button class="navbar-toggler" type="button" data-bs-
15         toggle="collapse" data-bs-target="#navbarNav">
16         <span class="navbar-toggler-icon"></span>
17       </button>
18       <div class="collapse navbar-collapse" id="navbarNav">
19         <ul class="navbar-nav">
20           <li class="nav-item">
21             <a class="nav-link" href="#">Home</a>
22           </li>
23           <li class="nav-item">
24             <a class="nav-link" href="#">About</a>
25           </li>
26         </ul>
27       </div>
28     </div>
29   </nav>
30 </body>
</html>
```

6 Forms

Bootstrap styles forms for consistency and responsiveness.

6.1 Form Example

Create a styled form.

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale
6     =1.0">
7   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/
8     css/bootstrap.min.css" rel="stylesheet">
9   <title>Form Example</title>
10 </head>
11 <body>
12   <div class="container">
13     <form>
14       <div class="mb-3">
15         <label for="name" class="form-label">Name</label>
16         <input type="text" class="form-control" id="name"
17           placeholder="Enter name">
18       </div>
```

```
16     <div class="mb-3">
17         <label for="email" class="form-label">Email</label>
18         <input type="email" class="form-control" id="email"
19             placeholder="Enter email">
20     </div>
21     <button type="submit" class="btn btn-primary">Submit</
22         button>
23 </form>
24 </div>
</body>
</html>
```

7 Modals

Modals create pop-up dialogs for user interaction.

7.1 Modal Example

Add a modal triggered by a button.

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4     <meta charset="UTF-8">
5     <meta name="viewport" content="width=device-width, initial-scale
6         =1.0">
7     <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/
8         css/bootstrap.min.css" rel="stylesheet">
9     <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/
10         js/bootstrap.bundle.min.js"></script>
11     <title>Modal Example</title>
12 </head>
13 <body>
14     <div class="container">
15         <button type="button" class="btn btn-primary" data-bs-toggle
16             ="modal" data-bs-target="#myModal">
17             Open Modal
18         </button>
19         <div class="modal fade" id="myModal">
20             <div class="modal-dialog">
21                 <div class="modal-content">
22                     <div class="modal-header">
23                         <h5 class="modal-title">Sample Modal</h5>
24                         <button type="button" class="btn-close" data
25                             -bs-dismiss="modal"></button>
26                     </div>
27                     <div class="modal-body">
28                         This is a Bootstrap modal.
29                     </div>
30                     <div class="modal-footer">
```

```
26         <button type="button" class="btn btn-  
           secondary" data-bs-dismiss="modal">Close<  
           /button>  
27     </div>  
28 </div>  
29 </div>  
30 </div>  
31 </div>  
32 </body>  
33 </html>
```

8 Customization

Customize Bootstrap with CSS or Sass.

8.1 Custom CSS Example

Override Bootstrap styles.

```
1 <!DOCTYPE html>  
2 <html lang="en">  
3 <head>  
4     <meta charset="UTF-8">  
5     <meta name="viewport" content="width=device-width, initial-scale  
6       =1.0">  
7     <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/  
8       css/bootstrap.min.css" rel="stylesheet">  
9     <style>  
10       .btn-primary {  
11         background-color: #28a745;  
12         border-color: #28a745;  
13       }  
14     </style>  
15     <title>Custom CSS Example</title>  
16 </head>  
17 <body>  
18     <div class="container">  
19       <button class="btn btn-primary">Custom Button</button>  
20     </div>  
21 </body>  
22 </html>
```

9 Conclusion

This module covers Bootstrap fundamentals—grid system, typography, components, navigation, forms, modals, and customization. Practice these examples and explore advanced features like Bootstrap’s JavaScript plugins and theming.

10 References

- Bootstrap Documentation: <https://getbootstrap.com/docs>
- W3Schools Bootstrap Tutorial: <https://www.w3schools.com/bootstrap>