



# **SNS COLLEGE OF ENGINEERING**

Kurumbapalayam (Po), Coimbatore – 641 107

**An Autonomous Institution**

Accredited by NBA – AICTE and Accredited by NAAC – UGC with ‘A’ Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

## **DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING-IOT Including CS&BCT**

**COURSE NAME : 19SB602 FULL STACK DEVELOPMENT FOR NEXT  
GENERATION IOT**

**III YEAR / VI SEMESTER**

**Unit II- FRONT-END MODULES**

**Topic : Bootstrap Framework, Responsive Web Design**



Bootstrap is a **free and open-source front-end** framework used for web development.

It was originally created by Twitter and is now maintained by the **open-source community**.

Bootstrap provides a **set of tools, styles, and components** that make it easier to **design and develop responsive, mobile-first web pages**



## Key features of Bootstrap:

1. Responsive Design
2. Grid System
3. CSS Components
4. JavaScript Plugins
5. Theming
6. Documentation



## 1. Responsive Design:

Bootstrap is built with a **mobile-first approach**, meaning that the design and layout of a **website start with mobile devices** and then scale up to larger screens.

## 2. Grid System:

Bootstrap includes a **flexible and responsive grid system** based on a **12-column layout**.

This grid system makes it easy to create **complex page layouts** by specifying how many columns a particular element should span.



### 3. CSS Components:

Bootstrap includes a variety of **pre-styled CSS components** such as **navigation bars, buttons, forms, typography, and more.**

These components can be **easily customized** and used to create a consistent and visually appealing design.

### 4. JavaScript Plugins:

Bootstrap comes with a **set of JavaScript plugins** that enhance the functionality of your website.

Examples include modal dialogs, carousels, tooltips, and more.



## 5. Theming:

Bootstrap allows **developers to customize the look** and feel of their websites by using themes.

Themes can be created by modifying the default styles or by using third-party themes available online.

## 6. Documentation:

Bootstrap has extensive documentation that provides **detailed information on its features, components, and how to use them.**



```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1, shrink-
to-fit=no">
  <link rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
  <script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>
  <script
src="https://cdn.jsdelivr.net/npm/@popperjs/core@2.9.2/dist/umd/popper.min.js"><
/script>
  <script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js"></scri
pt>
  <title>Bootstrap Example</title>
</head>
<body>
```



```
<nav class="navbar navbar-expand-lg navbar-dark bg-dark">
  <a class="navbar-brand" href="#">Bootstrap Example</a>
  <button class="navbar-toggler" type="button" data-toggle="collapse" data-
target="#navbarNav" aria-controls="navbarNav" aria-expanded="false" aria-label="Toggle
navigation">
  <span class="navbar-toggler-icon"></span>
</button>
<div class="collapse navbar-collapse" id="navbarNav">
  <ul class="navbar-nav">
    <li class="nav-item active">
      <a class="nav-link" href="#">Home <span class="sr-only">(current)</span></a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="#">About</a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="#">Contact</a>
    </li>
  </ul>
</div>
</nav>
```





```
<div class="container mt-4">
  <div class="row">
    <div class="col-md-6">
      <div class="card">
        <div class="card-body">
          <h5 class="card-title">Card 1</h5>
          <p class="card-text">This is a simple card.</p>
        </div>
      </div>
    </div>
    <div class="col-md-6">
      <div class="card">
        <div class="card-body">
          <h5 class="card-title">Card 2</h5>
          <p class="card-text">Another card with some content.</p>
        </div>
      </div>
    </div>
  </div>
</div>
</body>
</html>
```



Bootstrap Example [Home](#) [About](#) [Contact](#)

### Card 1

This is a simple card.

### Card 2

Another card with some content.



## Responsive Web Design

Responsive Web Design is about using **HTML and CSS** to **automatically resize, hide, shrink, or enlarge, a website**, to make it look good on all devices (desktops, tablets, and phones):



```
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<style>
* {
  box-sizing: border-box;
}
.menu {
  float: left;
  width: 20%;
}
.menuitem {
  padding: 8px;
  margin-top: 7px;
  border-bottom: 1px solid #f1f1f1;
}
```



```
.main {  
  float: left;  
  width: 60%;  
  padding: 0 20px;  
  overflow: hidden;  
}  
.right {  
  background-color: lightblue;  
  float: left;  
  width: 20%;  
  padding: 10px 15px;  
  margin-top: 7px;  
}
```



```
@media only screen and (max-width:800px) {  
  /* For tablets: */  
  .main {  
    width: 80%;  
    padding: 0;  
  }  
  .right {  
    width: 100%;  
  }  
}  
  
@media only screen and (max-width:500px) {  
  /* For mobile phones: */  
  .menu, .main, .right {  
    width: 100%;  
  }  
}  
</style>  
</head>
```



```
<body style="font-family:Verdana;">
```

```
<div style="background-color:#f1f1f1;padding:15px;">
```

```
<h1>Cinque Terre</h1>
```

```
<h3>Resize the browser window</h3>
```

```
</div>
```

```
<div style="overflow:auto">
```

```
<div class="menu">
```

```
<div class="menuitem">The Walk</div>
```

```
<div class="menuitem">Transport</div>
```

```
<div class="menuitem">History</div>
```

```
<div class="menuitem">Gallery</div>
```

```
</div>
```



```
<div class="main">
```

```
  <h2>The Walk</h2>
```

```
  <p>The walk from Monterosso to Riomaggiore will take you approximately two hours, give or take an hour depending on the weather conditions and your physical shape.</p>
```

```
  
```

```
</div>
```

```
<div class="right">
```

```
  <h2>What?</h2>
```

```
  <p>Cinque Terre comprises five villages: Monterosso, Vernazza, Corniglia, Manarola, and Riomaggiore.</p>
```





```
<h2>Where?</h2>
```

```
<p>On the northwest cost of the Italian Riviera, north of the city La Spezia.</p>
```

```
<h2>Price?</h2>
```

```
<p>The Walk is free!</p>
```

```
</div>
```

```
</div>
```

```
<div style="background-color:#f1f1f1;text-align:center;padding:10px;margin-top:7px;font-size:12px;"> This web page is a part of a demonstration of fluid web design made by w3schools.com. Resize the browser window to see the content respond to the resizing.</div>
```

```
</body>
```

```
</html>
```

# Cinque Terre

Resize the browser window

The Walk

Transport

History

Gallery

## The Walk

The walk from Monterosso to Riomaggiore will take you approximately two hours, give or take an hour depending on the weather conditions and your physical shape.



shutterstock.com · 2318928003

## What?

Cinque Terre comprises five villages: Monterosso, Vernazza, Corniglia, Manarola, and Riomaggiore.

## Where?

On the northwest coast of the Italian Riviera, north of the city La Spezia.

## Price?

The Walk is free!

This web page is a part of a demonstration of fluid web design made by w3schools.com. Resize the browser window to see the content respond to the resizing.



Any Query?????

Thank you.....