* **Advantages of Bootstrap:**

The Bootstrap is an open source Front-End framework, used for Web Application development, made up of HTML, CSS and Java script, which twitter has developed.

Advantages:

**Saves Time-** It increases the development speed and gets the work done in a very short time.

**Easy to Use-** If you have basic knowledge of HTML, CSS , then you can easily use Bootstrap.

**Responsive Design-** If your website is responsive then it adjusts itself according to the screen size in any platform or device like desktop, laptop, mobile etc.

**Cross Browser Compatible-** Bootstrap is designed in such a way that our web-page will look the same in almost all modern browsers like Firefox, Chrome, Internet Explorer, Opera etc.

**Open Source-** The best thing about it is that you can use it for free.

**Customization-** Bootstrap is easy to customize, customize means that if you do not want all the features of bootstrap, you can use a few features.

* **What is a Bootstrap Container, and how does it work?**

Containers are a fundamental block of Bootstrap that contain, pad and align your content within a given device or viewport.

Containers are the most basic layout element in Bootstrap and are required when using our default grid system.

There are two container classes available:

1. The .container class provides a responsive fixed width container (max. width 1140px).
2. The .container-fluid class provides a full width container, spanning the entire width of a viewport.

Ex.

<!DOCTYPE html>

<html lang="en">

<head>

<title>Bootstrap Example</title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="bootstrap@5.0.2-dist/css/bootstrap.css">

<link rel="stylesheet" href="bootstrap@5.0.2-dist/css/bootstrap.css">

</head>

<body>

<div class="container">

<h1>My First Bootstrap Page</h1>

<p>This part is inside a .container class.</p>

</div>

<div class="container-fluid">

<h1>My First Bootstrap Page</h1>

<p>This part is inside a .container class.</p>

</div>

</body>

</html>

* **Default Bootstrap text settings:**

Bootstrap uses a default font-size of 1rem(16px) and its line-height is 1.5.

The default font-family is “Helvetica Neue ”, Helvetica, Arial, Sans-serif.

All <p> elements have margin-top: o and margin-bottom: 1rem.

<h1> - <h6>: HTML headings with a bolder font-weight and an increased font-size.

.display-1 - .display-4: Display headings are used to stand out more than normal headings , larger font-size and lighter font-weight.

* **Bootstrap Grid System:**

Bootstrap’s Grid system allows up to 12 columns across the page. If we do not want to use all 12 columns individually, you can group the columns together to create wider columns.

Bootstrap grid system is responsive and the columns will re-arrange depending on the screen size.

The Bootstrap grid system has four classes:

1. Xs ( for phones)
2. Sm ( for tablets)
3. Md ( for small laptops)
4. Lg ( for laptops and desktops)

Ex.

<!DOCTYPE html>

<html lang="en">

<head>

<title>Bootstrap Example</title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="bootstrap@5.0.2-dist/css/bootstrap.css">

<link rel="stylesheet" href="bootstrap@5.0.2-dist/css/bootstrap.css">

</head>

<body>

<div class="container-fluid">

<h1>Hello World!</h1>

<p>Resize the browser window to see the effect.</p>

<p>The columns will automatically stack on top of each other when the screen is less than 768px wide.</p>

<div class="row">

<div class="col-sm-4" style="background-color:lavender;">.col-sm-4</div>

<div class="col-sm-4" style="background-color:lavenderblush;"> . col-sm- 4</div>

<div class="col-sm-4" style="background-color:lavender;">.col-sm-4</div>

</div>

</div>

</body>

</html>

* Difference

|  |  |  |
| --- | --- | --- |
| No. | Bootstrap 4 | Bootstrap 5 |
| 1 | It has 5 tier ( xs, sm, md, lg, xl). | It has 6 tier ( xs, sm, md, lg, xl, xxl). |
| 2 | It has limited colors. | Extra colors added with the looks, A card improved color palette. |
| 3 | It has jquery and all related plugins. | Jquery is removed and switched to vanilla JS with some working plugins. |
| 4 | Columns can be positioned relative. | Columns cannot be positioned relative. |
| 5 | Bootstrap doesn’t have its own SVG icons, we have to use fontawesome for icons. | It has its own SVG icons. |
| 6 | It does not support offcanvas component | It supports offcanvas component. |
| 7 | It supports both Internet Explorer 10 and 11. | It does not support both Internet Explorer 10 and 11. |

* **Button Group:**

Button Group is a series of buttons together on a single line or a stack them in a vertical column.

Button Group class:

Use a <div> element with class .btn-group to create a button group

Ex.

<!DOCTYPE html>

<html lang="en">

<head>

<title>Bootstrap Example</title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.1/dist/css/bootstrap.min.css" rel="stylesheet">

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.1/dist/js/bootstrap.bundle.min.js"></script>

</head>

<body>

<div class="container mt-3">

<h2>Button Group</h2>

<p>The .btn-group class creates a button group:</p>

<div class="btn-group">

<button type="button" class="btn btn-primary">Apple</button>

<button type="button" class="btn btn-primary">Samsung</button>

<button type="button" class="btn btn-primary">Sony</button>

</div>

</div>

</body>

</html>

* **How can you use Bootstrap to make thumbnails?**

Bootstrap helps web developers to create thumbnails that are used to show linked images in grids with the pre-defined classes which help to reduce codes length.

Thumbnails are created to provide a quick preview of images with small images.

Ex.

<!DOCTYPE html>

<html lang="en">

   <head>

     <title>Thumbnail images</title>

     <link rel="stylesheet" href=

"<http://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/css/bootstrap.min.css>"/>

     <script src=

"<https://ajax.googleapis.com/ajax/libs/jquery/1.12.0/jquery.min.js>">

     </script>

     <script src=

"<http://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/js/bootstrap.min.js>">

     </script>

   </head>

   <body>

     <h3 style="color: green">Bootstrap thumbnails</h3>

   <div class="row">

       <div class="col-sm-6 col-md-3">

         <a href="#" class="thumbnail">

<img src=https://media.geeksforgeeks.org/wp-content/cdn-uploads/20210310114057/web-development-image.png style="height: 100px; width: 100px"> </a>

</div>

       </div>

</body>

</html>

* **In Bootstrap 4, what is flexbox?**

The biggest difference between Bootstrap 3 and Bootstrap 4 is that Bootstrap 4 now uses flexbox, instead of floats, to handle the layout.

Ex.

<!DOCTYPE html>

<html lang="en">

<head>

<title>Bootstrap Example</title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css">

<script src="https://cdn.jsdelivr.net/npm/jquery@3.6.0/dist/jquery.slim.min.js">

</script>

<script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.1/dist/umd/popper.min.js"></script>

<scrip t src="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/js/bootstrap.bundle.min.js"></script>

</head>

<body>

<div class="container mt-3">

<h2>Flex</h2>

<p>To create a flexbox container and transform direct children into flex items, use the d-flex class:</p>

<div class="d-flex p-3 bg-secondary text-white">

<div class="p-2 bg-info">Flex item 1</div>

<div class="p-2 bg-warning">Flex item 2</div>

<div class="p-2 bg-primary">Flex item 3</div>

</div>

</div>

</body>

</html>

* **How can one create an alert in Bootstrap?**

Bootstrap provides an easy way to create predefined alert messages.

Alerts are created with the .alert class, followed by one of the four contextual classes .alert-success, .alert-info, .alert-warning or .alert-danger.

Ex.

<!DOCTYPE html>

<html lang="en">

<head>

<title>Bootstrap Example</title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/css/bootstrap.min.css">

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.0/jquery.min.js">

</script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.js"></script>

</head>

<body>

<div class="container">

<h2>Alerts</h2>

<div class="alert alert-success">

<strong>Success!</strong>

This alert box could indicate a successful or positive action.

</div>

<div class="alert alert-info">

<strong>Info!</strong>

This alert box could indicate a neutral informative change or action.

</div>

<div class="alert alert-warning">

<strong>Warning!</strong>

This alert box could indicate a warning that might need attention.

</div>

<div class="alert alert-danger">

<strong>Danger!</strong>

This alert box could indicate a dangerous or potentially negative action.

</div>

</div>

</body>

</html>

* **What is a Bootstrap card and how would you create one?**

A card in Bootstrap 4 is a bordered box with some padding around its content. It includes options for headers, footers, content, colors, etc.

Ex.

<!DOCTYPE html>

<html lang="en">

<head>

<title>Bootstrap Example</title>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css">

<script src="https://cdn.jsdelivr.net/npm/jquery@3.6.0/dist/jquery.slim.min.js">

</script>

<script src="https://cdn.jsdelivr.net/npm/popper.js@1.16.1/dist/umd/popper.min.js">

</script>

<script src="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/js/bootstrap.bundle.min.js"></script>

</head>

<body>

<div class="container">

<h2>Card Image</h2>

<p>Image at the top (card-img-top):</p>

<div class="card" style="width:400px">

<img class="card-img-top" src="img\_avatar1.png" alt="Card image" style="width:100%">

<div class="card-body">

<h4 class="card-title">John Doe</h4>

<p class="card-text">

Some example text some example text. John Doe is an architect and engineer</p>

<a href="#" class="btn btn-primary">See Profile</a>

</div>

</div>

</div>

</body>

</html>