**(Q.1) What are the advantages of Bootstrap?**

* Easy initiation
* Responsiveness
* Highly customizable
* Extremely user-centric
* Top-notch support
* Cross-browser compatibility
* JavaScript plugins to your rescue
* Far-reaching popularity
* Ample documentation
* Updates at the doorstep

**(Q.2) What is a Bootstrap Container, and how does it work?**

* Containers are used to pad the content inside of them, and there are two container classes available:

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

Ex.

<div class="container">  
  <h1>My First Bootstrap Page</h1>  
  <p>This is some text.</p>  
</div>

* Fluid Container
* Use the .container-fluid class to create a full width container, that will always span the entire width of the screen (width is always 100%)

Ex.

<div class="container-fluid">  
  <h1>My First Bootstrap Page</h1>  
  <p>This is some text.</p>  
</div>

**(Q.3) What are the default Bootstrap text settings?**

* Bootstrap 4 uses a default font-size of 16px, and its line-height is 1.5.
* The default font-family is "Helvetica Neue", Helvetica, Arial, sans-serif.
* In addition, all <p> elements have margin-top: 0 and margin-bottom: 1rem (16px by default)
* <h1>-<h6>
* Bootstrap 4 styles HTML headings (<h1> to <h6>)  with a bolder font-weight and an increased font-size
* Display Headings
* Display headings are used to stand out more than normal headings (larger font-size and lighter font-weight), and there are four classes to choose from: .display-1, .display-2, .display-3, .display-4

Ex.

<div class="container">

<h1 class="display-1">Display 1</h1>

<h1 class="display-2">Display 2</h1>

<h1 class="display-3">Display 3</h1>

<h1 class="display-4">Display 4</h1>

</div>

**(Q.4) What do you know about the Bootstrap Grid System?**

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

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| S-1 | S-1 | S-1 | S-1 | S-1 | S-1 | S-1 | S-1 | S-1 | S-1 | S-1 | S-1 |
| S-4 | | | | S-4 | | | | S-4 | | | |
| S-4 | | | | S-8 | | | | | | | |
| S-6 | | | | | | S-6 | | | | | |
| S-12 | | | | | | | | | | | |

* Bootstrap's grid system is responsive, and the columns will re-arrange depending on the screen size: On a big screen it might look better with the content organized in three columns, but on a small screen it would be better if the content items were stacked on top of each other.
* Grid Classes
* The Bootstrap grid system has four classes:
* xs (for phones - screens less than 768px wide)
* sm (for tablets - screens equal to or greater than 768px wide)
* md (for small laptops - screens equal to or greater than 992px wide)
* lg (for laptops and desktops - screens equal to or greater than 1200px wide)
* Grid System Rules
* Some Bootstrap grid system rules:
* Rows must be placed within a .container (fixed-width) or .container-fluid (full-width) for proper alignment and padding
* Use rows to create horizontal groups of columns
* Content should be placed within columns, and only columns may be immediate children of rows
* Predefined classes like .row and .col-sm-4 are available for quickly making grid layouts
* Columns create gutters (gaps between column content) via padding. That padding is offset in rows for the first and last column via negative margin on .rows
* Grid columns are created by specifying the number of 12 available columns you wish to span. For example, three equal columns would use three .col-sm-4
* Column widths are in percentage, so they are always fluid and sized relative to their parent element
* Basic Structure of a Bootstrap Grid:

<div class="container">  
  <div class="row">  
    <div class="col-\*-\*"></div>  
    <div class="col-\*-\*"></div>  
  </div>  
  <div class="row">  
    <div class="col-\*-\*"></div>  
    <div class="col-\*-\*"></div>  
    <div class="col-\*-\*"></div>  
  </div>  
  <div class="row">  
    ...  
  </div>  
</div>

* So, to create the layout you want, create a container (<div class="container">). Next, create a row (<div class="row">). Then, add the desired number of columns (tags with appropriate .col-\*-\* classes). Note that numbers in .col-\*-\* should always add up to 12 for each row.
* Example of Bootstrap Grid

<!DOCTYPE html>

<html>

<head>

    <meta charset="utf-8">

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

    <title></title>

      <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/css/bootstrap.min.css" rel="stylesheet">

  <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/js/bootstrap.bundle.min.js"></script>

  <style type="text/css">

    body

    {

        height: 100vh;

        background: url(https://cdn.pixabay.com/photo/2014/02/27/16/10/flowers-276014\_\_340.jpg);

        background-size: 100% 100%;

    }

  </style>

</head>

<body>

    <div class="bg-info container">

        <div class="row">

            <div class="bg-success col-xl-9 col-lg-3 col-md-6 col-sm-1">logo</div>

            <div class="bg-danger col-xl-3 col-lg-9 col-md-6 col-sm-11">cname</div>

        </div>

    </div>

    <div class="bg-info container-fluid">

        <div class="row">

            <div class="bg-warning col-xl-9 col-lg-3 col-md-6 col-sm-1">logo</div>

            <div class="bg-secondary col-xl-3 col-lg-9 col-md-6 col-sm-11">cname</div>

        </div>

    </div>

</body>

</html>

**(Q.5) What is the difference between Bootstrap 4 and Bootstrap 5?**

|  |  |  |
| --- | --- | --- |
| **BASIS OF** | BOOTSTRAP 4 | BOOTSTRAP 5 |
| Grid System | It has 5 tier (xs, sm, md, lg, xl). | It has 6 tier (xs, sm, md, lg, xl, xxl). |
| Color | It has limited colors. | Extra colors added with the looks, A card improved color palette. there are various shades available to choose. |
| Jquery | It has jquery and all related plugins. | Jquery is removed and switched to vanilla JS with some working plugins |
| Internet Explorer | Bootstrap 4 supports both IE 10 and 11. | Bootstrap 5 does not support IE 10 and 11. |
| Form elements | Radio buttons, checkboxes have different look in different OS and browsers. The form uses whatever default browsers provide. | The look of form elements will not change, on different OS or browser. The forms can be customized and form controls can be added, they would not depend on browser. |
| Utilities API | We cannot modify utilities in bootstrap 4 | Bootstrap 5 gave freedom to modify and create our own utility |
| Gutter | We use .glutter with fontsize in px | We use .g\* with fontsize in rem |
| Vertical Classes | Columns can be positioned relative | Columns cannot be positioned relative |
| Bootstrap Icons | Bootstrap 4 does not have its own SVG icons, we have to use font-awesome for icons. | Bootstrap 5 have its own SVG icons |
| Jumbotron | It supports. | It does not support jumbotron. |
| Card deck | The card deck is used to create a set of cards with equal width and height. | Card deck class in removed in bootstrap |
| Navbar | We have inline-block property and we will get white dropdown as default for dropdown-menu-dark class. | Inline-block property is removed and we will get black dropdown as default for dropdown-menu-dark class. |
| Static Site Generator | Bootstrap 4 uses Jekyll software. | Bootstrap 5 uses Hugo software as it is fast static site generator. |
| flexbox grid | this makes easier to implement vertical designs, and the columns and rows can easily be implemented. the classes justify-center-content can directly be used to align according to the requirement. | advanced grid system is made available , also columns do not have relative positions. |
| RTL Support | It does not enable RTL(Right to Left) switching. | It enables RTL(Right to Left) switching. |
| Offcanvas Component | It does not support Offcanvas Component. | It supports Offcanvas Component(that is it is available now). |

**(Q.6) What is a Button Group, and what is the class for a basic Button Group?**

* Bootstrap allows you to group a series of buttons together (on a single line) in a button group
* Use a <div> element with class .btn-group to create a button group:

Ex.

<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>

* Vertical Button Groups
* Use the class .btn-group-vertical to create a vertical button group

Ex.

<div class="btn-group-vertical">  
  <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>

* Justified Button Groups
* To span the entire width of the screen, use the .btn-group-justified class

Ex.

<div class="btn-group btn-group-justified">  
  <a href="#" class="btn btn-primary">Apple</a>  
  <a href="#" class="btn btn-primary">Samsung</a>  
  <a href="#" class="btn btn-primary">Sony</a>  
</div>

**(Q.7) How can you use Bootstrap to make thumbnails?**

* The .img-thumbnail class shapes the image to a thumbnail

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/3.6.3/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>Thumbnail</h2>

<p>The .img-thumbnail class creates a thumbnail of the image:</p>

<img src="cinqueterre.jpg" class="img-thumbnail" alt="Cinque Terre" width="304" height="236">

</div>

</body>

</html>

**(Q.8) 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.
* The Flexible Box Layout Module, makes it easier to design flexible responsive layout structure without using float or positioning. If you are new to flex.
* To create a flexbox container and to transform direct children into flex items, use the d-flex class.

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@4.6.2/dist/css/bootstrap.min.css">

<script src="https://cdn.jsdelivr.net/npm/jquery@3.6.3/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@4.6.2/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>

**(Q.9) 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/3.6.3/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>

**(Q.10) 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.
* Basic Card
* A basic card is created with the .card class, and content inside the card has a .card-body class

Ex.

<div class="card">  
  <div class="card-body">Basic card</div>  
</div>

* One Card Example

<!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@4.6.2/dist/css/bootstrap.min.css">

<script src="https://cdn.jsdelivr.net/npm/jquery@3.6.3/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@4.6.2/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>

<br>

</div>

</body>

</html>