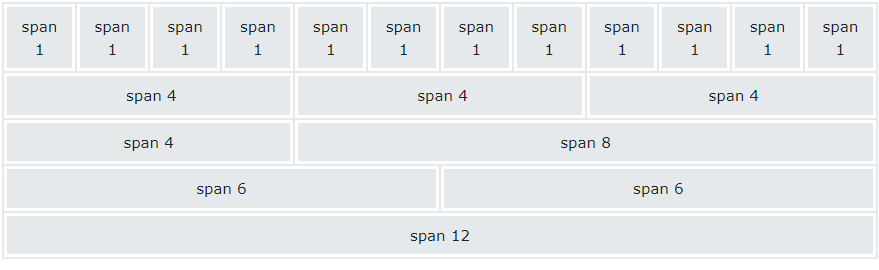
**Bootstrap GRID System:**

* It is used for creating the web page layouts through a series of rows and and columns.
* It consists of maximum 12 columns in a single row.
* If you do not want to use all 12 columns individually, you can group the columns together to create wider columns.

**For example:**



* The grid system is responsive, and the columns will re-arrange automatically depending on the screen size.
* Make sure that the sum adds up to 12 or fewer (it is not required that you use all 12 available columns).

**Grid System Rules:**

* Use 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.

**Grid Classes:**

**The Bootstrap grid system has five classes.**

* .col (extra small devices - screen width less than 576px)
* .col-sm (small devices - screen width equal to or greater than 576px)
* .col-md (medium devices - screen width equal to or greater than 768px)
* .col-lg (large devices - screen width equal to or greater than 992px)
* .col-xl (extra large devices - screen width equal to or greater than 1200px)
* .col-xxl (xxlarge devices - screen width equal to or greater than 1400px)

**Note :** The classes above can be combined to create more dynamic and flexible layouts.

**Basic Structure of a Bootstrap Grid :**

<!-- Control the column width, and how they should appear on different devices -->

**<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>**

**<!-- Bootstrap automatically handle the layout -->**

<div class="row">

<div class="col"> column-1 </div>

<div class="col"> column-2 </div>

</div>

**In First example:** create a row (<div class="row">). Then, add the desired number of columns (tags with appropriate .col-\*-\* classes).

The first star (\*) represents the responsiveness by using grid classes : sm, md, lg or xl and xxl. while the second star represents a number, which should add up to 12 for each row.

**In Second example:** instead of adding a number to each col, let bootstrap handle the layout, to create equal width columns like,

If two "col" elements then 50% width to each col.

If three cols elements 33.33% width to each col.

If four cols elements then 25% width to each col ....etc.

**Note :** You can also use .col-sm|md|lg|xl|xxl to make the columns responsive.

**Example :** **Three equal width columns:**

<div class="container-fluid">

<h1>Three equal width columns</h1>

<div class="row">

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

<div class="col" style="background-color:orange;">.col</div>

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

</div>

</div>

**Example :** **Responsive Columns ( < 768px)**

============

<div class="container-fluid">

<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-3" style="background-color:red;">.col-sm-3</div>

<div class="col-sm-3" style="background-color:lavenderblush;">.col-sm-3</div>

<div class="col-sm-3" style="background-color:lavender;">.col-sm-3</div>

<div class="col-sm-3" style="background-color:lavenderblush;">.col-sm-3</div>

</div>

</div>

**Two Unequal Responsive Columns:**

<div class="row">

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

<div class="col-8" style="background-color:green;">.col-sm-8</div>

</div>

**Responsive design**

<div class="row">

<div class="col-lg-2 col-md-8 col-sm-12 col-xs-5" style="background-color:red;">.col-sm-4</div>

<div class="col-lg-8 col-md-4 col-sm-10 col-xs-2" style="background-color:green;">.col-sm-8</div>

</div>

**Q. Write a program to explain Grid Architecture ?**

**Code:**

<!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/4.5.2/css/bootstrap.min.css">

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>

<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.16.0/umd/popper.min.js"></script>

<script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/js/bootstrap.min.js"></script>

</head>

<body>

<div class="container">

<h1 class="text-primary bg-danger">Welcome to Bootstrap.</h1>

<h1 class="text-danger bg-warning">Welcome to Bootstrap.</h1>

<h1 class="text-success bg-primary">Welcome to Bootstrap.</h1>

<h1 class="text-info">Welcome to Bootstrap.</h1>

<h1 class="text-muted">Welcome to Bootstrap.</h1>

<button type="button" class="btn btn-success">Login</button>

<button type="button" class="btn btn-danger">Login</button>

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

</div>

<hr style="background-color: red;padding: 5px">

<div class="container">

<div class="row">

<div class="col" style="background-color: red;"> Column-1</div>

<div class="col" style="background-color: yellow;">Column-2</div>

</div> <!-- row-1 -->

<div class="row">

<div class="col" style="background-color: blue;"> Column-1</div>

<div class="col" style="background-color: deeppink;">Column-2</div>

<div class="col" style="background-color: red;">Column-2</div>

</div> <!-- row-2 -->

<br>

<div class="row">

<div class="col-sm-4" style="background-color: blue;"> Column-1</div>

<div class="col-sm-6" style="background-color: deeppink;">Column-2</div>

<div class="col-sm-2" style="background-color: red;">Column-2</div>

</div> <!-- row-3 -->

<br>

<div class="row">

<div class="col-lg-4 col-md-2 col-sm-4" style="background-color: blue;">

<h1>Hello</h1>

<p>Welcome to Para</p>

</div>

<div class="col-lg-4 col-md-4 col-sm-6" style="background-color: deeppink;">Column-2</div>

<div class="col-lg-4 col-md-6 col-sm-2" style="background-color: red;">

<h1><a href="#">Facebook</a> </h1>

</div>

</div> <!-- row-4 -->

</div>

</body>

</html>