Bootstrap 5 Grid

The Bootstrap 5 grid system is designed with flexbox and supports up to 12 columns across the page. If we don't want to use all 12 columns separately, you can combine them to make wider columns.

The grid system is responsive, and the columns will re-arrange themselves automatically based on screen size. It is not necessary to use all 12 available columns. Make sure the total is less than or equal to 12.

We can utilize Bootstrap's default grid classes to easily create layouts for various devices like mobile phones, tablets, laptops, and desktops.

For example, the .col-* classes can construct grid columns for especially small devices such as mobile phones in portrait mode, and the .col-sm-* classes for mobile phones in landscape mode.

The following table shows the format of the bootstrap 5 grid systems.

Col1	Col1	Col1	Col1	Col1	Col1	Col1	Col1	Col1	Col1	Col1	Col1
Col6						Col6					
Col3			Col3			Col3			Col3		
Col4				Col4				Col4			
Col4				Col8							

Default Grid System

The default grid system helps create columns using the "col" class for a single column in a row. We can use the "col" class twelve times to create twelve columns in one row.

Syntax of the Grid System

The default grid system in bootstrap 5 syntax shows below

1. **<div** class = "row">
2.   **<div** class = "col">
3.   **</div>**
4.   **<div** class = "col">
5.   **</div>**
6.   **<div** class = "col">
7.   **</div>**
8.   **<div** class = "col">
9.   **</div>**
10. **</div>**

Examples

The given example shows default grid system in bootstrap 5 with classes and function. The default grid system uses "row" and "col" class as per requirement. Here, we uses three "col" classes for three column in one row.

1. `<!DOCTYPE html>`
2. `<html lang = "en">`
3. `<head>`
4. `<title> Bootstrap 5 Example </title>`
5. `<meta charset = "utf-8">`
6. `<meta name = "viewport" content = "width=device-width, initial-scale = 1">`
7. `<link href = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel="stylesheet">`
8. `<script src = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js">`
9. `</script>`
10. `</head>`
11. `<body>`
12. `<div class="container bg-light">`
13. `<h1> Bootstrap 5 Grid System example </h1>`
14. `</div>`
15. `<div class="container bg-primary">`
16. `<div class = "row" style="border : 1px solid black;">`
17. `<div class = "col" style="border : 2px solid black;"> Bootstrap </div>`
18. `<div class = "col" style="border : 2px solid black;"> Bootstrap 4 </div>`
19. `<div class = "col" style="border : 2px solid black;"> Bootstrap 5 </div>`
20. `</div>`
21. `</div>`
22. `</body>`
23. `</html>`

Output:

Bootstrap 5 Grid System example

Bootstrap	Bootstrap 4	Bootstrap 5

Grid System with Size

We can apply the size of the column to create the customized column. The grid system helps create columns with the required size using the "col-size" class for a single column in a row. For example, the "col-3" uses to create three column sizes in one column.

Syntax of the Grid System

The bootstrap 5 grid system with size syntax shows below.

```
1.  <div class = "row">
2.   <div class = "col-size">
3.   </div>
4.   <div class = "col-size">
5.   </div>
6.   <div class = "col-size">
7.   </div>
8.   <div class = "col-size">
9.   </div>
10. </div>
```

Examples

The given example shows default grid system in bootstrap 5 with classes and function. In this example, we can use column with sizes. First row uses uneven size of the column which total 12 column. Second row uses even size of the column which is 4 columns. We can use multiple column with equal to less than twelve column size.

```
1.  <!DOCTYPE html>
2.  <html lang = "en">
3.  <head>
4.  <title> Bootstrap 5 Example </title>
5.  <meta charset = "utf-8">
6.  <meta name = "viewport" content = "width=device-width, initial-scale = 1">
7.  <link href = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel=
    "stylesheet">
8.  <script src = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js"
    >
9.  </script>
10. </head>
11. <body>
12. <div class="container bg-light">
13.  <h1> Bootstrap 5 Grid System example </h1>
14. </div>
15. <div class="container bg-primary text-white">
16. <div class = "row" style="border : 1px solid black;">
17. <div class = "col-2" style="border : 2px solid black;"> Col1 </div>
18. <div class = "col-4" style="border : 2px solid black;"> Col2 </div>
19. <div class = "col-6" style="border : 2px solid black;"> Col3 </div>
20. </div>
```

```
21. <div class = "row" style="border : 1px solid black;">
22. <div class = "col-4" style="border : 2px solid black;"> Col1 </div>
23. <div class = "col-4" style="border : 2px solid black;"> Col2 </div>
24. <div class = "col-4" style="border : 2px solid black;"> Col3 </div>
25. </div>
26. </div>
27. </body>
28. </html>
```

Output:

Bootstrap 5 Grid System example

Responsive Grid Classes

The Bootstrap 5 classes use for a responsive grid system. The classes combine to create more dynamic and flexible layouts. The Bootstrap 5 adds an "xxl" breakpoint for a double extra-large device.

The Bootstrap 5 grid system has six classes:

Grid Class	Device	Device size
.col	Extra small devices	Screen width must be less than 576px
.col-sm	Small devices	Screen width must be equal to or greater than 576px
.col-md	Medium devices	Screen width must be equal to or greater than 768px
.col-lg	Large devices	Screen width must be equal to or greater than 992px
.col-xl	Extra-large devices	Screen width must be equal to or greater than 1200px
.col-xxl	Double extra (xxlarge) devices	Screen width must be equal to or greater than 1400px

Syntax of the Grid System

The bootstrap 5 grid system with size syntax shows below. We can use single or multiple grid class in one element.

```
1. <div class = "row">
2.   <div class = "col-sm|md|lg|xl|xxl-size">
```

3.   **</div>**
4.   **<div** class = "col-sm|md|lg|xl|xxl-size"**>**
5.   **</div>**
6.   **<div** class = "col-sm|md|lg|xl|xxl-size"**>**
7.   **</div>**
8.   **</div>**

Example

The given example shows default grid system in bootstrap 5 with classes and function. In this example, we use the "col-xxl" and "col-sm" classes in the container and container fluid element.

1.   <!DOCTYPE html**>**
2.   **<html** lang = "en"**>**
3.   **<head>**
4.   **<title>** Bootstrap 5 Example **</title>**
5.   **<meta** charset = "utf-8"**>**
6.   **<meta** name = "viewport" content = "width=device-width, initial-scale = 1"**>**
7.   **<link** href = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel= "stylesheet"**>**
8.   **<script** src = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js" **>**
9.   **</script>**
10. **</head>**
11. **<body>**
12. **<div** class="container bg-light"**>**
13.   **<h1>** Bootstrap 5 Grid System example **</h1>**
14. **</div>**
15. **<div** class="container bg-primary text-white"**>**
16. **<div** class = "row" style="border : 1px solid black;"**>**
17. **<div** class = "col-xxl-2" style="border : 2px solid black;"**>** Col1 **</div>**
18. **<div** class = "col-xxl-4" style="border : 2px solid black;"**>** Col2 **</div>**
19. **<div** class = "col-xxl-6" style="border : 2px solid black;"**>** Col3 **</div>**
20. **</div>**
21. **<div** class = "row" style="border : 1px solid black;"**>**
22. **<div** class = "col-sm-4" style="border : 2px solid black;"**>** Col1 **</div>**
23. **<div** class = "col-sm-4" style="border : 2px solid black;"**>** Col2 **</div>**
24. **<div** class = "col-sm-4" style="border : 2px solid black;"**>** Col3 **</div>**
25. **</div>**
26. **</div>**
27. **<div** class="container-fluid bg-secondary text-white"**>**
28. **<div** class = "row" style="border : 1px solid black;"**>**

29. **<div** class = "col-sm-3" style="border : 2px solid black;"**>** Col1 **</div>**

30. **<div** class = "col-sm-6" style="border : 2px solid black;"**>** Col2 **</div>**

31. **<div** class = "col-sm-3" style="border : 2px solid black;"**>** Col3 **</div>**

32. **</div>**

33. **</div>**

34. **</body>**

35. **</html>**

Output:

The following output shows the grid system for small and large screen width devices. This grid class uses container and container fluid.
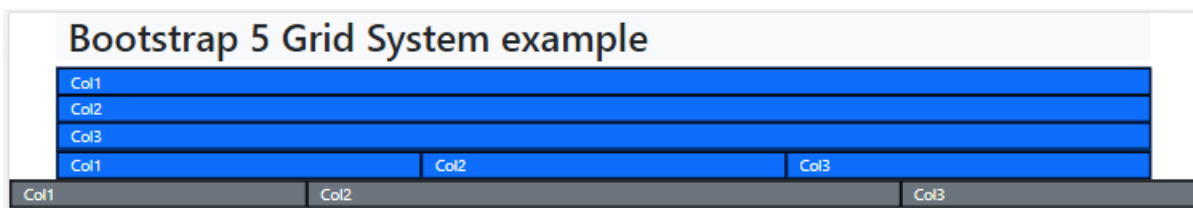
Example with grid class

The given example shows default grid system in bootstrap 5 with classes and function. If we need to use for small, medium, large, extra large and double extra large screen width then use "col-sm", "col-md", "col-lg", "col-xl" and "col-xxl" class respectively.

1. <!DOCTYPE html**>**

2. **<html** lang = "en"**>**

3. **<head>**

4. **<title>** Bootstrap 5 Example **</title>**

5. **<meta** charset = "utf-8"**>**

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

7. **<link** href = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel= "stylesheet"**>**

8. **<script** src = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js" **>**

9. **</script>**

10. **</head>**

11. **<body>**

12. **<div** class="container bg-light"**>**

13. **<h1>** Bootstrap 5 Responsive Grid System example **</h1>**

14. **</div>**

15. **<div** class="container text-white border"**>**

16. **<div** class = "row bg-info" style="border : 1px solid black;"**>**

17. **<div** class = "col-xxl-4" style="border : 2px solid black;"**>** Col-xxl-1 **</div>**

```html
18. <div class = "col-xxl-4" style="border : 2px solid black;"> Col-xxl-2 </div>
19. <div class = "col-xxl-4" style="border : 2px solid black;"> Col-xxl-3 </div>
20. </div>
21. <div class = "row bg-secondary" style="border : 1px solid black;">
22. <div class = "col-xl-4" style="border : 2px solid black;"> Col-xl-1 </div>
23. <div class = "col-xl-4" style="border : 2px solid black;"> Col-xl-2 </div>
24. <div class = "col-xl-4" style="border : 2px solid black;"> Col-xl-3 </div>
25. </div>
26. <div class = "row bg-primary" style="border : 1px solid black;">
27. <div class = "col-lg-4" style="border : 2px solid black;"> Col-lg-1 </div>
28. <div class = "col-lg-4" style="border : 2px solid black;"> Col-lg-2 </div>
29. <div class = "col-lg-4" style="border : 2px solid black;"> Col-lg-3 </div>
30. </div>
31. <div class = "row bg-warning" style="border : 1px solid black;">
32. <div class = "col-md-4" style="border : 2px solid black;"> Col-md-1 </div>
33. <div class = "col-md-4" style="border : 2px solid black;"> Col-md-2 </div>
34. <div class = "col-md-4" style="border : 2px solid black;"> Col-md-3 </div>
35. </div>
36. <div class = "row bg-success" style="border : 1px solid black;">
37. <div class = "col-sm-4" style="border : 2px solid black;"> Col-sm-1 </div>
38. <div class = "col-sm-4" style="border : 2px solid black;"> Col-sm-2 </div>
39. <div class = "col-sm-4" style="border : 2px solid black;"> Col-sm-3 </div>
40. </div>
41. </div>
42. </body>
43. </html>
```

Output

The following output shows the grid system for a small screen width device.

Bootstrap 5 Responsive Grid System example

Col-xxl-1
Col-xxl-2
Col-xxl-3
Col-xl-1
Col-xl-2
Col-xl-3
Col-lg-1
Col-lg-2
Col-lg-3
Col-md-1
Col-md-2
Col-md-3
Col-sm-1 | Col-sm-2 | Col-sm-3

The following output shows the grid system for a double extra-large screen width device.

Bootstrap 5 Responsive Grid System example

Col-xxl-1
Col-xxl-2
Col-xxl-3
Col-xl-1 | Col-xl-2 | Col-xl-3
Col-lg-1 | Col-lg-2 | Col-lg-3
Col-md-1 | Col-md-2 | Col-md-3
Col-sm-1 | Col-sm-2 | Col-sm-3

Stacked-to-horizontal

Let's build a simple grid system that starts stacked on extra-small devices and becomes horizontal on larger devices.
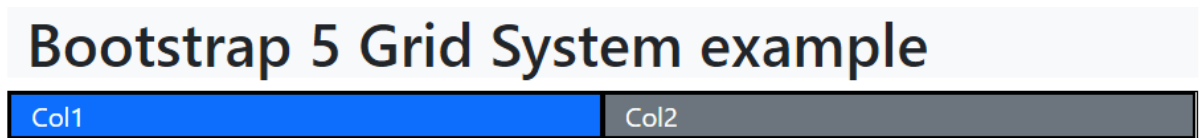
Example

The following example demonstrates a simple "stacked-to-horizontal" two-column layout. It will result in a 50 percent or 50 percent split on all displays except exceptionally small screens, which will stack (100 percent). The example given shows the default grid system in bootstrap 5 with classes and functions.

1. <!DOCTYPE html>
2. <html lang = "en">
3. <head>
4. <title> Bootstrap 5 Example </title>
5. <meta charset = "utf-8">
6. <meta name = "viewport" content = "width=device-width, initial-scale = 1">
7. <link href = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel= "stylesheet">
8. <script src = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js" >

9. `</script>`
10. `</head>`
11. `<body>`
12. `<div` class = "container bg-light"`>`
13.   `<h1>` Bootstrap 5 Grid System example `</h1>`
14. `</div>`
15. `<div` class = "container text-white"`>`
16. `<div` class = "row" style = "border: 1px solid black;"`>`
17. `<div` class = "col-sm-6 bg-primary" style = "border: 2px solid black;"`>` Col1 `</div>`
18. `<div` class = "col-sm-6 bg-secondary" style = "border: 2px solid black;"`>` Col2 `</div>`
19. `</div>`
20. `</div>`
21. `</body>`
22. `</html>`

Output

Bootstrap 5 Grid System example

| Col1 | Col2 |

Auto-layout Grid System

Bootstrap will detect the number of columns and ensure that each column has the same width. To establish equal-width columns for all devices with Bootstrap 5, remove the number from .col-size-* and only use the .col-size class on a given number of col components. Bootstrap 5 columns should be responsive using the size classes.

Example

The given example shows auto layout grid system in bootstrap 5 with classes and function. The "col-sm" class uses on the container and container-fluid of the web page. The "col-sm" class uses for four time to create four columns.
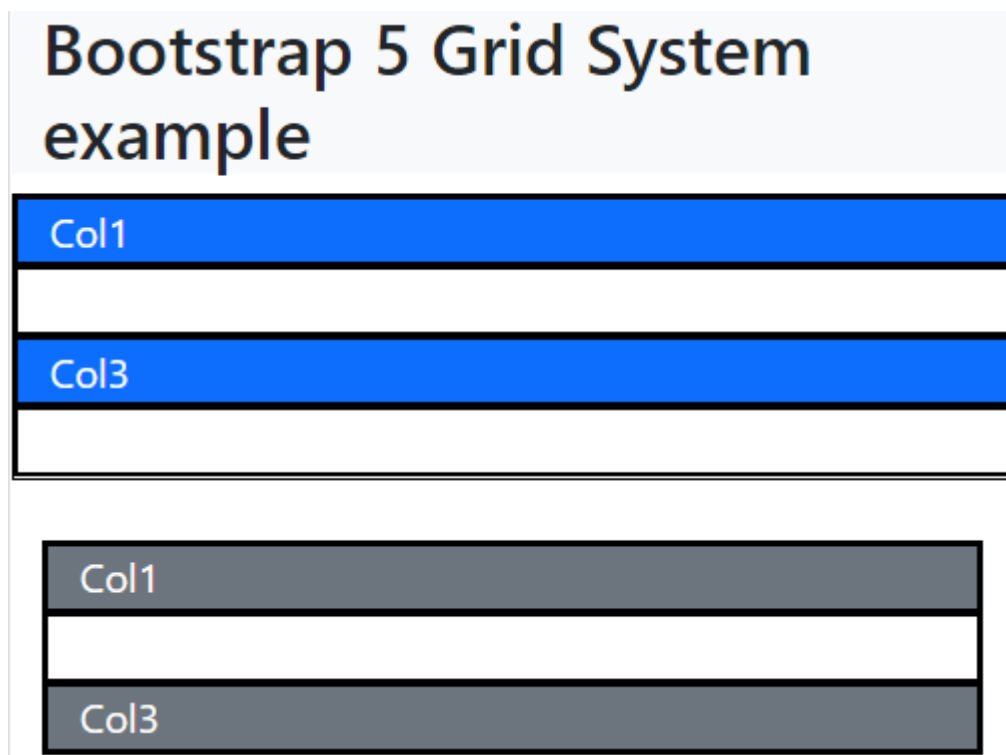
1. `<!DOCTYPE html>`
2. `<html` lang = "en"`>`
3. `<head>`
4. `<title>` Bootstrap 5 Example `</title>`
5. `<meta` charset = "utf-8"`>`
6. `<meta` name = "viewport" content = "width=device-width, initial-scale = 1"`>`
7. `<link` href = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css" rel= "stylesheet"`>`
8. `<script` src = "https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js" `>`

9. `</script>`
10. `</head>`
11. `<body>`
12. `<div class="container bg-light">`
13. `<h1>` Bootstrap 5 Grid System example `</h1>`
14. `</div>`
15. `<div class="container text-white">`
16. `<div class = "row" style="border : 1px solid black;">`
17. `<div class = "col-sm bg-primary" style = "border: 2px solid black;">` Col1 `</div>`
18. `<div class = "col-sm" style = "border: 2px solid black;">` Col2 `</div>`
19. `<div class = "col-sm bg-primary" style = "border: 2px solid black;">` Col3 `</div>`
20. `<div class = "col-sm" style = "border: 2px solid black;">` Col4 `</div>`
21. `</div>`
22. `<div class="container-fluid text-white">`
23. `<div class = "row" style = "border : 1px solid black;">`
24. `<div class = "col-sm bg-secondary" style = "border : 2px solid black;">` Col1 `</div>`
25. `<div class = "col-sm" style = "border : 2px solid black;">` Col2 `</div>`
26. `<div class = "col-sm bg-secondary" style = "border : 2px solid black;">` Col3 `</div>`
27. `</div>`
28. `</div>`
29. `</body>`
30. `</html>`

Output:

Conclusion

The bootstrap 5 grid system helps to create responsive, user-friendly, attractive, and simple web applications. It contains large size information in minimum space with user interaction. We can place multiple features on one page without complex space problems.