

The background features a dark blue-to-purple gradient with abstract white and light blue geometric patterns. These include concentric circles, arcs, and degree markings (40, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260) on the left side, suggesting a technical or design theme.

# AJAX 程式設計

# AJAX PROGRAMMING

# DESIGN

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# RESPONSIVE WEB DESIGN

R  
W  
D

BOOTSTRAP

# BOOTSTRAP 4 IS MOBILE-FIRST

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

There are two container classes to choose from:

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

`.container`

`.container-fluid`

# BOOTSTRAP 4 GET STARTED

```
<!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/4.1.3/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
  <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.3/umd/popper.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.1.3/js/bootstrap.min.js"></script>
</head>
<body>

<div class="container">
  <h1>My First Bootstrap Page</h1>
  <p>This part is inside a .container class.</p>
  <p>The .container class provides a responsive fixed width container.</p>
</div>

</body>
</html>
```



# BOOTSTRAP 4 GRID SYSTEM

## Bootstrap 4 Grid System

Bootstrap's grid system allows up to 12 columns across the page.

If you do not want to use all 12 column individually, you can group the columns together to create wider columns:

span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1	span 1
span 4				span 4				span 4			
span 4				span 8							
span 6						span 6					
span 12											

# BOOTSTRAP 4 GRID SYSTEM

## Grid Classes

The Bootstrap 4 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-` (xlarge devices - screen width equal to or greater than 1200px)

# GRID STACKED-TO-HORIZONTAL

## Grid Example

This example demonstrates a 50%/50% split on small, medium, large and xlarge devices. On extra small devices, it will stack (100% width).

Resize the browser window to see the effect.

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto.

# GRID STACKED-TO-HORIZONTAL

## Grid Example

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Resize the browser window to see the effect.

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto.

**Tip:** You can turn any fixed-width layout into a **full-width** layout by changing the `.container` class to `.container-fluid`



# GRID STACKED-TO-HORIZONTAL

```
<!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/4.1.3/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
  <script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.3/umd/popper.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.1.3/js/bootstrap.min.js"></script>
</head>
<body>

<div class="container-fluid">
  <h1>Auto Layout Columns</h1>
  <p>In Bootstrap 4, there is an easy way to create equal width columns: just use the <code>.col-size</code> class on a specified number of col elements. Bootstrap will recognize how many columns there are, and each column will get the same width.</p>
  <p>Two columns: 50% width on all screens, except for extra small (100% width on screens less than 576px wide)</p>
  <div class="container-fluid">
    <div class="row">
      <div class="col-sm bg-success">1 of 2</div>
      <div class="col-sm bg-warning">2 of 2</div>
    </div>
  </div>
  <br>
```

## Auto Layout Columns

In Bootstrap 4, there is an easy way to create equal width columns: just use the `.col-size` class on a specified number of col elements. Bootstrap will recognize how many columns there are, and each column will get the same width.

Two columns: 50% width on all screens, except for extra small (100% width on screens less than **576px** wide)



Four columns: 25% width on all screens, except for extra small (100% width on screens less than **576px** wide)



# GRID EXTRA SMALL

## Extra Small Grid

The following example will result in a 25%/75% split on all devices.

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo.

```
<div class="container-fluid">
  <h1>Extra Small Grid</h1>
  <p>The following example will result in a 25%/75% split on all devices.</p>
  <div class="container-fluid">
    <div class="row">
      <div class="col-3 bg-success">
        Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.<br>
        Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.
      </div>
      <div class="col-9 bg-warning">
        Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo.
      </div>
    </div>
  </div>
</div>
```

# GRID EXTRA SMALL

## Auto Layout Columns

In Bootstrap 4, there is an easy way to create equal width columns for all devices: just use the `.col` class on a specified number of col elements. Bootstrap will recognize how many columns there are, and each column will get the same width.

1 of 2

2 of 2

1 of 4

2 of 4

3 of 4

4 of 4

```
<div class="container-fluid">
  <h1>Auto Layout Columns</h1>
  <p>In Bootstrap 4, there is an easy way to create equal width columns for all devices: just use the <code>.col</code> class on a specified number of col elements. Bootstrap will recognize how many columns there are, and each column will get the same width.</p>
</div>
```

```
<div class="container-fluid">
  <div class="row">
    <div class="col bg-success">1 of 2</div>
    <div class="col bg-warning">2 of 2</div>
  </div>
</div>
<br>
```

```
<div class="container-fluid">
  <div class="row">
    <div class="col bg-success">1 of 4</div>
    <div class="col bg-warning">2 of 4</div>
    <div class="col bg-success">3 of 4</div>
    <div class="col bg-warning">4 of 4</div>
  </div>
</div>
```

```
</div>
```

# GRID EXTRA LARGE

```
<div class="container-fluid">
  <h1>XLarge Grid</h1>
  <p>The following example will result in a 25%/75% split on small devices, a 50%/50% split on medium devices, and a 33%/66% split on large devices and a 20%/80% on xlarge devices. On extra small devices, it will automatically stack (100%).</p>
  <p>Resize the browser window to see the effect.</p>
  <div class="container-fluid">
    <div class="row">
      <div class="col-sm-3 col-md-6 col-lg-4 col-xl-2 bg-success">
        Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.
        Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.
      </div>
      <div class="col-sm-9 col-md-6 col-lg-8 col-xl-10 bg-warning">
        Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo.
      </div>
    </div>
  </div>
</div>
```



# GRID EXTRA LARGE ONLY

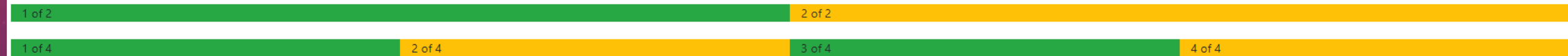
```
<div class="container-fluid">
  <h1>XLarge Grid</h1>
  <p>The following example will result in a 50%/50% split on xlarge devices (<strong>1200px and above</strong>). On large, medium, small and extra small devices, it will automatically stack (100%).</p>
  <p>Resize the browser window to see the effect.</p>
  <div class="container-fluid">
    <div class="row">
      <div class="col-xl-6 bg-success">
        Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua.<br>
        Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.
      </div>
      <div class="col-xl-6 bg-warning">
        Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto beatae vitae dicta sunt explicabo.
      </div>
    </div>
  </div>
</div>
```

# RESPONSIVE AUTO LAYOUT COLUMNS

## Responsive Auto Layout Columns

In Bootstrap 4, there is an easy way to create equal width columns: just use the `.col-x1` class on a specified number of col elements. Bootstrap will recognize how many columns there are, and each column will get the same width.


If the screen size is **less than 1200px**, the columns will stack horizontally.



# THREE EQUAL COLUMNS

## Three Equal Columns

Use the `.col` class on a specified number of elements and Bootstrap will recognize how many elements there are (and create equal-width columns). In the example below, we use three `col` elements, which gets a width of 33.33% each.



col col col

## Example

```
<div class="row">
  <div class="col">col</div>
  <div class="col">col</div>
  <div class="col">col</div>
</div>
```

Try it Yourself »

# THREE EQUAL COLUMNS

## Three Equal Columns Using Numbers

You can also use numbers to control the column width. Just make sure that the sum adds up to 12 or fewer (it is not required that you use all 12 available columns):

col-4

col-4

col-4

### Example

```
<div class="row">
  <div class="col-4">col-4</div>
  <div class="col-4">col-4</div>
  <div class="col-4">col-4</div>
</div>
```

Try it Yourself »



# MORE EQUAL COLUMNS

## More Equal Columns

1 of 2

2 of 2

1 of 4

2 of 4

3 of 4

4 of 4

1 of 6

2 of 6

3 of 6

4 of 6

5 of 6

6 of 6

# MORE UNEQUAL COLUMNS

## More Unequal Columns

1 of 2

2 of 2

1 of 4

2 of 4

3 of 4

4 of 4

1 of 4

2 of 4

3 of 4

4 of 4

# NESTED COLUMNS

## Nested Columns



The following example shows how to create a two column layout, with another two columns inside one of the columns:

### Example

```
<div class="row">
  <div class="col-8">
    .col-8
    <div class="row">
      <div class="col-6">.col-6</div>
      <div class="col-6">.col-6</div>
    </div>
  </div>
  <div class="col-4">.col-4</div>
</div>
```

[Try it Yourself »](#)

# MIX AND MATCH

## Mix and Match

col-6 col-sm-9

col-6 col-sm-3

col-7 col-lg-8

col-5 col-lg-4

col-sm-3 col-md-6 col-lg-4

col-sm-9 col-md-6 col-lg-8

## Example

```
<!-- 50%/50% split on extra small devices and 75%/25% split on larger devices -->
<div class="row">
  <div class="col-6 col-sm-9">col-6 col-sm-9</div>
  <div class="col-6 col-sm-3">col-6 col-sm-3</div>
</div>

<!-- 58%/42% split on extra small, small and medium devices and 66.3%/33.3% split on large and xlarge devices -->
<div class="row">
  <div class="col-7 col-lg-8">col-7 col-lg-8</div>
  <div class="col-5 col-lg-4">col-5 col-lg-4</div>
</div>

<!-- 25%/75% split on small devices, a 50%/50% split on medium devices, and a 33%/66% split on large and xlarge devices. On extra small devices, it will automatically stack (100%) -->
<div class="row">
  <div class="col-sm-3 col-md-6 col-lg-4">col-sm-3 col-md-6 col-lg-4</div>
  <div class="col-sm-9 col-md-6 col-lg-8">col-sm-9 col-md-6 col-lg-8</div>
</div>
```

Try it Yourself »





# THANK YOU

自學資源

- [W3SCHOOLS](https://www.w3schools.com)