

# Lecture 05: Flexbox, CSS Frameworks, Bootstrap

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ITP 303 Full-Stack Web Development

# Key Takeaways Today

1. Flexbox
2. CSS Frameworks
  - a. What is it?
  - b. What are the advantages of using a CSS framework?
  - c. What are the downsides of using a CSS framework?
3. Bootstrap
  - a. How to get started with using it.
  - b. Use it to create components.
  - c. Use it to create a mobile-first grid system.

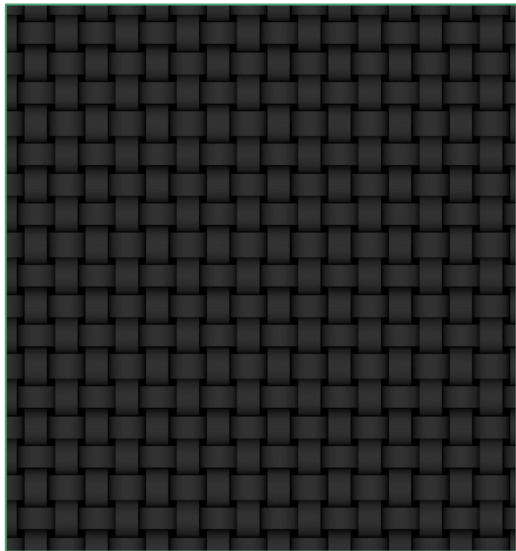
# Background images

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# Background Images

Specify images to be used as background of an element.

Result:

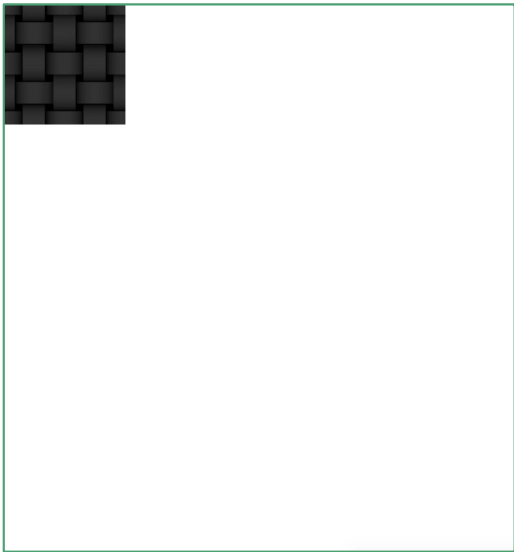


```
body {  
  background-image: url('tile.jpg');  
}
```

# Background Images

Specify images to be used as background of an element.

Result:

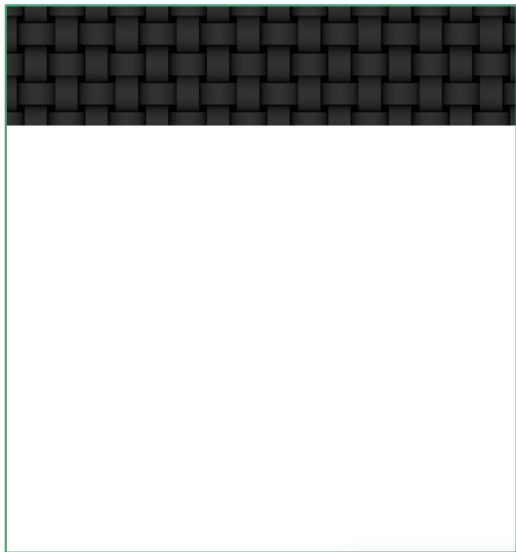


```
body {  
  background-image: url('tile.jpg');  
  background-repeat: no-repeat;  
}
```

# Background Images

Specify images to be used as background of an element.

Result:

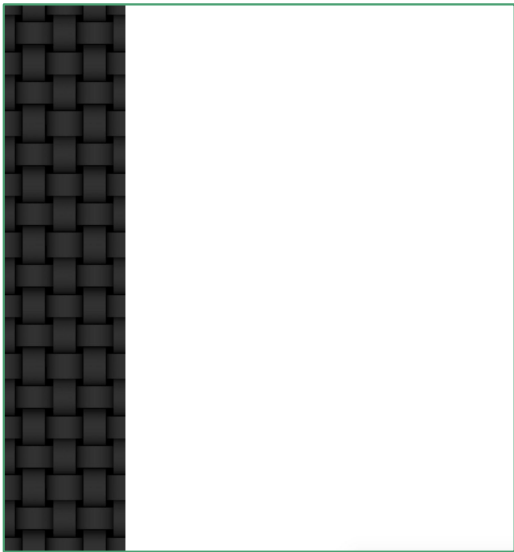


```
body {  
  background-image: url('tile.jpg');  
  background-repeat: no-repeat;  
  background-repeat: repeat-x;  
}
```

# Background Images

Specify images to be used as background of an element.

Result:



```
body {  
  background-image: url('tile.jpg');  
  background-repeat: no-repeat;  
  background-repeat: repeat-x;  
  background-repeat: repeat-y;  
}
```

# External CSS stylesheets

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# Cascading Style Sheets

There are three types of CSS:

1. External
2. Internal
3. Inline

Result:

```
h1 {  
  background-color: lightgreen;  
}
```

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
  <title>Page Title</title>
```

```
  <link rel="stylesheet" href="style.css">
```

```
  <style>
```

```
    p {
```

```
      background-color: lightblue;
```

```
    }
```

```
  </style>
```

```
</head>
```

```
<body>
```

```
  <h1>Page Heading 1</h1>
```

```
  <h2 style="background-color: yellow;">Page Heading 2</h2>
```

```
  <p>Paragraph 1</p>
```

```
  <p>Paragraph 2</p>
```

```
  <p>Paragraph 3</p>
```

```
</body>
```

```
</html>
```

**Page Heading 1**

**Page Heading 2**

Paragraph 1

Paragraph 2

Paragraph 3

# External CSS

## Shared CSS (External)



Individual CSS  
+ HTML



Individual CSS  
+ HTML

# Flexbox

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# Flexbox

<https://css-tricks.com/snippets/css/a-guide-to-flexbox/>

# CSS Frameworks

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# CSS Frameworks

Code / software / libraries with predefined CSS.

Make website styling easier & faster.

Help to ensure design consistency and browser compatibility.

- Downside: different sites using same CSS Framework may look similar.

Some CSS Frameworks:

- Bootstrap
- Foundation
- Materialize



# Bootstrap

Website: <http://getbootstrap.com>

One of the most popular CSS frameworks. Open Source.

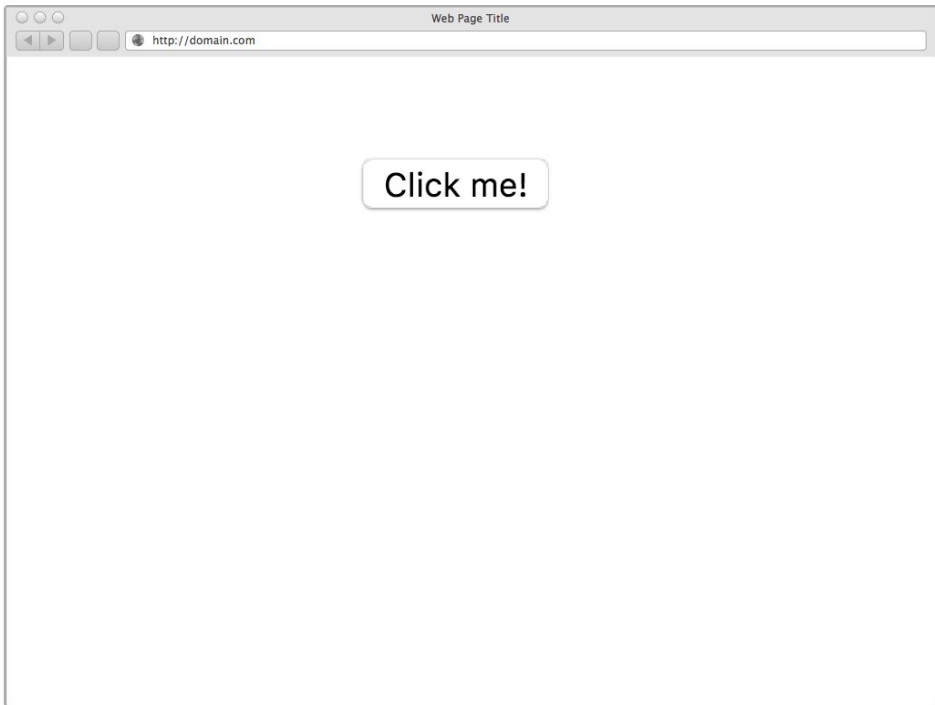
Created by Twitter.

Some sites that use Bootstrap:

- [LinkedIn](#)
- [Facebook](#)
- [Target](#)
- [NBA](#)



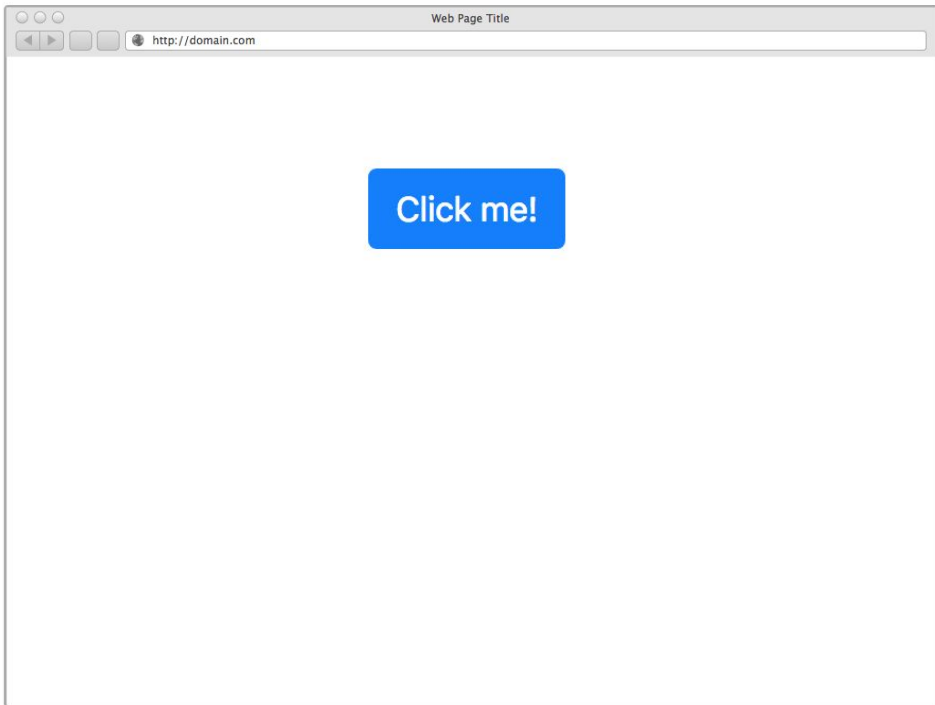
# Bootstrap: Essentials



```
<!-- Button tags come with pre-defined styles. -->  
<button>Click me!</button>
```



# Bootstrap: Essentials



```
<!-- Add Bootstrap classes -->  
<button class="btn btn-primary">Click me!</button>
```

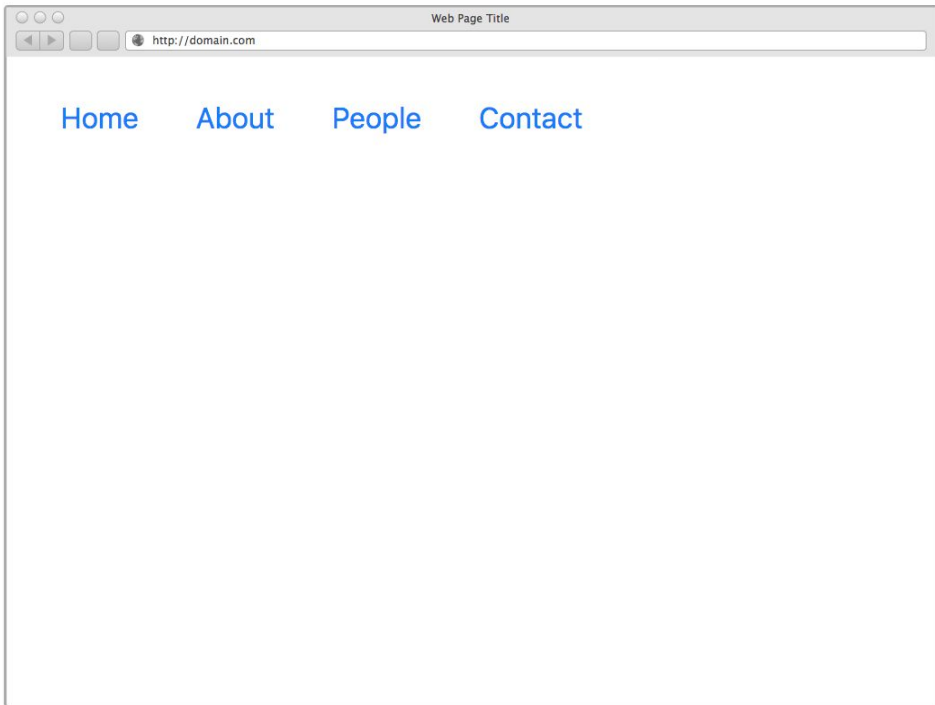
# Bootstrap: Essentials

- 
- A screenshot of a web browser window. The title bar says "Web Page Title". The address bar shows "http://domain.com". The main content area displays a bulleted list of four links: "Home", "About", "People", and "Contact". All links are underlined and blue.
- [Home](#)
  - [About](#)
  - [People](#)
  - [Contact](#)

<!-- Lists come with pre-defined styles. -->

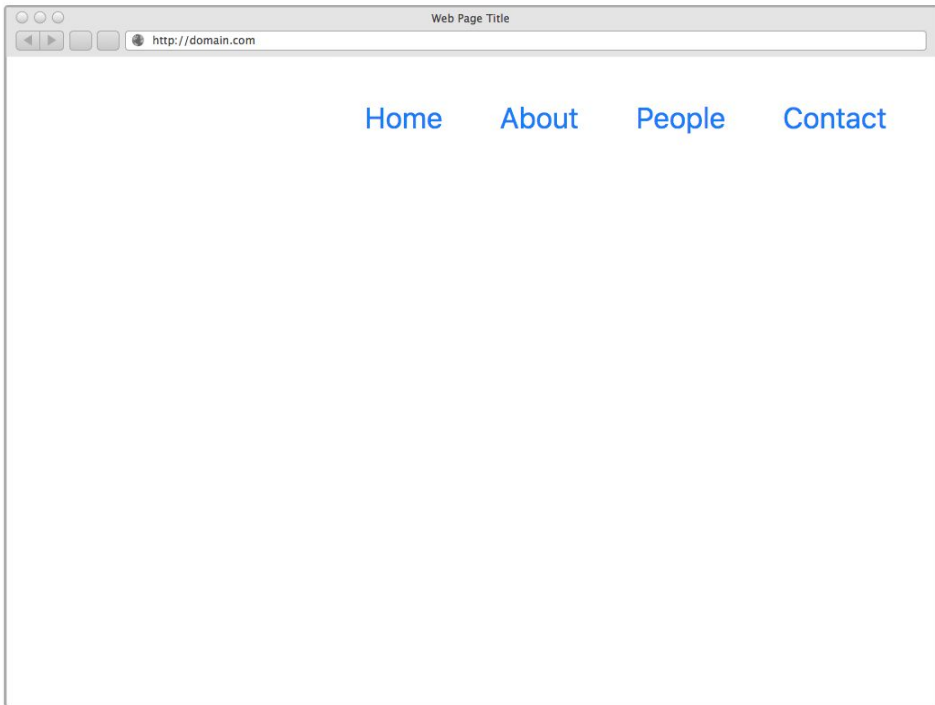
```
<ul>
  <li>
    <a href="#">Home</a>
  </li>
  <li>
    <a href="#">About</a>
  </li>
  <li>
    <a href="#">People</a>
  </li>
  <li>
    <a href="#">Contact</a>
  </li>
</ul>
```

# Bootstrap: Essentials



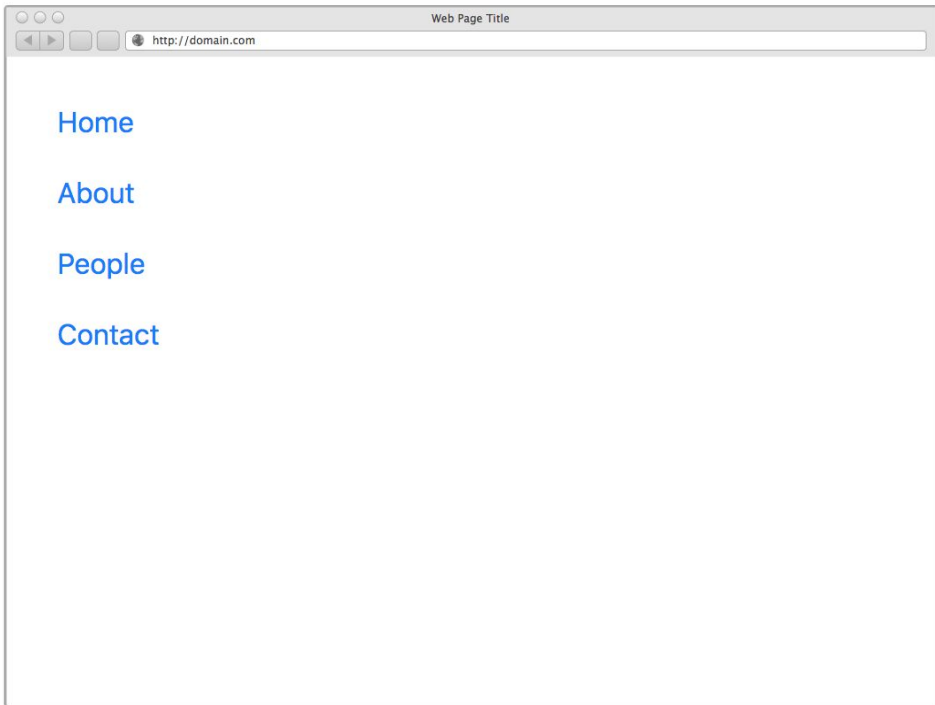
```
<!-- Add Bootstrap defined CSS classes. -->
<ul class="nav">
  <li class="nav-item">
    <a class="nav-link" href="#">Home</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">About</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">People</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">Contact</a>
  </li>
</ul>
```

# Bootstrap: Essentials



```
<!-- Bootstrap classes allow for variety. -->
<ul class="nav justify-content-end">
  <li class="nav-item">
    <a class="nav-link" href="#">Home</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">About</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">People</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">Contact</a>
  </li>
</ul>
```

# Bootstrap: Essentials



```
<!-- Bootstrap classes allow for variety. -->
<ul class="nav flex-column">
  <li class="nav-item">
    <a class="nav-link" href="#">Home</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">About</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">People</a>
  </li>
  <li class="nav-item">
    <a class="nav-link" href="#">Contact</a>
  </li>
</ul>
```

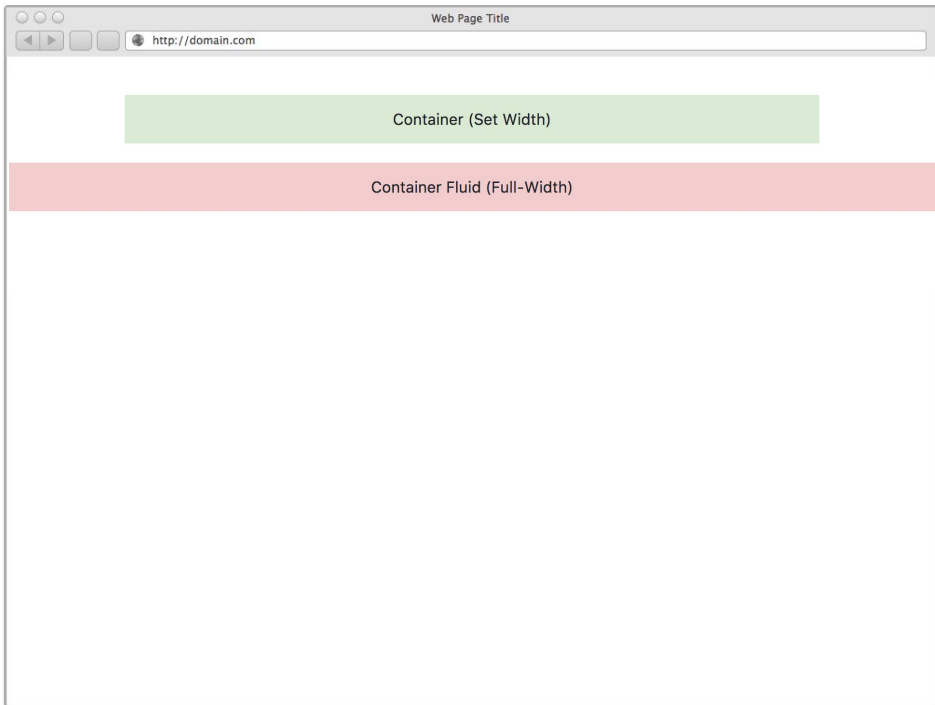
# Bootstrap: Grid Layout



# Bootstrap: Grid Layout

1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12
1	2	3	4	5	6	7	8	9	10	11	12

# Bootstrap: Grid Structure

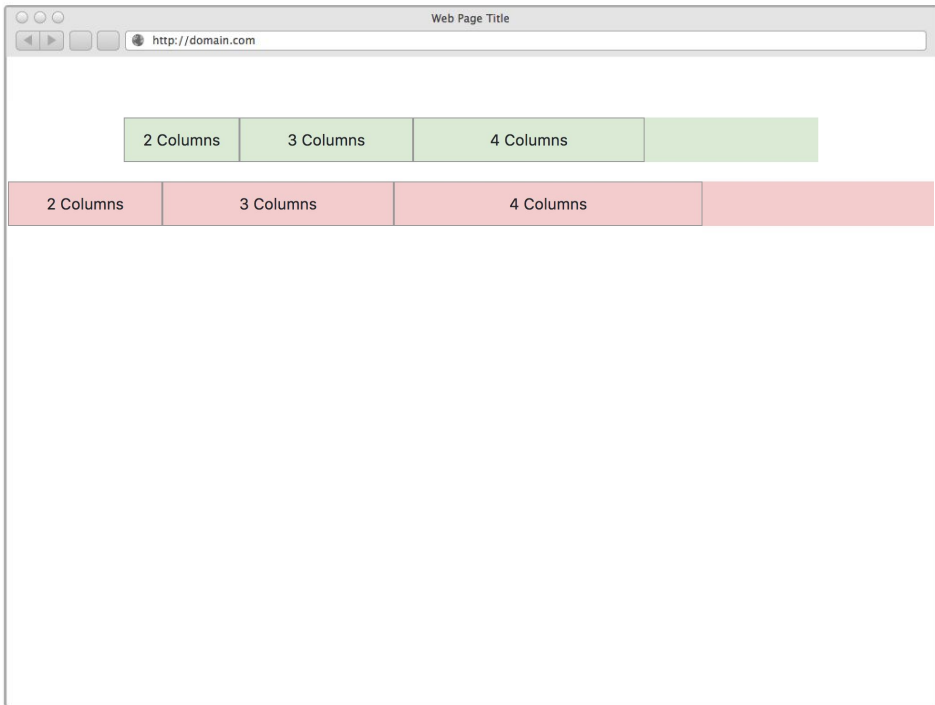


```
<div class="container">  
  Container (Set Width)  
</div> <!-- .container -->
```

```
<div class="container-fluid">  
  Container Fluid (Full-Width)  
</div> <!-- .container-fluid -->
```



# Bootstrap: Grid Structure



```
<div class="container">
  <div class="row">
    <div class="col-2">2 Columns</div>
    <div class="col-3">3 Columns</div>
    <div class="col-4">4 Columns</div>
  </div> <!-- .row -->
</div> <!-- .container -->
```

```
<div class="container-fluid">
  <div class="row">
    <div class="col-2">2 Columns</div>
    <div class="col-3">3 Columns</div>
    <div class="col-4">4 Columns</div>
  </div> <!-- .row -->
</div> <!-- .container-fluid -->
```

# Bootstrap: Grid Structure



```
<div class="container">
  <div class="row">
    <div class="col-2">2 Columns</div>
    <div class="col-3">3 Columns</div>
    <div class="col-4">4 Columns</div>
  </div> <!-- .row -->
  <div class="row">
    <div class="col-3">3 Columns</div>
    <div class="col-4">4 Columns</div>
    <div class="col-5">5 Columns</div>
  </div> <!-- .row -->
</div> <!-- .container -->
```

```
<div class="container-fluid">
  <div class="row">
    <div class="col-2">2 Columns</div>
    <div class="col-3">3 Columns</div>
    <div class="col-4">4 Columns</div>
  </div> <!-- .row -->
  <div class="row">
    <div class="col-3">3 Columns</div>
    <div class="col-4">4 Columns</div>
    <div class="col-5">5 Columns</div>
  </div> <!-- .row -->
</div> <!-- .container-fluid -->
```

# Bootstrap: Breakpoints

Mobile-First Responsive Design.

Name	Size	Devices
Extra Small	$\leq 575\text{px}$	Portrait Phones
Small	576px - 767px	Landscape Phones
Medium	768px - 991px	Tablets
Large	992px - 1199px	Desktops
Extra Large	$\geq 1200\text{px}$	Large Desktops

```
/* Extra small devices (portrait phones, less than 576px) */  
/* No media query since this is the default in Bootstrap */
```

```
/* Small devices (landscape phones, 576px and up) */  
@media (min-width: 576px) { ... }
```

```
/* Medium devices (tablets, 768px and up) */  
@media (min-width: 768px) { ... }
```

```
/* Large devices (desktops, 992px and up) */  
@media (min-width: 992px) { ... }
```

```
/* Extra large devices (large desktops, 1200px and up) */  
@media (min-width: 1200px) { ... }
```