

Chapter 1

Bootstrap Get Started

What is Bootstrap?

- Bootstrap is a free front-end framework for faster and easier web development
- Bootstrap includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, modals, image carousels and many other, as well as optional JavaScript plugins
- Bootstrap also gives you the ability to easily create responsive designs

What is Responsive Web Design?

Responsive web design is about creating web sites which automatically adjust themselves to look good on all devices, from small phones to large desktops.

Bootstrap History

Bootstrap was developed by Mark Otto and Jacob Thornton at Twitter, and released as an open source product in August 2011 on GitHub.

In June 2014 Bootstrap was the No.1 project on GitHub!

Why Use Bootstrap?

Advantages of Bootstrap:

- **Easy to use:** Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- **Responsive features:** Bootstrap's responsive CSS adjusts to phones, tablets, and desktops

- **Mobile-first approach:** In Bootstrap 3, mobile-first styles are part of the core framework
 - **Browser compatibility:** Bootstrap is compatible with all modern browsers (Chrome, Firefox, Internet Explorer, Edge, Safari, and Opera)
-

Where to Get Bootstrap?

There are two ways to start using Bootstrap on your own web site.

You can:

- Download Bootstrap from getbootstrap.com
 - Include Bootstrap from a CDN
-

Downloading Bootstrap

If you want to download and host Bootstrap yourself, go to getbootstrap.com, and follow the instructions there.

Bootstrap CDN

If you don't want to download and host Bootstrap yourself, you can include it from a CDN (Content Delivery Network).

MaxCDN provides CDN support for Bootstrap's CSS and JavaScript. You must also include jQuery:

MaxCDN:

```
<!-- Latest compiled and minified CSS -->
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
```

```
<!-- jQuery library -->
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
```

```
<!-- Latest compiled JavaScript -->
```

```
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>
```

One advantage of using the Bootstrap CDN:

Many users already have downloaded Bootstrap from MaxCDN when visiting another site. As a result, it will be loaded from cache when they visit your site, which leads to faster loading time. Also, most CDN's will make sure that once a user requests a file from it, it will be served from the server closest to them, which also leads to faster loading time.

jQuery

Bootstrap uses jQuery for JavaScript plugins (like modals, tooltips, etc). However, if you just use the CSS part of Bootstrap, you don't need jQuery.

Create First Web Page With Bootstrap

1. Add the HTML5 doctype

Bootstrap uses HTML elements and CSS properties that require the HTML5 doctype.

Always include the HTML5 doctype at the beginning of the page, along with the lang attribute and the correct character set:

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
  </head>
</html>
```

2. Bootstrap 3 is mobile-first

Bootstrap 3 is designed to be responsive to mobile devices. Mobile-first styles are part of the core framework.

To ensure proper rendering and touch zooming, add the following `<meta>` tag inside the `<head>` element:

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

The `width=device-width` part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

The `initial-scale=1` part sets the initial zoom level when the page is first loaded by the browser.

3. Containers

Bootstrap also requires a containing element to wrap site contents.

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



Two Basic Bootstrap Pages

The following example shows the code for a basic Bootstrap page (with a responsive fixed width container):

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://maxcdn.bootstrapcdn.com/bootstrap/3.
3.7/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.m
in.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstra
p.min.js"></script>
</head>
<body>

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

</body>
</html>
```

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The following example shows the code for a basic Bootstrap page (with a full width container):

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://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>
</head>
<body>

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

</body>
</html>
```

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Chapter 2

Bootstrap Grids

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:

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's grid system is responsive, and the columns will re-arrange automatically depending on the screen size.

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)

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

Basic Structure of a Bootstrap Grid

The following is a basic structure of a Bootstrap grid:

```
<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>
```

First; 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.

Below we have collected some examples of basic Bootstrap grid layouts.

Three Equal Columns

.col-sm-4	.col-sm-4	.col-sm-4
-----------	-----------	-----------

The following example shows how to get a three equal-width columns starting at tablets and scaling to large desktops. On mobile phones or screens that are less than 768px wide, the columns will automatically stack:

Example

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

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Two Unequal Columns

.col-sm-4	.col-sm-8
-----------	-----------

The following example shows how to get two various-width columns starting at tablets and scaling to large desktops:

Example

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

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Chapter 3

Bootstrap Images

Bootstrap Image Shapes

Rounded Corners:



Circle:



Thumbnail:



Rounded Corners

The `.img-rounded` class adds rounded corners to an image (IE8 does not support rounded corners):

Example

```

```

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Circle

The `.img-circle` class shapes the image to a circle (IE8 does not support rounded corners):

Example

```

```

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Thumbnail

The `.img-thumbnail` class shapes the image to a thumbnail:

Example

```

```

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Responsive Images

Images come in all sizes. So do screens. Responsive images automatically adjust to fit the size of the screen.

Create responsive images by adding an `.img-responsive` class to the `` tag. The image will then scale nicely to the parent element.

The `.img-responsive` class applies `display: block;` and `max-width: 100%;` and `height: auto;` to the image:

Example

```

```

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Image Gallery

You can also use Bootstrap's grid system in conjunction with the `.thumbnail` class to create an image gallery.



Lorem ipsum donec id elit non mi porta gravida at eget metus.



Lorem ipsum donec id elit non mi porta gravida at eget metus.



Lorem ipsum donec id elit non mi porta gravida at eget metus.

Note: You will learn more about the Grid System later in this tutorial (how to create a layout with different amount of columns).

Example

```
<div class="row">
  <div class="col-md-4">
    <div class="thumbnail">
      <a href="/w3images/lights.jpg">
        
        <div class="caption">
          <p>Lorem ipsum...</p>
        </div>
      </a>
    </div>
  </div>
  <div class="col-md-4">
    <div class="thumbnail">
      <a href="/w3images/nature.jpg">
        
        <div class="caption">
          <p>Lorem ipsum...</p>
        </div>
      </a>
    </div>
  </div>
  <div class="col-md-4">
    <div class="thumbnail">
      <a href="/w3images/fjords.jpg">
        
        <div class="caption">
          <p>Lorem ipsum...</p>
        </div>
      </a>
    </div>
  </div>
</div>
```

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Responsive Embeds

Also let videos or slideshows scale properly on any device.

Classes can be applied directly to <iframe>, <embed>, <video>, and <object> elements.

The following example creates a responsive video by adding an `.embed-responsive-item` class to an `<iframe>` tag (the video will then scale nicely to the parent element). The containing `<div>` defines the aspect ratio of the video:

Example

```
<div class="embed-responsive embed-responsive-16by9">
  <iframe class="embed-responsive-item" src="..."></iframe>
</div>
```

[Try it Yourself »](#)

What is aspect ratio?

The aspect ratio of an image describes the proportional relationship between its width and its height. Two common video aspect ratios are 4:3 (the universal video format of the 20th century), and 16:9 (universal for HD television and European digital television).

You can choose between two aspect ratio classes:

```
<!-- 16:9 aspect ratio -->
<div class="embed-responsive embed-responsive-16by9">
  <iframe class="embed-responsive-item" src="..."></iframe>
</div>

<!-- 4:3 aspect ratio -->
<div class="embed-responsive embed-responsive-4by3">
  <iframe class="embed-responsive-item" src="..."></iframe>
</div>
```

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Test Yourself with Exercises!

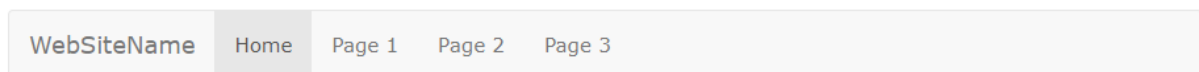
[Exercise 1 »](#) [Exercise 2 »](#) [Exercise 3 »](#) [Exercise 4 »](#)

Chapter 4

Bootstrap Navigation Bar

Navigation Bars

A navigation bar is a navigation header that is placed at the top of the page:



With Bootstrap, a navigation bar can extend or collapse, depending on the screen size.

A standard navigation bar is created with `<nav class="navbar navbar-default">`.

The following example shows how to add a navigation bar to the top of the page:

Example

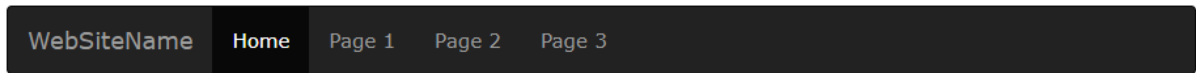
```
<nav class="navbar navbar-default">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <ul class="nav navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li><a href="#">Page 1</a></li>
      <li><a href="#">Page 2</a></li>
      <li><a href="#">Page 3</a></li>
    </ul>
  </div>
</nav>
...
```

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Note: All of the examples on this page will show a navigation bar that takes up too much space on small screens (however, the navigation bar will be on one single line on large screens - because Bootstrap is responsive). This problem (with the small screens) will be solved in the last example on this page.

Inverted Navigation Bar

If you don't like the style of the default navigation bar, Bootstrap provides an alternative, black navbar:



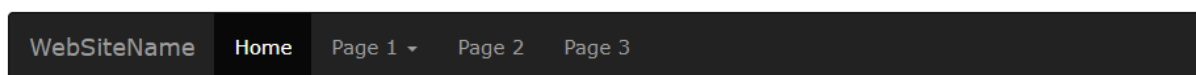
Just change the `.navbar-default` class into `.navbar-inverse`:

Example

```
<nav class="navbar navbar-inverse">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <ul class="nav navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li><a href="#">Page 1</a></li>
      <li><a href="#">Page 2</a></li>
      <li><a href="#">Page 3</a></li>
    </ul>
  </div>
</nav>
```

[Try it Yourself »](#)

Navigation Bar With Dropdown



Navigation bars can also hold dropdown menus.

The following example adds a dropdown menu for the "Page 1" button:

Example

```
<nav class="navbar navbar-inverse">
  <div class="container-fluid">
    <div class="navbar-header">
```

```

    <a class="navbar-brand" href="#">WebSiteName</a>
  </div>
  <ul class="nav navbar-nav">
    <li class="active"><a href="#">Home</a></li>
    <li class="dropdown">
      <a class="dropdown-toggle" data-toggle="dropdown" href="#">Page 1
      <span class="caret"></span></a>
      <ul class="dropdown-menu">
        <li><a href="#">Page 1-1</a></li>
        <li><a href="#">Page 1-2</a></li>
        <li><a href="#">Page 1-3</a></li>
      </ul>
    </li>
    <li><a href="#">Page 2</a></li>
    <li><a href="#">Page 3</a></li>
  </ul>
</div>
</nav>

```

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Right-Aligned Navigation Bar



The `.navbar-right` class is used to right-align navigation bar buttons.

In the following example we insert a "Sign Up" button and a "Login" button to the right in the navigation bar. We also add a glyphicon on each of the two new buttons:

Example

```

<nav class="navbar navbar-inverse">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <ul class="nav navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li><a href="#">Page 1</a></li>
      <li><a href="#">Page 2</a></li>
    </ul>
    <ul class="nav navbar-nav navbar-right">
      <li><a href="#"><span class="glyphicon glyphicon-user"></span> Sign
Up</a></li>
      <li><a href="#"><span class="glyphicon glyphicon-log-

```

```
in"></span> Login</a></li>
    </ul>
</div>
</nav>
```

[Try it Yourself »](#)

Navbar Buttons



To add buttons inside the navbar, add the `.navbar-btn` class on a Bootstrap button:

Example

```
<nav class="navbar navbar-inverse">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <ul class="nav navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li><a href="#">Link</a></li>
      <li><a href="#">Link</a></li>
    </ul>
    <button class="btn btn-danger navbar-btn">Button</button>
  </div>
</nav>
```

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Navbar Forms



To add form elements inside the navbar, add the `.navbar-form` class to a form element and add an input(s). Note that we have added a `.form-group` class to the div container holding the input. This adds proper padding

if you have more than one inputs (you will learn more about this in the Forms chapter).

Example

```
<nav class="navbar navbar-inverse">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <ul class="nav navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li><a href="#">Page 1</a></li>
      <li><a href="#">Page 2</a></li>
    </ul>
    <form class="navbar-form navbar-left" action="/action_page.php">
      <div class="form-group">
        <input type="text" class="form-control" placeholder="Search">
      </div>
      <button type="submit" class="btn btn-default">Submit</button>
    </form>
  </div>
</nav>
```

[Try it Yourself »](#)

You can also use the `.input-group` and `.input-group-addon` classes to attach an icon or help text next to the input field. You will learn more about these classes in the Bootstrap Inputs chapter.




Example

```
<form class="navbar-form navbar-left" action="/action_page.php">
  <div class="input-group">
    <input type="text" class="form-control" placeholder="Search">
    <div class="input-group-btn">
      <button class="btn btn-default" type="submit">
        <i class="glyphicon glyphicon-search"></i>
      </button>
    </div>
  </div>
</form>
```

[Try it Yourself »](#)

Navbar Text



Use the `.navbar-text` class to vertical align any elements inside the navbar that are not links (ensures proper padding and text color).

Example

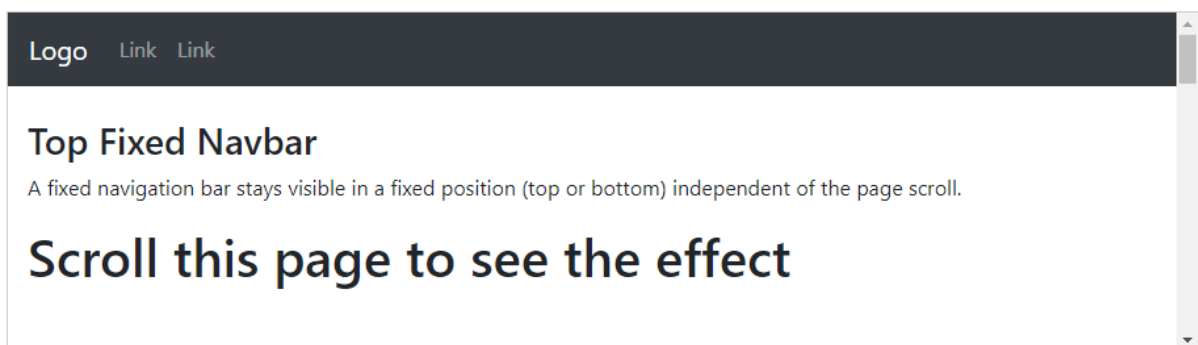
```
<nav class="navbar navbar-inverse">
  <ul class="nav navbar-nav">
    <li><a href="#">Link</a></li>
    <li><a href="#">Link</a></li>
  </ul>
  <p class="navbar-text">Some text</p>
</nav>
```

[Try it Yourself »](#)

Fixed Navigation Bar

The navigation bar can also be fixed at the top or at the bottom of the page.

A fixed navigation bar stays visible in a fixed position (top or bottom) independent of the page scroll.



The `.navbar-fixed-top` class makes the navigation bar fixed at the top:

Example

```
<nav class="navbar navbar-inverse navbar-fixed-top">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
```

```
<ul class="nav navbar-nav">
  <li class="active"><a href="#">Home</a></li>
  <li><a href="#">Page 1</a></li>
  <li><a href="#">Page 2</a></li>
  <li><a href="#">Page 3</a></li>
</ul>
</div>
</nav>
```

[Try it Yourself »](#)

The `.navbar-fixed-bottom` class makes the navigation bar stay at the bottom:

Example

```
<nav class="navbar navbar-inverse navbar-fixed-bottom">
  <div class="container-fluid">
    <div class="navbar-header">
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <ul class="nav navbar-nav">
      <li class="active"><a href="#">Home</a></li>
      <li><a href="#">Page 1</a></li>
      <li><a href="#">Page 2</a></li>
      <li><a href="#">Page 3</a></li>
    </ul>
  </div>
</nav>
```

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Collapsing The Navigation Bar

The navigation bar often takes up too much space on a small screen.

We should hide the navigation bar; and only show it when it is needed.

In the following example the navigation bar is replaced by a button in the top right corner. Only when the button is clicked, the navigation bar will be displayed:



Collapsible Navbar

Click on the button in the top right corner to reveal the navigation links.

Example

```
<nav class="navbar navbar-inverse">
  <div class="container-fluid">
    <div class="navbar-header">
      <button type="button" class="navbar-toggle" data-
toggle="collapse" data-target="#myNavbar">
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
      </button>
      <a class="navbar-brand" href="#">WebSiteName</a>
    </div>
    <div class="collapse navbar-collapse" id="myNavbar">
      <ul class="nav navbar-nav">
        <li class="active"><a href="#">Home</a></li>
        <li><a href="#">Page 1</a></li>
        <li><a href="#">Page 2</a></li>
        <li><a href="#">Page 3</a></li>
      </ul>
      <ul class="nav navbar-nav navbar-right">
        <li><a href="#"><span class="glyphicon glyphicon-
user"></span> Sign Up</a></li>
        <li><a href="#"><span class="glyphicon glyphicon-log-
in"></span> Login</a></li>
      </ul>
    </div>
  </div>
</nav>
```

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Test Yourself with Exercises!

Chapter 6

Bootstrap Carousel Plugin

The Carousel Plugin

The Carousel plugin is a component for cycling through elements, like a carousel (slideshow).

Tip: Plugins can be included individually (using Bootstrap's individual "carousel.js" file), or all at once (using "bootstrap.js" or "bootstrap.min.js").

Carousel Example



Carousels are not supported properly in Internet Explorer 9 and earlier (because they use CSS3 transitions and animations to achieve the slide effect).

How To Create a Carousel

The following example shows how to create a basic carousel:

Example

```
<div id="myCarousel" class="carousel slide" data-ride="carousel">
  <!-- Indicators -->
  <ol class="carousel-indicators">
    <li data-target="#myCarousel" data-slide-to="0" class="active"></li>
    <li data-target="#myCarousel" data-slide-to="1"></li>
    <li data-target="#myCarousel" data-slide-to="2"></li>
  </ol>

  <!-- Wrapper for slides -->
  <div class="carousel-inner">
    <div class="item active">
      
    </div>

    <div class="item">
      
    </div>

    <div class="item">
      
    </div>
  </div>

  <!-- Left and right controls -->
  <a class="left carousel-control" href="#myCarousel" data-slide="prev">
    <span class="glyphicon glyphicon-chevron-left"></span>
    <span class="sr-only">Previous</span>
  </a>
  <a class="right carousel-control" href="#myCarousel" data-slide="next">
    <span class="glyphicon glyphicon-chevron-right"></span>
    <span class="sr-only">Next</span>
  </a>
</div>
```

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Example Explained

The outermost <div>:

Carousels require the use of an id (in this case `id="myCarousel"`) for carousel controls to function properly.

The `class="carousel"` specifies that this `<div>` contains a carousel.

The `.slide` class adds a CSS transition and animation effect, which makes the items slide when showing a new item. Omit this class if you do not want this effect.

The `data-ride="carousel"` attribute tells Bootstrap to begin animating the carousel immediately when the page loads.

The "Indicators" part:

The indicators are the little dots at the bottom of each slide (which indicates how many slides there is in the carousel, and which slide the user are currently viewing).

The indicators are specified in an ordered list with class `.carousel-indicators`.

The `data-target` attribute points to the id of the carousel.

The `data-slide-to` attribute specifies which slide to go to, when clicking on the specific dot.

The "Wrapper for slides" part:

The slides are specified in a `<div>` with class `.carousel-inner`.

The content of each slide is defined in a `<div>` with class `.item`. This can be text or images.

The `.active` class needs to be added to one of the slides. Otherwise, the carousel will not be visible.

The "Left and right controls" part:

This code adds "left" and "right" buttons that allows the user to go back and forth between the slides manually.

The `data-slide` attribute accepts the keywords `"prev"` or `"next"`, which alters the slide position relative to its current position.

Add Captions to Slides

Add `<div class="carousel-caption">` within each `<div class="item">` to create a caption for each slide:

Example

```
<div id="myCarousel" class="carousel slide" data-ride="carousel">
  <!-- Indicators -->
  <ol class="carousel-indicators">
    <li data-target="#myCarousel" data-slide-to="0" class="active"></li>
    <li data-target="#myCarousel" data-slide-to="1"></li>
    <li data-target="#myCarousel" data-slide-to="2"></li>
```

```

</ol>

<!-- Wrapper for slides -->
<div class="carousel-inner">
  <div class="item active">
    
    <div class="carousel-caption">
      <h3>Los Angeles</h3>
      <p>LA is always so much fun!</p>
    </div>
  </div>

  <div class="item">
    
    <div class="carousel-caption">
      <h3>Chicago</h3>
      <p>Thank you, Chicago!</p>
    </div>
  </div>

  <div class="item">
    
    <div class="carousel-caption">
      <h3>New York</h3>
      <p>We love the Big Apple!</p>
    </div>
  </div>
</div>

<!-- Left and right controls -->
<a class="left carousel-control" href="#myCarousel" data-slide="prev">
  <span class="glyphicon glyphicon-chevron-left"></span>
  <span class="sr-only">Previous</span>
</a>
<a class="right carousel-control" href="#myCarousel" data-slide="next">
  <span class="glyphicon glyphicon-chevron-right"></span>
  <span class="sr-only">Next</span>
</a>
</div>

```

Try it Yourself »

Complete Bootstrap Carousel Reference

For a complete reference of all carousel options, methods and events, go to our [Bootstrap JS Carousel Reference](#).

