

Responsive Web Design With Bootstrap

Dr. Waheed Anwar

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 is the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first web sites.
- Bootstrap is completely free to download and use!

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

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.
- 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, Safari, and Opera)

Where to Get Bootstrap?



- There are two ways to start using Bootstrap on your own web site.
 - Download Bootstrap from getbootstrap.com
 - If you want to download and host Bootstrap yourself, go to getbootstrap.com, and follow the instructions there.
 - <https://getbootstrap.com/docs/5.0/getting-started/download/>
 - Download ready-to-use compiled code for Bootstrap v5.0.0-beta3 to easily drop into your project, which includes:
 - Compiled and minified CSS bundles (see CSS files comparison)
 - Compiled and minified JavaScript plugins (see JS files comparison)
 - Include Bootstrap from a 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.

Create 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>
```

Create Web Page with Bootstrap (2)



- Bootstrap 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.

- Button Styles
 - Bootstrap provides seven styles of buttons with the following classes:
.btn-default
.btn-primary
.btn-success
.btn-info
.btn-warning
.btn-danger
.btn-link

Button Sizes



- Bootstrap provides four button sizes with the following classes:

.btn-lg

.btn-md

.btn-sm

.btn-xs

Bootstrap Button Elements



- The button classes can be used on the following elements:
 - `<a>`
 - `<button>`
 - `<input>`

Block Level Buttons



- A block level button spans the entire width of the parent element.
 - Add class `.btn-block` to create a block level button:

Active/Disabled Buttons



- A button can be set to an active (appear pressed) or a disabled (unclickable) state:
 - The class `.active` makes a button appear pressed, and the class `.disabled` makes a button unclickable:

Bootstrap Images



- Rounded Corners
 - The `.img-rounded` class adds rounded corners to an image (IE8 does not support rounded corners):
- Circle
 - The `.img-circle` class shapes the image to a circle (IE8 does not support rounded corners):
- Thumbnail
 - The `.img-thumbnail` class shapes the image to a thumbnail:
- Responsive Images
 - Images comes 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:

Bootstrap Tables



- A **basic** Bootstrap table has a light padding and only horizontal dividers.
 - The `.table` class adds basic styling to a table:
- **Striped Rows**
 - The `.table-striped` class adds zebra-stripes to a table:
- **Bordered Table**
 - The `.table-bordered` class adds borders on all sides of the table and cells:
- **Hover Rows**
 - The `.table-hover` class enables a hover state on table rows:
- **Responsive Tables**
 - The `.table-responsive` class creates a responsive table. The table will then scroll horizontally on small devices (under 768px). When viewing on anything larger than 768px wide, there is no difference:

Create Web Page with Bootstrap (3)



- Containers
 - Bootstrap also requires a containing element to wrap site contents.
 - There are two container classes to choose from:
 - The .container class provides a responsive **fixed width container**. The .container-fluid class provides a **full width container**, spanning the entire width of the viewport.
 - **Note:** Containers are not nestable (you cannot put a container inside another container).

Bootstrap Grids



- 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:

```
<div class="col-md-12">Span 12 columns</div>
```

```
<div class="col-md-6">Span 6</div><div class="col-md-6">Span 6</div>
```

```
<div class="col-md-4">Span 4</div><div class="col-md-8">Span 8</div>
```

```
<div class="col-md-4">Span 4</div><div class="col-md-4">Span 4</div> <div class="col-md-4">Span 4</div>
```

- 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)
 - sm (for tablets)
 - md (for desktops)
 - lg (for larger desktops)
- The classes above can be combined to create more dynamic and flexible layouts.

Basic Structure of a Bootstrap Grid



```
<div class="row">
  <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.

References



- Discovering the Internet: Complete, Jennifer Campbell, Course Technology, Cengage Learning, 5th Edition-2015, ISBN 978-1-285-84540-1.
- Basics of Web Design HTML5 & CSS3, Second Edition, by Terry Felke-Morris, Pearson, ISBN 978-0-13-312891-8.
- W3schools.com