

# BOOTSTRAP OVERVIEW

## What is Bootstrap?

- Bootstrap is a free powerful front-end toolkit.
- It is a collection of HTML, CSS and JavaScript tools for building web pages.
- Bootstrap was developed by Mark Otto and Jacob Thornton at Twitter, and released as an open source product in August 2011 on GitHub.

## Bootstrap features

- It is flexible and easy to work with
  - HTML, CSS and JavaScript knowledge is good to start using it.
- It is responsive by design
  - Responsive CSS adapts to various form factors
- Maintains wide browser compatibility.
  - Compatible with Chrome, IE, Firefox, Safari, Opera
- Offers rich extensibility using JavaScript
  - Built-in support for jQuery plugins

## Bootstrap Package Inclusions

- Scaffolding
  - ▣ Bootstrap provides a basic structure with Grid system, link styles and backgrounds
- Components
  - ▣ Bootstrap contains many reusable components built to provide iconography, dropdowns, navigation, alerts etc
- JavaScript Plugins
  - ▣ Bootstrap contains quite a number of custom jQuery plugins.

## Get Bootstrap

- Bootstrap can be downloaded from <http://www.getbootstrap.com>
- Its available in two forms:
  - A precompiled version
    - Compiled and minified CSS, JavaScript and fonts
    - No documentation or original source files
  - A source code version
    - Styles source written in Less, JavaScript and relevant documentation.
    - Facilitates change and customization of styles
- Bootstrap can also be included from CDN

## Bootstrap HTML template

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width,
                                initial-scale=1">
    <title>Bootstrap Template</title>
    <link href="css/bootstrap.min.css" type="text/css"
          rel="stylesheet">
    <script src="js/jquery.min.js"></script>
    <script src="js/bootstrap.min.js"></script>
  </head>
  <body>
    <h1>Hello, Bootstrap world!</h1>
  </body>
</html>
```

Demo01.htm

## Bootstrap HTML template...

```
<meta charset="utf-8">
<meta name="viewport" content="width=device-
                               width, initial-scale=1">
```

- The first is to correctly set the character encoding to prevent text display issues.
- The `width=device-width` sets the width of the page to the screen-width of the device
- The `initial-scale=1` sets the initial zoom level when the page is first loaded by the browser.

## Components

- Bootstrap comes bundled with basic HTML and CSS design templates including common UI components.
- Some of them are
  - Tables, Forms, Buttons, dropdowns, Navigation, Alerts, Progress bars etc
- These templates are made available as CSS classes that can be applied to HTML to achieve different effects.

## Components...

- Many components use JavaScript extensions and jQuery plugins.
- Class names used are semantic like `.success`, `.warning`, `.info`
  - ▣ This makes the components reusable and extensible.
- All classes can be overridden with custom CSS style and color.

## Grid System

- Grids in web design organize and structure content.
- Bootstrap includes a responsive, mobile first fluid grid system that appropriately scales up to 12 columns as the device or viewport size increases.
  - ▣ In a full row, the column widths will be any combination that sums to 12.
- It includes predefined classes for easy layout options.
- Mobile first implies that the code for Bootstrap starts by targeting smaller screens and then expands components and grids for larger screens

## Mobile First Strategy

- Content
  - ▣ Determine what is most important
- Layout
  - ▣ Design to smaller widths first
  - ▣ Base CSS addresses mobile devices first
- Progressive Enhancement
  - ▣ Add elements as screen size increases

## Bootstrap Grid System

- Grid systems are used for creating page layouts through a series of rows and columns that hold content.
- Rows must be placed within a **.container** class for proper alignment and padding.
- Rows are used to create horizontal groups of columns
- Content should be placed within the columns and only columns may be the immediate children of rows.

## Bootstrap Grid System...

- Predefined grid classes like **.row** and **.col-xs-4** are available for making grid layouts.
- Columns create gutters (gaps between column content) via padding.
- Grid columns are created by specifying the number of twelve available columns to be spanned.
  - ▣ Three equal columns would use three **.col-xs-4**

## Grid options

	Extra small devices (<768px)	Small devices (≥768px)	Medium devices Desktops (≥992px)	Large devices Desktops (≥1200px)
Max container width	None(auto)	750px	970px	1170px
Class prefix	<b>.col-xs-</b>	<b>.col-sm-</b>	<b>.col-md-</b>	<b>.col-lg-</b>
No. of Columns	12	12	12	12
Max column width	Auto	60px	78px	95px
Gutter width	30px (15px on each side of a column)	30px	30px	30px
Nestable	Yes	Yes	Yes	Yes
Offsets	Yes	Yes	Yes	Yes

## Basic Grid Structure

- The basic structure of Bootstrap grid:

```
<div class="container">
  <div class="row">
    <div class="col-*-*"></div>
    <div class="col-*-*"></div>
  </div>
  <div class="row">...</div>
</div>
```

## Grid Structure

- **<div class="container">..</div>** element added to ensure proper centering and maximum width for layout
- **<div class="row">..</div>** is added for rows and **<div class="col-md-6"></div>** is added for columns.
- Every row in the grid is made up of 12 units
  - Eg: **<div class="col-md-3"></div>** and **<div class="col-md-9"></div>**

Demo05.htm  
Demo06.htm  
Demo07.htm



## Column characteristics

- Offsets are a useful feature for specialized layouts.
- They can be used to push columns over for more spacing.
- The **.col-md-offset-\*** classes are used on large displays for offsets
- These classes increase the left margin of a column by \* columns where \* ranges between 1 and 11.
  - ▣ The **.col-xs=\*** classes don't support offsets but it can be replicated by an empty cell.

Demo08.htm

## Column characteristics

- Nesting content with the default grid involves adding a new **.row** and a set of **.col-md-\*** columns within an existing **.col-md-\*** column.
- Nested rows should include a set of columns that add up to 12.

Demo09.htm

## CSS

### Mobile first

- The viewport meta tag can be added to ensure proper rendering and touch zooming on mobile devices
- **user-scalable=no** to the content attribute is added to disable zooming capabilities on mobile devices.
  - ▣ Users are able to scroll and not zoom
- Normally **maximum-scale=1.0** is used along with **user-scalable=no**

## CSS...

### Responsive Images

- Bootstrap 3 allows making images responsive by adding a class **.img-responsive** to the **<img>** tag.
- This class applies **max-width:100%** and **height:auto** to the image to scale it to the parent element.

Demo10.htm

## Typography

- Bootstrap employs Helvetica Neue, Helvetica, Arial and sans-serif in its default font stack.
- Typography feature of Bootstrap can be used to create headings, paragraphs, lists and other inline elements.
- Inline subheadings can be added to any of the headings by adding `<small>` around any of the elements
  - ▣ This yields a text in a lighter color.

Demo11.htm

## Typography...

- Lead Body Copy
  - ▣ `class="lead"` adds emphasis to a paragraph that yields larger font size, lighter weight and a taller line height.
- Emphasis
  - ▣ Bootstrap offers a few classes that can be used to provide emphasis on text.
- Abbreviations
  - ▣ The HTML element provides markup for abbreviations or acronyms like WWW.
  - ▣ Bootstrap styles `<abbr>` elements with a light dotted border along the bottom and reveals the full text on hover.

Demo12.htm  
Demo13.htm

## Code

- Bootstrap allows the display of code in two different ways:
  - ▣ `<code>` tag can be used to display code inline
  - ▣ `<pre>` is used to display code as a standalone block or if it has multiple lines.
  - ▣ When the `<pre>` and `<code>` tags are used the Unicode variants for the opening and closing tags `&lt;` and `&gt;` need to be used.

Demo15.htm

## Tables

- Bootstrap provides a simple layout for building tables.
- **.table** class added to a table provides a basic table style with some light padding and horizontal dividers.
- **.table-striped** class provides stripes on rows within the `<tbody>`
- **.table-bordered** class provides borders surrounding every element and rounded corners around the entire table.

Demo16.htm

## Tables

- **.table-hover** class provides a light gray background to rows when the cursor hovers over them.
- **.table-condensed** class cuts the row padding in half to condense the table.
  - ▣ Used in case of denser information
- Contextual Classes – used to change the background color of table rows or individual cells.
  - ▣ **.active** – applies the hover color to a particular row or cell
  - ▣ **.success** – indicates a successful or positive action
  - ▣ **.warning** – indicates a warning that needs attention
  - ▣ **.danger** – indicates a potentially negative action

Demo17.htm

## Forms

- Bootstrap provides classes for different styles of forms.
- Bootstrap provides the following form layouts
  - ▣ Vertical form (default)
  - ▣ Inline form
  - ▣ Horizontal form
- Vertical form
  - ▣ The form element is provided with a property **role="form"**
  - ▣ Labels and controls are wrapped in a **<div>** with class **.form-group**.
    - This is needed for optimum spacing
  - ▣ Class **.form-control** is added to all textual **<input>**, **<textarea>**, **<select>** element

Demo19.htm

## Forms

- **.form-inline** is added to the **<form>** tag to create a form where all of the elements are inline, left aligned and labels are alongside.
  - ▣ Inputs, selects and textareas have 100% width in Bootstrap.
  - ▣ Width needs to be set on form controls when using inline form
  - ▣ Class **.sr-only** is used to hide the labels of the inline forms.

Demo20.htm

## Forms...

- Horizontal forms are distinct in markup and presentation.
- A form employing horizontal layout can be created by
  - ▣ Adding a class **.form-horizontal** to the parent **<form>** element.
  - ▣ Wrapping labels and controls in a **<div>** with class **.form-group**
  - ▣ Adding a class **.control-label** to the labels.

Demo21.htm

## Form controls

- Bootstrap supports all native HTML5 input types.
- **.checkbox-inline** or **.radio-inline** class can be used for a series of checkboxes or radio buttons to appear on the same line.
- Validation States
  - ▣ Bootstrap includes validation styles for errors, warnings and success messages.
  - ▣ **.has-warning**, **.has-error**, **.has-success** is to be added to the parent element.

Demo22.htm

## Forms...

- Height and width of forms can be set using classes such as **.input-lg** and **.col-lg-\***
- Bootstrap form controls can have a block level help text that flows with inputs.
- In order to add a full width block of content, the **.help-block** class is used after the **<input>**

Demo23.htm

## Buttons

- Anything provided with a class of **.btn** will inherit the default look of a gray button with rounded corners.
- Bootstrap provides options to style buttons

Class	Description
btn	Default button
btn-primary	Provides extra weight and identifies the primary action in a set of buttons
btn-success	Indicates a positive action
btn-info	Contextual button for information
btn-warning	Indicates caution to be taken
btn-danger	Indicates a dangerous action
btn-link	Make a button look like a link

Demo24.htm

## Buttons

### Button Size

Class	Description
.btn-lg	Large button
.btn-sm	Small button
.btn-xs	Extra small button
.btn-block	Block level buttons that span the full width of the parent

- Button State – Buttons will appear pressed when active.
  - **.active** class is used to indicate that the button is activated
  - disabled attribute to **<button>** buttons to disable it and it fades in color by 50%

Demo25.htm



## Images

- Bootstrap provides three classes that can be used to apply simple styles to images
- **.img-rounded** – adds **border-radius:6px** to give the image rounded corners
- **.img-circle** – makes the entire image round by adding **border-radius:500px**
- **.img-thumbnail** – adds padding and a gray border

Demo26.htm

## Glyphicons

- Glyphicons are icon fonts that have been made available by their creator free of cost for Bootstrap.
- Glyphicons can be found in the **fonts** folder
- Associated CSS rules are present in the **bootstrap.css** and **bootstrap-min.css** files in the **css** folder.
- Glyphicons can be used anywhere in the code by using **.glyphicon** and appropriate classes.

Demo27.htm

## Conclusion

- Bootstrap helps build a responsive front end quickly with the help of simple CSS classes.
- Bootstrap is a free and open source project!
- Bootstrap plugins leverage jQuery.
- Bootstrap helps the developers focus on the development rather than on the design.