Unit III – Responsive Web Design (RWD)

Infosys
be more

Copyright Guideline

Table of Contents

Responsive Web Design

– What is RWD

– Introduction to RWD Techniques

• Fluid Layout

• Fluid Images and

• Media queries

Twitter Bootstrap

– Bootstrap Background and Features

– Getting Started with Bootstrap

– Demystifying Grids

– Off Canvas

– Bootstrap Components

– JS Plugins

– Customization

Infosys
be more

Responsive Web Design

What is Responsive Web Design(RWD)?

Responsive Web Design(RWD)

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

- It provides an optimal viewing experience with minimum resizing across various devices.

- HTML and CSS is used to resize, hide, shrink, enlarge or move the content to render a good web page on any screen of any standard size.

- RWD is not a program or a JavaScript

Responsive Web Design(RWD) in Today's Web
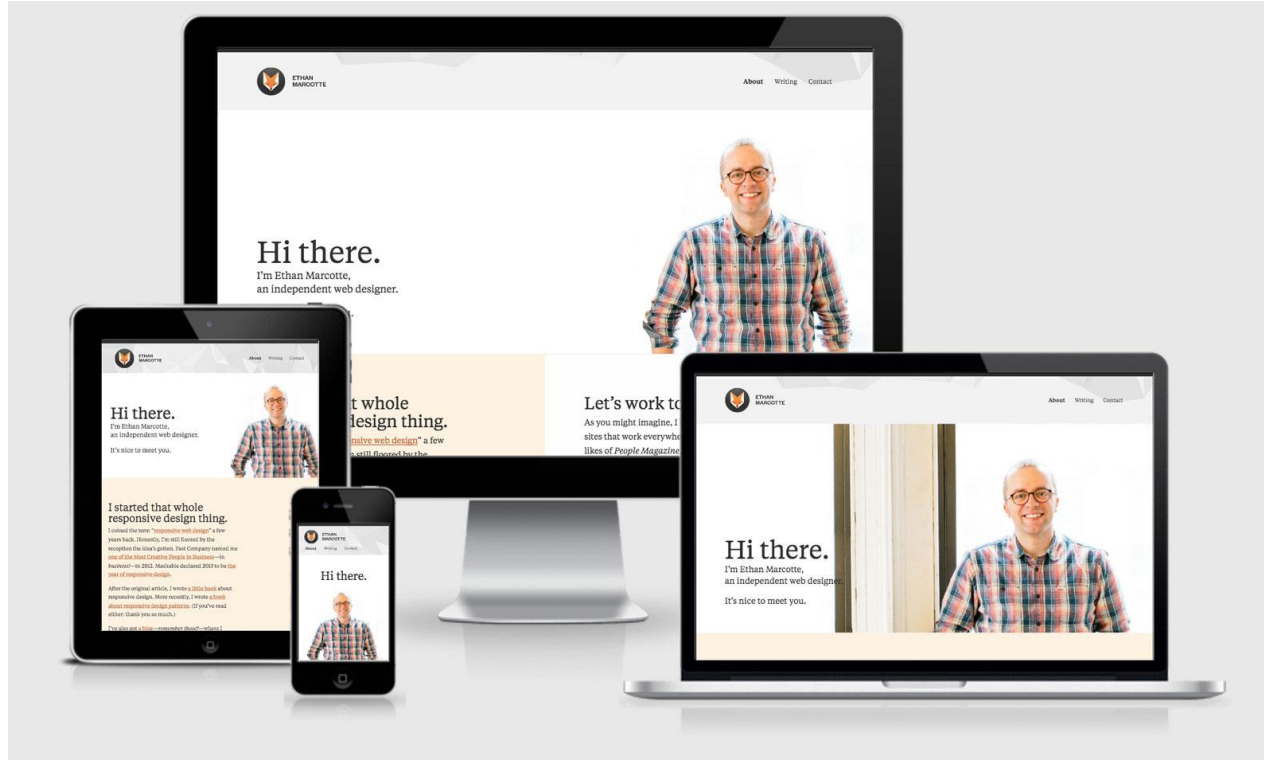
Need for RWD – Current Challenge

Multiple Devices	Different Form Factors
Different Screen Resolutions	Support Different Event & Interaction Models

Infosys
be more

RWD - Separation of content and presentation

Behaviour (DOM Script) → **JavaScript** →

Presentation (CSS) → **CSS** →

Responsive Layers

http://t1.gstatic.com/images?q=tbn:ANd9GcQYAa_-nBCFr3J
BIhMEerMaZIgfRVTtF9hgI48Sxy3-AP9IVUSE

Content → **Content**
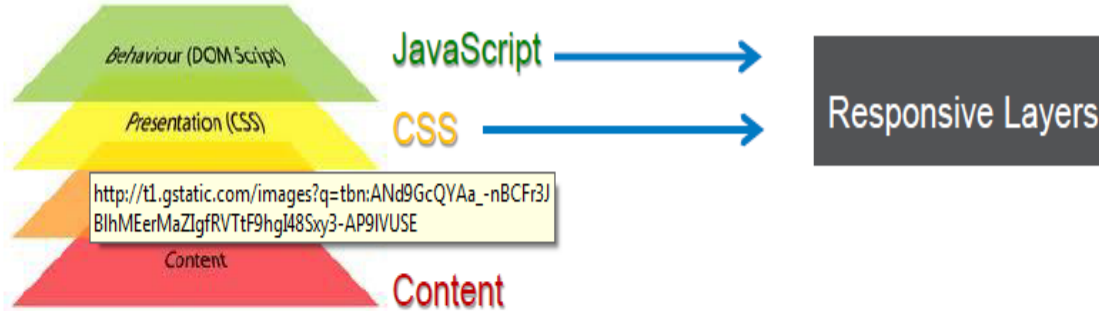
One HTML file

+

multiple CSS and JS files

----

a range of custom experiences

Desktop   Tablet   Phone

Infosys
be more

Core concepts of RWD

- Viewport is the user's visible area of web page.

- It varies with devices and will larger on a computer screen compared to mobile phones.

- Few core concepts of RWD:

  - Fluid layout

    - Web page layout was designed based on the size of viewport

  - Flexible images

    - Responsive images to adapt to the size of viewport

  - Media Queries

    - Selectively applying CSS for styling on small and large screens.

CSS Frameworks at a glance

CSS frameworks

- Quick start web development

- An easy way to achieve the core concepts of RWD

- Offers grids, automatic scaling of images and already implemented media queries

- Also offers CSS and JS components like Navigation bars, Tabs, Carousels etc. to ease out building full fledged sites

- Classified as :

  - Simple framework : Provides only grid system

  - Complete frameworks : Provides grid and configurable components

Popular complete frameworks

	Zurb Foundation	Twitter Bootstrap
Built by	Zurb Inc.	Twitter Inc.
Initial release	Oct 2011	Aug 2011
Version as of Dec 2013	5.0.2	3.0.3
JS components	✓	✓
CSS components	✓	✓

Twitter Bootstrap

Introduction

Bootstrap

Build responsive, mobile-first projects on the web with the world's most popular front-end component library.

Bootstrap is an open source toolkit for developing with HTML, CSS, and JS. Quickly prototype your ideas or build your entire app with our Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful plugins built on jQuery.

Get started   **Download**

Currently v4.0.0-beta.3

Introduction

Introducing Bootstrap.

Need reasons to love Bootstrap? Look no further.

By nerds, for nerds.

Built at Twitter by @mdo and @fat, Bootstrap utilizes LESS CSS, is compiled via Node, and is managed through GitHub to help nerds do awesome stuff on the web.

Made for everyone.

Bootstrap was made to not only look and behave great in the latest desktop browsers (as well as IE7!), but in tablet and smartphone browsers via responsive CSS as well.

Packed with features.

A 12-column responsive grid, dozens of components, javascript plugins, typography, form controls, and even a web-based Customizer to make Bootstrap your own.

What is Bootstrap?

- **Bootstrap is a**
  - Free Front-end Framework for faster and easier web development.
  - Includes HTML and CSS based design templates for typography, forms, buttons, tables, navigation, models, image carousels and may also use JavaScript plugins.
  - Gives us an ability to create responsive designs.

- **History of Bootstrap**
  - Developed by Mark Otto and Jacob Thornton at Twitter.
  - Released as an open source product in August 2011 on GitHub.
  - Current version: v4.0.0-beta.3

Why Bootstrap?

- Mobile first approach

  – Bootstrap consists of mobile first framework throughout the entire library than having them in separate files.

- Browser support

  – Seamlessly supported by all popular browsers

- Easy to get started

  – With basic knowledge of HTML and CSS, anyone can get started with Bootstrap. Also, official site of bootstrap has good documentation http://getbootstrap.com/docs/4.0/layout/overview/

- Responsive Design

  – Provides built-in components like navigation menu, buttons, tabs etc for easy customization.

Features

- Powerful 12 column fluid grid system

- Customizable mobile first grid with 4 major breakpoints (480px , 768px, 992px and 1200px)

- Grid configs : Nested, Offset and Column ordering

- Typography classes like Address , Block quotes, Lists etc.

- Stylish tables, forms and buttons

- Responsive images

- Visibility classes

- Bootstrap makes use of the LESS(LEaner cSS) framework, which is a CSS preprocessor, and makes the CSS code leaner and meaner.

RWD techniques and Twitter Bootstrap

RWD Technique	Implementing with Bootstrap
Responsive Layout	Grids and Offcanvas
Responsive Navigation	Navbar
Content Choreography	Grids
Fluid Images	css components

Built-in Components

Built-in Components

Getting started with Twitter Bootstrap

- Download Bootstrap from http://getbootstrap.com/

- Extract and observe the folder structure.

sub folder	files
css	bootstrap.css, bootstrap.min.css, bootstrap-theme.css and bootstrap-theme.min.css
fonts	glyphicons-halflings-regular.eot, glyphicons-halflings-regular.svg , glyphicons-halflings-regular.ttf and glyphicons-halflings-regular.woff
js	bootstrap.js, bootstrap.min.js

Infosys
be more

My First Bootstrap Page

Example:

```html
<!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">
</head>
<body>

<h1>My First Bootstrap Page</h1>

</body>
</html>
```

Output:

My First Bootstrap Page

Demystifying Grids

Grid System

- Bootstrap provides a responsive, mobile first fluid grid system that appropriately scales up to 12 columns based on the size of device or viewport.

- It includes built-in classes for layout options and powerful mixins for semantic layouts

- **Mobile First Strategy:**

  - **Content**
    - Determine what is most important.

  - **Layout**
    - Design to smaller widths first.
    - Base CSS address mobile first; media queries address for tablet, desktops.

  - **Progressive Enhancement**
    - Add elements as screen size increases.

Grids

Two Column Row

.col-md-6	.col-md-6

Two Column Unequal Row

.col-md-3	.col-md-6	.col-md-3

Mixed Two Column Row

.col-md-6 .col-sm-8	.col-md-6 .col-sm-4

Without offset

.col-md-4	.col-md-6

With offset

.col-md-4	.col-md-6

Nesting grids

Parent : .col-md-8	.col-md-4

Child 1 – col 1 .col-md-6	Child 1 – col 2 .col-md-6
Child 2 – col 1 .col-md-6	Child 2 – col 2 .col-md-6

Grids

Two Column Row

.col-md-6	.col-md-6

```
<h1>Two column row</h1>
<div class="row">
  <div class="col-md-6">.col-md-6</div>
  <div class="col-md-6">.col-md-6</div>
</div>
```

Two Column Unequal Row

.col-md-3	.col-md-6	.col-md-3

```
<h1>Three column row</h1>
<div class="row">
  <div class="col-md-3">.col-md-3</div>
  <div class="col-md-6">.col-md-6</div>
  <div class="col-md-3">.col-md-3</div>
</div>
```

Grid for different sizes

- Bootstrap grid system provides 4 grid sizes:

  - xs : Extra small devices (<768px) - phones

  - sm : small devices (>=768 px) - tablets

  - md : medium devices (>=992 px) - desktops

  - lg : Large devices (>=1200px) – large desktops, TV

- Grid Classes: .col-xs-, col-sm-, .col-md- and .col-lg-

- We can combine these grid classes and create mixed grid with powerful and dynamic layouts.

Mixed Grids

- An approach to render the content differently on different viewports/screens.

- Ex: Ads can take 40% on medium screens but only 20% on small screens.

- Creating a mixed grid:

- On a small screen

- On a medium screen

Mixed Two Column Row

.col-md-6 .col-sm-8	.col-md-6 .col-sm-4

Mixed Two Column Row

.col-md-6 .col-sm-8	.col-md-6 .col-sm-4

```
<h1>Mixed two column row</h1>
<div class="row">
  <div class="col-md-6 col-sm-8">.col-md-6 .col-sm-8 </div>
  <div class="col-md-6 col-sm-4">.col-md-6 .col-sm-4 </div>
</div>
```

Why Mixed Grids?

- If only the medium grid is used,

  - Columns start stacked on small and extra small devices

  - Shift to horizontal on medium and large devices

- On a Extra small/Small(xs/sm) screen

Two column row

.col-md-6
.col-md-6

- On a medium/large(md/lg) screen

Two Column Row

.col-md-6	.col-md-6

Infosys
be more

Column offsets

- Useful feature for more specialized layouts. Shifting columns to the right by giving a left margin

- Class config to be added : .col-<size>-offset-*

- Ex: .col-md-offset-2

```
<h1>With offset</h1>
<div class="row">
  <div class="col-md-4">.col-md-4</div>
  <div class="col-md-6 col-md-offset-2">.col-md-6</div>
</div>
```

Without offset

.col-md-4	.col-md-6

With offset

.col-md-4	.col-md-6

- Used to create a new grid(Child grid) within any column of parent grid.

- A column in a row(parent) can have many rows and columns(children)

- Example

```
<h1>Nesting Columns </h1>
<div class="row">
  <div class="col-md-8">Parent: .col-md-8
    <div class ="row"
        <div class="col-md-6">Child 1 – col1 .col-md-6</div>
        <div class="col-md-6">Child 1 – col2 .col-md-6</div>
      </div>
  </div>
…
  <div class="col-md-4">.col-md-4</div>
</div>
```

Parent : .col-md-8		.col-md-4
Child 1 – col 1 .col-md-6	Child 1 – col 2 .col-md-6	
Child 2 – col 1 .col-md-6	Child 2 – col 2 .col-md-6	

Column Ordering

- Change the order of columns when the viewport size changes

- Used to ensure that important content is always rendered at beginning or other appropriate position

- Ex: Ads may appear on left in md screens but right on sm screens

- Class syntax : .col-<size>-<push/pull>-*

- Push: push to right, Pull: pull to left

- Ex: .col-sm-pull-9   //pull content to left side on small devices

- On a Medium Screen(md)

Advertisements	Main Content

- On a Small Screen(sm)

Main Content	Advertisements

```
<h1>Column Ordering</h1>
<div class="row">
  <div class="col-sm-9 col-md-push-3">Main Content</div>
 <div class="col-sm-3 col-md-pull-9">Advertisements</div>
</div>
```

Layouts: Fixed Layout

- Containers are the basic layout element in Bootstrap

- They are required to use default grid system

- Containers can be nested

- .container class provides a responsive fixed size container as shown below

```
<body>
   <div class = "container">
     . . .
   </div>
</body>
```

Layouts: Fluid Layout

• .container-fluid class provides a full width container spanning the entire width of the viewport.


```
<div class =  "container-fluid">
    <div class = "row-fluid">
        <div class = "span2">
        <!--Sidebar content-->
        </div>
            <div class = span10">
        <!--Body content-->
    </div>
    </div>
</div>
```
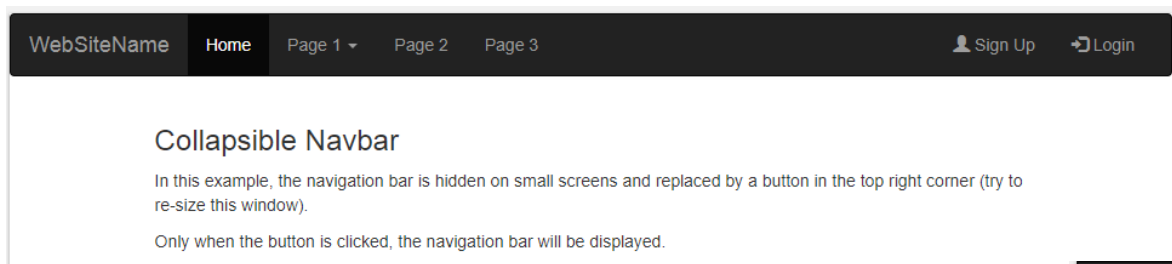
Navbar

•••

Navbar

- Navigation bars/headers are responsive 'meta' components.

- Collapse in mobile views and expand as the viewport width increases.

- On large screens

- On small screens
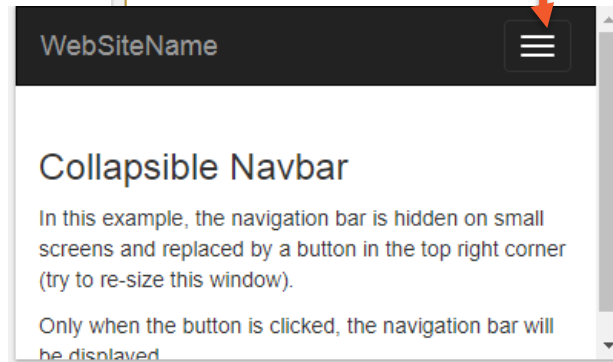
Navbar

- Navbar on Small devices

```html
<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>

<div class="container">
  <h3>Basic Navbar Example</h3>
  <p>A navigation bar is a navigation header that is placed at the top of
the page.</p>
</div>
```

WebSiteName

Home

Page 1

Page 2

Page 3

Basic Navbar Example

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

Sign in page

● ● ●

Sign in page

Email:

Enter email

Password:

Enter password

☐ Remember me

Submit

```html
<div class="container">
  <h2>Vertical (basic) form</h2>
  <form action="/action_page.php">
    <div class="form-group">
      <label for="email">Email:</label>
      <input type="email" class="form-control" id="email" placeholder="Enter email" name="email">
    </div>
    <div class="form-group">
      <label for="pwd">Password:</label>
      <input type="password" class="form-control" id="pwd" placeholder="Enter password" name="pwd">
    </div>
    <div class="checkbox">
      <label><input type="checkbox" name="remember"> Remember me</label>
    </div>
    <button type="submit" class="btn btn-default">Submit</button>
  </form>
</div>
```

Sidenav Push Example

Click on the element below to open the side navigation menu, and push this content to the right.

☰ open

About	Sidenav Push Example
Services	Click on the element below to open the side navigation menu, and push this content to the right.
Clients	
Contact	☰ open

Off Canvas
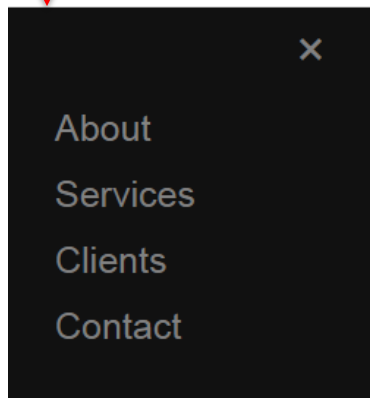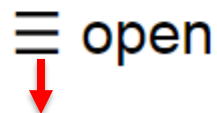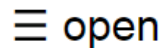
```html
<div id="main">
  <h2>Sidenav Push Example</h2>
  <p>Click on the element below to open the side navigation menu, and push
this content to the right.</p>
  <span style="font-size:30px;cursor:pointer" onclick="openNav()">&#9776;
open</span>
</div>

<script>
function openNav() {
    document.getElementById("mySidenav").style.width = "250px";
    document.getElementById("main").style.marginLeft = "250px";
}

function closeNav() {
    document.getElementById("mySidenav").style.width = "0";
    document.getElementById("main").style.marginLeft= "0";
}
</script>
```

```css
.sidenav a {
    padding: 8px 8px 8px 32px;
    text-decoration: none;
    font-size: 25px;
    color: #818181;
    display: block;
    transition: 0.3s;
}

.sidenav a:hover {
    color: #f1f1f1;
}

.sidenav .closebtn {
    position: absolute;
    top: 0;
    right: 25px;
    font-size: 36px;
    margin-left: 50px;
}
```

CSS Components

CSS component and classes (1/2)

- Button: use <button> tag with .btn .btn-default

  - Style variants: .btn-primary, .btn-success, .btn-info, .btn-warning, .btn-danger, and .btn-link

  - Size variants: .btn-lg, .btn-sm and .btn-xs

  - Block level button: .btn-block

- Images: <img> tag with either of .img-rounded, .img-circle or .img-thumbnail as classes

- Responsive images: use .img-responsive class to a container of <img>

- Tables: <table> tag with .table as class

  - Other classes: .table-striped, .table-bordered, .table-hover, .table-condensed

- Responsive tables: use .table-responsive class in a container for the table

CSS component and classes (2/2)

- Button groups: use .btn-group as the container and fill it with buttons

- Breadcrumbs: use .breadcrumb as the class to any

- Pagination: use .pagination as class to any

- Badges: use .badge as class to <span> to indicate badges

- On page Alerts: use .alert class along with styles: .alert-success / .alert-failure / .alert-info / .alert-danger

- For dismissible on page alerts: use .alert-dismissible

- List group: use .list-group as class for a container with .list-group-item(s)

- Panels: use .panel .panel-default as container with .panel-header, .panel-body and .panel-footer as child elements. Context alernatives like .panel-primary/success/info/warning and danger also available

Infosys
be more

Bootstrap Typography

- Typography is an art and technique of arranging type to make language legible, readable and appealing when displayed.

- Bootstrap provides simple and easily customizable styling for

  - Headings

  - Lists

  - Blockquotes

  - Inline text elements

  - Paragraphs

  - Emphasis text, etc

Bootstrap Typography - Headings

- All HTML headings - <h1> to <h6> are available in Bootstrap and are displayed below:

```
<div class="container">
  <h1>h1 Bootstrap heading (36px)</h1>
  <h2>h2 Bootstrap heading (30px)</h2>
  <h3>h3 Bootstrap heading (24px)</h3>
  <h4>h4 Bootstrap heading (18px)</h4>
  <h5>h5 Bootstrap heading (14px)</h5>
  <h6>h6 Bootstrap heading (12px)</h6>
</div>
```

h1 Bootstrap heading (36px)

h2 Bootstrap heading (30px)

h3 Bootstrap heading (24px)

h4 Bootstrap heading (18px)

h5 Bootstrap heading (14px)

h6 Bootstrap heading (12px)

Bootstrap Tables

- Bootstrap a framework/layout for building tables.

- Base class is .table. Basic styling like padding and adding horizontal dividers is supported by following table elements:

  - <table>

  - <thread>

  - <tbody>

  - <tr>

  - <td>

  - <th>

  - <caption>

Bootstrap Tables

Basic Table

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

```html
<div class="container">
  <h2>Basic Table</h2>
  <table class="table">
    <thead>
      <tr>
        <th>Firstname</th>
        <th>Lastname</th>
        <th>Email</th>
      </tr>
    </thead>
    <tbody>
      <tr>
        <td>John</td>
        <td>Doe</td>
        <td>john@example.com</td>
      </tr>
      <tr>
        <td>Mary</td>
        <td>Moe</td>
        <td>mary@example.com</td>
      </tr>        <tr>
        <td>July</td>
        <td>Dooley</td>
        <td>july@example.com</td>
      </tr>
    </tbody>
  </table>
</div>
```

Bootstrap Tables – Optional Classes

- Along with .table class, Bootstrap provides few optional classes for styling the tables.

- Striped Table – use .table-striped class

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- Bordered Table – use .table-bordered class

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- Hover Table – use .table-hover class

Firstname	Lastname	Email
John	Doe	john@example.com
Mary	Moe	mary@example.com
July	Dooley	july@example.com

- Responsive Table – use .table-responsive class

#	Firstname	Lastname	Age	City	Country
1	Anna	Pitt	35	New York	USA

Infosys
be more

Bootstrap Forms

- Form layouts available in Bootstrap are

  - Vertical (default) form

  - In-line form

  - Horizontal form

- To create a basic form following are required:

  - Add role as **form** to the **<form>** element\

  - For optimum spacing, labels and controls should be wrapped in **<div>** element with class .form-group.

  - Textual elements like <input>, <textarea> and <select> can included using the class .form-control

Infosys
be more

Vertical Forms

```html
<div class="container">
  <h2>Vertical (basic) form</h2>
  <form action="/action_page.php">
    <div class="form-group">
      <label for="email">Email:</label>
      <input type="email" class="form-control" id="email"
placeholder="Enter email" name="email">
    </div>
    <div class="form-group">
      <label for="pwd">Password:</label>
      <input type="password" class="form-control" id="pwd"
placeholder="Enter password" name="pwd">
    </div>
    <div class="checkbox">
      <label><input type="checkbox" name="remember"> Remember
me</label>
    </div>
    <button type="submit" class="btn btn-
default">Submit</button>
  </form>
</div>
```

Vertical (basic) form

Email:

[Enter email]

Password:

[Enter password]

☐ Remember me

[Submit]

Infosys
be more

```html
<div class="container">
  <h2>Inline form with .sr-only class</h2>
  <p>Make the viewport larger than 768px wide to see that all of the form elements are inline, left aligned, and the labels are alongside.</p>
  <form class="form-inline" action="/action_page.php">
    <div class="form-group">
      <label class="sr-only" for="email">Email:</label>
      <input type="email" class="form-control" id="email" placeholder="Enter email"  name="email">
    </div>
    <div class="form-group">
      <label class="sr-only" for="pwd">Password:</label>
      <input type="password" class="form-control" id="pwd" placeholder="Enter password" name="pwd">
    </div>
    <div class="checkbox">
      <label><input type="checkbox" name="remember"> Remember me</label>
    </div>
    <button type="submit" class="btn btn-default">Submit</button>
  </form>
</div>
```

Inline form with .sr-only class

Make the viewport larger than 768px wide to see that all of the form elements are inline, left aligned, and the labels are alongside.

| Enter email | Enter password | ☐ Remember me | Submit |

Horizontal Forms

```html
<div class="container">
  <h2>Horizontal form</h2>
  <form class="form-horizontal" action="/action_page.php">
    <div class="form-group">
      <label class="control-label col-sm-2" for="email">Email:</label>
      <div class="col-sm-10">
        <input type="email" class="form-control" id="email"
placeholder="Enter email" name="email">
      </div>
    </div>
    <div class="form-group">
      <label class="control-label col-sm-2" for="pwd">Password:</label>
      <div class="col-sm-10">
        <input type="password" class="form-control" id="pwd"
placeholder="Enter password" name="pwd">
      </div>
    </div>
    <div class="form-group">
      <div class="col-sm-offset-2 col-sm-10">
        <div class="checkbox">
          <label><input type="checkbox" name="remember"> Remember me</label>
        </div>
      </div>
    </div>
    <div class="form-group">
      <div class="col-sm-offset-2 col-sm-10">
        <button type="submit" class="btn btn-default">Submit</button>
      </div>
```

Horizontal form

Email:

> Enter email

Password:

> Enter password

☐ Remember me

Submit

Bootstrap Buttons (1/2)

- To display Buttons use .btn class

- Some options to style buttons are:

Button Styles

| Basic | Default | Primary | Success | Info | Warning | Danger | Link |

```html
<div class="container">
  <h2>Button Styles</h2>
  <button type="button" class="btn">Basic</button>
  <button type="button" class="btn btn-default">Default</button>
  <button type="button" class="btn btn-primary">Primary</button>
  <button type="button" class="btn btn-success">Success</button>
  <button type="button" class="btn btn-info">Info</button>
  <button type="button" class="btn btn-warning">Warning</button>
  <button type="button" class="btn btn-danger">Danger</button>
  <button type="button" class="btn btn-link">Link</button>
</div>
```

Bootstrap Buttons (2/2) – Size

- To get buttons of various sizes following classes can be used
  - .btn-lg for large button
  - .btn-sm for small button
  - .btn-xs for extra small button
  - -btn-block for block-level button that span full width

Button Sizes


```
<div class="container">
  <h2>Button Sizes</h2>
  <button type="button" class="btn btn-primary btn-lg">Large</button>
  <button type="button" class="btn btn-primary btn-md">Medium</button>
  <button type="button" class="btn btn-primary btn-sm">Small</button>
  <button type="button" class="btn btn-primary btn-xs">XSmall</button>
</div>
```

Bootstrap Images

- Bootstrap provides following classing for styling the images.

  - .img-rounded – renders image with rounded corners and border-radius:6px

  - .img-circle – renders image in round shape with radius:500px

  - .img-thumbnail – adds padding and a gray border to the image

```html
<div class="container">
  <img src="cinqueterre.jpg" class="img-circle" alt="Cinque Terre"
width="304" height="236"></br>
  <br/>
  <img src="cinqueterre.jpg" class="img-thumbnail" alt="Cinque Terre"
width="304" height="236"></br>
  <br/><img src="cinqueterre.jpg" class="img-rounded" alt="Cinque Terre">
</div>
```

Circle:

Rounded Corners:

Thumbnail:

Bootstrap Images - Responsive

- Images can be made responsive by adding the class **.img-responsive**

```html
<div class="container">
  <h2>Image</h2>
    <img class="img-responsive" src="img1.jpg" alt="" width="460" height="345">
</div>
```

Bootstrap Glyphicons

- Glyphicons are icon fonts used in web projects.

```html
<div class="container">
  <h2>Glyphicon Examples</h2>
  <p>Envelope icon: <span class="glyphicon glyphicon-envelope"></span></p>

  <p>Envelope icon as a link:
    <a href="#"><span class="glyphicon glyphicon-envelope"></span></a>
  </p>
  <p>Search icon: <span class="glyphicon glyphicon-search"></span></p>
  <p>Search icon on a button:
    <button type="button" class="btn btn-default">
      <span class="glyphicon glyphicon-search"></span> Search
    </button>
  </p>
  <p>Search icon on a styled button:
    <button type="button" class="btn btn-info">
      <span class="glyphicon glyphicon-search"></span> Search
    </button>
  </p>
  <p>Print icon: <span class="glyphicon glyphicon-print"></span></p>
  <p>Print icon on a styled link button:
    <a href="#" class="btn btn-success btn-lg">
      <span class="glyphicon glyphicon-print"></span> Print
    </a>
  </p>
</div>
```

Glyphicon Examples

Envelope icon: ✉

Envelope icon as a link: ✉

Search icon: 🔍

Search icon on a button: 🔍 Search

Search icon on a styled button: 🔍 Search

Print icon: 🖨

Print icon on a styled link button: 🖨 Print

Infosys
be more

Bootstrap Groups

- To group together a series of buttons on a single line

- **.btn-group** can be used

```
<div class="container">
  <h2>Button Group</h2>
  <p>The .btn-group class creates a button group:</p>
  <div class="btn-group">
    <button type="button" class="btn btn-primary">Apple</button>
    <button type="button" class="btn btn-primary">Samsung</button>
    <button type="button" class="btn btn-primary">Sony</button>
  </div>
</div>
```

Button Group

The .btn-group class creates a button group:

| Apple | Samsung | Sony |

Infosys
be more

Bootstrap Breadcrumb

- Used to indicate current page's location within a navigational hierarchy

- Breadcrumb is an unordered list with a class of **.breadcrumb**

```html
<div class="container">
  <h2>Breadcrumbs</h2>
  <p>The .breadcrumb class indicates the current page's location within a
navigational hierarchy:</p>
  <ul class="breadcrumb">
    <li><a href="#">Home</a></li>
    <li><a href="#">Private</a></li>
    <li><a href="#">Pictures</a></li>
    <li class="active">Vacation</li>
  </ul>
</div>
```

Breadcrumbs

The .breadcrumb class indicates the current page's location within a navigational hierarchy:

Home / Private / Pictures / Vacation

Infosys
be more

Bootstrap Pagination

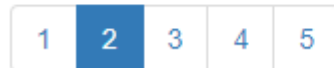- .pagination class can be used handle pagination in Bootstrap

```html
<div class="container">
  <h2>Pagination - Active State</h2>
  <p>Add class .active to let the user know which page he/she is on:</p>
  <ul class="pagination">
    <li><a href="#">1</a></li>
    <li class="active"><a href="#">2</a></li>
    <li><a href="#">3</a></li>
    <li><a href="#">4</a></li>
    <li><a href="#">5</a></li>
  </ul>
</div>
```

Pagination - Active State

Add class .active to let the user know which page he/she is on:

| 1 | 2 | 3 | 4 | 5 |

Bootstrap Labels

- Used to add additional information like tips, status etc.

- **.label** class can be used to display labels.

- Modifier class that can be used along with **.label** class are **label-default, label-primary, label-success, label-info, label-warning, label-danger.**

Contextual Label Classes

Contextual classes can be used to color the label.


```html
<div class="container">
  <h2>Contextual Label Classes</h2>
  <p>Contextual classes can be used to color the label.</p>
  <span class="label label-default">Default Label</span>
  <span class="label label-primary">Primary Label</span>
  <span class="label label-success">Success Label</span>
  <span class="label label-info">Info Label</span>
  <span class="label label-warning">Warning Label</span>
  <span class="label label-danger">Danger Label</span>
</div>
```

Bootstrap Badges

- Used to highlight new or unread items

- Add **<span class = badge>** to badges in links, Bootstrap navs, etc.

```html
<div class="container">
  <h2>Badges</h2>
  <a href="#">News <span class="badge">5</span></a><br>
  <a href="#">Comments <span class="badge">10</span></a><br>
  <a href="#">Updates <span class="badge">2</span></a>
</div>
```

Badges

News 5
Comments 10
Updates 2

Infosys
be more

Jumbotron

- Lightweight, flexible component that can optionally extend entire viewport to showcase key messages on a web page

- Use class .jumbotron to display a jumbotron.

```html
<div class="container">
  <div class="jumbotron">
    <h1>Bootstrap Tutorial</h1>
    <p>Bootstrap is the most popular HTML, CSS, and JS framework for
developing responsive, mobile-first projects on the web.</p>
  </div>
</div>
```

Bootstrap Tutorial

Bootstrap is the most popular HTML, CSS, and JS framework for developing responsive, mobile-first projects on the web.

Infosys
be more

Bootstrap Alerts

- Provide contextual feedback messages for typical user actions

- To add a alert: Create a wrapper <div> and add class .alert along with one of the four contextual classes - .alert-success, .alert-info, .alert-warning, .alert-danger

```html
<div class="container">
  <h2>Alerts</h2>
  <div class="alert alert-success">
    <strong>Success!</strong> This alert box could indicate a successful or
positive action.
  </div>
  <div class="alert alert-info">
    <strong>Info!</strong> This alert box could indicate a neutral
informative change or action.
  </div>
  <div class="alert alert-warning">
    <strong>Warning!</strong> This alert box could indicate a warning that
might need attention.
  </div>
  <div class="alert alert-danger">
    <strong>Danger!</strong> This alert box could indicate a dangerous or
potentially negative action.
  </div>
</div>
```

Alerts

Success! This alert box could indicate a successful or positive action.

Info! This alert box could indicate a neutral informative change or action.

Warning! This alert box could indicate a warning that might need attention.

Danger! This alert box could indicate a dangerous or potentially negative action.

Bootstrap Progress Bar

- Progress bars are used to display the status of assets that are loading, in-progress or that there is an action taking place on elements of the page.

- **To create a progress bar:**

  – Add a **<div>** element along with class **.progress**

  – Inside the above **<div>** element, add an empty **<div>** along with class **.progress-bar**

  – Add a style attribute with width expressed in % to indicate the progress like **style = "width:70%"**

```html
<div class="container">
  <h2>Basic Progress Bar</h2>
  <div class="progress">
    <div class="progress-bar" role="progressbar" aria-valuenow="70" aria-valuemin="0" aria-valuemax="100" style="width:70%">
      <span class="sr-only">70% Complete</span>
    </div>
  </div>
</div>
```
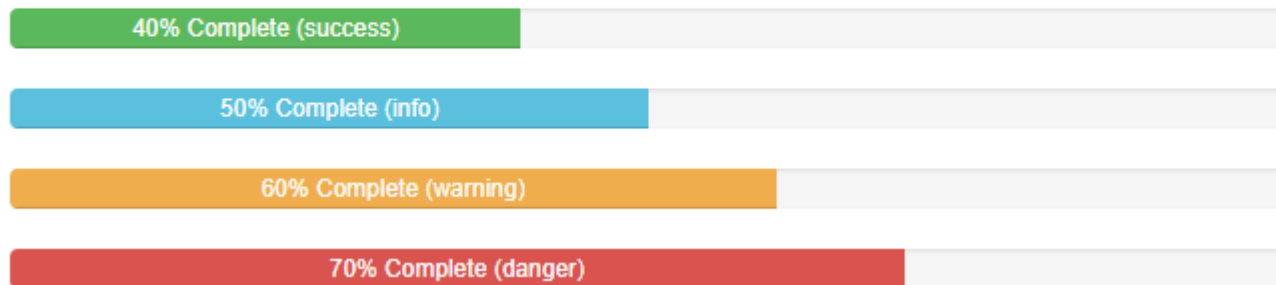
Basic Progress Bar

- Colored Progress Bar
  - Use class .progress-bar-success, progress-bar-info,progress-bar-warning,progress-bar-danger
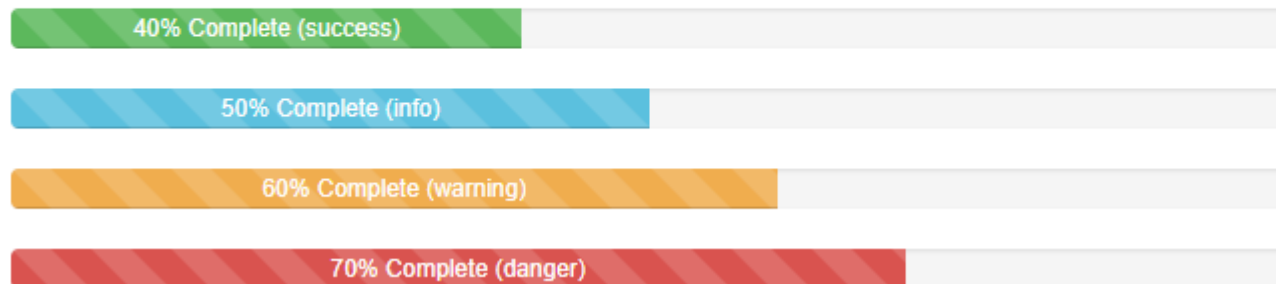
Colored Progress Bars

The contextual classes colors the progress bars:

40% Complete (success)	

50% Complete (info)	

60% Complete (warning)	

70% Complete (danger)	

Bootstrap Progress Bar

- Striped progress bar : Use class .progress-bar-striped

Striped Progress Bars

The .progress-bar-striped class adds stripes to the progress bars:

| 40% Complete (success) |
| 50% Complete (info) |
| 60% Complete (warning) |
| 70% Complete (danger) |

- Stacked Progress Bar: by placing multiple bars in same <div> class

Stacked Progress Bars

Create a stacked progress bar by placing multiple bars into the same div with class .progress:

| Free Space | Warning | Danger |

Bootstrap Dropdowns(1/2)

- Dropdown menus are used as contextual menus for displaying options in a list format.

- Create Dropdown menu using the class **.dropdown**

```html
<div class="dropdown">
    <button class="btn btn-primary dropdown-toggle" type="button" data-
toggle="dropdown">Dropdown Example
    <span class="caret"></span></button>
    <ul class="dropdown-menu">
      <li><a href="#">HTML</a></li>
      <li><a href="#">CSS</a></li>
      <li><a href="#">JavaScript</a></li>
    </ul>
  </div>
</div>
```
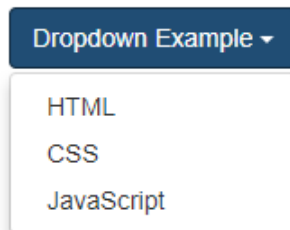
Dropdowns

The .dropdown class is used to indicate a dropdown menu.

Use the .dropdown-menu class to actually build the dropdown menu.

To open the dropdown menu, use a button or a link with a class of .dropdown-toggle and data-toggle="dropdown".

Dropdown Example ▾

HTML

CSS

JavaScript

Bootstrap Dropdowns(2/2)

Class	Description
.dropdown	Indicates a dropdown menu
.dropdown-menu	Creates the dropdown menu
.dropdown-menu-right	Creates a Right-aligned dropdown menu
.dropdown-header	Provides a header inside the drop-down menu
.disabled	Disables an item in the dropdown menu

Infosys
be more

Media Queries(1/3)

- Media queries are a way to apply CSS rules to the page based on the size of the displaying browser.

- The incredible power of this is that you can adjust and indeed re-design, the entire layout of your website to fit a smaller or larger browser than the one for which you originally designed.

- Create different parts of your design, such as main content, sidebar, header and navigation, as modules that can be re-organized, re-sized and shuffled without their original significance getting lost.

- Media queries internal – syntax

```
body {
background : gray; }
@media screen and (max-width:500px)
{ body {
background: blue; } }
@media screen and (min-width:501px)
{ body {
background: gray;
} }
```

Media Queries(2/3)

- index.html

```
<!doctype html>
<html> <head>
  <link rel = "stylesheet" media = "screen and (min-width:420px)" href = "style.css"/>
  <link rel = "stylesheet" media = "screen and (min-width:320px)" href = "style.css/>
<link rel = "stylesheet" media = "screen and (min-width"320px)" href = "style.css/>
</head><body>
<p>Weclome to HTML5</p>
</body></html>
```

- style.css

```
@media screen and (min-width:800px) and (max-width:1200px) {
body {
 background-size: 850px; }
 img {
   height: 200px;
   width: 100px; } }
@media screen and (min-width:320px)
img {
   height: 300px;
   width: 200px; } }
@media screen and (min-width: 620px)
Img {
   height: 500px;
   width: 300px; } }
```

Infosys
be more

Media Queries(3/3) – Common Breakpoints

Label	Layout Width
Smartphones	480px and below
Portrait Tables	480px to 768px
Landscape Tablets	768px to 940px
Default	940px and up
Large Screens	1210px and up

JS Plugins

JS Plugins

- Bootstrap includes many jQuery plugins bundled with it to extend the features that can make your site more interactive.

- **Two options for including the Bootstrap plugins on your site:**

  - **Individually: Using Bootstrap's individual *.js files**

  - **Or compiled: Using bootstrap.js or the minified bootstrap.min.js**

- **Plugins:**

  - **Tab, Modal, Scrollspy, Carousel, etc..**

Tabs

Dynamic Tabs

Home	Menu 1	Menu 2	Menu 3

HOME

Home Page Text goes here

```html
<div class="container">
  <h2>Dynamic Tabs</h2>
  <ul class="nav nav-tabs">
    <li class="active"><a data-toggle="tab" href="#home">Home</a></li>
    <li><a data-toggle="tab" href="#menu1">Menu 1</a></li>
    <li><a data-toggle="tab" href="#menu2">Menu 2</a></li>
    <li><a data-toggle="tab" href="#menu3">Menu 3</a></li>
  </ul>

  <div class="tab-content">
    <div id="home" class="tab-pane fade in active">
      <h3>HOME</h3>
      <p>Home Page Text goes here</p>
    </div>
    <div id="menu1" class="tab-pane fade">
      <h3>Menu 1</h3>
      <p>Menu 1 Page Text goes here.</p>
    </div>
    <div id="menu2" class="tab-pane fade">
      <h3>Menu 2</h3>
      <p>Menu 2 Page Text goes here.</p>
    </div>
    <div id="menu3" class="tab-pane fade">
      <h3>Menu 3</h3>
      <p>Menu 3 Page Text goes here.</p>
    </div>
  </div>
</div>
```
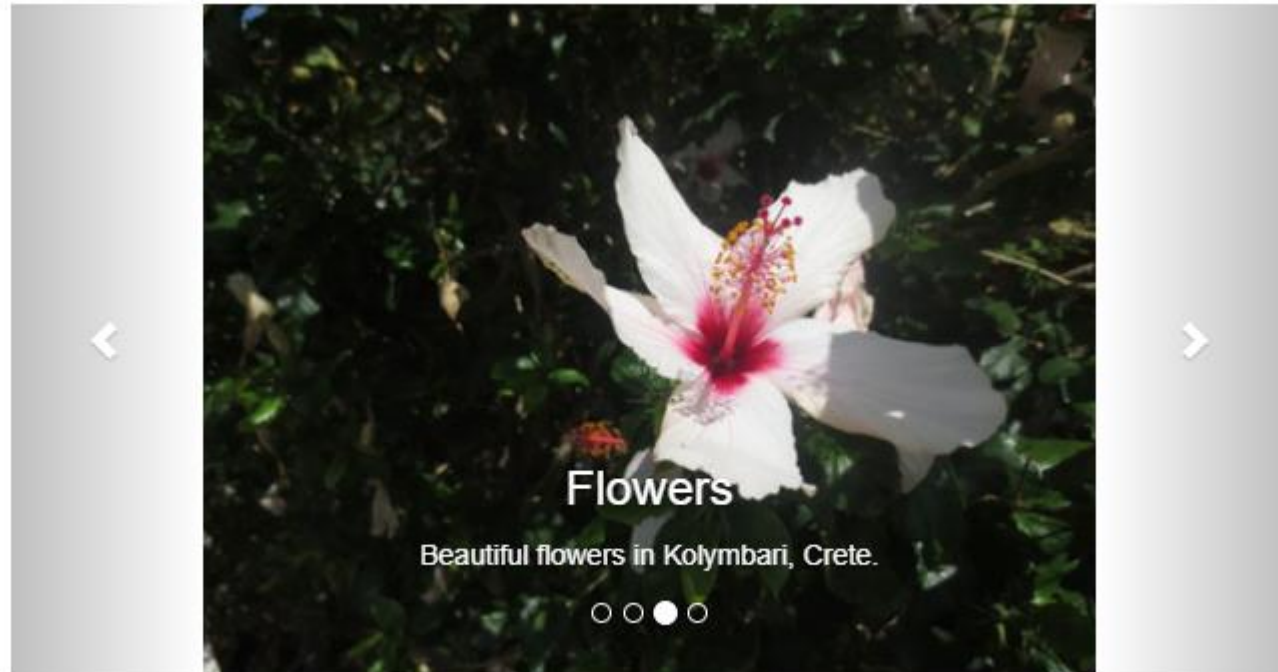
Collapse (Accordion)

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

Class	Description
.carousel	Creates a carousel
.slide	Adds a CSS transition and animation effect when sliding from one item to the next. Remove this class if you do not want this effect
.carousel-indicators	Adds indicators for the carousel. These are the little dots at the bottom of each slide (which indicates how many slides there are in the carousel, and which slide the user are currently viewing)
.icon-next	Unicode icon (arrow pointing right), used in carousels. This is often used instead of a glyphicon
.icon-prev	Unicode icon (arrow pointing left), used in carousels. This is often used instead of a glyphicon
.item	Specifies the content of each slide
.left carousel-control	Adds a left button to the carousel, which allows the user to go back between the slides
.right carousel-control	Adds a right button to the carousel, which allows the user to go forward between the slides
.carousel-caption	Specifies a caption for the carousel

Carousel - Anatomy

Infosys
be more

Creating a carousel(1/2)

Creating a carousel(2/2)

```html
<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>
    <li data-target="#myCarousel" data-slide-to="3"></li>
  </ol>

  <!-- Wrapper for slides -->
  <div class="carousel-inner" role="listbox">

    <div class="item active">
      <img src="img_chania.jpg" alt="Chania" width="460" height="345">
      <div class="carousel-caption">
        <h3>Chania</h3>
        <p>The atmosphere in Chania has a touch of Florence and Venice.
</p>
      </div>
    </div>

    <div class="item">
      <img src="img_chania2.jpg" alt="Chania" width="460" height="345">
      <div class="carousel-caption">
        <h3>Chania</h3>
        <p>The atmosphere in Chania has a touch of Florence and Venice.
</p>
      </div>
```

```html
    <div class="item">
      <img src="img_flower2.jpg" alt="Flower" width="460" height="345">
      <div class="carousel-caption">
        <h3>Flowers</h3>
        <p>Beautiful flowers in Kolymbari, Crete.</p>
      </div>
    </div>

  </div>

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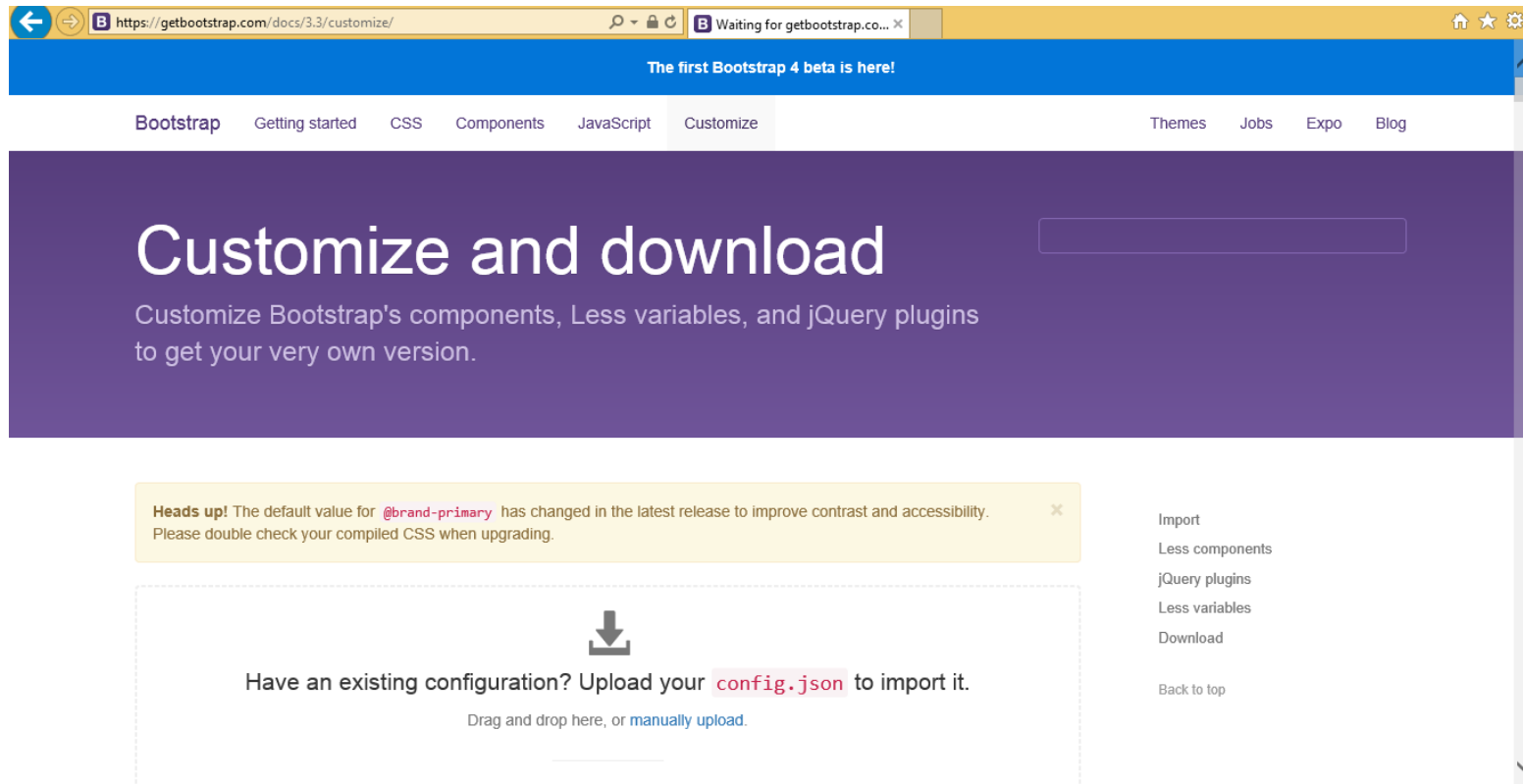
Customization

Customization

- Customizing Bootstrap is really simple

- Go to https://getbootstrap.com/docs/3.3/customize/

- Choose the required CSS components

- Choose the required JS components

- Modify the LESS variables to a custom theme

- Compile and download the custom build

Infosys
be more

Customization

Summary

You have explored on:

- Responsive Web Design (RWD)

- Twitter Bootstrap features:

  - Sign in Page

  - Off Canvas

- Bootstrap CSS Components

  - Responsive Images

  - Responsive Tables

  - Breadcrumbs, etc.

- Media Queries

- JS plugins

- Customizing Bootstrap

References

- https://getbootstrap.com/
- https://www.tutorialspoint.com/bootstrap/index.htm
- https://www.w3schools.com/bootstrap/
- https://www.tutorialrepublic.com/twitter-bootstrap-tutorial/
- https://www.javatpoint.com/bootstrap-tutorial
- https://www.codecademy.com/courses/web-beginner-en-yjvdd/0/1
- https://www.youtube.com/watch?v=gqOEoUR5RHg

Thank You