

1.1 - Exercise (Instructions): Navbar and Breadcrumbs

Objectives and Outcomes

In this exercise, we will examine the navigation support that we can build into a web page using the Navbar in Bootstrap. At the end of this exercise, you will be able to:

- Create a navigation structure for your website using the Navbar
- Add breadcrumbs to the website
- Include additional CSS classes into your project

Create a basic navigation bar

- We will now add a simple navigation bar to the web page so that it provides links to the other pages on the website. Start by adding the following code to the body just above the header jumbotron.

```
<nav class="navbar navbar-dark navbar-expand-sm bg-primary fixed-top">

  <div class="container">

    <a class="navbar-brand" href="#">Ristorante Con Fusion</a>

    <ul class="navbar-nav mr-auto">

      <li class="nav-item active"><a class="nav-link" href="#">Home</a></li>

      <li class="nav-item"><a class="nav-link" href="/aboutus.html">About</a></li>

      <li class="nav-item"><a class="nav-link" href="#">Menu</a></li>

      <li class="nav-item"><a class="nav-link" href="#">Contact</a></li>

    </ul>

  </div>

</nav>
```

In the above code, we can see the use of the `nav` element to specify the navigation information for the website. This `nav` element is styled by the `navbar` that declares it as a navigation bar, and the `navbar-dark` class to specify that the page should use the dark navigation bar. You will now notice the addition of a link with the name of the restaurant. This is the brand name for the website. You can replace this with the logo for the website. This is created by the `` tag.

In addition the inner *ul* is used to specify the items to be put in the navigation bar. This *ul* is styled with *navbar-nav* class to specify that the items should be displayed inline inside the navigation bar. We also use the container class inside the navigation bar.

Creating a responsive navigation bar

- We would like the navigation bar elements to collapse for shorter screens, to be replaced by a toggle button so that the items can be toggled on or off when required on small and extra small screens. This can be achieved by adding the following code to the navigation bar, just below the container div

```
<button class="navbar-toggler" type="button" data-toggle="collapse" data-target="#Navbar">

  <span class="navbar-toggler-icon"></span>

</button>
```

This creates a button with three horizontal lines. For medium to extra large screens, this button is hidden. For small and extra small screens, this button becomes visible. This button will act as the toggle for the navbar items.

- To hide the items from the navigation bar for the small screens, we need to enclose the *ul* within another div as follows:

```
<div class="collapse navbar-collapse" id="Navbar">

  <ul class="navbar-nav mr-auto"> ... </ul>

</div>
```

By doing this, we are specifying that this div with *collapse* and *navbar-collapse* classes and with the id *Navbar* will be collapsed on small and xs screens, but can be toggled on or off when the toggle button is clicked. Note the use of *data-toggle="collapse" data-target="#Navbar"* within the button above. This specifies that the menu items are collapsed on small and xs screens when the toggle button is visible. They can be displayed or hidden by clicking the toggle button.

- Copy and paste the entire navbar code also into *aboutus.html* to add the navigation also to that page. Make sure to change the ** corresponding to "About" to *active*, and remove the *active* class from the Home link. Also, update the home link to take you back to *index.html*. Update the navbar-brand tag also to take you back to *index.html*.

Modifications to the CSS styles

- We would like to have the navigation bar displayed in darker purple color, instead of the current color. In addition, when we use the fixed navigation bar, we should give the body of the page an upper margin of 50px, so that the top 50px of the page does not get hidden under the navigation bar. We accomplish these by adding these CSS customisations to the *styles.css* file

```
body{  
  
    padding:50px 0px 0px 0px;  
  
    z-index:0;  
  
}  
  
.navbar-dark {  
  
    background-color: #512DA8;  
  
}
```

- Remember to delete the *bg-primary* class from the `<nav>` element in both *index.html* and *aboutus.html*.
- We are already beginning to see the page format close to the final format for this module.

Adding Breadcrumbs

- To add breadcrumbs to our pages, we take the help of the *breadcrumb* and *breadcrumb-item* classes to add the following to the row containing the About Us title in *aboutus.html*.

```
<ol class="col-12 breadcrumb">  
  
    <li class="breadcrumb-item"><a href="/index.html">Home</a></li>  
  
    <li class="breadcrumb-item active">About Us</li>  
  
</ol>
```

- Save all the changes and commit to your Git repository with a message "Navbar and Breadcrumbs".

Conclusions

In this exercise you learnt about adding a navigation bar and breadcrumbs to your website.

1.2 - Exercise (Instructions): Icon Fonts

Objectives and Outcomes

In this exercise, we will learn the use of icons in web page design using Font Awesome icons, and bootstrap-social icons. At the end of this exercise, you will be able to:

- Use icons within your website to represent various entities making use of the glyphsicons, font-awesome icons and bootstrap-social icons

Note: Some people have pointed out that if they have AdBlocker installed, then the font icons are not showing up in their browser.

Using Icon Fonts and Other CSS classes

- One of the most popular icon font toolkit is Font Awesome. Go to its website <http://fontawesome.io/> to check out more details about this icon font. You can get Font Awesome using npm by typing the following at the prompt:

```
npm install font-awesome@4.7.0 --save
```

- Another module that we install is Bootstrap Social that enables the addition of Social buttons to our site. You can find more information about it at <https://lipis.github.io/bootstrap-social/>. To install it using npm, type the following at the prompt:

```
npm install bootstrap-social@5.1.1 --save
```

- We now need to include the CSS files for font awesome and bootstrap-social in the index.html file. Add the following code to the head of the file after the links for importing Bootstrap CSS classes. Do the same change to aboutus.html file:

```
<link rel="stylesheet" href="node_modules/font-awesome/css/font-awesome.min.css">
```

```
<link rel="stylesheet" href="node_modules/bootstrap-social/bootstrap-social.css">
```

- Let us now use some font icons in our web page and decorate it. Update the navbar's ul list items as follows in index.html:

```

<li class="nav-item active"><a class="nav-link" href="#"><span class="fa fa-home fa-lg"
></span> Home</a></li>

<li class="nav-item"><a class="nav-link" href="/aboutus.html"><span class="fa fa-info f
a-lg"></span> About</a></li>

<li class="nav-item"><a class="nav-link" href="#"><span class="fa fa-list fa-lg"></span
> Menu</a></li>

<li class="nav-item"><a class="nav-link" href="#"><span class="fa fa-address-card fa-l
g"></span> Contact</a></li>

```

- Similarly update the navbar's ul list items as follows in aboutus.html:

```

<li class="nav-item"><a class="nav-link" href="/index.html"><span class="fa fa-home f
a-lg"></span> Home</a></li>

<li class="nav-item active"><a class="nav-link" href="#"><span class="fa fa-info fa-lg">
</span> About</a></li>

<li class="nav-item"><a class="nav-link" href="#"><span class="fa fa-list fa-lg"></span
> Menu</a></li>

<li class="nav-item"><a class="nav-link" href="#"><span class="fa fa-address-card fa-l
g"></span> Contact</a></li>

```

- Next, in both index.html and aboutus.html, go down to the address in the footer of the page and replace the "Tel.", "Fax" and "Email" with the corresponding font awesome based icons as follows:

```

<i class="fa fa-phone fa-lg"></i>: +852 1234 5678<br>

<i class="fa fa-fax fa-lg"></i>: +852 8765 4321<br>

<i class="fa fa-envelope fa-lg"></i>:

<a href="mailto:confusion@food.net">confusion@food.net</a>

```

- Finally, let us use the bootstrap-social CSS classes to create the social buttons in the footer in both index.html and aboutus.html, by replacing the social sites' links with the following code:

```
<div class="text-center">

    <a class="btn btn-social-icon btn-google" href="http://google.com/+><i class="fa fa-
google-plus"></i></a>

    <a class="btn btn-social-icon btn-facebook" href="http://www.facebook.com/profile.p
hp?id="><i class="fa fa-facebook"></i></a>

    <a class="btn btn-social-icon btn-linkedin" href="http://www.linkedin.com/in/"><i class
="fa fa-linkedin"></i></a>

    <a class="btn btn-social-icon btn-twitter" href="http://twitter.com/"><i class="fa fa-twitt
er"></i></a>

    <a class="btn btn-social-icon btn-google" href="http://youtube.com/"><i class="fa fa-y
outube"></i></a>

    <a class="btn btn-social-icon" href="mailto:"><i class="fa fa-envelope-o"></i></a>

</div>
```

- Save all the changes and commit to your Git repository with the message "Icon Fonts".

Conclusions

We learnt about using icon fonts in a web project.

1.3 - Navigation and Navigation Bar: Additional Resources

PDFs of Presentations

1-Navigation.pdf

2-Icon Fonts.pdf

Official Bootstrap Resources

- [Navbar](#)
- [Breadcrumbs](#)

General

- [Accessible Rich Internet Applications \(ARIA\)](#) (Accessibility support and screen reader support)

Information Architecture

- [Information Architecture 101: Techniques and Best Practices](#) (Quick introduction to Information architecture with respect to website design)
- [Web Site Information Architecture models](#) (Another good resource on information architecture)
- [What is information architecture?](#) (Good definition and explanation about the topic)
- [Information Architecture Tutorial](#) (Comprehensive look from a website design perspective)

Navigation Bar Design

- [Designing A Winning Navigation Menu: Ideas and Inspirations](#) (Good suggestions on how to design navigation for a website)
- [Are You Making These Common Website Navigation Mistakes?](#) (Worth reading at least to learn what not to do)
- [3 Reasons We Should Stop Using Navigation Bars](#) (A provocative view on navigation bars)

Breadcrumbs

- [Breadcrumb Navigation Examined: Best Practices & Examples](#) (Great suggestions on using breadcrumbs for navigation)
- [Breadcrumb Navigation: A Guide On Types, Benefits And Best Practices](#) (Another great resource on types and usage of breadcrumbs)

Icon Fonts

- [Why And How To Use Icon Fonts](#) (a good overview of icon fonts)
- [Icon Fonts are Awesome](#) (another good introduction to icon fonts)
- [Font Awesome](#) (one of the most popular icon fonts)
- [Get started with FontAwesome](#) (good official help)
- [Bootstrap-Social](#)
- [The Final Nail in the Icon Fonts Coffin?](#) (a controversial opinion piece on icon fonts)
- [Using SVGs](#) (alternative to icon fonts)

2.1 - Exercise: Buttons

Objectives and Outcomes

In this exercise, we will examine user input for a website through the use of Buttons support in Bootstrap. At the end of this exercise, you will be able to:

- Create, style and activate buttons in a web page using the button classes
- Use a Button Group to group together related buttons.

Exercise Resources

[contactus.html.zip](#)

Set up for the Exercise

- Download the *contactus.html.zip* file given above, unzip it and move the *contactus.html* to the **conFusion** folder. This file is already pre-formatted with some content.
- Set up the links in the navigation bars for all the three pages, *index.html*, *aboutus.html* and *contactus.html* so that we can navigate from one to the other with ease.
- Also set up the links in the footer correctly to point to the appropriate pages.

Adding a Button Bar

- We are now going to add content to *contactus.html* file to learn more about buttons and button bars. Go to the div where we specify "Button group goes here", and replace it with the following code to create a button bar containing three buttons:

```
<div class="btn-group" role="group">

    <a role="button" class="btn btn-primary" href="tel:+85212345678"><i class="fa fa-phone"></i> Call</a>

    <a role="button" class="btn btn-info"><i class="fa fa-skype"></i> Skype</a>

    <a role="button" class="btn btn-success" href="mailto:confusion@food.net"><i class="fa fa-envelope-o"></i> Email</a>

</div>
```

Note how we define the button bar using the *btn-group* class, and then add the three buttons using the `<a>` tag. In this case, the three buttons are hyperlinks that cause an action and have an *href* associated with them. So we decided to use the `<a>` tag instead of the `<button>` tag. Note how the `<a>` tags have been styled using the *btn* class.

- Remember to do a Git commit with the message "Buttons"

Conclusions

We have learnt how to add buttons and button groups to a web page.

2.2 - Exercise: Forms

Objectives and Outcomes

In this exercise, we will examine user input for a website through the use of Forms support in Bootstrap. At the end of this exercise, you will be able to:

- Design a form using various form elements and style the form using Bootstrap form classes

Adding a Basic Form

- We will add a simple form to the page at the location identified by "Form goes here". Add the following code to page to create a simple horizontal form with two fields:

```
<form>

<div class="form-group row">

  <label for="firstname" class="col-md-2 col-form-label">First Name</label>

  <div class="col-md-10">

    <input type="text" class="form-control" id="firstname" name="firstname" placeholder="
First Name">

  </div>

</div>

<div class="form-group row">

  <label for="lastname" class="col-md-2 col-form-label">Last Name</label>

  <div class="col-md-10">

    <input type="text" class="form-control" id="lastname" name="lastname" placeholder="L
ast Name">

  </div>

</div>

</form>
```

This creates a form with two elements in the form. Note that the class *row* in the form enables us to use the Bootstrap grid system. Hence we can style the contents using the column classes as appropriate.

- Let us add fields to seek user's telephone number and email:

```
<div class="form-group row">

  <label for="telnum" class="col-12 col-md-2 col-form-label">Contact Tel.</label>

  <div class="col-5 col-md-3">

    <input type="tel" class="form-control" id="areacode" name="areacode" placeholder="Ar
ea code">

  </div>

  <div class="col-7 col-md-7">

    <input type="tel" class="form-control" id="telnum" name="telnum" placeholder="Tel. nu
mber">

  </div>

</div>

<div class="form-group row">

  <label for="emailid" class="col-md-2 col-form-label">Email</label>

  <div class="col-md-10">

    <input type="email" class="form-control" id="emailid" name="emailid" placeholder="Em
ail">

  </div>

</div>
```

Adding a Checkbox and Select

- We now see the addition of a checkbox and a select element to the form. Note the styling of these elements using Bootstrap classes:

```
<div class="form-group row">

  <div class="col-md-6 offset-md-2">

    <div class="form-check">

      <input type="checkbox" class="form-check-input" name="approve" id="approve" value="">

      <label class="form-check-label" for="approve">

        <strong>May we contact you?</strong>

      </label>

    </div>

  </div>

  <div class="col-md-3 offset-md-1">

    <select class="form-control">

      <option>Tel.</option>

      <option>Email</option>

    </select>

  </div>

</div>
```

Adding a textarea

- Next we add a textarea for the users to submit their feedback comments as follows:

```
<div class="form-group row">

  <label for="feedback" class="col-md-2 col-form-label">Your Feedback</label>

  <div class="col-md-10">

    <textarea class="form-control" id="feedback" name="feedback" rows="12"></textarea>

  </div>

</div>
```

Adding the Submit Button

- Finally, we add the submit button to the form as follows:

```
<div class="form-group row">

  <div class="offset-md-2 col-md-10">

    <button type="submit" class="btn btn-primary">Send Feedback</button>

  </div>

</div>
```

Note the declaration of the type for the button to *submit*.

- Remember to do a Git commit with the message "Forms"

Conclusions

We have learnt how to add a form and style the form using Bootstrap form classes.

2.3 - User Input: Additional Resources

PDFs of Presentations

3-User-Input.pdf

Exercise Resources

[contactus.html.zip](#)

Bootstrap Resources

- [Bootstrap Buttons](#)
- [Bootstrap Button Groups](#)
- [Bootstrap Forms](#)

Other Useful Resources

- [The Difference Between Anchors, Inputs and Buttons](#) (Semantic differences in the usage)
- [When To Use The Button Element](#) (The multifaceted button element)

3.1 - Exercise (Instructions): Displaying Content:

Tables and Cards

Objectives and Outcomes

In this exercise, we will examine tables and Bootstrap classes for styling tables. We will also examine Bootstrap cards and their use for displaying content. At the end of this exercise, you will be able to:

- Create, style and present tabular data in tables in a web page using the Bootstrap table classes
- Display content in a web page using Bootstrap cards

Set up for the Exercise

- In this exercise we will be modifying the *aboutus.html* page to add a table, a card with some content and a card with a quotation.
- Let us get started by opening *aboutus.html* page in a text editor.

Bootstrap Tables

- In this part, we will add a new row of content after the Corporate Leadership row in the page. We first start by adding a row and columns to the page as follows:

```
<div class="row row-content">  
  
  <div class="col-12 col-sm-9">  
  
    <h2>Facts & Figures</h2>  
  
  </div>  
  
  <div class="col-12 col-sm-3">  
  
  </div>  
  
</div>
```



```

        <td>100,000</td>

    </tr>

    <tr>

        <th>Special Events</th>

        <td>3</td>

        <td>20</td>

        <td>45</td>

    </tr>

    <tr>

        <th>Annual Turnover</th>

        <td>$251,325</td>

        <td>$1,250,375</td>

        <td>~$3,000,000</td>

    </tr>

</tbody>

</table>

</div>

```

Note the use of *table-responsive* class to create a responsive table, and the *table-striped* and *thead-inverse* classes for styling the table.

Bootstrap Cards

- Next we add a card to the second div in the first content row as follows, updating the div first by adding the classes col-12 col-sm-6 to it and then adding the card:

```
<div class="col-12 col-sm-6">

  <div class="card">

    <h3 class="card-header bg-primary text-white">Facts At a Glance</h3>

    <div class="card-body">

      <dl class="row">

        <dt class="col-6">Started</dt>

        <dd class="col-6">3 Feb. 2013</dd>

        <dt class="col-6">Major Stake Holder</dt>

        <dd class="col-6">HK Fine Foods Inc.</dd>

        <dt class="col-6">Last Year's Turnover</dt>

        <dd class="col-6">$1,250,375</dd>

        <dt class="col-6">Employees</dt>

        <dd class="col-6">40</dd>

      </dl>

    </div>

  </div>

</div>
```

- Next, we add a Bootstrap card and include a quotation in the card using the blockquote typography style:

```
<div class="col-12">

  <div class="card card-body bg-light">

    <blockquote class="blockquote">

      <p class="mb-0">You better cut the pizza in four pieces because

        I'm not hungry enough to eat six.</p>

      <footer class="blockquote-footer">Yogi Berra,

        <cite title="Source Title">The Wit and Wisdom of Yogi Berra,

          P. Pepe, Diversion Books, 2014</cite>

      </footer>

    </blockquote>

  </div>

</div>
```

Note the use of the `<blockquote>` tag to create a block quote in the card. We can use a `<footer>` inside the block quote to specify the attribution of the quote to its origin.

- Remember to commit the changes to your Git repository with the message "Tables and Cards"

Conclusions

In this exercise, we constructed a table and styled it with the Bootstrap table classes. Thereafter, we added two cards to the web page. We also saw the use of the description list and the block quote in the content.

3.2 - Displaying Content: Additional Resources

PDFs of Presentations

4-Bootstrap-Tables.pdf

5-Bootstrap-Cards.pdf

Bootstrap Classes

- [Bootstrap Tables](#)
- [Bootstrap Card](#)
- [Bootstrap Blockquote](#)

3.2 - Exercise (Instructions): Images and Media

Objectives and Outcomes

In this exercise, we will explore the Bootstrap classes to support image and media on a website. In particular, we will look at how to include images on a website, how to make use of images within a media objects. At the end of this exercise you will be able to:

- Use Bootstrap classes to include a responsive images in a website
- Use a media object to include images and description on a website

Exercise Resources

[img.zip](#)

Set up for the Exercise

- Download the `img.zip` file that we provide above and unzip it in the *conFusion* folder. This should create a folder named *img* there.
- We will now update the *index.html* file to include images and media objects on the web page.

Adding the Restaurant Logo

- We will now add the restaurant logo to the Jumbotron. In `index.html` go to the header row inside the jumbotron and replace the second `<div>` column with the following code:

```
<div class="col-12 col-sm align-self-center">  
  
    
  
</div>
```

You will immediately notice the restaurant logo being displayed in the jumbotron.

- Next, we will add the logo to the navbar where we display the restaurant brand. Go to the navbar and replace the code there for the `<a>` tag with the "navbar-brand" class with the following code:

```
<a class="navbar-brand mr-auto" href="#"></a>
```

Note the inclusion of the logo in the navbar.

- Repeat the above two steps for the *aboutus.html* and the *contactus.html* page also to update their navbars and jumbotrons.

Adding Media Objects

- Next we will work with the content on the web page and use the media object classes to style the content in the content rows.
- Go to the first content row, and replace the content in the second column containing the description of Uthappizza with the following code:

```
<div class="media">

  

  <div class="media-body">

    <h2 class="mt-0">Uthappizza</h2>

    <p class="d-none d-sm-block">A unique combination of Indian Uthappam (pancake) and

      Italian pizza, topped with Cerignola olives, ripe vine

      cherry tomatoes, Vidalia onion, Guntur chillies and

      Buffalo Paneer.</p>

  </div>

</div>
```

Note the use of the *media* class and the related Bootstrap classes to style the content.

- Next, we will go to the third row and replace the contents of the second column containing the description about Alberto with the following content:

```
<div class="media">

  

  <div class="media-body">

    <h2 class="mt-0">Alberto Somayya</h2>

    <h4>Executive Chef</h4>

    <p class="d-none d-sm-block">Award winning three-star Michelin chef with wide

      International experience having worked closely with

      whos-who in the culinary world, he specializes in

      creating mouthwatering Indo-Italian fusion experiences.

    </p>

  </div>

</div>
```

- Finally, do a Git commit with a message "Images and Media".

Conclusions

In this exercise, we learnt about the Bootstrap classes to support images and media in a web page. We saw how we can include responsive images on a web page. In addition, we saw the use of images within a media object to style and display content.

3.3 - Images and Media: Additional Resources

PDFs of Presentations

6-Images-Media.pdf

Exercise Resources

img.zip

- (download this to conFusion, unzip it to create an "img" folder there)

Bootstrap Resources

- [Bootstrap Image Classes](#)
- [Bootstrap Media Object Classes](#)

4.1 - Exercise (Instructions): Alerting Users

Objectives and Outcomes

In this short exercise we will examine the use of badges as a way of alerting users. At the end of this exercise, you will be able to:

- Add a badge to your web page using the Bootstrap badge class

Adding Badges

- We will continue to edit the *index.html* file. In this file, we will add a badge *HOT* next to the name of the dish Uthappizza in the first content row. To do this, add the following code inside the `<h2>` containing the name of the dish:

```
<span class="badge badge-danger">HOT</span>
```

- Next we will add a badge as a badge-pill right next to the earlier tag in the web page. Add the following code to the `<h2>` tag:

```
<span class="badge badge-pill badge-secondary">$4.99</span>
```

- Remember to commit the changes to the Git repository with message "Alerting Users".

Conclusions

In this short exercise, we learnt how to add badges to our web page.

4.2 - Alerting Users: Additional Resources

PDFs of Presentations

7-Alerting-Users.pdf

Bootstrap Resources

- [Bootstrap Badge](#)
- [Bootstrap Alerts](#)
- [Bootstrap Progress](#)

Assignment 2 Bootstrap Resources

Bootstrap Resources

- [Navbar](#)
- [Breadcrumbs](#)
- [Bootstrap Buttons](#)
- [Bootstrap Button Groups](#)
- [Bootstrap Forms](#)
- [Bootstrap Tables](#)
- [Bootstrap Card](#)
- [Bootstrap Blockquote](#)
- [Bootstrap Image Classes](#)
- [Bootstrap Media Object Classes](#)
- [Bootstrap Responsive Helpers](#)
- [Bootstrap Badges](#)
- [Bootstrap Alerts](#)
- [Bootstrap Progress](#)