**NGEE ANN**
SCHOOL OF INFOCOMM TECHNOLOGY

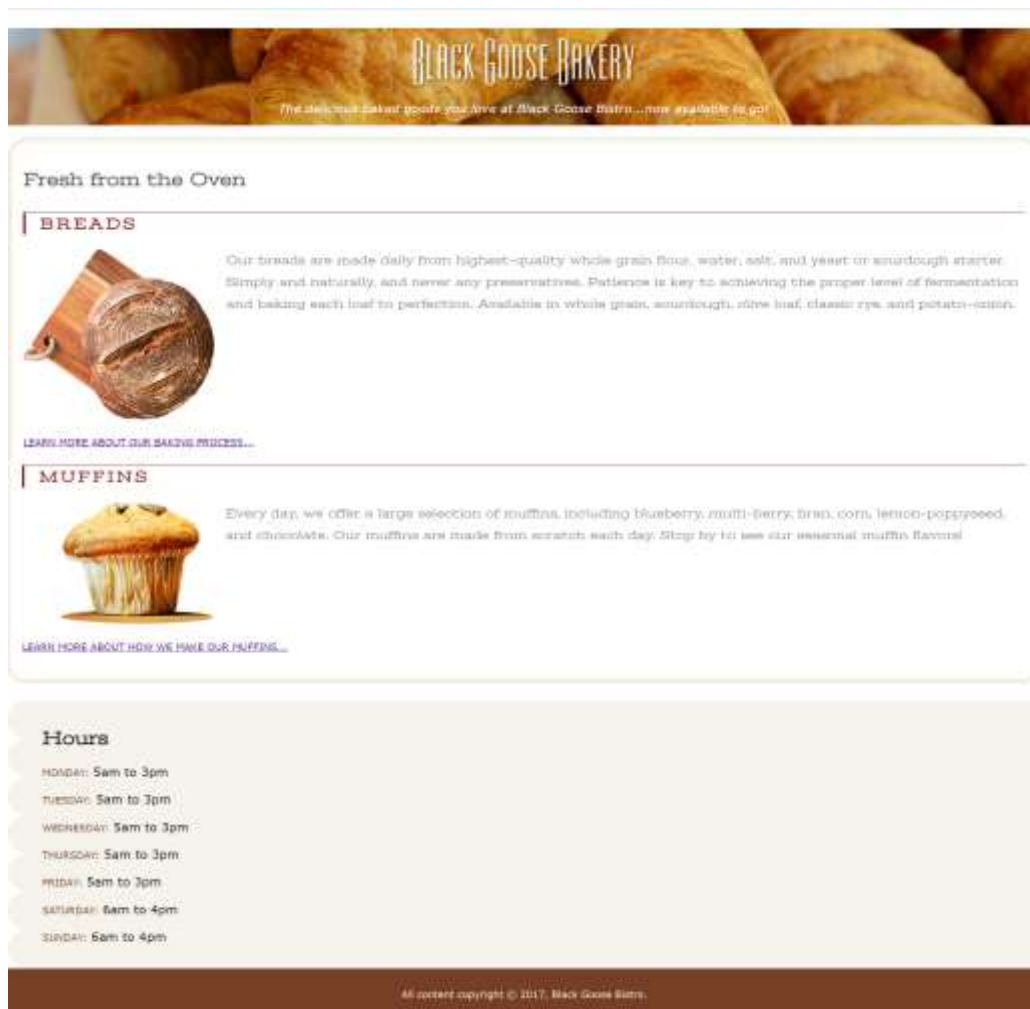| **Front End Development** Diploma in CSF 2020/21 Semester 2 | Week 4 |
|---|---|
| | 2 Hours |
| **CSS for Responsive Web Design** | |

**Activities**

**Materials**

- Download the following file from MeL for this practical exercise:
  - Week4Practical_Start.zip

- Unzip the file and copy the following folder and files to the *Week4Practical* project:
  - "**images**" folder
  - "**css**" folder (contains the external style sheets required for Bootstrap framework and the bakery.html and flex-menu HTML files.)
  - "**js**" folder (contains JavaScript/jQuery libraries required for Bootstrap framework.)
  - **bakery.html**

**(The task in this activity must run in sequential order. Do not skip tasks.)**

**Task 1**

1. Create a new project in Visual Studio and name it as **Week4Practical.**
2. Read Part III – CSS for Presentation, Chapter 14: Thinking Inside the Box to learn about applying CSS Box Model in controlling the margin, border and padding of HTML elements.
3. Refer to **Exercise 14-1** on Page 364 to 365, follow the instructions in **step 3 to 5** to edit the CSS on *bakery-styles.css* to add **paddings** to the "main", "aside" and "footer" sections.
4. Refer to **Exercise 14-2** on Page 373 to 374, follow the instructions in **step 1 to 3** to edit the CSS on *bakery-styles.css* to define borders for the "main", "aside" sections and the "h3" elements.
5. Refer to **Exercise 14-3** on Page 381, follow the instructions in **step 3** to edit the CSS on *bakery-styles.css* to define margins for the "h1" and "p" elements in the "header" section.
6. Read Part III – CSS for Presentation, Chapter 15: Floating and Positioning to learn about aligning HTML elements.
7. Refer to **Exercise 15-1** on Page 395, follow the instructions in **step 1 to 3** to edit the CSS on *bakery-styles.css* to position the images in the "main" section.
8. Save the CSS file and test view the *bakery.html* page on web browser:

## Task 2

1. Open the file "bakery.html" from Visual Studio, add the following highlighted lines of code at the "<head>" section:

```html
<head>
<title>Black Goose Bakery</title>
<meta charset="UTF-8">
<!-- To Do: Add the responsive viewport meta tag -->
<meta name="viewport" content="width=device-width, initial-scale=1">
<!-- To Do: Add Bootstrap libraries -->
<link rel="stylesheet" href="css/bootstrap.min.css">
<script src="js/jquery-3.3.1.min.js"></script>
<script src="js/bootstrap.min.js"></script>
<!-- CSS that supports Stint Ultra Expanded Google Fonts -->
<link href="https://fonts.googleapis.com/css?family=Stint+Ultra+Expanded"
rel="stylesheet">
<!-- Site specific Cascading Stylesheet -->
<link rel="stylesheet" href="css/bakery-styles.css">
</head>
```

> **Note**:
> Bootstrap is developed mobile first, a strategy in which we optimize code for mobile devices first and then scale up components as necessary using CSS media queries. To ensure proper rendering and touch zooming for all devices, add the responsive viewport meta tag to the <head> section.
>
> Bootstrap uses an external CSS file to define classes that are responsive to change in screen size through media query, as well as providing design templates for everything from typography, forms, buttons, navigation and other interface components.  The JavaScript and jQuery libraries allow Bootstrap Framework to provide animation such as toggling a button.

2. Look for the "To Do" comments that lead you to create a Bootstrap container (begin and end), type the highlighted code as shown:

```
<!-- To Do: Create a full width Bootstrap container-->
<div class="container-fluid">
......
<!-- To Do: End of Bootstrap container div -->
</div>
```

> **Note**:
> Bootstrap 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

3. Look for the "To Do" comments that lead you to create the first row in the container that contains the <header> section in the HTML, type the highlighted code as shown:

```
<!-- To Do: Bootstrap Grid 1st row - Header -->
<div class="row">
    <!-- To Do: Bootstrap Grid column, full width -->
    <div class="col-sm-12">
        <header>
            <!-- To Do: Use Bootstrap CSS class to make image
                responsive to screen size -->
            <h1><img class="img-fluid" src="images/bgb_logo.png"
                    alt="Black Goose Bakery"></h1>
            <!-- To Do: Use Bootstrap CSS class to show the following
                paragraph for medium device and above only -->
            <p class="d-none d-md-block">The delicious baked goods you love
at Black Goose Bistro...now available to go!</p>
        </header>
    <!-- To Do: End of column -->
    </div>
<!-- To Do: End of 1st row -->
</div>
```

> **Note:**
>
> Responsive images automatically adjust to fit the size of the screen.  Bootstrap create responsive images by adding an **.img-fluid** class to the <img> tag. The image will then scale nicely to the parent element.

> For faster mobile-friendly development, use responsive display classes for showing and hiding elements by device.
>
> To hide elements simply use the **.d-none** class or one of the **.d-{sm,md,lg,xl}-none** classes for any responsive screen variation.
>
> To show an element only on a given interval of screen sizes you can combine one **.d-*-none** class with a **.d-*-block** class, in our case we use **.d-none .d-md-block**, which will hide the element for all screen sizes except on medium or larger devices. In another word, the paragraph is hidden in extra-small and small devices (mobile phone, portrait or landscape mode) only.

4. Look for the "To Do" comments that lead you to create the second row in the container. In this row, create a left column that contains the main content, and a right column that contains a side bar (<aside>) which displays the opening hours, type the highlighted code as shown:

```html
<!-- To Do: Bootstrap Grid 2nd row - Content Section -->
<div class="row">
    <!-- To Do: Left column - Main content (67% width) -->
    <div class="col-sm-8">
        <main>
            <h2>Fresh from the Oven</h2>
            <h3>Breads</h3>
            <!-- To Do: Use Bootstrap CSS class to make image
                responsive to screen size -->
            <p><img class="img-fluid" src="images/bread.png" alt="round loaf
of bread on cutting board"> Our breads are made daily from highest-quality
whole grain flour, water, salt, and yeast or sourdough starter. Simply and
naturally, and never any preservatives. Patience is key to achieving the
proper level of fermentation and baking each loaf to perfection. Available in
whole grain, sourdough, olive loaf, classic rye, and potato-onion.</p>
            <p class="more"><a href="">Learn more about our baking
process...</a></p>

            <h3>Muffins</h3>
            <!-- To Do: Use Bootstrap CSS class to make image
                responsive to screen size -->
            <p><img class="img-fluid" src="images/muffin.png" alt="one
chocolate chip muffin"> Every day, we offer a large selection of muffins,
including blueberry, multi-berry, bran, corn, lemon-poppyseed, and chocolate.
Our muffins are made from scratch each day. Stop by to see our seasonal
muffin flavors!</p>
            <p class="more"><a href="">Learn more about how we make our
muffins...</a></p>
        </main>
    <!-- To Do: End of left column -->
    </div>
    <!-- To Do: Right column - Side bar (33% width) -->
    <div class="col-sm-4">
        <aside>
            <h2>Hours</h2>
            <p><span class="day">Monday:</span> 5am to 3pm</p>
            <p><span class="day">Tuesday:</span> 5am to 3pm</p>
            <p><span class="day">Wednesday:</span> 5am to 3pm</p>
            <p><span class="day">Thursday:</span> 5am to 3pm</p>
            <p><span class="day">Friday:</span> 5am to 3pm</p>
            <p><span class="day">Saturday:</span> 6am to 4pm</p>
            <p><span class="day">Sunday:</span> 6am to 4pm</p>
        </aside>
```

```
        <!-- To Do: End of right column -->
    </div>
<!-- To Do: End of 2nd row -->
</div>
```

**Note**:

Bootstrap's grid system is built with flexbox and allows up to 12 columns across viewport. 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 | | | | | | | | | | | |

The grid system is responsive, and the columns will re-arrange automatically depending on the screen size. In our case, we set the left column to span 8 small columns (**.col-sm-8**) and the right column to span 4 small columns (**.col-sm-4**) in a small device. When the page is displayed on an extra-small device (mobile phone portrait mode), the left column will be stacked above the right column and hence the second row will be displayed as a row contains one column.

When the page is displayed on larger device (i.e., md, lg, xl), the two columns remain in the row. The following table summarizes some of the key features of the Bootstrap 4 grid system.

| Features Bootstrap 4 Grid System | Extra small <576px | Small ≥576px | Medium ≥768px | Large ≥992px | Extra large ≥1200px |
|---|---|---|---|---|---|
| Max container width | None (auto) | 540px | 720px | 960px | 1140px |
| Ideal for | Mobile (Portrait) | Mobile (Landscape) | Tablets | Laptops | Laptops & Desktops |
| Class prefix | .col- | .col-sm- | .col-md- | .col-lg- | .col-xl- |
| Number of columns | 12 | | | | |
| Gutter width | 30px (15px on each side of a column) | | | | |
| Nestable | Yes | | | | |
| Column ordering | Yes | | | | |

5. Look for the "To Do" comments that lead you to create the third row in the container that contains the <footer> section in the HTML, type the highlighted code as shown:

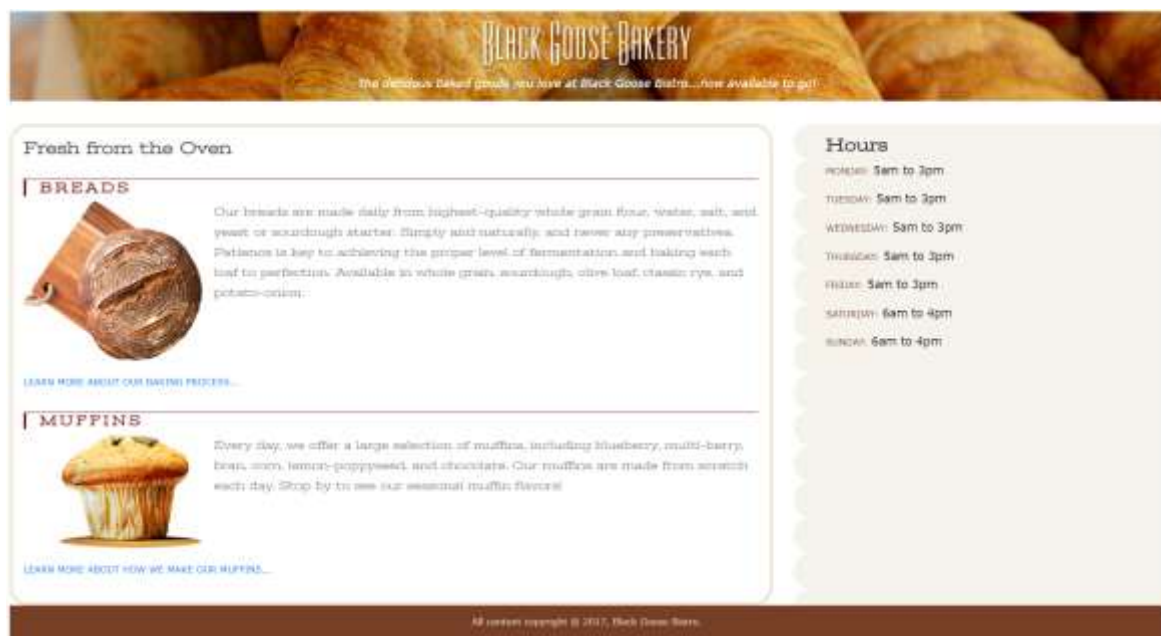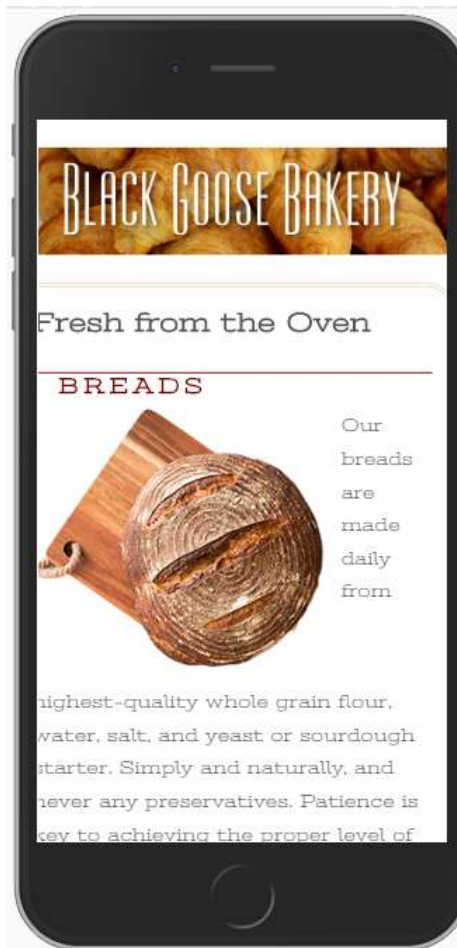```
<!-- To Do: Bootstrap Grid 3rd row - Footer -->
<div class="row">
    <!-- To Do: Bootstrap Grid column, full width -->
    <div class="col-sm-12">
```

```
            <footer>
                <p>All content copyright &copy; 2017, Black Goose Bistro.</p>
            </footer>
        <!-- To Do: End of column -->
        </div>
    <!-- To Do: End of 3rd row -->
    </div>
```

6. Test view the *bakery.html* page in browser, resize the browser to observe the responsive design.

Note: Refer to the following links to learn viewing the mobile version of a webpage in Google Chrome:

https://superuser.com/questions/1214829/how-can-i-view-the-mobile-version-of-a-webpage-in-google-chrome-for-desktop

https://developers.google.com/web/tools/chrome-devtools/device-mode#viewport

7. Save the file and view in Browser.

8. Zipped the entire **Week4Practical** folder and submit in MEL submission.

(Zip filename format as instructed in ppt slides)

== End of Worksheet ==