DEPARTMENT OF
COMPUTER SCIENCE AND ENGINEERING

Title: Responsive Web design with Bootstrap

WEB PROGRAMMING LAB
CSE 302

GREEN UNIVERSITY OF BANGLADESH

1 Objective(s)

- To be familiar with Bootstrap to design responsive web pages using Bootstrap materials.

2 Problem analysis

Responsive Web design: Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it look good on all devices (desktops, tablets, and phones). A responsive web design will automatically adjust for different screen sizes and viewports.

To create a responsive website, add the following <meta> tag to all your web pages:

<meta name="viewport" content="width=device-width, initial-scale=1.0">

Responsive Web Design Frameworks Bootstrap:

Bootstrap is a CSS framework which uses HTML, CSS and jQuery to make responsive web pages. Bootstrap is an open source toolkit for developing with HTML, CSS, and JS and its a world's most popular front-end component library. Bootstrap has light but powerful plugin built on jQuery.

3 Designing Web Page Using Bootstrap

3.1 Link Bootstrap to HTML Page

```
1  <head>
2    <title>Bootstrap Example</title>
3    <meta charset="utf-8">
4    <meta name="viewport" content="width=device-width, initial-scale=1">
5    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/
       css/bootstrap.min.css">
6    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js"
       ></script>
7    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.
       js"></script>
8  </head>
```

3.2 Design Your First Bootstrap Page
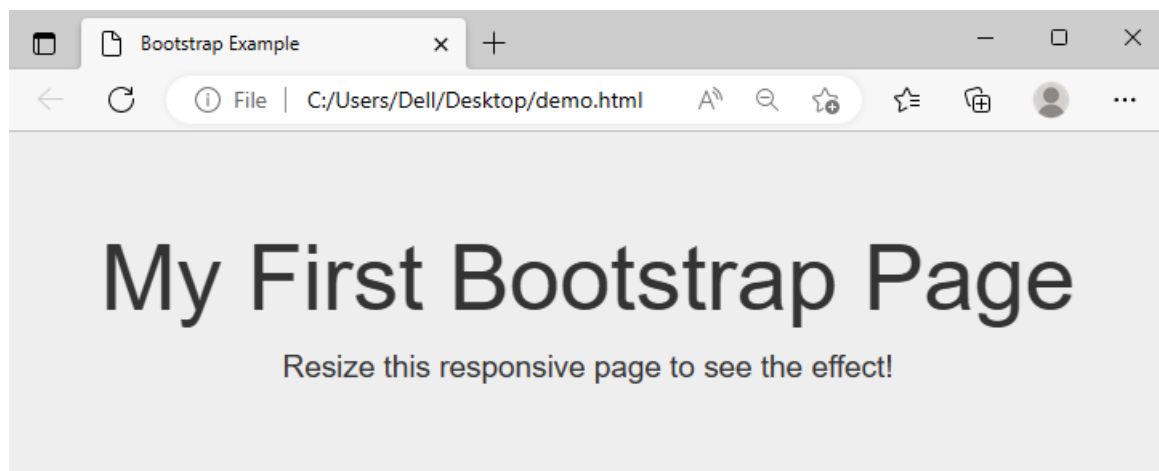
```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <title>Bootstrap Example</title>
5    <meta charset="utf-8">
6    <meta name="viewport" content="width=device-width, initial-scale=1">
7    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/
       css/bootstrap.min.css">
8    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js"
       ></script>
9    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.
       js"></script>
10 </head>
11 <body>
12
13 <div class="jumbotron text-center">
14   <h1>My First Bootstrap Page</h1>
15   <p>Resize this responsive page to see the effect!</p>
16 </div>
```

```
17
18  <div class="container">
19    <div class="row">
20      <div class="col-sm-4">
21        <h3>Column 1</h3>
22        <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit...</p>
23        <p>Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...</p>
24      </div>
25      <div class="col-sm-4">
26        <h3>Column 2</h3>
27        <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit...</p>
28        <p>Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...</p>
29      </div>
30      <div class="col-sm-4">
31        <h3>Column 3</h3>
32        <p>Lorem ipsum dolor sit amet, consectetur adipisicing elit...</p>
33        <p>Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...</p>
34      </div>
35    </div>
36  </div>
37
38  </body>
39  </html>
```


My First Bootstrap Page

Resize this responsive page to see the effect!

Column 1

Lorem ipsum dolor sit amet, consectetur adipisicing elit...

Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...

Column 2

Lorem ipsum dolor sit amet, consectetur adipisicing elit...

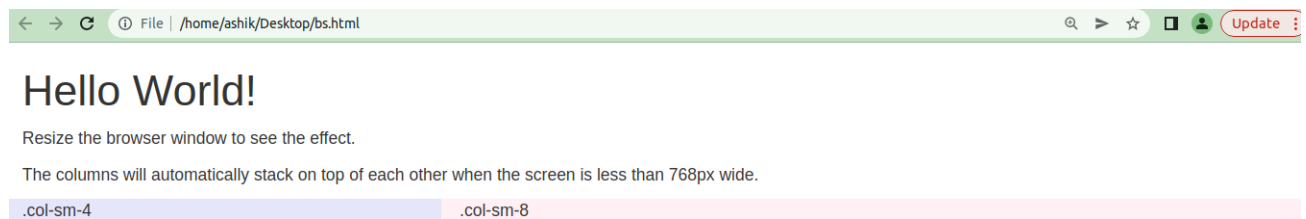Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...

Column 3

Lorem ipsum dolor sit amet, consectetur adipisicing elit...

Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris...

3.3   Bootstrap Grid System

```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/3.4.1/
      css/bootstrap.min.css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js"
      ></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.
      js"></script>
</head>
<body>

<div class="container-fluid">
  <h1>Hello World!</h1>
  <p>Resize the browser window to see the effect.</p>
  <p>The columns will automatically stack on top of each other when the screen
      is less than 768px wide.</p>
  <div class="row">
    <div class="col-sm-4" style="background-color:lavender;">.col-sm-4</div>
    <div class="col-sm-8" style="background-color:lavenderblush;">.col-sm-8</div
        >
  </div>
</div>


</body>
</html>
```


3.4   Bootstrap Table

```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/3.4.1/
      css/bootstrap.min.css">
```

```
 8    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js"
         ></script>
 9    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.
         js"></script>
10  </head>
11  <body>
12
13  <div class="container">
14    <h2>Contextual Classes</h2>
15    <p>Contextual classes can be used to color table rows or table cells. The
         classes that can be used are: .active, .success, .info, .warning, and .
         danger.</p>
16    <table class="table">
17      <thead>
18        <tr>
19          <th>Firstname</th>
20          <th>Lastname</th>
21          <th>Email</th>
22        </tr>
23      </thead>
24      <tbody>
25        <tr>
26          <td>Default</td>
27          <td>Defaultson</td>
28          <td>def@somemail.com</td>
29        </tr>
30        <tr class="success">
31          <td>Success</td>
32          <td>Doe</td>
33          <td>john@example.com</td>
34        </tr>
35        <tr class="danger">
36          <td>Danger</td>
37          <td>Moe</td>
38          <td>mary@example.com</td>
39        </tr>
40        <tr class="info">
41          <td>Info</td>
42          <td>Dooley</td>
43          <td>july@example.com</td>
44        </tr>
45        <tr class="warning">
46          <td>Warning</td>
47          <td>Refs</td>
48          <td>bo@example.com</td>
49        </tr>
50        <tr class="active">
51          <td>Active</td>
52          <td>Activeson</td>
53          <td>act@example.com</td>
54        </tr>
55      </tbody>
56    </table>
57  </div>
58
59  </body>
60  </html>
```

Contextual Classes

Contextual classes can be used to color table rows or table cells. The classes that can be used are: .active, .success, .info, .warning, and .danger.

Firstname	Lastname	Email
Default	Defaultson	def@somemail.com
Success	Doe	john@example.com
Danger	Moe	mary@example.com
Info	Dooley	july@example.com
Warning	Refs	bo@example.com
Active	Activeson	act@example.com

3.5 Bootstrap Images
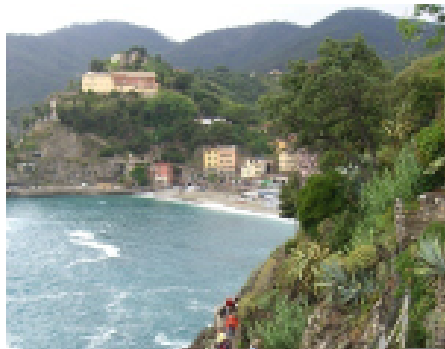
```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <title>Bootstrap Example</title>
5    <meta charset="utf-8">
6    <meta name="viewport" content="width=device-width, initial-scale=1">
7    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/
       css/bootstrap.min.css">
8    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js"
       ></script>
9    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.
       js"></script>
10 </head>
11 <body>
12
13 <div class="container">
14   <h2>Rounded Corners</h2>
15   <p>The .img-rounded class adds rounded corners to an image (not available in
       IE8):</p>
16   <img src="cinqueterre.jpg" class="img-rounded" alt="Cinque Terre" width="304"
       height="236">
17 </div>
18 <div class="container">
19   <h2>Circle</h2>
20   <p>The .img-circle class adds rounded corners to an image (not available in
       IE8):</p>
21   <img src="cinqueterre.jpg" class="img-circle" alt="Cinque Terre" width="304"
       height="236">
22 </div>
23 <div class="container">
24   <h2>Thumbnail</h2>
25   <p>The .img-thumbnail class adds rounded corners to an image (not available in
       IE8):</p>
```

```
26     <img src="cinqueterre.jpg" class="img-thumbnail" alt="Cinque Terre" width="304
         " height="236">
27  </div>
28
29  </body>
30  </html>
```

Rounded Corners

The .img-rounded class adds rounded corners to an image (not available in IE8):
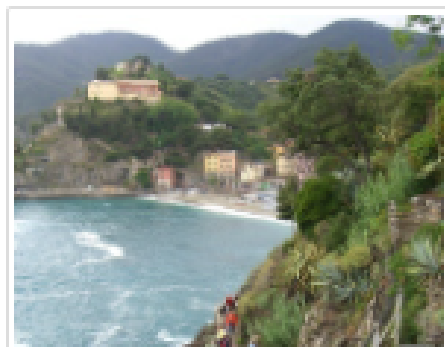

Circle

The .img-circle class adds rounded corners to an image (not available in IE8):

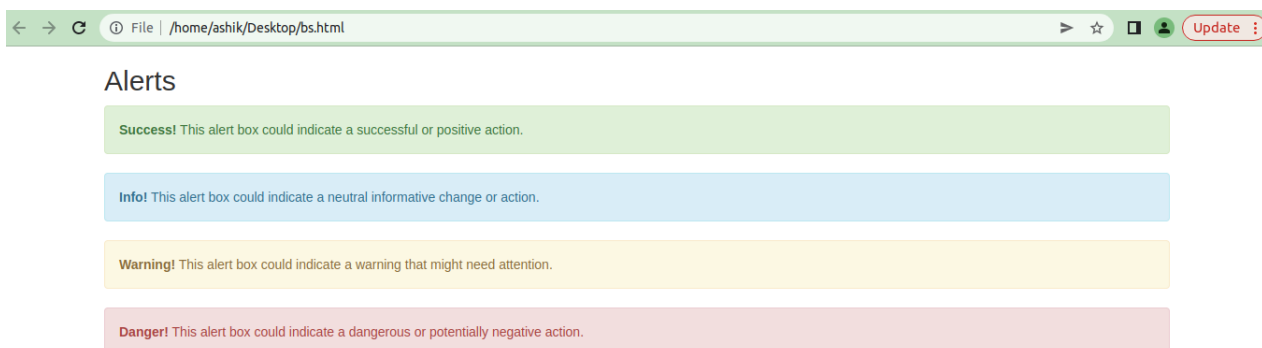## Thumbnail

The .img-thumbnail class adds rounded corners to an image (not available in IE8):

3.6 Bootstrap Alerts

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <title>Bootstrap Example</title>
5    <meta charset="utf-8">
6    <meta name="viewport" content="width=device-width, initial-scale=1">
7    <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/
        css/bootstrap.min.css">
8    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js"
        ></script>
9    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.
        js"></script>
10  </head>
11  <body>
12
13  <div class="container">
14    <h2>Alerts</h2>
15    <div class="alert alert-success">
16      <strong>Success!</strong> This alert box could indicate a successful or
          positive action.
17    </div>
18    <div class="alert alert-info">
19      <strong>Info!</strong> This alert box could indicate a neutral informative
          change or action.
20    </div>
21    <div class="alert alert-warning">
22      <strong>Warning!</strong> This alert box could indicate a warning that might
          need attention.
23    </div>
24    <div class="alert alert-danger">
25      <strong>Danger!</strong> This alert box could indicate a dangerous or
          potentially negative action.
26    </div>
27  </div>
28
29  </body>
30  </html>
```


3.7 Bootstrap Buttons

```
1  <!DOCTYPE html>
2  <html lang="en">
```

```
3   <head>
4     <title>Bootstrap Example</title>
5     <meta charset="utf-8">
6     <meta name="viewport" content="width=device-width, initial-scale=1">
7     <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/
        css/bootstrap.min.css">
8     <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js"
        ></script>
9     <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.
        js"></script>
10  </head>
11  <body>
12
13  <div class="container">
14    <h2>Button Styles</h2>
15    <button type="button" class="btn">Basic</button>
16    <button type="button" class="btn btn-default">Default</button>
17    <button type="button" class="btn btn-primary">Primary</button>
18    <button type="button" class="btn btn-success">Success</button>
19    <button type="button" class="btn btn-info">Info</button>
20    <button type="button" class="btn btn-warning">Warning</button>
21    <button type="button" class="btn btn-danger">Danger</button>
22    <button type="button" class="btn btn-link">Link</button>
23  </div>
24
25  </body>
26  </html>
```

Button Styles

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

3.8 Bootstrap Collapse

```
1   <!DOCTYPE html>
2   <html>
3   <head>
4     <meta name="viewport" content="width=device-width, initial-scale=1">
5     <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/
        css/bootstrap.min.css">
6     <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.6.1/jquery.min.js"
        ></script>
7     <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.4.1/js/bootstrap.min.
        js"></script>
8   </head>
9   <body>
10
11  <div class="container">
12    <h2>Simple Collapsible</h2>
```

```
13    <a href="#demo" class="btn btn-success" data-toggle="collapse">Simple
        collapsible</a>
14    <div id="demo" class="collapse">
15      Lorem ipsum dolor sit amet, consectetur adipisicing elit,
16      sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim
          ad minim veniam,
17      quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo
          consequat.
18    </div>
19  </div>
20
21  </body>
22  </html>
```

Simple Collapsible

Simple collapsible

Simple Collapsible

Simple collapsible

Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

3.9 Other Bootstrap Elements

```
1  For more Bootstrap Components, Visit-
2  https://www.w3schools.com/bootstrap/default.asp
```

4 Sample Input/Output (Compilation, Debugging & Testing)

Output:

Please login

Email Address

Password

☐ Remember me

Login

5 Discussion & Conclusion

Based on the focused objective(s) to understand the concepts of designing web pages using Bootstrap elements, the additional lab exercise made me more confident in the fulfillment of the objectives(s).

6 Lab Task (Please implement yourself and show the output to the instructor)

7 Lab Exercise (Submit as a report)

- Design the following page using Bootstrap.

8 Policy

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