Assignment 1a

Title: Web Page Design

Problem Statement: Create a responsive web page which shows the ecommerce/ college/ exam admin dashboard with sidebar and statistics in cards using HTML, CSS and Bootstrap.

Objective: Apply HTML, CSS and Bootstrap classes and demonstrate a web page that is responsive.

Theory:

1. **HTML**

- HTML stands for Hypertext Markup Language. HTML is rendered on a Web Browser. HTML has a set of elements that describes the structure of a Web page.

   a. **HTML Elements**

   - The HTML **element** comprises of a start tag, the content and the end tag:
   - <tagname>Content</tagname>
   - The main HTML element is <html> … </html>. All the HTML will be enclosed within it.

   b. **HTML**

```
<!DOCTYPE html>
<html lang="en">
  <head>
      <meta charset="UTF-8">
      <meta name="viewport" content="width=device-width, initial-scale=1.0">
      <title>HTML 5 Boilerplate</title>
      <link rel="stylesheet" href="style.css">
  </head>
  <body>
      Other HTML elements are per choice of User
      <script src="index.js"></script>
  </body>
</html>
```

- <head> and <body> are the two main tags. <head> is where the meta information, title of Web Page and CSS files can be embedded. <body> holds the user's code and any JavaScript files can also come below.

c. Block-Level vs. Inline Elements

- **The Block-level elements** occupy the entire width of the Web Page (height is automatic as per the content within element, if not explicitly mentioned).
- Common Block−Level Elements are , <section>, <form>, <main>, <table>, <h1> to <h6>, <nav>, <header>, <p>, <hr>, <ol>, <ul>, <li> etc.
- **The inline elements** take up the width on the browser as much its own width only.
- Inline Elements can sit next each other in a single row.
- Inline Elements can also be nested within the Block−level elements
- Common Inline Elements are <a>, <b>, <i>, <img>, , <input>, <label>, <button> etc.

d. HTML Attributes

- An attribute is a key−value pair written within an element.
- An attribute is used to add more specific details to an element.
- For e.g. You may use a "style" attribute in element to change the color of text or add a background …. and much more
- **Case Study: The <a> tag**
  - The <a> or anchor tag is used to add a hyperlink.
  - In this slide we shall see the different attributes associated with <a> tag.
    1. **href** – used to mention the link
       i. e.g. CLICK ME
    2. **target** – indicates where to open the linked document.
       i. e.g. CLICK ME

          The web page is opened in same tab

       ii. e.g. CLICK ME

The web page is opened in a new window or tab

3. **style** – used to add styles

1. e.g. CLICK ME

2. Cascading Style Sheets (CSS)

- CSS, also known as Cascading Style Sheets is used to style or achieve the desired look and feel of the web page.
- CSS has a wide range of properties that can facilitate the user from changing the color of text to applying animations.

a. CSS Syntax

selector{ property:value; property:value; }

Selector could be element selector or id selector or class selector or universal selector etc..A property may have various values.

e.g. if property is “font-style”

It can have 2 values: normal, italic

b. Types of CSS

- **Inline CSS** – It is written within the HTML element itself using the style attribute.

  e.g. I am a div element

- **Internal CSS** – It is written within the HTML document using <style> tag.
- **External CSS** – It is written in a separate CSS file. The CSS can then be linked to the HTML file. CSS file is saved with .css extension

c. CSS Selectors

- CSS Selectors are the various ways for writing a CSS.
- The common selectors are:

1. Element Selector

The element selector uses the name of HTML tag.

e.g.

HTML

```
<div>I am div 1</div>
<div>I am div 2</div>
```

CSS

```
div
{
width: 100px;
 border: 1px solid grey;
}
```

2. ID Selector

The id selector uses the unique id of HTML tag to apply CSS.

e.g.

HTML

```
<div id="div1">I am div 1</div>
```

CSS

```
#div1
{
width: 100px;
border: 1px dashed orange;
}
```

3. Class Selector

The class selector uses the class of HTML tag to apply CSS.

e.g. **HTML**

```
<div class="mydiv">I am div 1</div>
```

CSS

```
.mydiv{
    width: 50%;
    border: 1px dashed orange;}
```

4. Universal Selector

The universal selector applies CSS to each HTML element of the Web Page. Common styling like font-family, page width can be specified using universal selector

e.g. **CSS**

```
*{
font-family: sans-serif;
font-weight: 700;
text-align: justify;
}
```

5. Grouping Selector

In grouping selector all the elements which require same style can be grouped together and a common set CSS rules can be applied to them.

e.g. **HTML**

```
<div>I am a div</div>
<p>I am paragraph 1</p>
<p id="p1">I am paragraph 2</p>
```

CSS

```
div, #p1
{
text-align: center;
color: red;
}
```

6. Combination Selector

When there is a relationship between HTML elements, the combination selector can be used to apply rules.

There are four different combination selectors in CSS:

- descendant selector (space)
- child selector (>)
- adjacent sibling selector (+)
- general sibling selector (~)

7. Pseudo-class Selector

A pseudo-class is used to define a specific state of an HTML element.

:link, :hover

```
<p><a href="#" target="_blank">Click ME</a></p>
```

e.g.

```
a:link {
  color: red;
}
a:hover {
  color: hotpink;
}
```

:checked

```
<form action="#">
<input type="radio" value="male" name="gender"> Male<br>
<input type="radio" value="female" name="gender"> Female<br>
</form>
input:checked {
  outline: 2px solid deeppink;
}
```

3. Bootstrap

- Bootstrap is a light−weight library of CSS.
- Bootstrap 5 is common used version as of now.

- It has a wide range of class that works perfectly well on all browsers.
- These classes have in−built CSS associated with them.
- e.g. class=“card” automatically applies the following CSS:

```
position: relative;
display: flex;
flex-direction: column;
min-width: 0;
```

a. Bootstrap Grid System

- Bootstrap Grid allows 12 columns in a row on the web page.
- The Bootstrap 5 grid system has six classes:
    - .col− (extra small devices − screen width less than 576px)
    - .col−sm− (small devices − screen width equal to or greater than 576px)
    - .col−md− (medium devices − screen width equal to or greater than 768px)
    - .col−lg− (large devices − screen width equal to or greater than 992px)
    - .col−xl− (xlarge devices − screen width equal to or greater than 1200px)
    - .col−xxl− (xxlarge devices − screen width equal to or greater than 1400px)
-

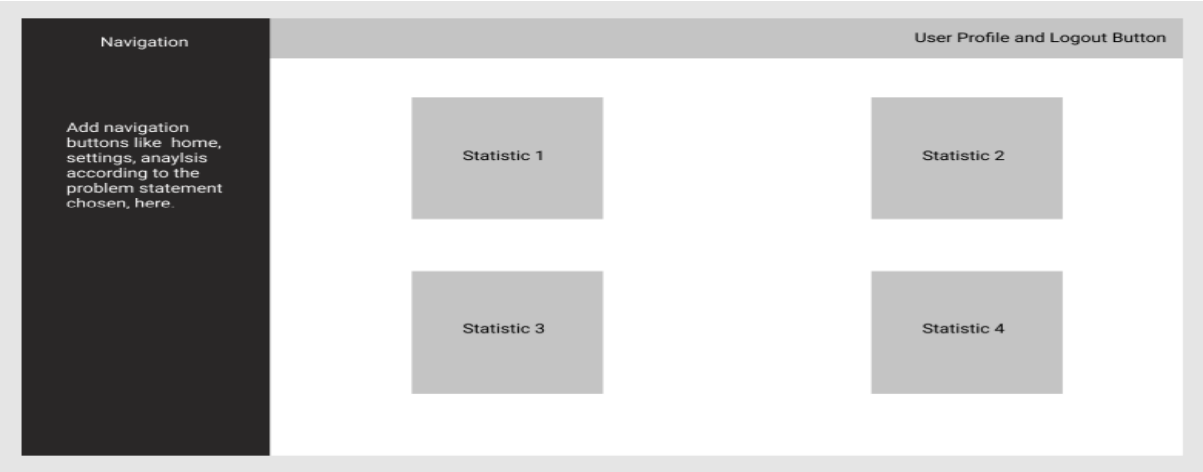
- The first * may hold one of the values: xs, sm, md, lg, xl, xxl
- The second * may hold a number (the summation of all numbers in a row must be less than or equal to 12)

b. How to add Bootstrap CDN links to your code

```
<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-
alpha1/dist/css/bootstrap.min.css" rel="stylesheet">
  <script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-
alpha1/dist/js/bootstrap.bundle.min.js"></script>
 </head>
```

Source: getbootstrap.com

Implementation: Sample Dashboard



Sample HTML tags to be used

1. p
2. body
3. All table tags
4. All heading tags
5. a
6. div
7. title
8. head
9. li
10. ol
11. ul
12. html
13. br
14. hr
15. img
16. link
17. header etc…

Sample Bootstrap classes to be used

1. container
2. container−fluid
3. card
4. card−body
5. card−title
6. card−text
7. btn
8. btn−primary (with variations) etc…

Conclusion: Thus, we have applied HTML, CSS and Bootstrap classes and demonstrated a web pagethat is responsive.