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Learning Outcome - After completing this module, the student should be able to understand Hypertext Markup Language (HTML).

To meet the learning outcome, a student has to complete the following activities

1. Create HTML document using markup Tags in HTML editor (Notepad) (Open/run the html file in web browser to check the output (30 mins)
2. Modify above HTML document using heading – paragraphs, modify above HTML document using Line Breaks, modify above HTML document using HTML Tags. (30 mins)
3. Introduce new elements of HTML5 (1 Hrs)
4. Create Text, Lists, Tables and iFrames (2 Hrs)
5. Create Hyperlinks, Images and Multimedia Working with Forms and controls. (3 Hrs)
6. Enable Hypertext Transfer Protocol (HTTP) via GET and POST requests (1 Hrs)
7. Obtain input from users. (5 Hrs)
8. Divide a webpage into logical sections (1 Hr)
9. Display computer code with HTML (1 Hr)
10. Annotation of images and graphics. (2 Hrs)
11. Marking abbreviations (1 Hr)
12. Add quotations and citations to web pages (2 Hrs)
13. Embed a webpage within another webpage (2 Hrs)
14. Create a data spreadsheet (2 Hrs)
15. Optimize HTML table rendering (1 Hr)
16. Create collapsible content with HTML (1 Hr)
17. Add context menus to a webpage (2 Hr)
18. Create dialog boxes with HTML (2 Hrs)
19. Add multiple languages into a single webpage (2 Hrs)
20. Controlling of HTML line breaking (1 Hrs)
21. Mark changes (added and removed text) (2 Hrs)
22. Add responsive image to a webpage (3 Hrs.)
23. Add vector image to a webpage (3 Hrs.)
24. Add a hit map on top of an image (2 Hrs.)
25. Animation (1 hrs.)
26. Transform (1 hrs.)

Activity 1

Aim: Create HTML document using mark up Tags in HTML editor (Notepad), Open/run the html file in web browser to check the output.

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 30 mins

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Program 1:

```
<!DOCTYPE html>

<html>
    <head>          <!-- Document Head Starts -->
        <title>Markup Tags</title>
    </head>          <!-- Document Head Ends -->
    <body>          <!-- Document Body Starts -->
        <p><mark>My First Paragraph. </mark>We are using mark tag</p> <!--Paragraph element -->
    </body>          <!-- Document Body Ends -->
</html>
```

Output/Results snippet:



My First Paragraph

Program 2:

```
<!DOCTYPE html>

<html>
  <head>          <!-- Document Head Starts -->
    <title>Markup Tags</title>
  </head>          <!-- Document Head Ends -->
  <body>          <!-- Document Body Starts -->
    <center>
      <font size="20">My Web Page</font>    <!--Font element -->
    </center>
  </body>          <!-- Document Body Ends -->
</html>
```

Output/Results snippet:



My First Paragraph

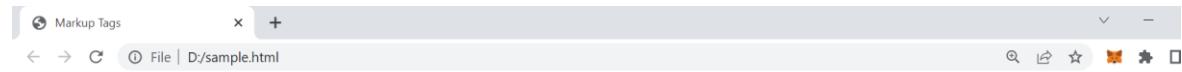
Program 3: Open/run the html file in web browser to check the output.

Step 1: Press "Windows-E" to launch Windows Explorer.

Step 2: Navigate to the folder that contains your HTML file.

Step 3: Double-click the file. Your default browser displays the HTML document. If the browser is not open, Windows launches it.

Output/Results snippet:



My First Paragraph

References:

- https://www.w3schools.com/html/html_editors.asp
- <https://www.tutorialrepublic.com/html-tutorial/html-get-started.php>
- <https://smallbusiness.chron.com/run-html-file-internet-browser-53175.html>
- <https://www.tutorialrepublic.com/html-tutorial/html-get-started.php>

Activity 2

Aim: Modify above HTML document using heading – paragraphs, Modify above HTML document using Line Breaks, Modify above HTML document using HTML Tags.

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 30 mins

List of Hardware/Software requirements:

1. 1Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Program 1:

```
<!DOCTYPE html>

<html>
    <head>          <!-- Document Head Starts -->
        <title> Heading & Paragraph</title>
    </head>          <!-- Document Head Ends -->

    <body bgcolor="lightblue" >      <!-- Document Body Starts -->
        <h1>My First Heading</h1>      <!--This is a heading-->
        <h2>My First Heading</h2>
        <h3>My First Heading</h3>
        <h4>My First Heading</h4>
        <h5>My First Heading</h5>
        <h6>My First Heading</h6>

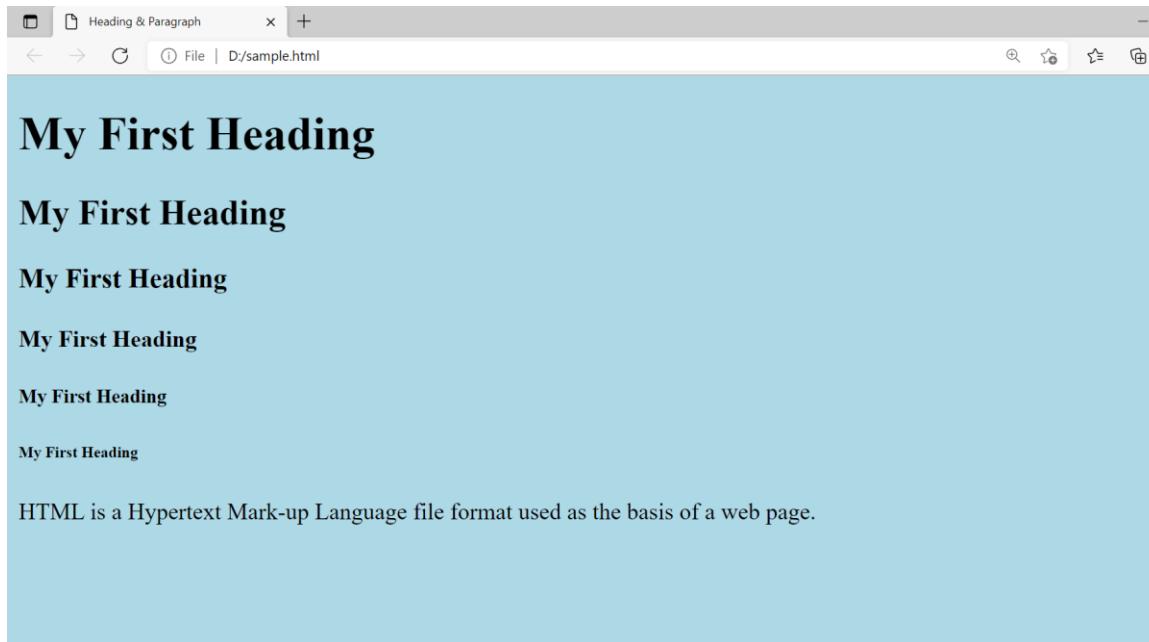
        <p>          <!--Paragraph element -->
```

HTML is a Hypertext Mark-up Language file format used as the basis of a web page.

</p>

```
</body>           <! -- Document Body Ends -->  
</html>
```

Output/Results snippet:



Program 2:

```
<!DOCTYPE html>  
  
<html>  
  
<head>           <! -- Document Head Starts -->  
  
<title> Heading Paragraph</title>  
  
</head>           <! -- Document Head Ends -->  
  
<body >         <! -- Document Body Starts -->  
  
<p>             <! – Paragraph Element with break -->
```

To break lines
in a text,
use the br element.

```
</p>
</body>          <!-- Document Body Ends -->
</html>
```

Output/Results snippet:



To break lines
in a text,
use the br element.

Program 3:

```
<!DOCTYPE html>

<html>

<head>          <!-- Document Head Starts -->
<title> IBM </title>

</head>          <!-- Document Head Ends -->
<body >         <!-- Document Body Starts -->
<h1>IBM</h1>    <!--Heading Tag -->
<hr>            <!--Horizontal Rule -->
<p>              <!--Paragraph Element -->
```

International Business Machines (IBM), is a global technology company that provides hardware, software, cloud-based services and cognitive computing. </p>
<p>largest computer company in the world. </p>

```
</body>           <! -- Document Body Ends -->
```

```
</html>
```

Output/Results snippet:



IBM

International Business Machines (IBM), is a global technology company that provides hardware, software, cloud-based services and cognitive computing.

largest computer company in the world.

References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialrepublic.com/html-tutorial/html-paragraphs.php>
- <https://www.tutorialrepublic.com/html-tutorial/html-paragraphs.php>

Activity 3

Aim: Introduce new elements of HTML5

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 1 Hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<body>

<h2>Example of video and audio tag</h2>

<video width = "300" height = "200" controls autoplay> <!--Video Element -->

    <source src = "/html5/foo.ogg" type = "video/ogg" />
    <source src = "/html5/foo.mp4" type = "video/mp4" />

    Your browser does not support the video element.

</video>

<audio controls autoplay> <!--Audio Element -->

    <source src = "/html5/audio.ogg" type = "audio/ogg" />
    <source src = "/html5/audio.wav" type = "audio/wav" />

    Your browser does not support the audio element.

</audio><br>
```

```
<svg id = "svgelem" height = "100" xmlns = "http://www.abc.org/2000/svg">    <!--svg Element-->

    <circle id = "redcircle" cx = "50" cy = "50" r = "50" fill = "red" />

</svg>

<br>

<h1> HTML Nav tag</h1>

<nav>          <!--Nav Element -->

    <a href="/html/">HTML</a>

    <a href="/css/">CSS</a>

    <a href="/js/">JavaScript</a>

    <a href="/jquery/">jQuery</a>

</nav>

<h1>The progress element</h1>

<label for="file">Downloading progress:</label>

<progress id="file" value="32" max="100"> 32% </progress>    <!--Progress Element -->

<h2 style="font-size:25px; font-style:italic;">

    Placeholder Attribute in Input Element <!--Placeholder Attribute in Input Element-->

</h2>

<form action=" ">

    <input type="text" name="fname"

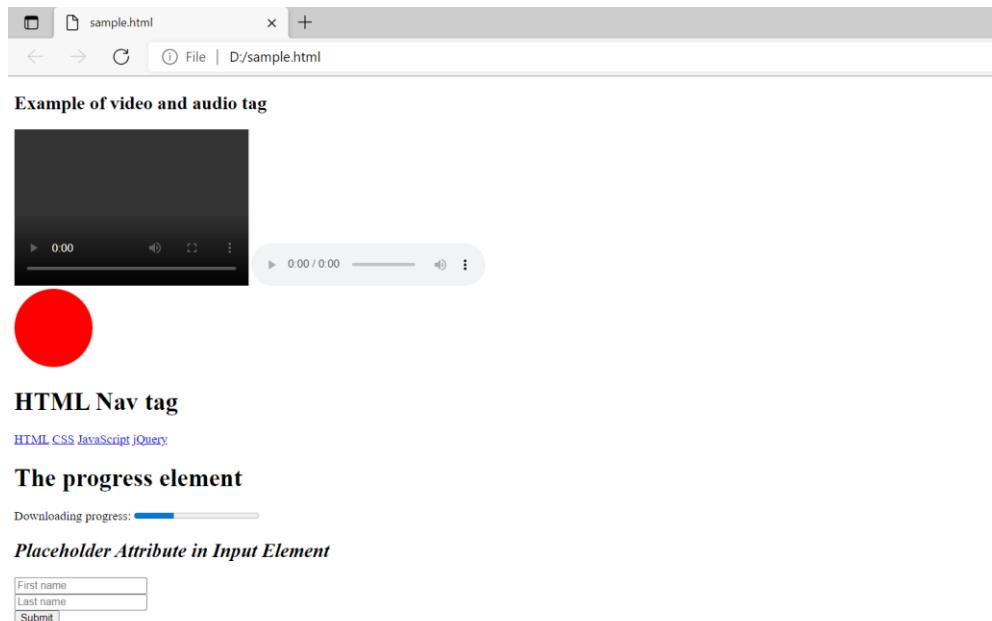
        placeholder="First name">

    <br>

    <input type="text" name="lname"
```

```
placeholder="Last name">  
<br>  
<input type="submit" value="Submit">  
</form>  
  
</body>  
</html>
```

Output/Results snippet:



References:

- https://www.w3.org/wiki/HTML/New_HTML5_Elements
- <https://www.geeksforgeeks.org/html5-new-tags/>
- <https://www.javatpoint.com/html-new-elements>

Activity 4

Aim: Create Text, Lists and iFrames

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 2 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Program 1: A simple HTML webpage with the body Texts.

```
<!DOCTYPE html>

<html>
    <head>                    <!-- Document Head Starts -->
        <title>Text,Lists,Tables and Frames </title>
    </head>                    <! -- Document Head Ends -->
    <body >                  <!-- Document Body Starts -->
        <b>Bold text.</b><br>    <!-- This text is Bold -->
        <i>Italic text.</i><br>    <!-- This text is Italic -->
        <pre>Preformatted text      <!-- This text is Preformatted text -->
    displays just
    as you
    type it...
    ...line breaks,
    spaces...
```

...and all!

</pre>

<tt>Teletype text - sometimes referred to as typewriter text.</tt>

 <!-- This text is Teletype Text-->

<cite>Citation text.</cite>
 <!-- This text is Citation -->

Emphasized text.
 <!-- This text is Emphasize -->

<code>Code text.</code>
 <!-- This text is Codetext -->

<big>Big text.</big>
 <!-- This text is Big -->

<small>Small text.</small>
 <!-- This text is Small -->

Delete this text.
 <!-- This text is Delete Text -->

<ins>Insert this text.</ins>
 <!-- This text is Insertion -->

<kbd>Keyboard text - text to be entered by the user.</kbd>

 <!-- This text is Keyboard text-->

<q>Quotation text.</q>
 <!-- This text is Quotation text -->

<samp>Sample text (output from a computer program).</samp>

 <!-- This text is Sample Text-->

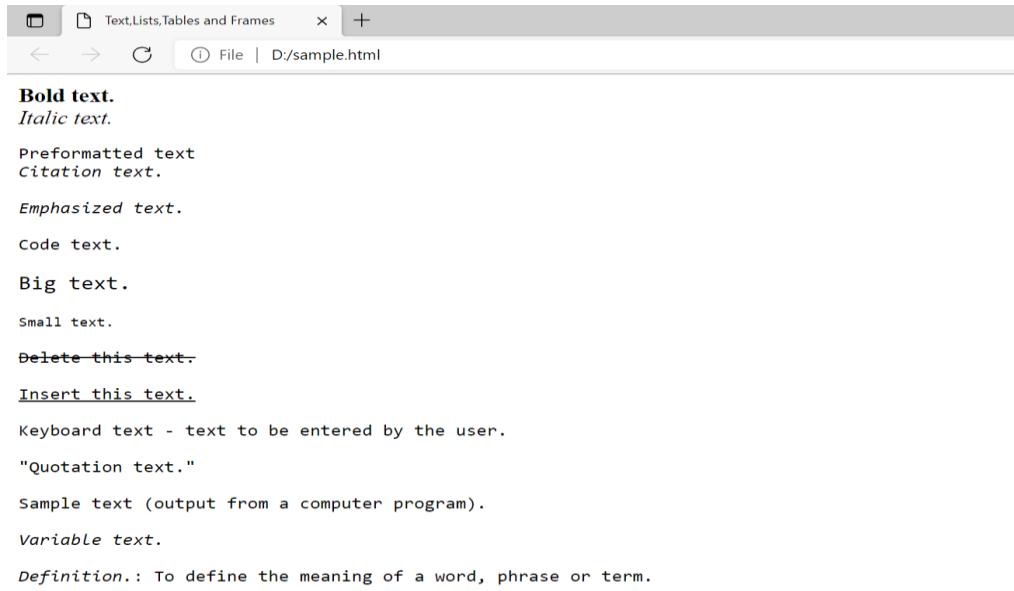
<var>Variable text.</var>
 <!-- This text is Variable Text -->

<dfn>Definition.</dfn>: To define the meaning of a word, phrase or term.
 <! -- This text is Document Type Definition -->

</body> <! -- Document Body Ends -->

</html>

Output/Results snippet:



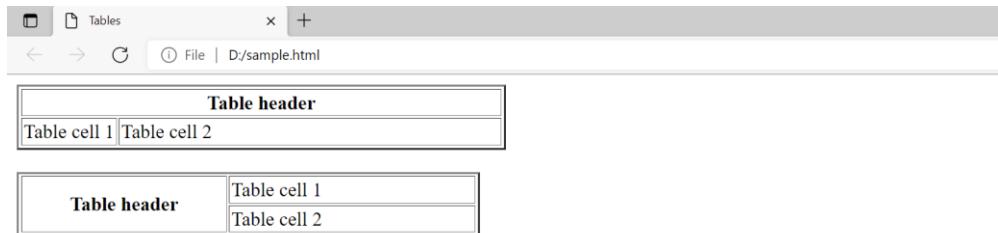
Program 2: A simple HTML webpage with the body Tables.

```
<!DOCTYPE html>

<html>
    <head>          <!-- Document Head Starts -->
        <title> Tables </title>
    </head>          <! -- Document Head Ends -->
    <body >         <!-- Document Body Starts -->
        <table class="example3" border="2"> <!--Table Tag Starts -->
            <tr>          <!--Table Row Starts -->
                <th colspan="2">Table header</th>      <!--This is Table Head -->
            </tr>          <!--Table Row Ends -->
            <tr>          <!--Table Row Starts -->
                <td width="20%">Table cell 1</td><td>Table cell 2</td>
            </tr>          <!--Table Row Ends -->
        </table><br>          <!--Table Tag Ends -->
```

```
<table class="example4" border="2">      <!--Table Tag Starts -->  
<tr>                                <!--Table Row Starts -->  
<th rowspan="2" width="25%">Table header</th> <!--This is Table Head -->  
<td width="30%">Table cell 1</td>       <!--This is Table Data -->  
</tr>                                <!--Table Row Ends -->  
<tr>                                <!--Table Row Starts -->  
<td width="30%">Table cell 2</td>       <!--This is Table Data -->  
</tr>                                <!--Table Row Ends -->  
</table>                            <!--Table Tag Ends -->  
</body>                             <!-- Document Body Ends -->  
</html>
```

Output/Results snippet:



Program 3: A simple HTML webpage with the body List.

```
<!DOCTYPE html>  
<html>  
<head>          <!-- Document Head Starts -->
```

```
<title> Lists </title>

</head>           <! -- Document Head Ends -->

<body>            <!-- Document Body Starts -->

<ol>              <!-- OrderedList Starts -->

<li>List item 1</li>    <!--List of Items -->
<li>List item 2</li>
<li>List item 3</li>

</ol>             <! -- OrderedList Ends -->

<ul>              <!-- UnOrderedList Starts -->

<li>List item 1</li>    <!--List of Items -->
<li>List item 2</li>
<li>List item 3</li>

</ul>             <! -- UnOrderedList Ends-->

<dl>               <!--This is Definition List Starts-->

<dt>Term 1</dt>      <!--This is Definition Term -->
<dd>Definition of term 1</dd>   <!--This is Definition Data -->
<dt>Term 2</dt>      <!--This is Definition Term -->
<dd>Definition of term 2</dd>   <!--This is Definition Data -->

</dl>             <!--This is Definition List Ends-->

</body>            <! -- Document Body Ends -->

</html>
```

Output/Results snippet:



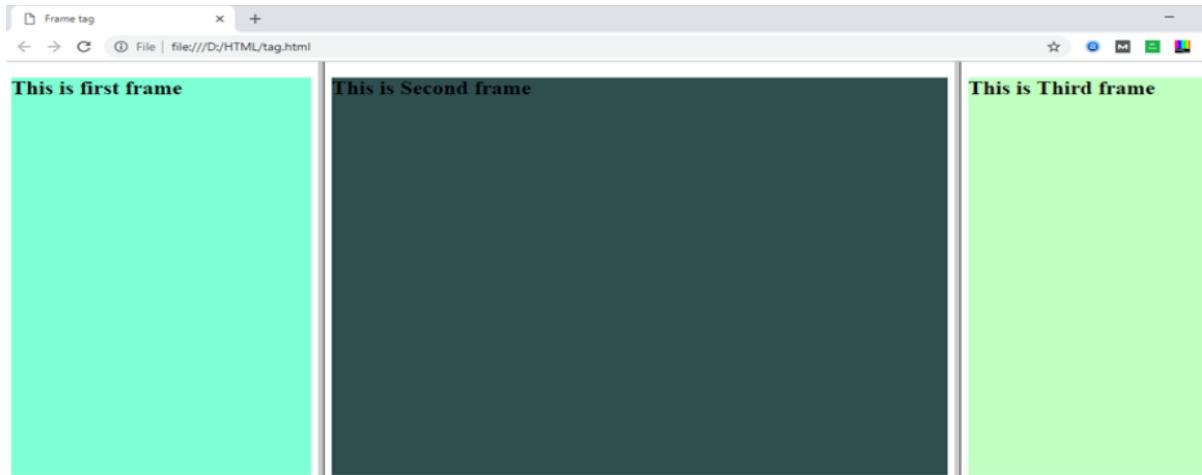
Program 3: A simple HTML webpage with the body Frames.

```
<!DOCTYPE html>

<html>
    <head>            <! -- Document Head Starts -->
        <title>Frame tag</title>
    </head>            <! -- Document Head Ends -->

    <frameset cols="25%,50%,25%">      <! -- Frameset Starts -->
        <frame src="frame1.html" >          <!--Frame element -->
        <frame src="frame2.html">          <!--Frame element -->
        <frame src="frame3.html">          <!--Frame element -->
    </frameset>          <! -- Frameset Ends -->

</html>
```



References:

- <https://www.w3.org/TR/html4/present/frames.html>
- <https://www.javatpoint.com/html-tags>
- https://www.w3schools.com/html/html_iframe.asp

Activity 5

Aim: Create Hyperlinks, Images and Multimedia Working with Forms and controls.

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 3 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Program 1: Create Hyperlinks, Images and Multimedia

```
<!DOCTYPE html>

<html>

<head>                                <!-- Document Head Starts -->
<title> Links with Paragraph</title>

</head>                                <!-- Document Head Ends -->
<body>                                <!-- Document Body Starts -->

<a href="https://www.google.com">Welcome to HTML</a><br>
<!--This is Hyperlink -->

<p>Locked in a frame? <a href="https://edunetworkworld.com/" target="_top">Click here!</a></p>
<!--This is Paragraph with Hyperlink -->

<br>

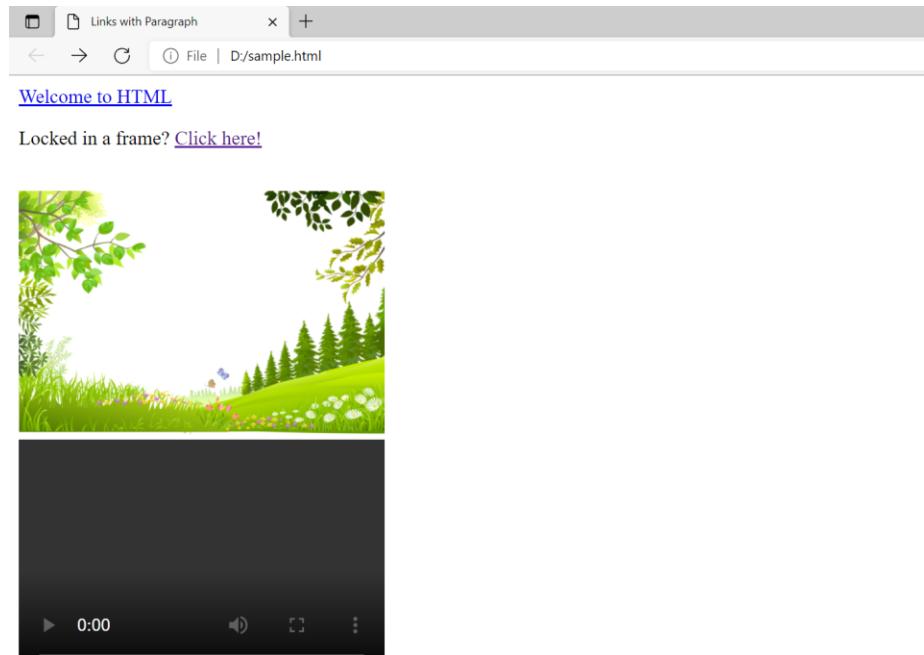
<a href="http://www.google.com">
</a>

<br>
<video width = "300" height = "200" controls autoplay>          <!-- video Element Starts-->
```

<source src = "../video.mp4" type="video/mp4" />Your browser does not support the
<video> element.

```
</video>                                <!-- video Element Ends-->  
</body>                                <! -- Document Body Ends -->  
</html>
```

Output/Results snippet:



Program 2: Working with forms and controls

```
<!DOCTYPE html>  
  
<html>  
  
<head>          <!-- Document Head Starts -->  
  
<title> Forms and Controls</title>  
  
</head>          <!-- Document Head Ends -->
```

```
<body>          <!-- Document Body Starts -->  
  
<form>          <!-- Form Element Starts -->  
  
<table cellpadding="2" width="20%" bgcolor="lightblue" align="center" cellspacing="2">  
    <!--Table Tag Starts -->  
  
<tr>    <!--Table Row Starts -->  
  
<td colspan=2>      <!--This is Table Data -->  
  
<center><font size=4><b>Student Registration Form</b></font></center>  
    <!--This is font-->  
  
</td>  
  
</tr>          <!--Table Row Ends -->  
  
<tr>          <!--Table Row Starts -->  
  
<td>Name</td>      <!--This is Table Data -->  
  
<td><input type="text" name="textnames" id="textname" size="30"></td> <!--This is Textbox-->  
  
</tr>          <!--Table Row Ends -->  
  
<tr>          <!--Table Row Starts -->  
  
<td>Father Name</td>      <!--This is Table Data -->  
  
<td><input type="text" name="fathername" id="fathername" size="30"></td>  
    <!--This is Textbox-->  
  
</tr>          <!--Table Row Ends -->  
  
<tr>          <!--Table Row Starts -->  
  
<td>Postal Address</td>      <!--This is Table Data -->  
  
<td><input type="text" name="paddress" id="paddress" size="30"></td>  
    <!--This is Textbox-->  
  
</tr>          <!--Table Row Ends -->  
  
<tr>          <!--Table Row Starts -->
```

```
<td>Personal Address</td>  <!--This is Table Data -->
<td><input type="text" name="personaladdress" id="personaladdress" size="30"></td>>
    <!--This is Textbox-->
</tr>          <!--Table Row Ends -->
<tr>          <!--Table Row Starts -->
<td>Sex</td>      <!--This is Table Data -->
<td><input type="radio" name="sex" value="male" size="10">Male <!--This is Table Data --><!--
-Input type is radio-->
<input type="radio" name="sex" value="Female" size="10">Female</td>
</tr>          <!--Table Row Ends -->
<tr>          <!--Table Row Starts -->
<td>City</td>      <!--This is Table Data -->
<td><select name="City">  <! This is Dropdown List-->
<option value="-1" selected>select..</option>           <!--This is option for Cities-->
<option value="New Delhi">NEW DELHI</option>
<option value="Mumbai">MUMBAI</option>
<option value="Goa">GOA</option>
<option value="Patna">PATNA</option>
</select></td>
</tr>          <!--Table Row Ends -->
<tr>          <!--Table Row Starts -->
<td>Course</td>      <!--This is Table Data -->
<td><select name="Course">  <! This is Dropdown List-->
<option value="-1" selected>select..</option>           <!--This is option for Course-->
<option value="B.Tech">B.TECH</option>
```

```
<option value="MCA">MCA</option>
<option value="MBA">MBA</option>
<option value="BCA">BCA</option>
</select></td>

</tr>          <!--Table Row Ends -->
<tr>          <!--Table Row Starts -->
<td>District</td>    <!--This is Table Data -->
<td><select name="District">      <! This is Dropdown List-->
<option value="-1" selected>select..</option>>    <!--This is option for Districts-->
<option value="Nalanda">NALANDA</option>
<option value="UP">UP</option>
<option value="Goa">GOA</option>
<option value="Patna">PATNA</option>
</select></td>

</tr>          <!--Table Row Ends -->
<tr>          <!--Table Row Starts -->
<td>State</td>    <!--This is Table Data -->
<td><select Name="State">      <! This is Dropdown List-->
<option value="-1" selected>select..</option>>    <!--This is option for States-->
<option value="New Delhi">NEW DELHI</option>
<option value="Mumbai">MUMBAI</option>
<option value="Goa">GOA</option>
<option value="Bihar">BIHAR</option>
</select></td>
```

```
</tr>          <!--Table Row Ends -->

<tr>          <!--Table Row Starts -->

<td>PinCode</td>  <!--This is Table Data -->

<td><input type="text" name="pincode" id="pincode" size="30"></td>  <!--This is Textbox-->

</tr>          <!--Table Row Ends -->

<tr>          <!--Table Row Starts -->

<td>EmailId</td>  <!--This is Table Data -->

<td><input type="text" name="emailid" id="emailid" size="30"></td>  <!--This is Textbox-->

</tr>          <!--Table Row Ends -->




<tr>          <!--Table Row Starts -->

<td>DOB</td>    <!--This is Table Data -->

<td><input type="text" name="dob" id="dob" size="30"></td>  <!--This is Textbox-->

</tr>          <!--Table Row Ends -->

<tr>          <!--Table Row Starts -->

<td>MobileNo</td> <!--This is Table Data -->

<td><input type="text" name="mobileno" id="mobileno" size="30"></td>
  <!--This is Textbox-->

</tr>          <!--Table Row Ends -->

<tr>          <!--Table Row Starts -->

<td><input type="reset"></td>    <!--This is Table Data & Reset button-->

<td colspan="2"><input type="submit" value="Submit Form" /></td>  <!--submit button-->

</tr>          <!--Table Row Ends -->

</table>        <!--Table Tag Ends-->
```

```
</form>          <! -- Form Element Ends -->  
</body>          <! -- Document Body Ends -->  
</html>
```

Output/Results snippet:

The screenshot shows a browser window titled "Forms and Controls" with the URL "D:/sample.html". The main content is a "Student Registration Form" with the following fields:

- Name
- Father Name
- Postal Address
- Personal Address
- Sex: Male (radio button) Female (radio button)
- City: select.. (dropdown menu)
- Course: select.. (dropdown menu)
- District: select.. (dropdown menu)
- State: select.. (dropdown menu)
- PinCode
- EmailId
- DOB
- MobileNo

At the bottom of the form are two buttons: "Reset" and "Submit Form".

References:

- https://www.tutorialspoint.com/adobe_robohelp/adobe_robohelp_linking_images_multimedia.htm
- <https://www.scribd.com/document/275188671/Unit-2-Working-with-Links-Images-Forms-and-Multimedia-pdf>

Activity 6

Aim: Enable Hypertext Transfer Protocol (HTTP) via GET and POST requests

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 1 Hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>
<title>Get </title>
</head>

<!--Body content Starts-->

<body>
<form action="action_page.php" method="get" target="_blank">
Name: <input type="text" name="fname" size="20"><br><br>
Age: <input type="text" name="age" size="20"><br><br>
<!--Click on the submit button, and the input will be sent to a page on the server called
"/action_page.php".-->
<input type="submit" value="Submit">
</form>
<p>Click on the submit button, and the input will be sent to a page on the server called
```

```
"/action_page.php".</p>
</body>
<!--Body content Ends-->
</html>
<!DOCTYPE html>
<html>
<head>
<title>Post </title>
</head>
<!--Body content Starts-->
<body>
<form action="action_page.php" method="post" target="_blank">
Name: <input type="text" name="fname" size="20"><br><br>
Age:<input type="text" name="age" size="20"><br><br>
<!--Click on the submit button, and the form will be submitted using the POST method.-->
<input type="submit" value="Submit">
</form>
<p>Click on the submit button, and the form will be submitted using the POST method.</p>
</body>
<!--Body content Ends-->
</html>
```

action_page.php

```
<?php
```

```
if( isset($_GET["fname"]) && isset($_GET["age"] ) )

{

//Display Name and Age in Get Method

echo "Welcome ". $_GET['fname']. "<br />";

echo "You are ". $_GET['age']. " years old. ";

exit();

}

?>

<?php

if( isset($_POST["fname"]) && isset($_POST["age"] ) )

{

//Display Name and Age in POST Method

echo "Welcome ". $_POST['fname']. "<br />";

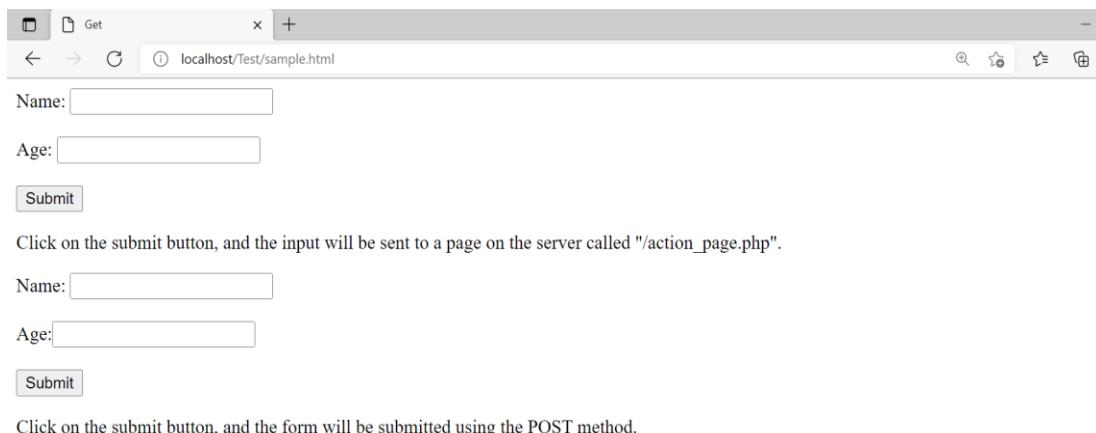
echo "You are ". $_POST['age']. " years old. ";

exit();

}

?>
```

Output/Results snippet:



A screenshot of a web browser window titled "Get". The address bar shows "localhost/Test/sample.html". The page contains a form with two text input fields: "Name:" and "Age:", each followed by a submit button. Below the form is a descriptive text: "Click on the submit button, and the input will be sent to a page on the server called "/action_page.php".

Name:

Age:

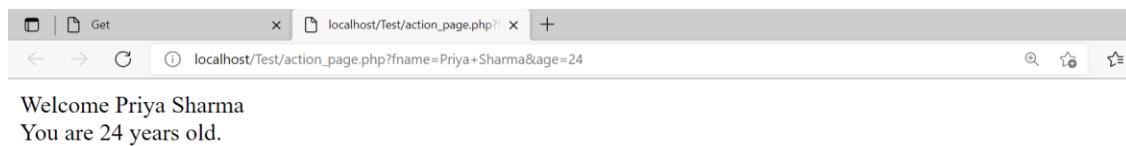
Click on the submit button, and the input will be sent to a page on the server called "/action_page.php".

Name:

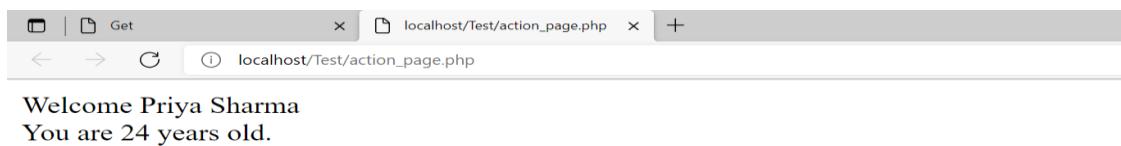
Age:

Click on the submit button, and the form will be submitted using the POST method.

GET Method URL



POST Method URL



References:

- <https://www.guru99.com/php-forms-handling.html>

Activity 7

Aim: Obtain input from users.

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 5 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

users.html

```
<html>
<head>
<title> Users </title>
</head>
<!--Body Content Starts-->
<body>
<form action="retrieve.php" method="post">
Username: <input type="text" name="username" value="" /><br><br>
Password: <input type="password" name="password" value= "" /><br><br>
<!--If you click the "Submit" button, the form-data will be sent to a page called
"/retrieve.php"-->
<input type="submit" name="submit" value="Submit" />
<p>If you click the "Submit" button, the form-data will be sent to a page called
"/retrieve.php".</p>
```

```
</form>  
</body>  
<!--Body Content Ends-->  
</html>
```

retrieve.php

```
<?php  
//Display user Details  
echo "<pre>";  
print_r($_POST);  
echo "</pre>";  
echo "Username : {$_POST['username']}<br>";  
echo "Password : {$_POST['password']}";  
?>
```

Output/Results snippet:



The screenshot shows a web browser window with the title bar 'Users'. The address bar displays 'localhost/Test/users.html'. The page content contains a form with two text input fields labeled 'Username:' and 'Password:', and a single button labeled 'Submit'.

If you click the "Submit" button, the form-data will be sent to a page called "/retrieve.php".

Obtain User Details



```
Array
(
    [username] => Aarti
    [password] => Aarti@123
    [submit] => Submit
)

Username : Aarti
Password : Aarti@123
```

References:

- <https://www.programming-techniques.com/2012/02/php-tutorial-getting-user-input-in-php-using-html-form.html>

Activity 8

Aim: Divide a webpage into logical sections

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 1 Hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

divide.html

```
<!DOCTYPE html>

<html>
  <head>
    <meta charset="utf-8">
    <title>My page title</title>
    <link href="https://fonts.googleapis.com/css?family=Open+Sans+Condensed:300|Sonsie+One" rel="stylesheet" type="text/css">
    <link rel="stylesheet" href="style.css">
    <!-- the below three lines are a fix to get HTML5 semantic elements working in old versions of Internet Explorer-->
    <script src="https://cdnjs.cloudflare.com/ajax/libs/html5shiv/3.7.3/html5shiv.js"></script>
  </head>
  <body>
    <!-- Here is our main header that is used across all the pages of our website -->
```

```
<!-- Header Starts-->

<header>
  <h1>Header</h1>
</header>

<!--Header Ends-->

<!--Navigation Menu Starts-->

<nav>
  <ul>

    <li><a href="#">Home</a></li>
    <li><a href="#">Our team</a></li>
    <li><a href="#">Projects</a></li>
    <li><a href="#">Contact</a></li>
  </ul>

<!-- A Search form is another common non-linear way to navigate through a website. -->

<form>
  <input type="search" name="q" placeholder="Search query">
  <input type="submit" value="Go!">
</form>

</nav>

<!--Navigation Menu Ends-->

<!-- Here is our page's main content -->

<main>
  <!-- It contains an article -->
```

<article>

<h2>Article heading</h2>

<p>Lorem ipsum dolor sit amet, consectetur adipisicing elit. Donec a diam lectus. Set sit amet ipsum mauris. Maecenas congue ligula as quam viverra nec consectetur ant hendrerit.

Donec et mollis dolor. Praesent et diam eget libero egestas mattis sit amet vitae augue. Nam tincidunt congue enim, ut porta lorem lacinia consectetur.</p>

<h3>Subsection</h3>

<p>Donec ut librero sed accu vehicula ultricies a non tortor. Lorem ipsum dolor sit amet, consectetur adipisicing elit. Aenean ut gravida lorem. Ut turpis felis, pulvinar a semper sed, adipiscing id dolor.</p>

<p>Pelientesque auctor nisi id magna consequat sagittis. Curabitur dapibus, enim sit amet elit pharetra tincidunt feugiat nist imperdiet. Ut convallis libero in urna ultrices accumsan. Donec sed odio eros.</p>

<h3>Another subsection</h3>

<p>Donec viverra mi quis quam pulvinar at malesuada arcu rhoncus. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. In rutrum accumsan ultricies. Mauris vitae nisi at sem facilisis semper ac in est.</p>

<p>Vivamus fermentum semper porta. Nunc diam velit, adipiscing ut tristique vitae sagittis vel odio. Maecenas convallis ullamcorper ultriced. Curabitur ornare, ligula semper consectetur sagittis, nisi diam iaculis velit, is fringille sem nunc vet mi.</p>

</article>

<!-- the aside content can also be nested within the main content -->

<aside>

<h2>Related</h2>

```
<ul>
<li><a href="#">Oh I do like to be beside the seaside</a></li>
<li><a href="#">Oh I do like to be beside the sea</a></li>
<li><a href="#">Although in the North of England</a></li>
<li><a href="#">It never stops raining</a></li>
<li><a href="#">Oh well...</a></li>
</ul>
</aside>
</main>
```

!-- And here is our main footer that is used across all the pages of our website -->

```
<footer>
<p> ©Copyright 2020 All rights Reserved.</p>
</footer>
</body>
</html>
```

style.css

```
html, body {
margin: 0;
padding: 0;
}
html {
font-size: 10px;
background-color: #a9a9a9;
}
```

```
body {  
    width: 70%;  
    margin: 0 auto;  
}  
  
/* || typography */  
  
h1, h2, h3 {  
    font-family: 'Sonsie One', cursive;  
    color: #2a2a2a;  
}  
  
p, input, li {  
    font-family: 'Open Sans Condensed', sans-serif;  
    color: #2a2a2a;  
}  
  
h1 {  
    font-size: 4rem;  
    text-align: center;  
    color: white;  
    text-shadow: 2px 2px 10px black;  
}  
  
h2 {  
    font-size: 3rem;  
    text-align: center;  
}  
  
h3 {
```

```
font-size: 2.2rem;  
}  
  
p, li {  
font-size: 1.6rem;  
line-height: 1.5;  
}  
  
/* || header layout */  
  
nav, article, aside, footer {  
background-color: white;  
padding: 1%;  
}  
  
nav {  
height: 50px;  
background-color: #ff80ff;  
display: flex;  
margin-bottom: 10px;  
}  
  
nav ul {  
padding: 0;  
list-style-type: none;  
flex: 2;  
display: flex;  
}  
  
nav li {
```

```
display: inline;  
text-align: center;  
flex: 1;  
}  
  
nav a {  
display: inline-block;  
font-size: 2rem;  
text-transform: uppercase;  
text-decoration: none;  
color: black;  
}  
  
nav form {  
flex: 1;  
display: flex;  
align-items: center;  
height: 100%;  
padding: 0 2em;  
}  
  
input {  
font-size: 1.6rem;  
height: 32px;  
}  
  
input[type="search"] {  
flex: 3;
```

```
}
```

```
input[type="submit"] {
```

```
  flex: 1;
```

```
  margin-left: 1rem;
```

```
  background: #333;
```

```
  border: 0;
```

```
  color: white;}
```

```
/* || main layout */
```

```
main {
```

```
  display: flex;
```

```
}
```

```
article {
```

```
  flex: 4;
```

```
}
```

```
aside {
```

```
  flex: 1;
```

```
  margin-left: 10px;
```

```
  background-color: #ff80ff;
```

```
}
```

```
aside li {
```

```
  padding-bottom: 10px;
```

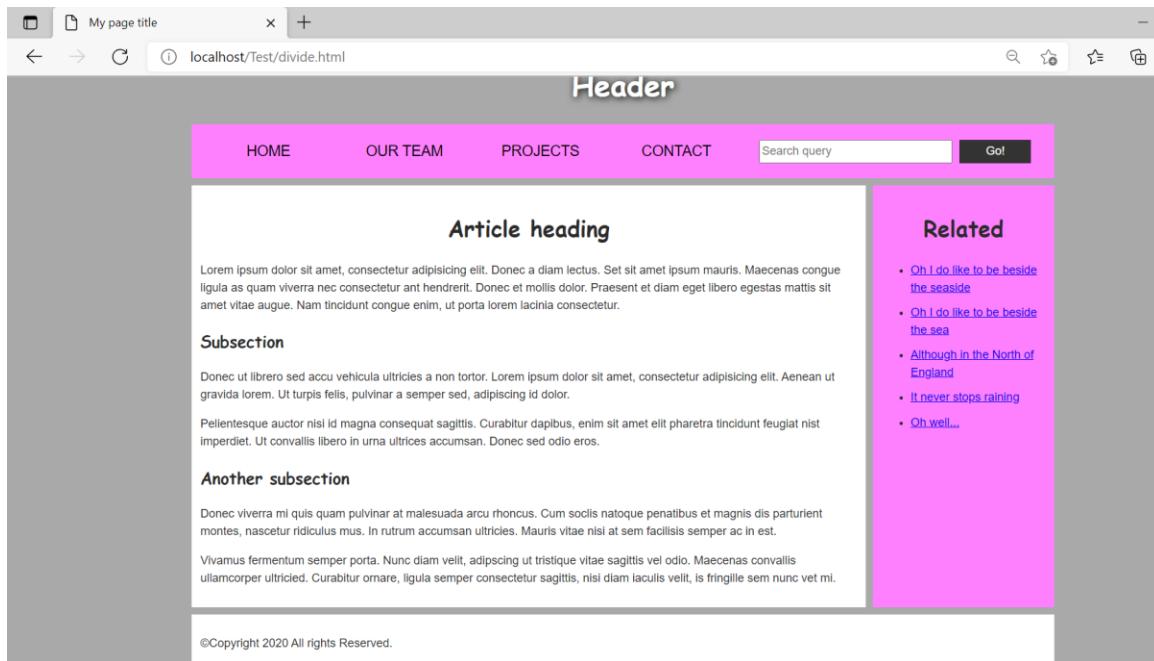
```
}
```

```
footer {
```

```
  margin-top: 10px;
```

}

Output/Results snippet:



References:

- [https://developer.mozilla.org/enUS/Learn/HTML/Howto/Divide a webpageinto logical sections](https://developer.mozilla.org/enUS/Learn/HTML/Howto/Divide_a_webpageinto_logical_sections)

Activity 9

Aim: Display computer code with HTML

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 1 Hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<title>Code in HTML</title>

<body>

<h2>Computer Code</h2>

<p style="font-weight: bolder;">Some programming code:</p>

<!--Computer Code Starts-->

<code>

x = 5;</br>

y = 6;</br>

z = x + y;

</code>

<!--Computer Code Ends-->

<p style="font-weight: bolder;">C programming code:</p>
```

<!--Computer Code Starts-->

<pre>

<code>

//C Programming Code

#include<stdio.h>

int main() {

 printf("Hello...");

}

</code>

</pre>

<!--Computer Code Ends-->

</body>

</html>

Output/Results snippet:



Computer Code

Some programming code:

```
x = 5;  
y = 6;  
z = x + y;
```

C programming code:

```
//C Programming Code  
#include  
int main() {  
    printf("Hello...");  
}
```

References:

-
- <https://www.geeksforgeeks.org/html-computer-code-elements/>

Activity 10

Aim: Annotation of images and graphics.

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 2 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE HTML>

<html>

<style>
figure{border: 2px solid black; border-style:ridge;}
figcaption{font-family:Arial; padding:10px; background:#fa4b2a; color:#fff;}
</style>

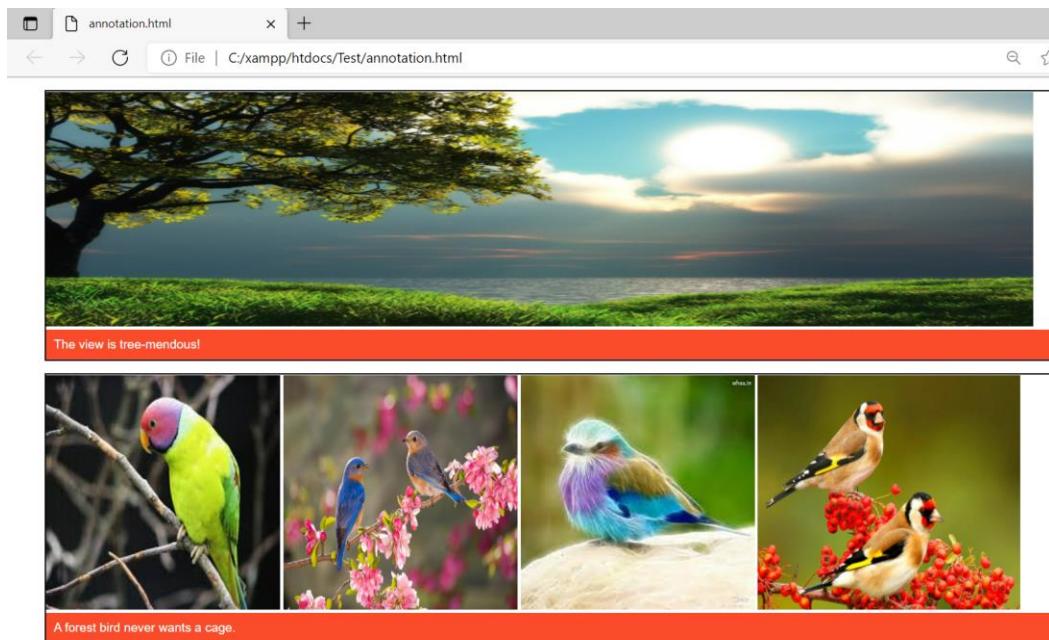
<body>

<!--single Image-->

<figure>
 <br>
<figcaption>
The view is tree-mendous!
```

```
</figcaption>  
</figure>  
<!--Multiple Images-->  
<figure>  
      
      
      
      
    <figcaption>A forest bird never wants a cage.</figcaption>  
</figure>  
</body>  
</html>
```

Output/Results snippet:



References:

- https://developer.mozilla.org/enUS/docs/Learn/HTML/Multimedia_and_embedding/Images_in_HTML

Activity 11

Aim: Marking abbreviations

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 1 Hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
<body>
<p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>
</body>
</html>
```

Output/Results snippet:



The WHO was founded in 1948.

References:

- https://www.w3schools.com/tags/tag_abbr.asp
- <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/abbr>

Activity 12

Aim: Add quotations and citations to web pages

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 2 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<body>

<p>Here is a quote from WWF's website:</p>

<blockquote cite="http://www.worldwildlife.org/who/index.html">

For 50 years, WWF has been protecting the future of nature.

The world's leading conservation organization,

WWF works in 100 countries and is supported by

1.2 million members in the United States and

close to 5 million globally.

</blockquote>

</body>

</html>
```

Output/Results snippet:



Here is a quote from WWF's website:

For 50 years, WWF has been protecting the future of nature. The world's leading conservation organization, WWF works in 100 countries and is supported by 1.2 million members in the United States and close to 5 million globally.

References:

- <https://www.geeksforgeeks.org/html-quotations/>
- https://www.w3schools.com/html/html_quotation_elements.asp

Activity 13

Aim: Embed a webpage within another webpage

Learning outcome: HyperText MarkUp Language (HTML)

Duration: 2 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS.....
2. Text Editors- Notepad++, Sublime Text, etc.
3. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<body>

<iframe src="https://en.wikipedia.org/wiki/HTML">

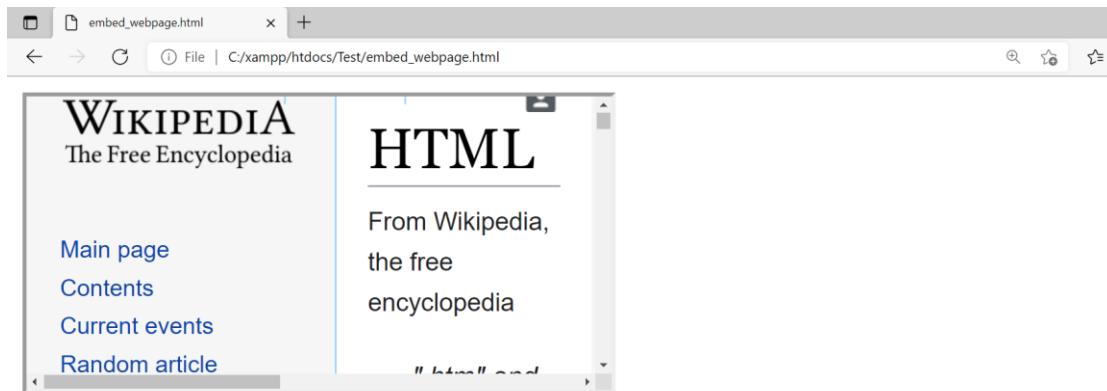
<p>Your browser does not support iframes.</p>

</iframe>

</body>

</html>
```

Output/Results snippet:



References:

- <https://atomisystems.com/html5-animation/embedding-html5-project-into-webpage/>
- <https://www.tutorialrepublic.com/html-tutorial/html-iframe.php>

Activity 14

Aim: Create a data spreadsheet (2 hr)

Learning outcome: Able to Structuring the web.

Duration: 2 hours

List of Hardware/Software requirements:

- i. Windows/Ubuntu OS
- ii. Text Editor- Sublime Text, Notepad++
- iii. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<script type="text/javascript"> function createCSV() {

csvRows = [["label first","details of label 1"], ["label sec","details of label 2"], ["label 3","details of label 3"], ["label 4","details of label 4 and 3"], ["label 5","details of label 5"], ["label 6","details of label 6"], ["label 7","details of label 7"], ["label 8","details of label 8"], ["label 9","details of label 9"]];

var csvString = csvRows.join("%0A");

var a = document.createElement('a');

a.href = 'data:attachment/csv,' + csvString;

a.target = '_blank';

a.download = 'myFile.csv';

document.body.appendChild(a);

a.click();

}

</script>

<body>

<form action="" method="post">
```

```
<input type="button" value="Create" >
</form>
</body>
</html>
```

Output/Results snippet:

The screenshot shows a Microsoft Excel window titled 'myFile.csv - Microsoft Excel'. The data is organized into two columns: 'label' and 'details'. The first column contains labels from 'labelfirst' to 'label9'. The second column contains corresponding details, such as 'detailslabel1' through 'detailslabel9'. The Excel interface includes a ribbon bar with tabs like FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, and VIEW. The 'HOME' tab is selected, showing various font and alignment tools.

labelfirst	detailslabel1
labelsec	detailslabel2
label3	detailslabel3
label4	detailslabel4and3
label5	detailslabel5
label6	detailslabel6
label7	detailslabel7
label8	detailslabel8
label9	detailslabel9

References:

- <https://www.codeproject.com/Questions/1116401/Insert-data-into-CSV-file-using-javascript>
- <https://stackoverflow.com/questions/22550858/how-to-write-csv-file-using-javascript>

Activity 15

Aim: Optimize HTML table rendering (1Hr)

Learning outcome: Able to Structuring the web.

Duration: 1 hour

List of Hardware/Software requirements:

- i. Windows/Ubuntu OS
- ii. Text Editor- Sublime Text ,Notepad++
- iii. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>
<style> table, th, td {
border: 1px solid black;
}

</style>
</head>

<body>
<table>
<tr>
<th>Month</th>
<th>Savings</th>
<th>Savings for holiday!</th>
```

```
</tr>  
  
<tr>  
  
<td>January</td>  
  
<td>$100</td>  
  
<td rowspan="2">$50</td>  
  
</tr>  
  
<tr>  
  
<td>February</td>  
  
<td>$80</td>  
  
</tr>  
  
</table>  
  
</body>  
  
</html>
```

Output/Results snippet:



A screenshot of a Microsoft Edge browser window. The title bar shows the file path "D:\edunet_module4\table" and the file name "table_rendering.html". The main content area displays a simple HTML table with three rows. The first row contains three header cells: "Month", "Savings", and "Savings for holiday!". The second row contains two cells: "January" and "\$100". The third row contains two cells: "February" and "\$80". A fourth cell, containing the value "\$50", spans both columns of the second row due to the "rowspan=2" attribute.

Month	Savings	Savings for holiday!	
January	\$100		
February	\$80	\$50	

References:

- <https://stackoverflow.com/questions/21531269/optimizing-html-tables>
- <https://seymour.co.za/2017/07/03/html-table/>

Activity 16

Aim: Create collapsible content with HTML (1Hr)

Learning outcome: Able to Structuring the web.

Duration: 1 hour

List of Hardware/Software requirements:

- i. Windows/Ubuntu OS
- ii. Text Editor- Sublime Text, Notepad++
- iii. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<meta name="viewport" content="width=device-width, initial-scale=1">

<style>

.collapsible { background-color: #777; color: white;
cursor: pointer; padding: 18px; width: 100%;

border: none; text-align: left; outline: none; font-size: 15px;

}

.active, .collapsible:hover { background-color: #555;

}

.content { padding: 0 18px; display: none; overflow: hidden;
background-color: #f1f1f1;

}

</style>
```

```
</head>

<body>

<h2>Collapsibles</h2>

<p>A Collapsible:</p>

<button class="collapsible">Open Collapsible</button>

<div class="content">

<p>Data 1.</p>

</div>

<p>Collapsible Set:</p>

<button class="collapsible">Open Section 1</button>

<div class="content">

<p>Data 2.</p>

</div>

<button class="collapsible">Open Section 2</button>

<div class="content">

<p>Data 3.</p>

</div>

<button class="collapsible">Open Section 3</button>

<div class="content">

<p>Data 4.</p>

</div>

<script>

var coll = document.getElementsByClassName("collapsible"); var i;
```

```
for (i = 0; i < coll.length; i++) { coll[i].addEventListener("click", function() {
this.classList.toggle("active");

var content = this.nextElementSibling; if (content.style.display === "block") {
content.style.display = "none";
} else {
content.style.display = "block";
}
});

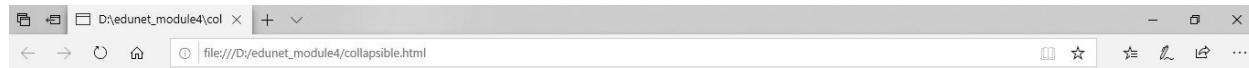
});
}

</script>

</body>

</html>
```

Output/Results snippet:



Collapsibles

A Collapsible:

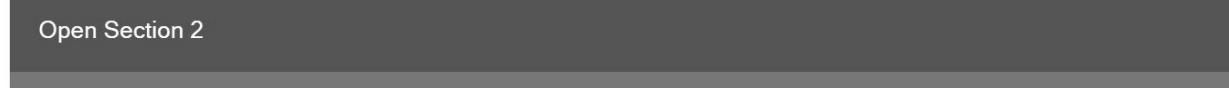


Open Collapsible

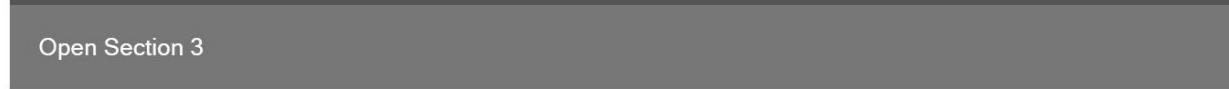
Collapsible Set:



Open Section 1



Open Section 2



Open Section 3

References:

- <https://www.w3schools.com/bootstrap/bootstrapCollapse.asp>
- https://www.w3schools.com/howto/howto_js_collapse.asp

Activity 17

Aim: Add context menus to a webpage (2Hr)

Learning outcome: Able to Structuring the web.

Duration: 2 hour

List of Hardware/Software requirements:

- i. Windows/Ubuntu OS
- ii. Text Editor- Sublime Text, Notepad++
- iii. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
<body>
<p>The <abbr title="World Health Organization">WHO</abbr> was founded in 1948.</p>
</body>
</html>
```

Output/Results snippet:



References:

-
- <https://stackoverflow.com/questions/4909167/how-to-add-a-custom-right-click-menu-to-a-webpage>
 - https://www.w3schools.com/jsref/event_oncontextmenu.asp

Activity 18

Aim: Create dialog boxes with HTML (2Hrs)

Learning outcome: Able to Structuring the web.

Duration: 2 hour

List of Hardware/Software requirements:

- i. Windows/Ubuntu OS
- ii. Text Editor- Sublime Text, Notepad++
- iii. Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<meta name="viewport" content="width=device-width, initial-scale=1">

<style>

body {font-family: Arial, Helvetica, sans-serif;}

/* The Modal (background) */

.modal {

display: none; /* Hidden by default */
position: fixed; /* Stay in place */

z-index: 1; /* Sit on top */

padding-top: 100px; /* Location of the box */
left: 0;

top: 0;

width: 100%; /* Full width */
height: 100%; /* Full height */

overflow: auto; /* Enable scroll if needed */
background-color: rgb(0,0,0); /* Fallback color */

background-color: rgba(0,0,0,0.4); /* Black w/ opacity */
```

{

```
/* Modal Content */

.modal-content { background-color: #fefefe; margin: auto;
padding: 20px;
border: 1px solid #888; width: 80%;

}

/* The Close Button */

.close {
color: #aaaaaa; float: right; font-size: 28px;
font-weight: bold;
}

.close:hover,
.close:focus { color: #000;
text-decoration: none; cursor: pointer;
}

</style>

</head>

<body>

<h2>Modal Example</h2>

<!-- Trigger/Open The Modal -->

<button id="myBtn">Open Modal</button>

<!-- The Modal -->
```

```
<div id="myModal" class="modal">
  <!-- Modal content -->
  <div class="modal-content">
    <span class="close">&times;</span>
    <p>Some text in the Modal..</p>
  </div>
</div>
<script>
  // Get the modal
  var modal = document.getElementById('myModal');

  // Get the button that opens the modal
  var btn = document.getElementById("myBtn");

  // Get the <span> element that closes the modal
  var span = document.getElementsByClassName("close")[0];

  // When the user clicks the button, open the modal
  btn.onclick = function() {
    modal.style.display = "block";
  }

  // When the user clicks on <span> (x), close the modal
  span.onclick = function() {
    modal.style.display = "none";
  }

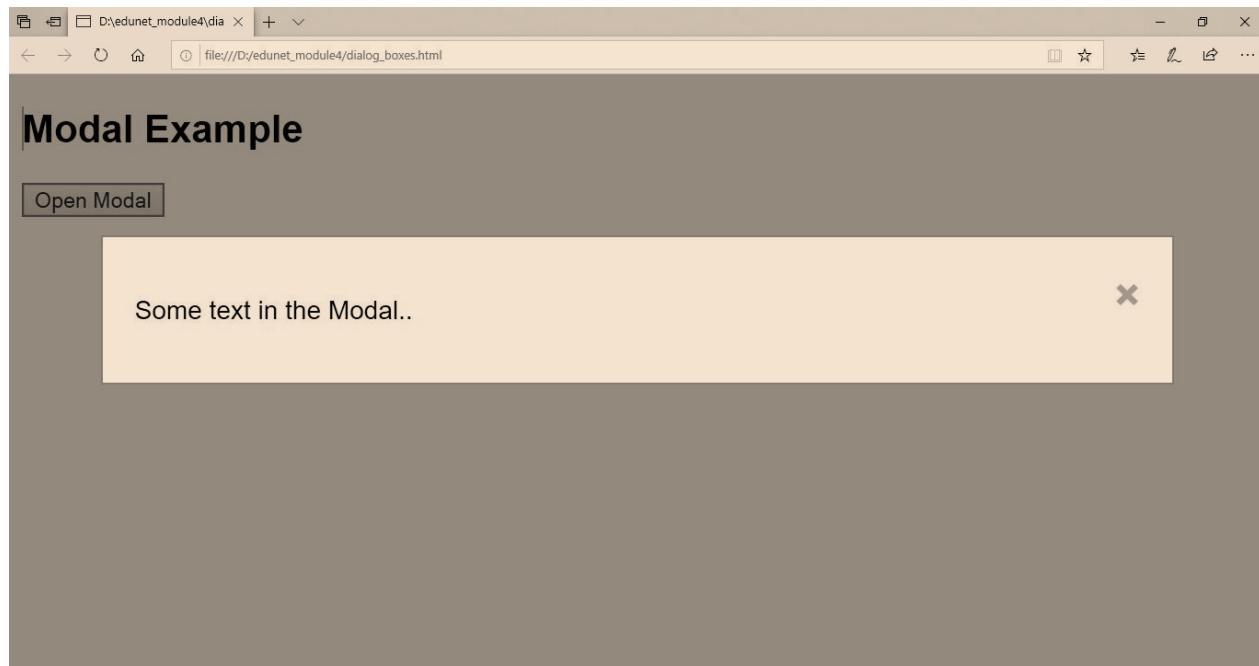
  // When the user clicks anywhere outside of the modal, close it
  window.onclick = function(event) {
    if (event.target == modal) {
      modal.style.display = "none";
    }
  }
}
```

```
</script>
```

```
</body>
```

```
</html>
```

Output/Results snippet:



References:

- <https://www.javatpoint.com/html-dialog-tag>
- https://www.w3schools.com/tags/tag_dialog.asp

Activity 19

Aim: Add multiple languages into a single webpage (2Hrs)

Learning outcome: Able to Structuring the web.

Duration: 2 hour

List of Hardware/Software requirements:

- i. Windows/Ubuntu OS
- ii. Text Editor- Sublime Text, Notepad+
- iii. Browser

Code/Program/Procedure (with comments):

```
<!doctype html>

<html lang="en">

<head>
<meta charset="utf-8">
<title>jQuery Language Switcher</title>
<link rel="stylesheet" href="languageswitcher.css">
</head>

<body>
<header>
<h1>jQuery Language Switcher</h1>
<div id="country-select">
<form action="server-side-script.php">
<select id="country-options" name="country-options">

<option selected="selected" title="http://www.yoursite.com" value="us">United States</option>
```

```
<option title="http://www.yoursite.co.uk" value="uk">United Kingdom</option>
<option title="http://www.yoursite.fr" value="fr">France</option>
<option title="http://www.yoursite.de" value="de">Germany</option>
<option title="http://www.yoursite.nl" value="nl">Netherlands</option>
</select>
<input value="Select" type="submit" />
</form>
</div>
</header>
<section>
<p>For more information, refer to the <a href="/website-language-dropdown-withjquery">original article</a> on graphicpush.</p>
</section>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.5.0/jquery.min.js"></script>
<script src="languageswitcher.js"></script>
</body>
</html>

languageswitcher.css
* { margin: 0; padding: 0; } body {
background: #ccc;
}

header { display: block;
background: #777; height: 50px; position: relative; min-width: 600px;
```

```
}
```

```
header h1 {
```

```
font: bold 24px Arial, Helvetica, sans-serif; color: #fff;
```

```
position: absolute; left: 20px;
```

```
top: 8px;
```

```
}
```

```
#country-select { position: absolute;
```

```
top: 13px; right: 0; width: 180px;
```

```
}
```

```
/* rought form styles for when JS is disabled */ #country-select form {
```

```
width: 180px; padding: 0;
```

```
}
```

```
#country-select select, #country-select input { display: inline; padding: 0;
```

```
margin: 0;
```

```
}
```

```
/* JS-created definition list */
```

```
.dropdown dd { position: relative; }
```

```
.dropdown a {
```



```
text-decoration: none; outline: 0;
```

```
font: 12px Arial, Helvetica, sans-serif; display: block;
```

```
width: 130px; overflow: hidden;
```

```
}
```

```
.dropdown dt a { background: #c45618; border: 1px solid #964315; padding: 3px 10px 4px 10px;
```

```
-webkit-border-radius: 5px;  
-moz-border-radius: 5px; border-radius: 5px; color: #ffff;  
}  
  
.dropdown dt a.active { background: #db5e18;  
-webkit-border-bottom-left-radius: 0;  
-webkit-border-bottom-right-radius: 0;  
-moz-border-radius-bottomleft: 0;  
-moz-border-radius-bottomright: 0;  
border-bottom-left-radius: 0;  
border-bottom-right-radius: 0; border-bottom: 1px dotted #676768;  
-moz-box-shadow: 0 3px 7px rgba(0,0,0,.5);  
-webkit-box-shadow: 0 3px 7px rgba(0,0,0,.5); box-shadow: 0 3px 7px rgba(0,0,0,.5);  
color: #ffff;  
}  
  
.dropdown dd ul { background: #814f33; border: 1px solid #676768; color: #C5C0B0;  
display: none; position: absolute; z-index: 999;  
top: 0;  
  
left: 0;  
padding: 2px 0 5px 0; list-style: none; border-top: none; margin: 0;  
-webkit-border-bottom-right-radius: 5px;  
-webkit-border-bottom-left-radius: 5px;  
-moz-border-radius-bottomright: 5px;  
-moz-border-radius-bottomleft: 5px; border-bottom-right-radius: 5px;
```

```
border-bottom-left-radius: 5px;  
-moz-box-shadow: 0 3px 7px rgba(0,0,0,.5);  
-webkit-box-shadow: 0 3px 7px rgba(0,0,0,.5); box-shadow: 0 3px 7px rgba(0,0,0,.5);  
}  
  
.dropdown dd ul li a { padding: 2px 10px;  
}  
  
.dropdown dd ul li a span,  
.dropdown dt a span { float: left;  
width: 16px; height: 11px;  
margin: 2px 6px 0 0;  
background-image: url(flags.png); background-repeat: no-repeat; cursor: pointer;  
}  
  
.us a span { background-position: 0 0 }  
.uk a span { background-position: -16px 0 }  
  
.fr a span { background-position: -32px 0 }  
.de a span { background-position: -48px 0 }  
.nl a span { background-position: -64px 0 }  
  
.dropdown dd ul li a em,  
.dropdown dt a em { font-style: normal; float: left;  
width: 100px; cursor: pointer;  
}  
  
.dropdown dd ul li a em { color: #dbc3b5;  
}
```

```
.dropdown dd ul li a:hover { background-color: rgba(255,255,255,.1); }

.dropdown dd ul li a:hover em { color: #fff; } Languageswitcher.js

$(document).ready(function() {

// --- language dropdown --- //

// turn select into dl createDropDown();

var $dropTrigger = $(".dropdown dt a"); var $languageList = $(".dropdown dd ul");

// open and close list when button is clicked

$dropTrigger.toggle(function() {

$languageList.slideDown(200);

$dropTrigger.addClass("active");

}, function() {

$languageList.slideUp(200);

$(this).removeAttr("class");

});

// close list when anywhere else on the screen is clicked

$(document).bind('click', function(e) { var $clicked = $(e.target);

if (! $clicked.parents().hasClass("dropdown"))

$languageList.slideUp(200);

$dropTrigger.removeAttr("class");

});

// when a language is clicked, make the selection and then hide the list

$(".dropdown dd ul li a").click(function() {

var clickedValue = $(this).parent().attr("class"); var clickedTitle = $(this).find("em").html();
```

```
$( "#target dt").removeClass().addClass(clickedValue);
$( "#target dt em").html(clickedTitle);
$languageList.hide();
$dropTriggerremoveAttr("class");
});
});
// actual function to transform select to definition list function createDropDown(){
var $form = $("div#country-select form");
$form.hide();
var source = $("#country-options"); sourceremoveAttr("autocomplete");
var selected = source.find("option:selected"); var options = $("option", source);
$("#country-select").append('<dl id="target" class="dropdown"></dl>')
$("#target").append('<dt class=' + selected.val() + "'><a href="#"><span
class="flag"></span><em>' + selected.text() + '</em></a></dt>')
$("#target").append('<dd><ul></ul></dd>') options.each(function(){
$("#target dd ul").append('<li class=' + $(this).val() + "'><a href='" + $(this).attr("title") +
"><span class="flag"></span><em>' + $(this).text() + '</em></a></li>');
});
}
```

Output/Results snippet:

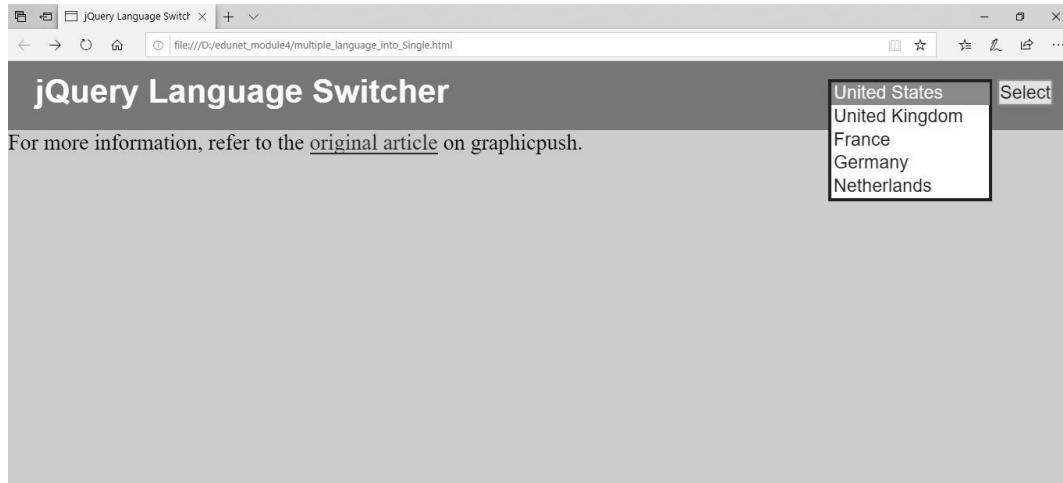


Image11: Add multiple languages into a single webpage

References:

- <https://stackoverflow.com/questions/46008760/how-to-build-multiple-language-website-using-pure-html-js-jquery>
- <https://forum.freecodecamp.org/t/what-is-the-best-way-to-create-a-multi-language-site/99449>

Activity 20

Aim: Controlling of HTML line breaking (1Hrs)

Learning outcome: Able to Structuring the web.

Duration: 1 hour

List of Hardware/Software requirements:

- i. Windows/Ubuntu OS
- ii. Text Editor- Sublime Text, Notepad++
- iii. Browser

Code/Program/Procedure (with comments):

<p> O'er all the hilltops
 Is quiet now,

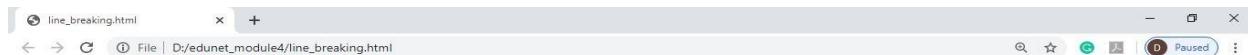
In all the treetops
 Hearest thou
 Hardly a breath;

The birds are asleep in the trees:
 Wait, soon like these

Thou too shalt rest.

</p>

Output/Results snippet:



O'er all the hilltops
Is quiet now,
In all the treetops
Hearest thou
Hardly a breath;
The birds are asleep in the trees:
Wait, soon like these
Thou too shalt rest.

References:

- <https://www.informit.com/articles/article.aspx?p=131028&seqNum=7>
- <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/br>

Activity 21

Aim: Mark changes (added and removed text) (2Hrs)

Learning outcome: Able to structure the web.

Duration: 2 hours

List of Hardware/Software requirements:

1. A computer with Windows/Linux/Mac operating system.
2. Any latest browser installed.
3. Any HTML editor (online/pre-installed).

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
<h2>HTML <mark>Marked</mark> Formatting</h2>
<p>The ins element represent inserted (added) text.</p>
<p>My favorite <ins>color</ins> is red.</p>
<p>The del element represents deleted (removed) text.</p>
<p>My favorite color is <del>blue</del> red.</p>
</body>
</html>
```

Output/Results snippet:

HTML Marked Formatting

The ins element represent inserted (added) text.

My favorite color is red.

The del element represents deleted (removed) text.

My favorite color is blue red.

References:

- https://www.w3schools.com/tags/tag_del.asp

Activity 22

Aim: Add responsive image to a webpage (3Hrs)

Learning outcome: Able to structure the web.

Duration: 3 hours

List of Hardware/Software requirements:

- i. A computer with Windows/Linux/Mac operating system.
- ii. Any latest browser installed.
- iii. Any HTML editor (online/pre-installed).

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<meta name="viewport" content="width=device-width, initial-scale=1">

<style>

.responsive {           /*creating a class in css and setting rules */ width: 100%;  
max-width: 400px; height: auto;  
}

</style>

</head>

<body>

<h2>Responsive Images</h2>

<p>If you want the image to scale both up and down on responsiveness, set the CSS width  
property to 100% and height to auto.</p>
<p>Resize the browser window to see the effect.</p>


```

```
</body>           <!-- import the image and apply the css class effects -->  
</html>
```

Output/Results snippet:**Responsive Images**

If you want the image to scale both up and down on responsiveness, set the CSS width property to 100% and height to auto.

Resize the browser window to see the effect.

**References:**

- https://www.w3schools.com/howto/howto_css_image_responsive.asp

Activity 23

Aim: Add vector image to a webpage (3Hrs)

Learning outcome: Able to structure the web.

Duration: 3 hours

List of Hardware/Software requirements:

- i. A computer with Windows/Linux/Mac operating system.
- ii. Any latest browser installed.
- iii. Any HTML editor (online/pre-installed).

Code/Program/Procedure (with comments):

```
<html>
<body>
<svg width="100" height="100">    <!-- <svg> is a container for svg graphics -->
<circle cx="50" cy="50" r="40" stroke="green" stroke-width="4" fill="yellow" /> Sorry, your
browser does not support inline SVG.
<!-- if circle is not displayed then this text will show -->
</svg>
</body>
</html>
```

Output/Results snippet:



References:

- https://www.w3schools.com/html/html5_svg.asp

Activity 24

Aim: Add a hit map on top of an image (2Hrs)

Learning outcome: Able to structure the web.

Duration: 2 hours

List of Hardware/Software requirements:

- i. A computer with Windows/Linux/Mac operating system.
- ii. Any latest browser installed.
- iii. Any HTML editor (online/pre-installed).

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<body>

<p>Click on the sun or on one of the planets to watch it closer:</p>



<map name="planetmap">

<area shape="rect" coords="0,0,82,126" alt="Sun" href="sun.htm">

<area shape="circle" coords="90,58,3" alt="Mercury" href="mercur.htm">

<area shape="circle" coords="124,58,8" alt="Venus" href="venus.htm">

</map>

</body>
</html>
```

Output/Results snippet:

Click on the sun or on one of the planets to watch it closer:

**References:**

- https://www.w3schools.com/tags/tag_map.asp

Activity 25

Aim: Animation (1 hr)

Duration: 1 hours

List of Hardware/Software requirements:

- i. A computer with Windows/Linux/Mac operating system.
- ii. Any latest browser installed.
- iii. Any HTML editor (online/pre-installed).

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
  <head>
    <style>
      div {
        width: 100px;
        height: 100px;
        background-color: red;
        position: relative;
        animation-name: example;
        animation-duration: 4s;
      }

      @keyframes example {
        0% {background-color:red; left:0px; top:0px;}
        25% {background-color:yellow; left:200px; top:0px;}
        50% {background-color:blue; left:200px; top:200px;}
      }
    </style>
  </head>
  <body>
    <div></div>
  </body>
</html>
```

```
75% {background-color:green; left:0px; top:200px;}  
100% {background-color:red; left:0px; top:0px;}  
}  
</style>  
</head>  
<body>  
<h1>CSS Animation</h1>  
<div></div>  
<p><b>Note:</b> When an animation is finished, it goes back to its original style.</p>  
</body>  
</html>
```

Output/Results snippet:



Reference:

- https://www.w3schools.com/css/tryit.asp?filename=trycss3_animation3

Activity 26

Aim: Transition (1 hr)

Duration: 1 hours

List of Hardware/Software requirements:

- i. A computer with Windows/Linux/Mac operating system.
- ii. Any latest browser installed.
- iii. Any HTML editor (online/pre-installed).

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<style>
```

```
div {
```

```
    width: 100px;
```

```
    height: 100px;
```

```
    background: red;
```

```
    transition: width 2s;
```

```
}
```

```
div:hover {
```

```
    width: 300px;
```

```
}
```

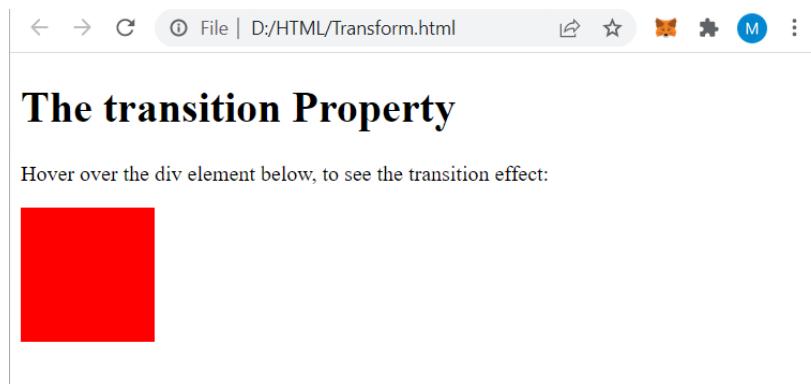
```
</style>
```

```
</head>
```

```
<body>
```

```
<h1>The transition Property</h1>  
<p>Hover over the div element below, to see the transition effect:</p>  
<div></div>  
</body>  
</html>
```

Output/Results snippet:



Reference:

- https://www.w3schools.com/css/tryit.asp?filename=trycss3_transition2

Learning Outcome - Able to understand Scripting and styling the web

After achieving this learning outcome, a student will be able to understand structuring the web.
In order to achieve this learning outcome, a student has to complete the following:

1. Apply CSS within a webpage (1Hrs)
2. Apply CSS to HTML (1Hrs)
3. Select elements via element name, class or ID (1 Hrs)
4. Select elements via attribute name and content (1 Hrs)
5. Apply pseudo-elements (1 Hrs)
6. Specify colors in CSS (1 Hrs)
7. Debug CSS in the browser (1 Hrs)
8. Style text and customize a list of elements (1 Hrs)
9. Add shadows to text (1 Hrs)
10. Size CSS boxes (1 Hrs)
11. Control overflowing content (1 Hr)
12. Control the part of a CSS box to draw the background (1 Hrs)
13. Create fancy boxes (also see the Styling boxes module, generally). (1 Hrs)
14. Use background-clip to control background image (1Hrs)
15. Change the box model completely using box- sizing (1Hrs)
16. Control backgrounds (1 Hrs)
17. Apply control borders(1 Hrs)
18. Style an HTML table (1 Hrs)
19. Add shadows to boxes (1 Hrs)
20. Calculate specificity of a CSS selector (1 Hrs)
21. Control inheritance in CSS (1 Hrs)
22. Apply filters in CSS (1 Hrs)
23. Apply blend modes in CSS (1 Hrs)
24. Apply CSS multi-column layouts (1 Hrs)
25. Apply CSS generated content (1 Hrs)
26. Create CSS document by using ID selector (1 Hrs)
27. Create CSS document by using Class selector, Universal selector Grouping selector (1 Hrs)

Activity 1

Aim: Apply CSS within a webpage (2Hrs)

Learning outcome: Able to script and style the web.

Duration: 1 hours

List of Hardware/Software requirements:

1. A computer with Windows/Linux/Mac operating system.
2. Any latest browser installed.
3. Visual studio code / Notepad++/ Sublime text

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<style>

body {background-color: powderblue;}      /* setting background color for body element */

h1 {color: blue;}                      /* setting color for h1 element */

p {color: red;}                        /* setting color for paragraph element */

</style>

</head>
```

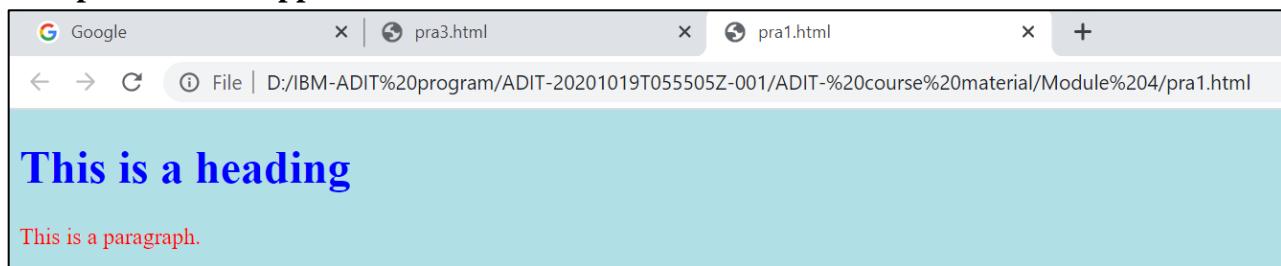
```
<body>
```

```
<h1>This is a heading</h1>
```

```
<p>This is a paragraph.</p>
```

```
</body>
```

```
</html>
```

Output/Results snippet:**References:**

- https://www.w3schools.com/html/html_css.asp

Activity 2

Aim: Apply CSS to HTML

Learning outcome: Able to script and style the web.

Duration: 1 hours

List of Hardware/Software requirements:

1. A computer with Windows/Linux/Mac operating system.
2. Any latest browser installed.
3. Visual studio code / Notepad++/ Sublime text

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<link rel="stylesheet" href="style.css">      <!-- Linking the external .css file to this html doc-->

</head>

<body>

<h1>This is a heading</h1>

<p>This is a paragraph.</p>

</body>
```

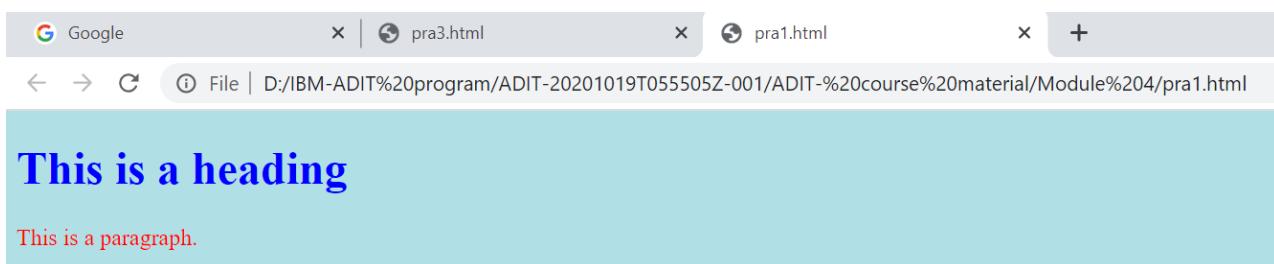
</html>

style.css

/* here only the css rules are coded and this file need to be imported in html file for use */

```
body {  
  
background-color: powderblue;  
  
}  
  
h1 {  
  
color: blue;  
  
}  
  
p {  
  
color: red;  
  
}
```

Output/Results snippet:



The screenshot shows a web browser window with two tabs open: "pra3.html" and "pra1.html". The URL bar indicates the files are located at "D:/IBM-ADIT%20program/ADIT-20201019T055505Z-001/ADIT-%20course%20material/Module%204/pr1.html". The content of the "pra3.html" tab is displayed in a light blue box:

This is a heading

This is a paragraph.

References:

-
- https://www.w3schools.com/html/html_css.asp

Activity 3

Aim: Select elements via element name, class or ID (2 Hrs)

Learning outcome: Able to script and style the web.

Duration: 1 hours

List of Hardware/Software requirements:

1. A computer with Windows/Linux/Mac operating system.
2. Any latest browser installed.
3. Visual studio code / Notepad++/ Sublime text

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<style>

.center { /* setting the css rules for center class */

text-align: center;

color: red;

}

</style>
```

```
</head>
```

```
<body>
```

```
<h1 class="center">Red and center-aligned heading</h1> /*applying the effect of class center*/
```

```
<p class="center">Red and center-aligned paragraph.</p> /*applying the effect of class center*/
```

```
</body>
```

```
</html>
```

Output/Results snippet:**References:**

- https://www.w3schools.com/css/css_selectors.asp

Activity 4

Aim: Select elements via attribute name and content (1 Hrs)

Learning outcome: Able to script and style the web. Duration: 1 hours

List of Hardware/Software requirements:

1. A computer with Windows/Linux/Mac operating system.
2. Any latest browser installed.
3. Visual studio code / Notepad++/ Sublime text

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

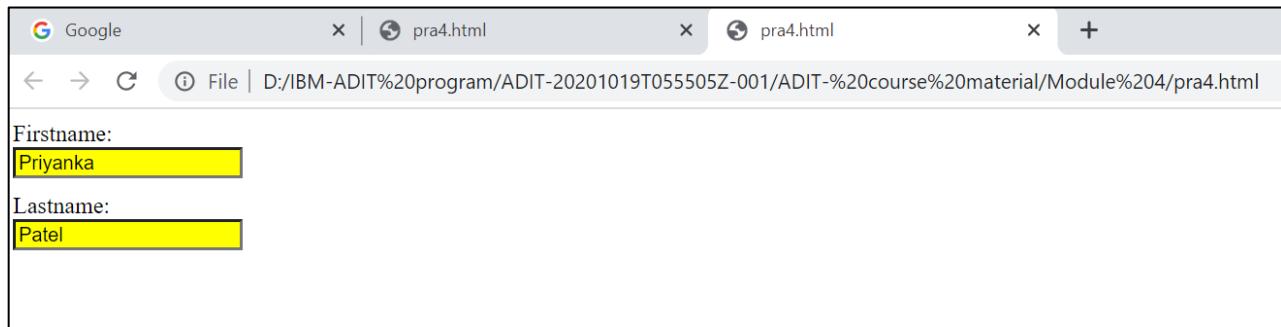
<style>

input[type="text"] {          /* sets the css rule for textbox element*/
    width: 150px;
    display: block;
    margin-bottom: 10px;
    background-color: yellow;
}

}
```

```
input[type="button"] {      /* sets the css rule for button element*/  
  
width: 120px;  
  
margin-left: 35px;  
  
display: block;  
  
}  
  
</style>  
  
</head>  
  
<body>  
  
<form name="input" action="" method="get">  
  
Firstname:<input type="text" name="Name" value="Priyanka"  
size="20"> Lastname:<input type="text" name="Name" value="Patel"  
size="20">
```

Output/Results snippet:



References:

-
- https://www.w3schools.com/css/css_attribute_selectors.asp

Activity 5

Aim: Apply pseudo-elements (2 Hrs)

Learning outcome: Able to script and style the web.

Duration: 1 hours

List of Hardware/Software requirements:

1. A computer with Windows/Linux/Mac operating system.
2. Any latest browser installed.
3. Visual studio code / Notepad++/ Sublime text

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<style>

p.intro::first-letter {          /* sets the css rule of intro class for its first-letter */

color: #ff0000;

font-size:200%;

}
```

```
</style>

</head>

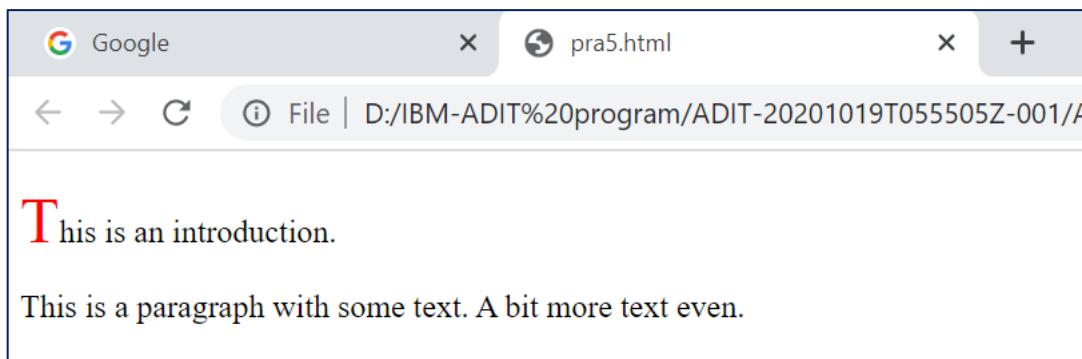
<body>

<p class="intro">This is an introduction.</p>      /*applying the effects of intro class*/

<p>This is a paragraph with some text. A bit more text even.</p>

</body>

</html>
```

Output/Results snippet:**References:**

- https://www.w3schools.com/css/css_pseudo_elements.asp

Activity 6

Aim: Specify colors in CSS (5 Hrs)

Learning outcome: Specify colors in CSS. **Duration:** 1 hour

List of Hardware/Software requirements:

1. Visual studio code / Notepad++/ Sublime text
2. Any One web browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <title>CSS Color</title>
    <style>
        /* Using Color Name */
        #col {
            color: red;
        }
        /* Using Hexadecimal Color code */
        #hex {
            color: #00ff00;
        }
        /* Using RGB() */
        #rgb {
            color: rgb(255, 165, 0);
        }
        /* Using RGBA() */
        #rgba {
            color: rgba(255, 0, 0, 1);
        }
    </style>
</head>
<body>
    <h1>My First CSS Document</h1>
    <p>This is my first CSS document. I am learning how to use CSS to style HTML elements.</p>
    <div id="col">Color Me Red</div>
    <div id="hex">Color Me Green</div>
    <div id="rgb">Color Me Orange</div>
    <div id="rgba">Color Me Black</div>
</body>
</html>
```

```
        }
    /* Using HSLA */
    #hsla {
        color: hsla(120, 100%, 25%, 0.3);
    }
</style>
</head>
<body>
    <p id="col">Specify Colors in CSS using Color Names</h1>
    <p id="hex">Specify Colors in CSS using Hexadecimal Notation</p>
    <p id = "rgb">Specify Colors in CSS using RGB Values</h2>
    <p id="rgba">Specify Colors in CSS using rgba() Values</p>
    <p id="hsla">Specify Colors in CSS using HSLA() Values</p>
</body>
</html>
```

Output/Results snippet:



References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 7

Aim: Debug CSS in the browser.

Learning outcome: Scripting and styling the web

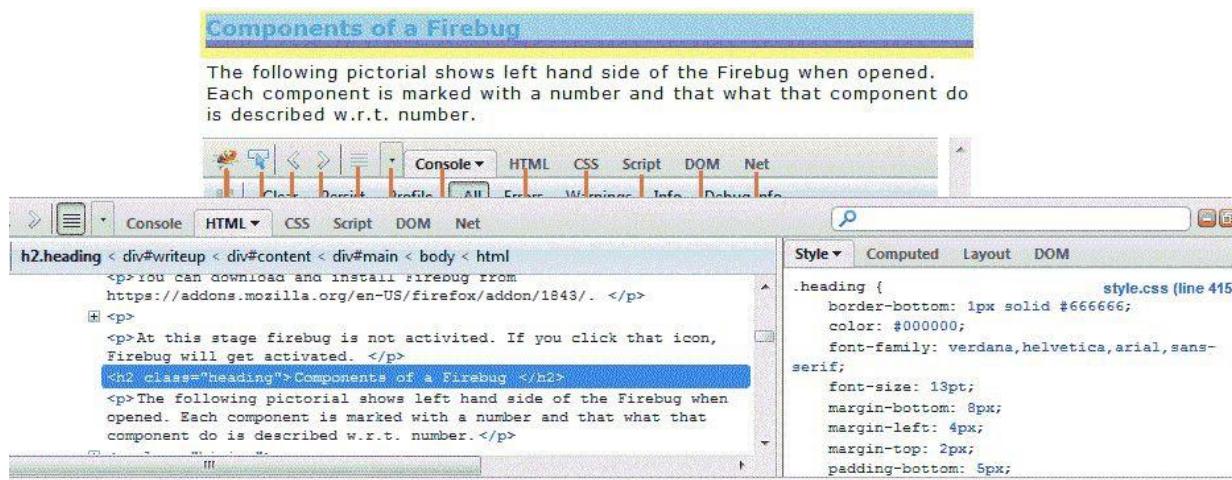
Duration: 1 hour

List of Hardware/Software requirements:

1. Visual studio code / Notepad++/ Sublime text.
2. Any One web browser, Mozilla Firefox recommended.

Code/Program/Procedure (with comments):

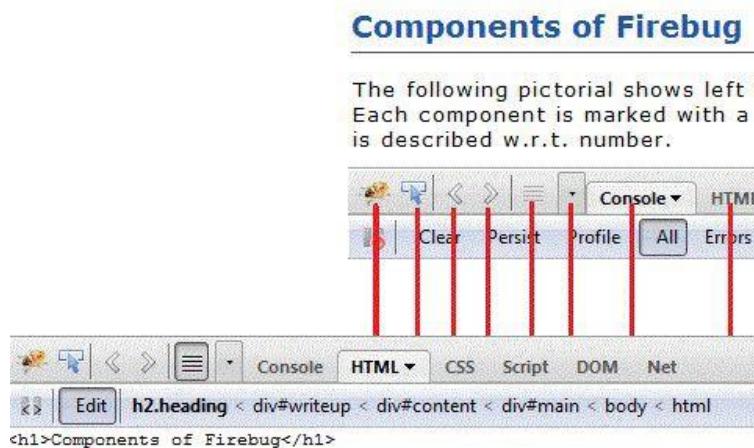
- Right click on the element which you want to inspect and click on the **Inspect Element**.



-
- Click on the **Edit** in the Firebug window now.



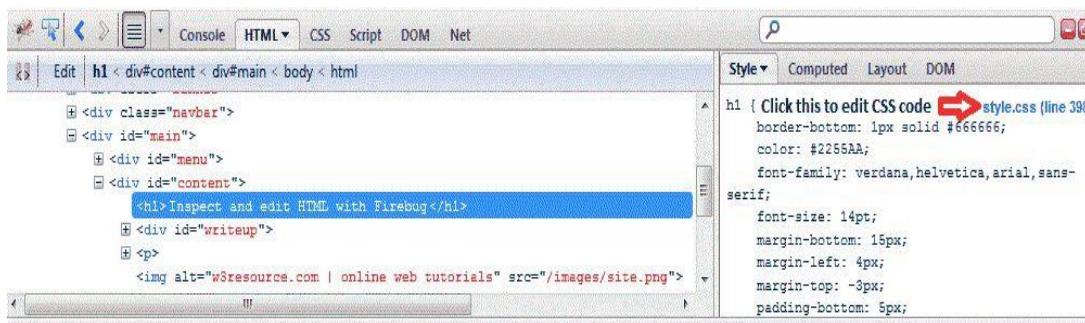
- Change the code to <h1>Components of Firebug</h1> .



As soon as you change the code, you can see the effect live. You can copy the code and then simply paste it replacing the original code and save to make the effect permanent.

Inspect and edit CSS with Firebug

- Right click on the element which you want to inspect and click on the **Inspect Element**. A then click as shown (scroll the image to right) in the image to open corresponding CSS code.



- Change the color of the heading by changing the code to colour: red;
- You will see the effect live immediately. Now you can simple copy this and replace the original code and save to make the changes permanent

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Inspect and edit CSS with Firebug

Right click on the element which you want to inspect
Inspect Element.

Console HTML **CSS** Script DOM Net

```
Edit style.css
width: 582px;
}

h1 {
    border-bottom: 1px solid #666666;
    color: red;
    font-family: verdana,helvetica,arial,sans-serif;
    font-size: 14pt;
    margin-bottom: 15px;
```

Output/Results snippet:

- Edit and save successfully.

References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>
- https://developer.mozilla.org/en-US/docs/Tools/Page_Inspector/How_to/Examine_and_edit_HTML

Activity 8

Aim: Style text and customize a list of elements.

Learning outcome: Scripting and styling the web (1 Hrs)

Duration: 1 hour

List of Hardware/Software requirements:

1. Visual studio code / Notepad++/ Sublime text
2. Any One web browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
<html>

<head>
    <title>CSS Text Color</title>
    <style>
        /* Text Properties */
        #txt {
            text-align: justify;
            text-indent: 35px;
            text-transform: capitalize;
            letter-spacing: 5px; word-
            spacing: 25px; white-space:
            pre;

            text-shadow: 4px 4px 8px orange;
            font-style: italic;
        }

        /* Unorderd List */
        ul.unol1 {
            list-style-type: circle;
        }
    </style>
</head>
<body>
    <h1>My First CSS Document</h1>
    <p>This is my first CSS document. I am learning how to style text and lists.</p>
    <ul class="unol1">
        <li>Item 1</li>
        <li>Item 2</li>
        <li>Item 3</li>
    </ul>
</body>
</html>
```

```
        }
    ul.unol2 {
        list-style-type: square;
    }
    /* Orderd List */
    ol.ol1 {
        list-style-type: upper-roman;
    }

    ol.ol2 {
        list-style-type: lower-alpha;
    }
</style>
</head>

<body>
<p id="txt">
    Hello, this is example of CSS text-align justify type. Its like newspaper or
    book type.
</p>
<p>Example of UnOrdered lists:</p>
<ul class="unol1">
    <li>HTML5</li>
    <li>CSS3</li>
    <li>JAVASCRIPT</li>
</ul>

<ul class="unol2">
    <li>Typescript</li>
    <li>Bootstrap</li>
    <li>JQuery</li>
</ul>
<p>Example of ordered lists:</p>
```

```

<ol class="ol1">
    <li>C</li>
    <li>Java</li>
    <li>Python</li>
</ol>
<ol class="ol2">
    <li>Mozilla firefox</li>
    <li>Chromium</li>
    <li>EPIC</li>
</ol>
</body>

</html>
```

Output/Results snippet:

Example of UnOrdered lists:

- o HTML5
- o CSS3
- o JAVASCRIPT
- Typescript
- Bootstrap
- JQuery

Example of ordered lists:

- I. C
- II. Java
- III. Python

- a. Mozilla firefox
- b. Chromium
- c. EPIC

References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 9

Aim: Add shadows to text.

Learning outcome: Scripting and styling the web

Duration: 1 Hrs

List of Hardware/Software requirements:

1. Visual studio code / Notepad++/ Sublime text
2. Any One web browser

Code/Program/Procedure (with comments):

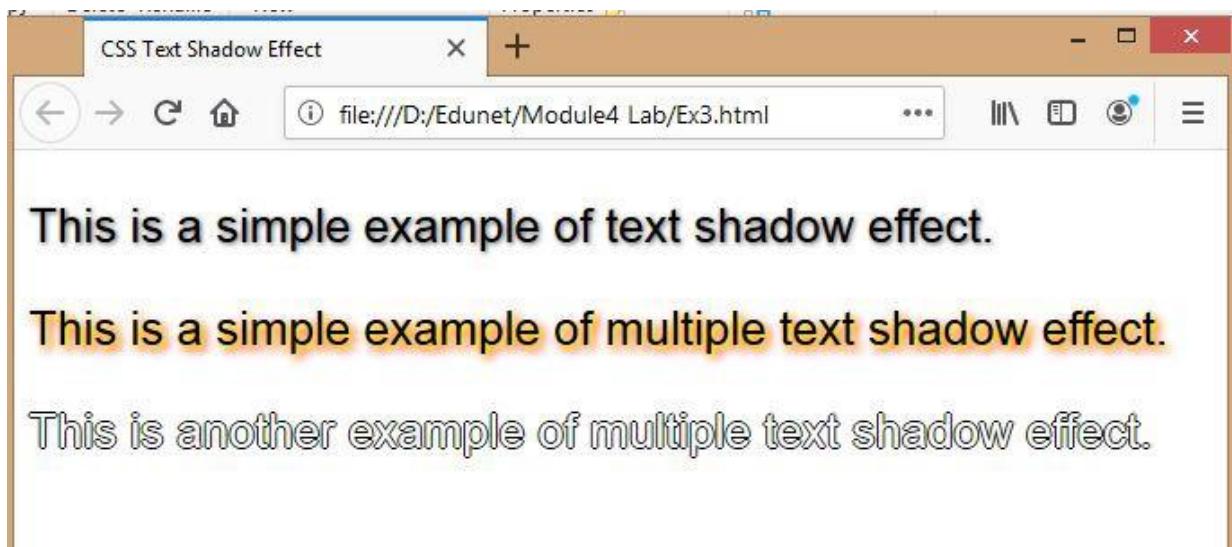
```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>CSS Text Shadow Effect</title>
<style>
/* CSS Text Shadow Effect */

p{
    font: 26px sans-serif;
}
p.shadow{
    text-shadow: 1px 1px 2px rgba(0, 0, 0, 0.6);
}
p.shadow-multiple{
    text-shadow: 2px 2px 3px yellow, 3px 3px 5px red;
}
p.shadow-outline{
    color: #fff;
    text-shadow: -1px 0 #000, 0 1px #000, 1px 0 #000, 0 -1px #000;
}
</style>
```

```
</head>
<body>
    <p class="shadow">This is a simple example of text shadow effect.<
/p>

    <p class="shadow-multiple">This is a simple example of multiple te
xt shadow effect.</p>
    <p class="shadow-outline">this is another example of multiple text shadow effect. </p>

</body>
</html>
```

Output/Results snippet:**References:**

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 10

Aim: Size CSS Boxes

Learning outcome: Scripting and styling the web

Duration: 1 hour

List of Hardware/Software requirements:

1. Visual studio code / Notepad++/ Sublime text
2. Any One web browser

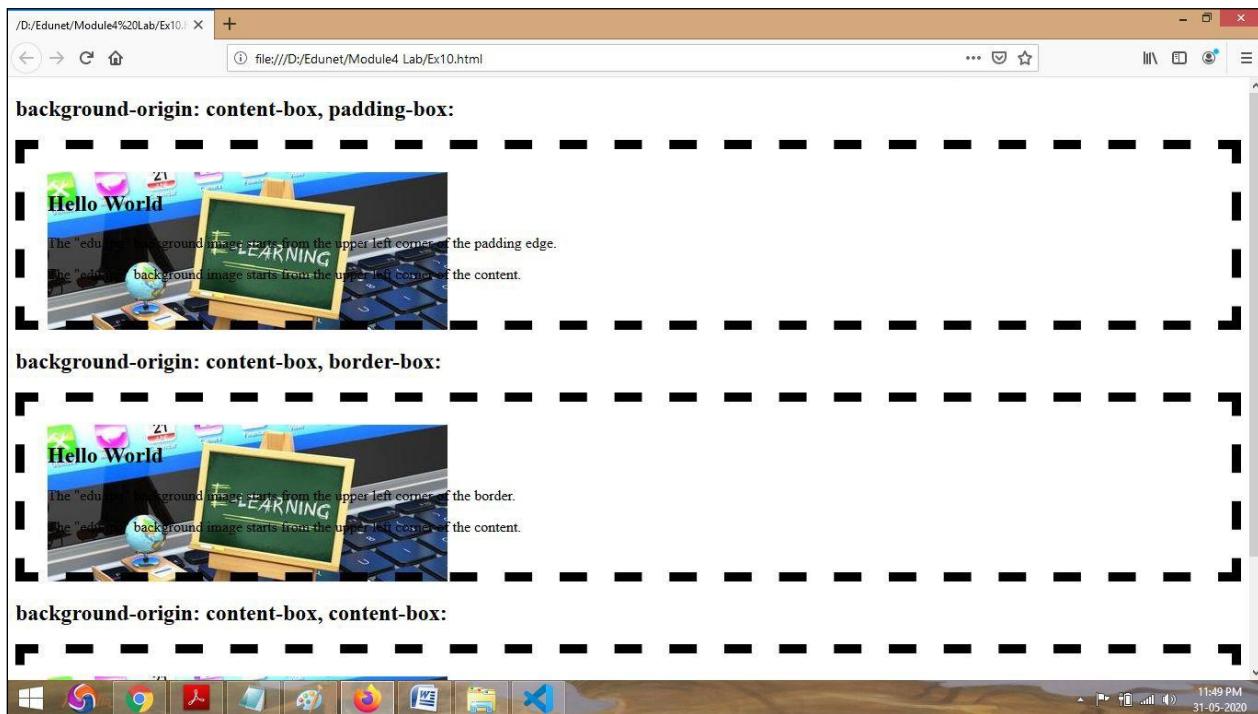
Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
<html>
<head>
<style>
/* CSS Box Properties */
#example1 {
    border: 10px dashed black;
    padding: 25px;
    background: url(edu.jpg);
    background-repeat: no-repeat;
    background-origin: content-box, padding-box;
}
```

```
#example2 {
    border: 10px dashed black;
    padding: 25px;
    background: url(edu.jpg);
    background-repeat: no-repeat;
    background-origin: content-box, border-box;
}
```

```
#example3 {  
    border: 10px dashed black;  
    padding: 25px;  
    background: url(edu.jpg);  
    background-repeat: no-repeat;  
    background-origin: content-box, content-box;  
}  
</style>  
</head>  
<body>  
<h2>background-origin: content-box, padding-box:</h2>  
<div id="example1">  
<h2>Hello World</h2>  
<p>The "edu.jpg" background image starts from the upper left corner of the padding  
edge.</p>  
<p>The "edu.jpg" background image starts from the upper left corner of the content.</p>  
</div>  
<h2>background-origin: content-box, border-box:</h2>  
<div id="example2">  
<h2>Hello World</h2>  
<p>The "edu.jpg" background image starts from the upper left corner of the border.</p>  
<p>The "edu.jpg" background image starts from the upper left corner of the content.</p>  
</div>  
<h2>background-origin: content-box, content-box:</h2>  
<div id="example3">  
<h2>Hello World</h2>  
<p>Both background images starts from the upper left corner of the content.</p>  
</div>  
</body>  
</html>
```

Output/Results snippet:



References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 11

Aim: Control overflowing content.

Learning outcome: Scripting and styling the web (1 Hrs)

Duration: 1 hour

List of Hardware/Software requirements:

1. Visual studio code / Notepad++/ Sublime text
2. Any One web browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
<html>
<head>
    <style>
/* Overflow – Visible, Hidden, Scroll, Auto */
    #overflow-visible {
        background-color: #cccccc;
        width: 200px;
        height: 50px;
        border: 2px solid red;
        overflow: visible;
    }
    #overflow-hidden {
        background-color: #cccccc;
        width: 200px;
        height: 50px;
        border: 1px solid red;
        overflow: hidden;
    }

```

```
#overflow-scroll {
    background-color: #cccccc;
    width: 200px;
    height: 50px;
    border: 1px solid red;
    overflow: scroll;
}

#overflow-auto {
    background-color: #cccccc;
    width: 200px;
    height: 50px;
    border: 1px solid red;
    overflow: auto;
}

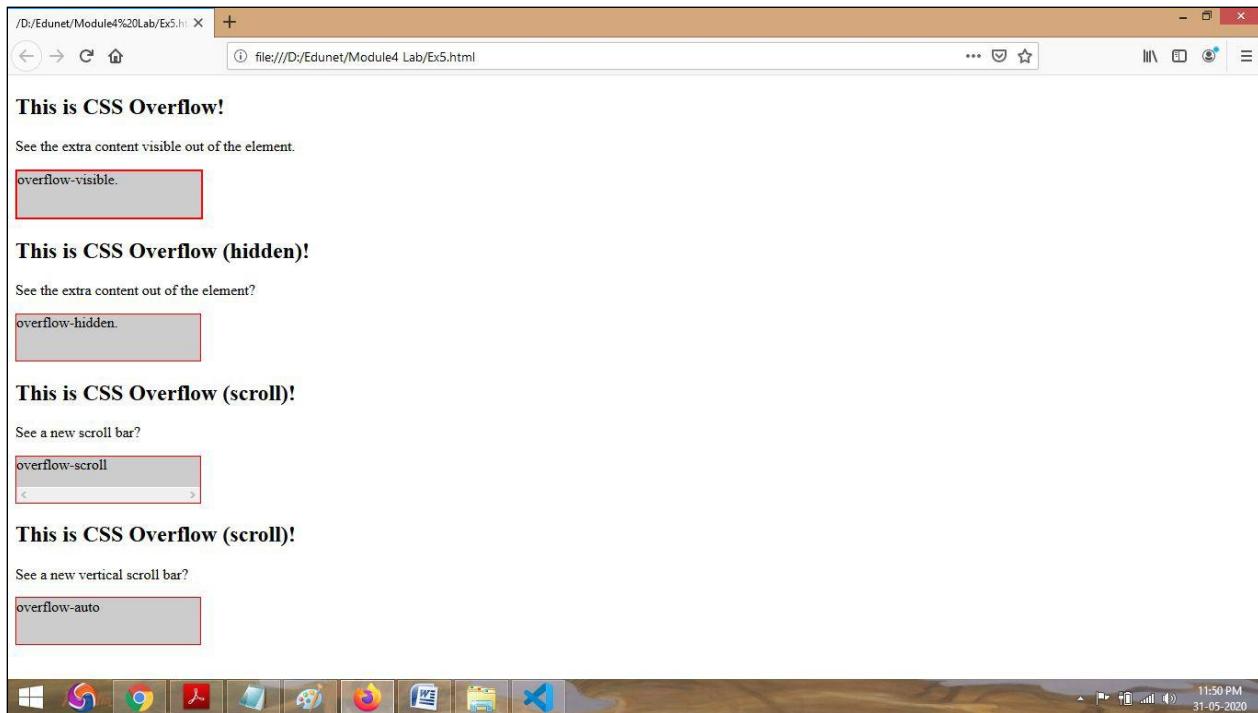
</style>
</head>

<body>

<h2>This is CSS Overflow!</h2>
<p>See the extra content visible out of the element.</p>
<div id="overflow-visible">overflow-visible.</div>
<h2>This is CSS Overflow (hidden)!</h2>
<p>See the extra content out of the element?</p>
<div id="overflow-hidden">overflow-hidden.</div>
<h2>This is CSS Overflow (scroll)!</h2>
<p>See a new scroll bar?</p>
<div id="overflow-scroll">overflow-scroll</div>
<h2>This is CSS Overflow (scroll)!</h2>
<p>See a new vertical scroll bar?</p>
<div id="overflow-auto">overflow-auto</div>

</body>
</html>
```

Output/Results snippet:



References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 12

Aim: Control the part of a CSS box to draw the background.

Learning outcome: Scripting and styling the web

Duration: 1 hour

List of Hardware/Software requirements:

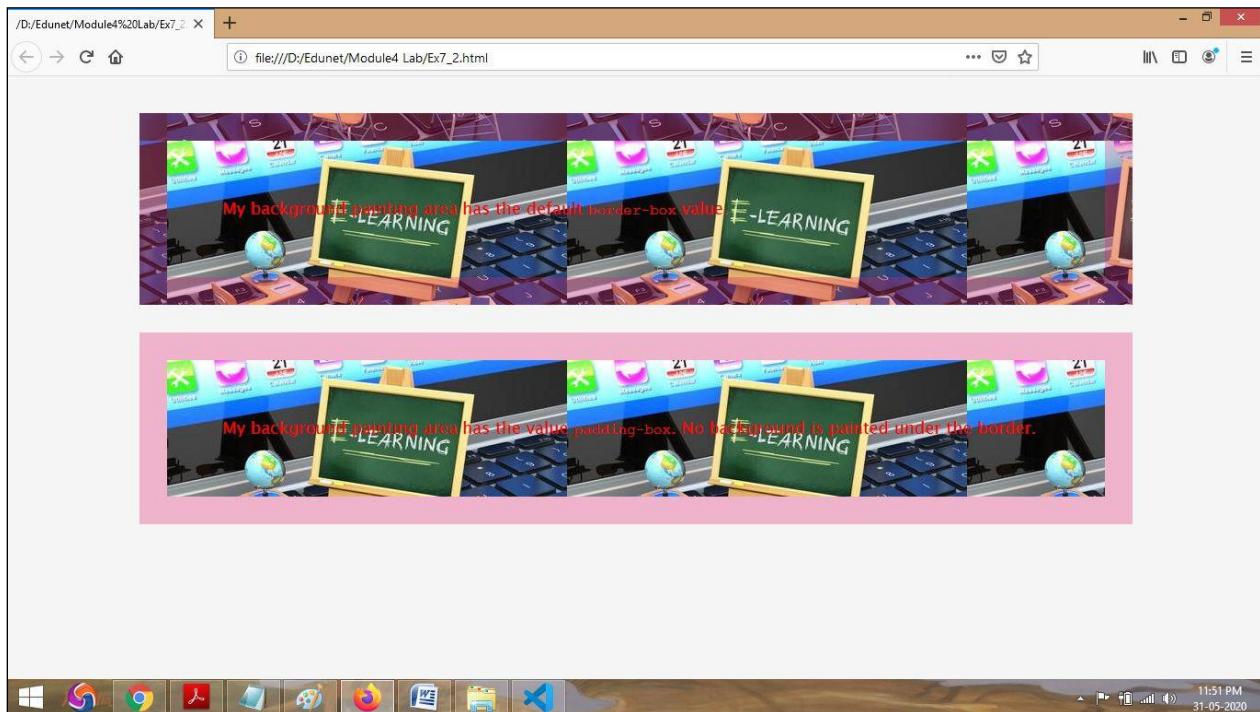
1. Visual studio code / Notepad++/ Sublime text
2. Any One web browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
<html>
<head>
    <style>
        /* CSS Box to draw background */
        body {
            background-color: #F5F5F5;
            color: #555;
            font-size: 1.1em;
            font-family: 'Helvetica Neue', Helvetica, Arial, sans-serif;
        }
        .container {
            margin: 40px auto;
            width: 80%;
        }
        .el {
            padding: 40px;
            margin-bottom: 30px; background-color: #0099cc; color: white;
```

```
border: 30px solid rgba(224, 30, 108, 0.3);
background-image: url(edu.jpg);
}
.el-2 {
    background-clip: padding-box;
}
.el p {
    padding: 20px;
    margin: 0;
    font-size: large;
    font-family: 'Lucida Sans', 'Lucida Sans Regular', 'Lucida Grande', 'Lucida Sans Unicode', Geneva, Verdana, sans-serif;
    color: red;
}
</style>
</head>
<body>
<div class="container">
    <div class="el el-1">
        <p>
            My background painting area has the default <code>bord er-box</code>
            value.
        </p>
    </div>
    <div class="el el-2">
        <p>
            My background painting area has the value <code>paddin g-box</code>.
            No background is painted under the
            border.
        </p>
    </div>
</div>
</body>
</html>
```

Output/Results snippet:



References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 13

Aim: Create fancy boxes (also see the Styling boxes module, generally).

Learning outcome: Scripting and styling the web

Duration: 1 hour

List of Hardware/Software requirements:

- Visual studio code/ Notepad++/ Sublime
- Any One web browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
<head>
    <title>Fancy Boxes</title>
    <style>
        /*fancy-box */
        .fancy-box { background:
            #666; color: #fff;
            text-align: center;
            border: 5px solid #444;
            border-radius: 30px 30px 30px 30px;
            padding: 10px;
            margin: 1em 0;
        }
        .fancy-box .fancy-heading {
            font-family: Arial;
            font-size: 32px;
        }
        .fancy-box .fancy-button {
            background: #fff; color: #666;
            padding: 1.5em;
        }
    </style>
</head>
<body>
    <div class="fancy-box">
        <h1>Hello World!</h1>
        <p>This is a fancy box!</p>
        <a href="#" class="fancy-button">Click Me!</a>
    </div>
</body>

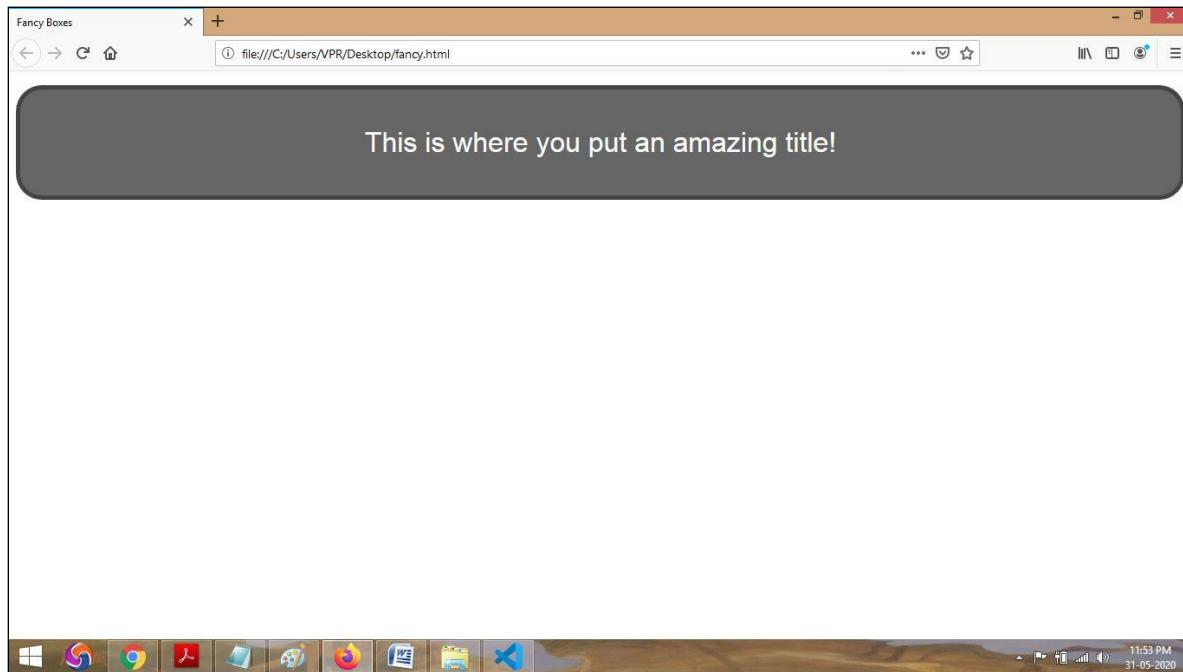
```

```
        }
    </style>

</head>
<body>

<div class="fancy-box">
    <p class="fancy-heading">This is where you put an amazing title!</p>
</div>
</body>
</html>
```

Output/Results snippet:



References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 14

Aim: Use background-clip to control background image.

Learning outcome: Scripting and styling the web

Duration: 1 hour

List of Hardware/Software requirements:

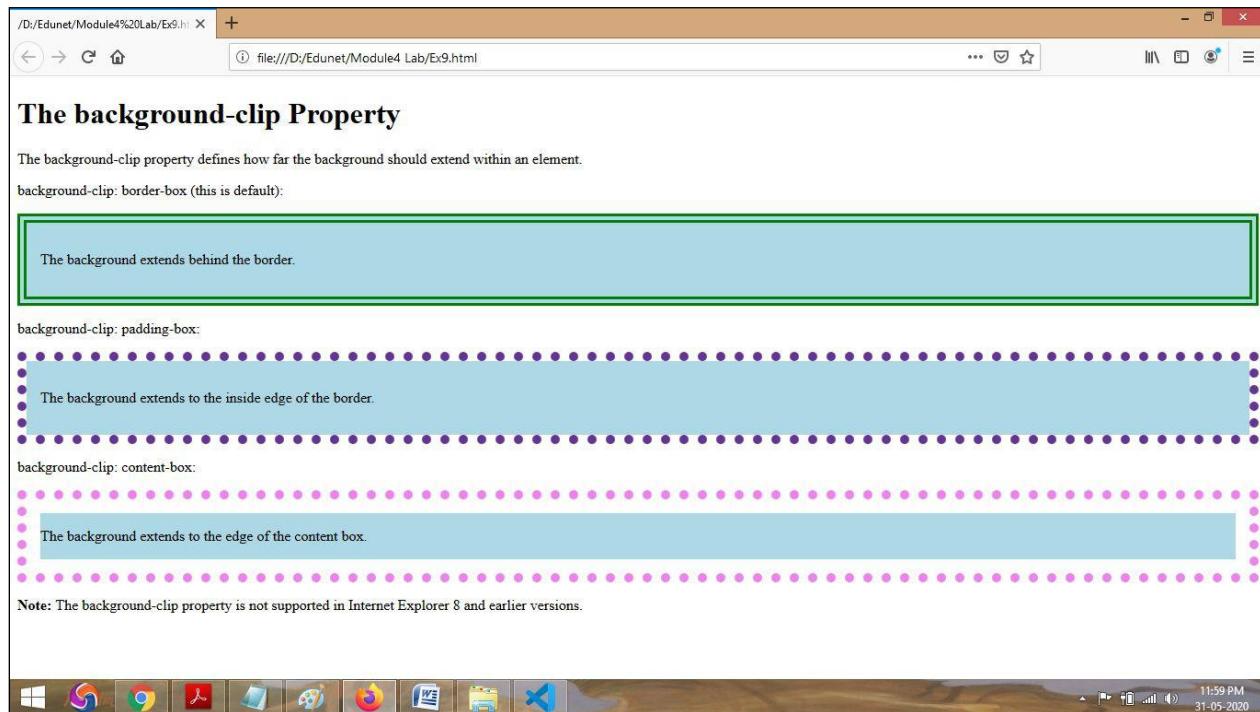
- Visual studio code/notepad++/sublime
- Any One web browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
<html>
<head>
<style>
/* Background-Clip */
#example1 {
    border: 10px double green;
    padding: 15px; background: lightblue;
    background-clip: border-box;
}
#example2 {
    border: 10px dotted rebeccapurple;
    padding: 15px; background: lightblue;
    background-clip: padding-box;
}
```

```
#example3 {  
    border: 10px dotted violet;  
    padding: 15px; background: lightblue;  
    background-clip: content-box;  
}  
</style>  
</head>  
<body>  
  
<h1>The background-clip Property</h1>  
  
<p>The background-clip property defines how far the background should extend within an element.</p>  
  
<p>background-clip: border-box (this is default):</p>  
<div id="example1">  
    <p>The background extends behind the border.</p>  
</div>  
  
<p>background-clip: padding-box:</p>  
<div id="example2">  
    <p>The background extends to the inside edge of the border.</p>  
</div>  
  
<p>background-clip: content-box:</p>  
<div id="example3">  
    <p>The background extends to the edge of the content box.</p>  
</div>  
  
<p><strong>Note:</strong> The background-clip property is not supported in Internet Explorer 8 and earlier versions.</p>  
  
</body>  
</html>
```

Output/Results snippet:



The screenshot shows a Microsoft Edge browser window displaying the Mozilla Developer Network article titled "The background-clip Property". The page content includes three examples of the background-clip property: border-box (the default), padding-box, and content-box. Each example features a green-bordered box with a light blue background and a series of colored dots (purple, pink, or grey) extending beyond the box's boundaries to illustrate the clipping behavior.

The background-clip property defines how far the background should extend within an element.

background-clip: border-box (this is default):

The background extends behind the border.

background-clip: padding-box:

• The background extends to the inside edge of the border.

background-clip: content-box:

• The background extends to the edge of the content box.

Note: The background-clip property is not supported in Internet Explorer 8 and earlier versions.

References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 15

Aim: Change the box model completely using box sizing

Learning outcome: Scripting and styling the web

Duration: 1 hour

List of Hardware/Software requirements:

- Visual studio code
- Any One web browser

Code/Program/Procedure (with comments):

```
<!doctype html public "-//w3c//dtd html 4.01//en">
<html>

<head>
    <title>box model</title>
    <style type="text/css">
        /* examples of margins, padding, and borders */
        ul {
            background: yellow;
            margin: 12px 12px 12px 12px;
            padding: 3px 3px 3px 3px;
            /* no borders set */
        }
        li {
            color: white;
            /* text color is white */
            background: blue;
            /* content, padding will be blue */
            margin: 12px
            12px 12px 12px;
            padding: 12px 0px 12px 12px;
            /* note 0px padding right */
        }
    </style>
</head>
<body>
    <ul>
        <li>one</li>
        <li>two</li>
        <li>three</li>
    </ul>
</body>
</html>
```

```
list-style: none

/* no glyphs before a list item */
/* no borders set */

}

li.withborder {
    border-style: dashed;
    border-width: medium;
    /* sets border width on all sides */
    border-color: lime;
}

body {
    margin: 2em
}

/* all margins set to 2em */
body {
    margin: 1em 2em
}

/* top & bottom = 1em, right & left = 2em */
body {
    margin: 1em 2em 3em
}

</style>
</head>
<body>
    <ul>
        <li>first element of list
            <li class="withborder">second element of list is a bit longer to
                illustrate wrapping.
        </li>
    </ul>
</body>
</html>
```

Output/Results snippet



References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 16

Aim: Control backgrounds.

Learning outcome: Scripting and styling the web

Duration: 1 hours

List of Hardware/Software requirements:

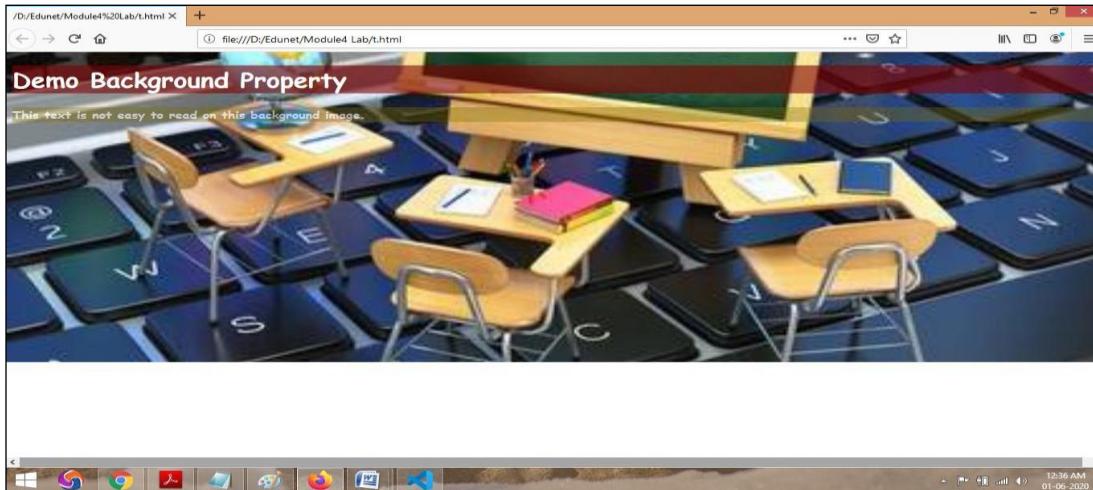
- Visual studio code
- Any One web browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>
<html>
<head>
<style>
/* Control Backgrounds*/
body {
    background-image: url("edu.jpg");
    height: 100%;
    width: 100%;
    /* Center and scale the image nicely */
    background-position: center;
    background-repeat: no-repeat;
    background-size: cover;
}
h1, p {
    font-family: cursive; font-weight: bolder; color: white;
}
```

```
div.first {  
    background: rgba(128, 0, 0, 0.6);  
}  
div.second {  
    background: rgba(128, 109, 0, 0.6);  
    opacity: 0.6;  
}  
</style>  
</head>  
<body>  
    <div class="first">  
        <h1>Demo Background Property</h1>  
    </div>  
    <div class="second">  
        <p>This text is not easy to read on this background image.</p>  
    </div>  
</body>  
</html>
```

Output/Results snippet:



References:

- <https://developer.mozilla.org/en-US/docs/Web/CSS>

Activity 17

Aim: Apply control borders

Learning outcome: Able to understand how the web works.

Duration: 1 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

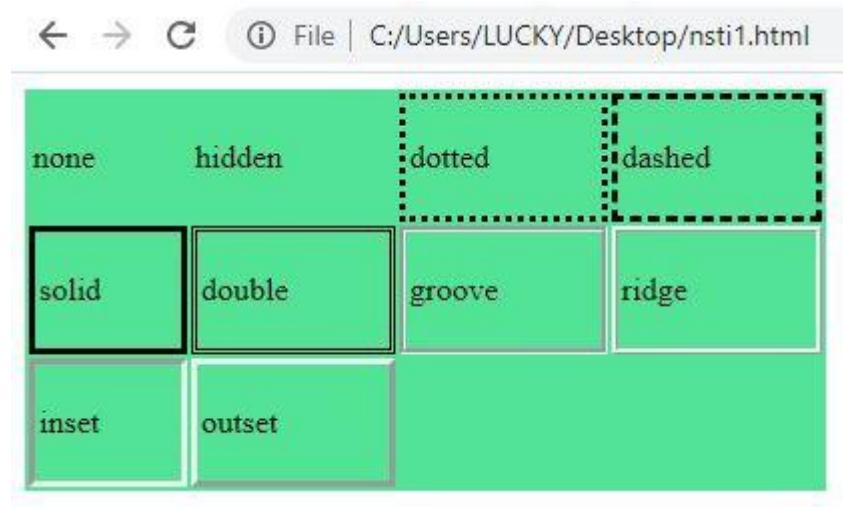
Code/Program/Procedure (with comments):

```
<html>
<head>
<style>
/* Define look of the table */
table {
    border-width: 3px;
    background-color: #52E396;
}
tr, td {
    padding: 2px;
}
/* border-style example classes */
.b1 {border-style:none;}
.b2 {border-style:hidden;}
.b3 {border-style:dotted;}
.b4 {border-style:dashed;}
```

```
.b5 {border-style:solid;}  
.b6 {border-style:double;}  
.b7 {border-style:groove;}  
.b8 {border-style:ridge;}  
.b9 {border-style:inset;}  
.b10 {border-style:outset;}  
</style>  
</head>  
<body>  
<table>  
<tr>  
<td class="b1">none</td>  
<td class="b2">hidden</td>  
<td class="b3">dotted</td>  
<td class="b4">dashed</td>  
</tr>  
<tr>  
<td class="b5">solid</td>  
<td class="b6">double</td>  
<td class="b7">groove</td>  
<td class="b8">ridge</td>  
</tr>  
<tr>  
<td class="b9">inset</td>  
<td class="b10">outset</td>  
</tr>  
</table>  
</body>
```

</html>

Output/Results snippet:



References:

- https://www.w3schools.com/css/css_border.asp
- <https://www.html.am/html-codes/tables/table-border.cfm>
- https://www.w3schools.com/css/css_border.asp

Activity 18

Aim: Style an HTML table

Learning outcome: Able to understand how the web works.

Duration: 3 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<style>

#customers {

font-family: "Trebuchet MS", Arial, Helvetica, sans-serif;

border-collapse: collapse;

width: 100%;

}

#customers td, #customers th {

border: 1px solid #ddd;

padding: 8px;

}

#customers tr:nth-child(even){background-color: #f2f2f2;}
```

```
#customers tr:hover {background-color: #ddd;}
```

```
#customers th {  
padding-top: 12px;  
padding-bottom: 12px;  
text-align: left;  
background-color: #4CAF50;  
color: white;  
}  
</style>
```

```
</head>  
  
<body>  
  
<table id="customers">  
  
<tr>  
  <th>Company</th>  
  <th>Contact</th>  
  <th>Country</th>  
</tr>  
  
<tr>  
  <td>Alfreds Futterkiste</td>  
  <td>Maria Anders</td>  
  <td>Germany</td>  
</tr>  
  
<tr>
```

```
<td>Berglunds snabbköp</td>
<td>Christina Berglund</td>
<td>Sweden</td>
</tr>

<tr>
<td>Centro comercial Moctezuma</td>
<td>Francisco Chang</td>
<td>Mexico</td>
</tr>

<tr>
<td>Ernst Handel</td>
<td>Roland Mendel</td>
<td>Austria</td>
</tr>

<tr>
<td>Island Trading</td>
<td>Helen Bennett</td>
<td>UK</td>
</tr>

<tr>
<td>Königlich Essen</td>
<td>Philip Cramer</td>
<td>Germany</td>
```

```
</tr>

<tr>

<td>Laughing Bacchus Winecellars</td>
<td>Yoshi Tannamuri</td>
<td>Canada</td>

</tr>

<tr>

<td>Magazzini Alimentari Riuniti</td>
<td>Giovanni Rovelli</td>
<td>Italy</td>

</tr>

<tr>

<td>North/South</td>
<td>Simon Crowther</td>
<td>UK</td>

</tr>

<tr>

<td>Paris spécialités</td>
<td>Marie Bertrand</td>
<td>France</td>

</tr>

</table>

</body>

</html>
```

Output/Results snippet:



Company	Contact	Country
Alfreds Futterkiste	Maria Anders	Germany
Berglunds snabbköp	Christina Berglund	Sweden
Centro comercial Moctezuma	Francisco Chang	Mexico
Ernst Handel	Roland Mendel	Austria
Island Trading	Helen Bennett	UK
Königlich Essen	Philip Cramer	Germany
Lauding Bacchus Winecellars	Yoshi Tannamuri	Canada
Magazzini Alimentari Riuniti	Giovanni Rovelli	Italy
North/South	Simon Crowther	UK
París spécialités	Marie Bertrand	France

References:

- https://www.w3schools.com/css/css_table.asp

Activity 19

Aim: Add shadows to boxes

Learning outcome: Able to understand how the web works.

Duration: 2 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

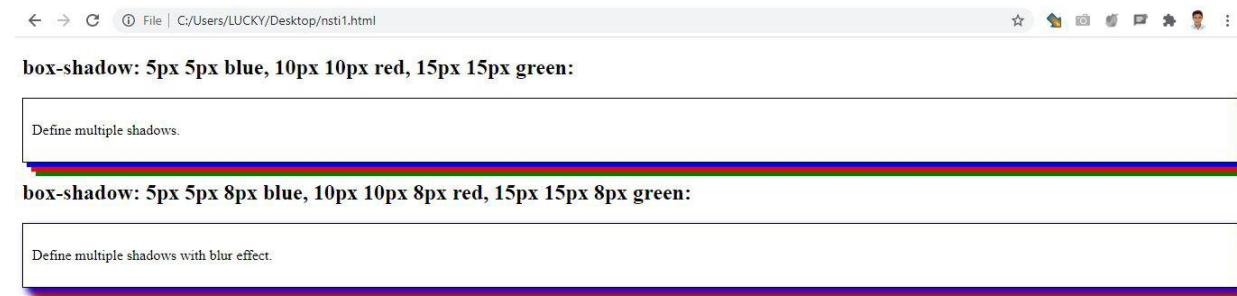
Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
  <head>
    <style>
      #example1 {
        border: 1px solid;
        padding: 10px;
        box-shadow: 5px 5px blue, 10px 10px red, 15px 15px green;
      }
      #example2 {
        border: 1px solid;
```

```
padding: 10px;  
box-shadow: 5px 5px 8px blue, 10px 10px 8px red, 15px 15px 8px green;  
}  
</style>  
</head>  
<body>  
<h2>box-shadow: 5px 5px blue, 10px 10px red, 15px 15px green:</h2>  
<div id="example1">  
<p>Define multiple shadows.</p>  
</div>  
<h2>box-shadow: 5px 5px 8px blue, 10px 10px 8px red, 15px 15px 8px green:</h2>  
<div id="example2">  
<p>Define multiple shadows with blur effect.</p>  
</div>  
</body>  
</html>
```

Output/Results snippet:



References:

- https://www.w3schools.com/cssref/css3_pr_box-shadow.asp
- https://www.w3schools.com/css/css3_shadows.asp

Activity 20

Aim: Calculate specificity of a CSS selector

Learning outcome: Able to understand how the web works.

Duration: 3 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<style>

/*Element Selector*/

h1

{background-color: yellow;

text-align: center;}

/*Class Selector*/

.center {

background-color: red;

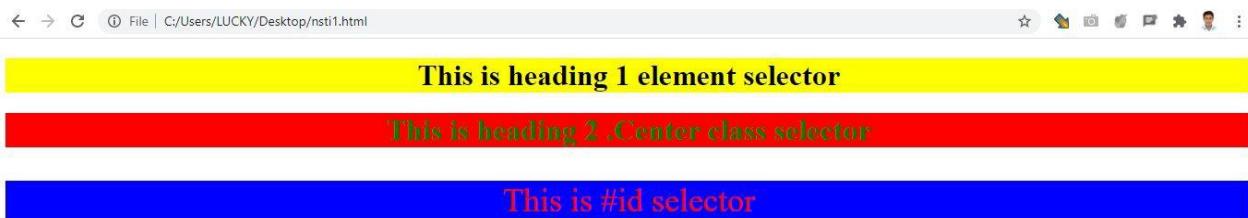
text-align: center;

color: green;

}
```

```
/*id selector*/
#header{
    background-color: blue;
    text-align: center;
    color: red;
    font-size: 36px;
}
</style>
</head>
<body>
<h1>This is heading 1 element selector</h1>
<h1 class="center">This is heading 2 .Center class selector</h1>
<p id="header">This is #id selector</p>
</body>
</html>
```

Output/Results snippet:



References:

- https://www.w3schools.com/css/css_selectors.asp

Activity 21

Aim: Control Inheritance in CSS

Learning outcome: Able to understand how the web works.

Duration: 2 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
<head>
<style>
span {
color: blue;
border: 1px solid black;
}
.extra span {
color: inherit;
}
</style>
</head>
<body>
```

```
<div>
```

Here is a span element which is blue, as span elements are set to be.

```
</div>
```

```
<div class="extra" style="color:green">
```

Here is a span element which is green, because it inherits from its parent.

```
</div>
```

```
<div style="color:red">
```

Here is a span element which is blue, as span elements are set to be.

```
</div>
```

```
</body>
```

```
</html>
```

Output/Results snippet:



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Here is a span element which is blue, as span elements are set to be.
Here is a span element which is green, because it inherits from its parent.
Here is a span element which is blue, as span elements are set to be.

References:

- <https://stackoverflow.com/questions/641217/css-control-inheritance-inheriting-other-control-styles>

Activity 22

Aim: Apply filters in CSS

Learning outcome: Able to understand how the web works.

Duration: 2 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
  <head>
    <style>
      img {
        -webkit-filter: grayscale(100%); /* Safari 6.0 - 9.0 */
        filter: grayscale(100%);
      }
    </style>
  </head>
  <body>
    <h1>The filter Property</h1>
    <p>Convert the image to grayscale:</p>
    
  </body>
</html>
```

```
<p><strong>Note:</strong> The filter property is not supported in Internet Explorer, Edge  
12, or Safari 5.1 and earlier.</p>  
</body>  
</html>
```

Output/Results snippet:



References:

- https://www.w3schools.com/cssref/css3_pr_filter.asp

Activity 23

Aim: Apply blend modes in CSS

Learning outcome: Able to understand how the web works.

Duration: 2 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
<head>
<style>
#myDIV {
    width: 400px;
    height: 400px;
    background-repeat: no-repeat, repeat;
    background-image: url("img_5terre.jpg"),url("download.png");
    background-blend-mode: lighten;
}
</style>
</head>
<body>
```

```
<h1>The background-blend-mode Property</h1>
<div id="myDIV"></div>
<p><b>Note:</b> Edge/Internet Explorer do not support the background-blend-mode
property.</p>
</body>
</html>
```

Output/Results snippet:



References:

- https://www.w3schools.com/cssref/pr_background-blend-mode.asp

Activity 24

Aim: Apply CSS multi-column layouts

Learning outcome: Able to understand how the web works.

Duration: 3 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<style>

.newspaper {

-webkit-column-count: 3; /* Chrome, Safari, Opera */

-moz-column-count: 3; /* Firefox */

column-count: 3;

-webkit-column-gap: 40px; /* Chrome, Safari, Opera */

-moz-column-gap: 40px; /* Firefox */
```

```
column-gap: 40px;
```

```
-webkit-column-rule-style: solid; /* Chrome, Safari, Opera */
```

```
-moz-column-rule-style: solid; /* Firefox */
```

```
column-rule-style: solid;
```

```
}
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<p><b>Note:</b> Internet Explorer 9, and earlier versions, does not support the  
columnrule-style property.</p>
```

```
<div class="newspaper">
```

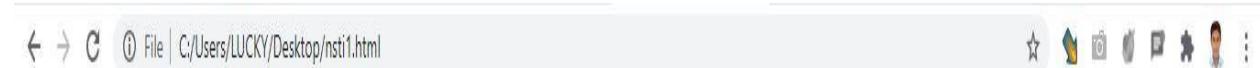
HyperText Markup Language (HTML) is a markup language[1] for creating a webpage. Webpages are usually viewed in a web browser. They can include writing, links, pictures, and even sound and video. HTML is used to mark and describe each of these kinds of content so the web browser can display them correctly. HTML can also be used to add meta information to a webpage. Meta information is usually not shown by web browsers and is data about the web page, e.g., the name of the person who created the page. Cascading Style Sheets (CSS) is used to style HTML elements while JavaScript is used to manipulate HTML elements and CSS styles.

```
</div>
```

```
</body>
```

```
</html>
```

Output/Results snippet:



Note: Internet Explorer 9, and earlier versions, does not support the columnrule-style property.

HyperText Markup Language (HTML) is a markup language[1] for creating a webpage. Webpages are usually viewed in a web browser. They can include writing, links, pictures, and even sound and video. HTML is used to mark and describe each of

these kinds of content so the web browser can display them correctly. HTML can also be used to add meta information to a webpage. Meta information is usually not shown by web browsers and is data about the web page, e.g., the name of the

person who created the page. Cascading Style Sheets (CSS) is used to style HTML elements while JavaScript is used to manipulate HTML elements and CSS styles.

References:

- https://www.w3schools.com/css/css3_multiple_columns.asp

Activity 25

Aim: Apply CSS generated Content

Learning outcome: Able to understand how the web works.

Duration: 2 Hours

List of Hardware/Software requirements:

1. HTML Editor: Sublime Text Editor
2. Web Browser: Google Chrome/Mozilla Firefox

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

<head>

<style>

ul {

list-style: none; /* Remove HTML bullets */

padding:

0; margin:

0; } li {

padding-left: 16px; }

li::before {
```

```
content: "•"; /* Insert content that looks like bullets */
```

```
padding-right: 8px;
```

```
color: blue; /* Or a color you prefer */ }
```

```
</style>
```

```
</head>
```

```
<body>
```

```
<h1>The content Property</h1>
```

```
<ul>
```

```
<li>Coffee</li>
```

```
<li>Tea</li>
```

```
<li>Coca Cola</li>
```

```
</ul>
```

```
</body>
```

```
</html>
```

Output/Results snippet:

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The content Property

- Coffee
- Tea
- Coca Cola

References:

- https://www.w3schools.com/cssref/pr_gen_content.asp

Activity 26

Aim: Create CSS document by using ID selector

Learning outcome: Able to create Styles of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default GEDIT) and a Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
    <head>          <!-- Document Head Starts -->
        <title> ID Selector </title>

        <style>
            /* Style the element with the id "myHeader" */

            #myHeader {
                background-color: lightblue;
                color: black;
                padding: 40px;
                text-align: center; }

        </style>
    </head>          <!-- Document Head Ends -->

    <body>          <!-- Document Body Starts -->
        <!--This is Heading Tag with id myHeader-->
```

```
<h1 id="myHeader">My Header</h1>
</body>      <!-- Document Body Ends -->
</html>
```

Output/Results snippet:

A simple HTML webpage with the body CSS id Selector.



References:

- HTML Introduction - https://www.w3schools.com/html/html_intro.asp

Activity 27

Aim: Create CSS document by using Class selector, Universal selector Grouping selector

Learning outcome: Able to create Styles of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default GEDIT) and a Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
    <head>          <!-- Document Head Starts -->
        <title> Selectors </title>

        <style>
            /* Style the element with the id "myHeader" */
            #myHeader {
                background-color: lightblue;
                color: black;
                padding: 40px;
                text-align: center;
            }

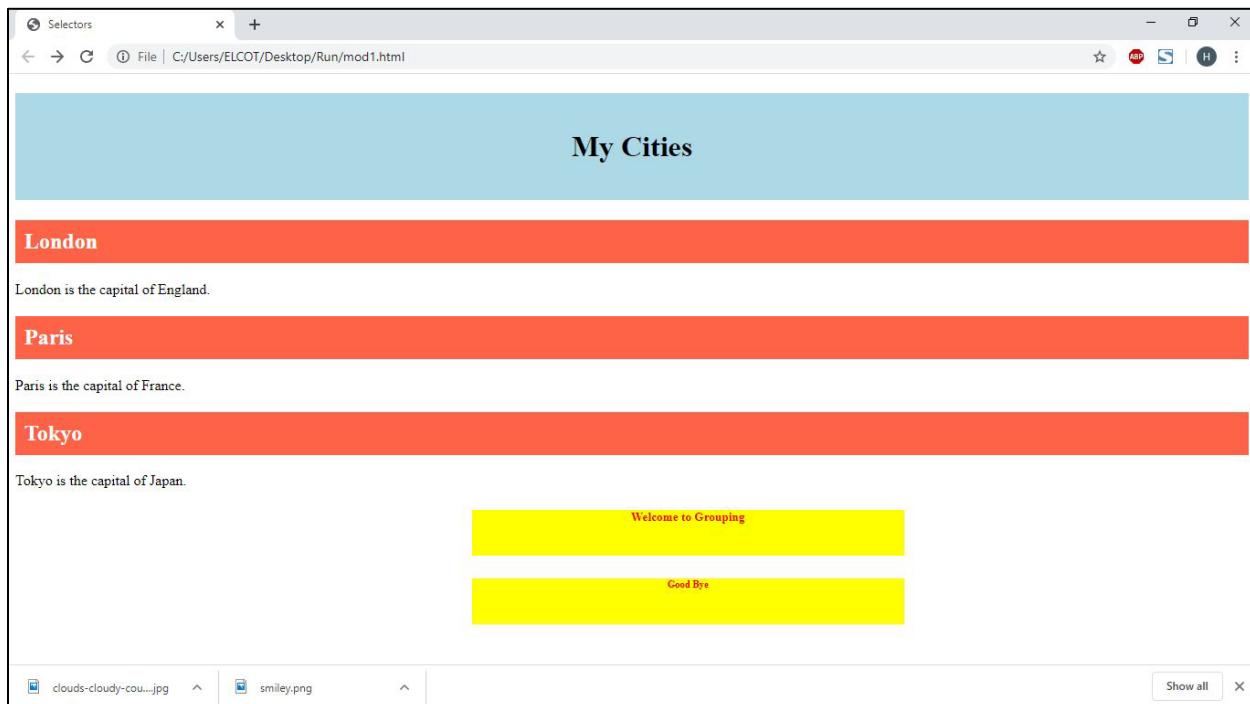
            /* Style all elements with the class name "city" */
            .city {
                background-color: tomato;
            }
        </style>
    </head>
    <body>
        <h1>My First CSS Document</h1>
        <p>This is my first CSS document. It contains a heading and some text.</p>
        <h2>Section 1</h2>
        <p>This is the content of Section 1.</p>
        <h2>Section 2</h2>
        <p>This is the content of Section 2.</p>
    </body>
</html>
```

```
color: white;  
padding: 10px;  
}  
/* Style all elements with the Group name "h5,h6" */  
  
h5,h6{  
margin-left: 500px;  
color: red;  
background-color: yellow;  
width: 35%;  
height: 50px;  
text-align: center;  
}  
</style>  
</head>      <!-- Document Head Ends -->  
<body>        <!-- Document Body Starts -->  
    <!-- A unique element -->  
    <h1 id="myHeader">My Cities</h1>  
    <!-- Multiple similar elements -->  
    <h2 class="city">London</h2>  
    <p>London is the capital of England.</p>  
    <h2 class="city">Paris</h2>  
    <p>Paris is the capital of France.</p>
```

```
<h2 class="city">Tokyo</h2>
<p>Tokyo is the capital of Japan.</p>
<h5>Welcome to Grouping</h5>
<h6>Good Bye</h6>
</body>      <!-- Document Body Ends -->
</html>
```

Output/Results snippet:

A simple HTML webpage with the body CSS Selectors.



References:

- HTML Introduction - https://www.w3schools.com/html/html_intro.asp

Activity 28

Aim: Create CSS document with fonts: Bold, Italics, oblique

Learning outcome: Able to create Styles of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default GEDIT) and a Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
    <head>          <!-- Document Head Starts -->
        <title> Fonts</title>

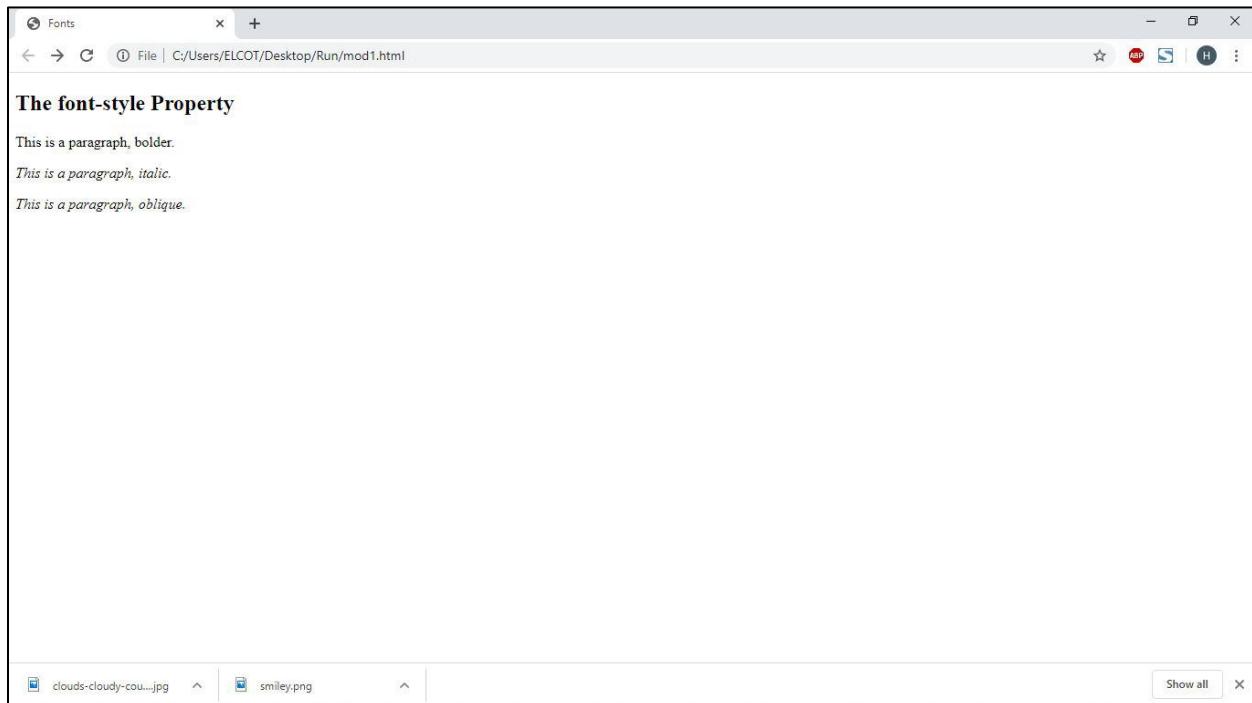
        <style>
            /* Style all elements with the paragraph class name "p.a,p.b,p.c" */
            p.a { font-style: bolder; }
            p.b { font-style: italic; }
            p.c { font-style: oblique; }

        </style>
    </head>          <!-- Document Head Ends -->
    <body>          <!-- Document Body Starts -->
        <h2>The font-style Property</h2>  <!--This is Heading-->
        <p class="a">This is a paragraph, bolder.</p>      <!--Paragraph
Element with bolder-->
```

```
<p class="b">This is a paragraph, italic.</p>      <!--Paragraph  
Element with Italic-->  
  
<p class="c">This is a paragraph, oblique.</p>    <!--Paragraph  
Element with oblique -->  
  
</body>      <!-- Document Body Ends -->  
  
</html>
```

Output/Results snippet:

A simple HTML webpage with the body CSS Fonts.



References:

- HTML Introduction - https://www.w3schools.com/html/html_intro.asp

Activity 29

Aim: Design Style sheet document with text transformation: Uppercase, Lowercase and capitalize

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default Gedit or any other) and a Browser

Code/Program/Procedure (with comments):

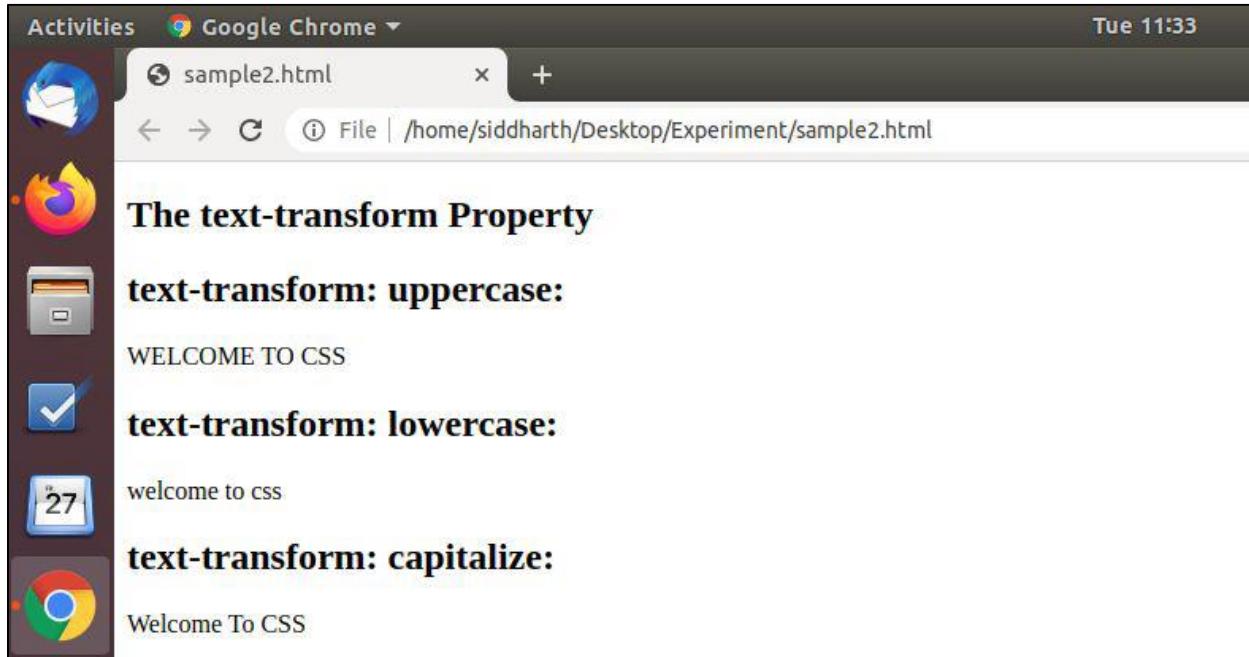
```
<!DOCTYPE html>

<html>
  <head>
    <style>
      /* Style the element with the class "a" */
      div.a {
        text-transform: uppercase;
      }
      /* Style the element with the class "b" */
      div.b {
        text-transform: lowercase;
      }
      /* Style the element with the class "c" */
      div.c {
```

```
text-transform: capitalize;  
}  
  
</style>  
</head>  
<body>  
    <h2>The text-transform Property</h2>  
    <h2>text-transform: uppercase:</h2>  
    <div class="a">Welcome to CSS</div>  
    <h2>text-transform: lowercase:</h2>  
    <div class="b">Welcome to CSS</div>  
    <h2>text-transform: capitalize:</h2>  
    <div class="c">Welcome to CSS</div>  
</body>  
</html>
```

Output/Results snippet:

A Page with all the div has applied CSS

**References:**

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 30

Aim: Create CSS document with font size in different pixels

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default Gedit) and a Browser

Code/Program/Procedure (with comments):

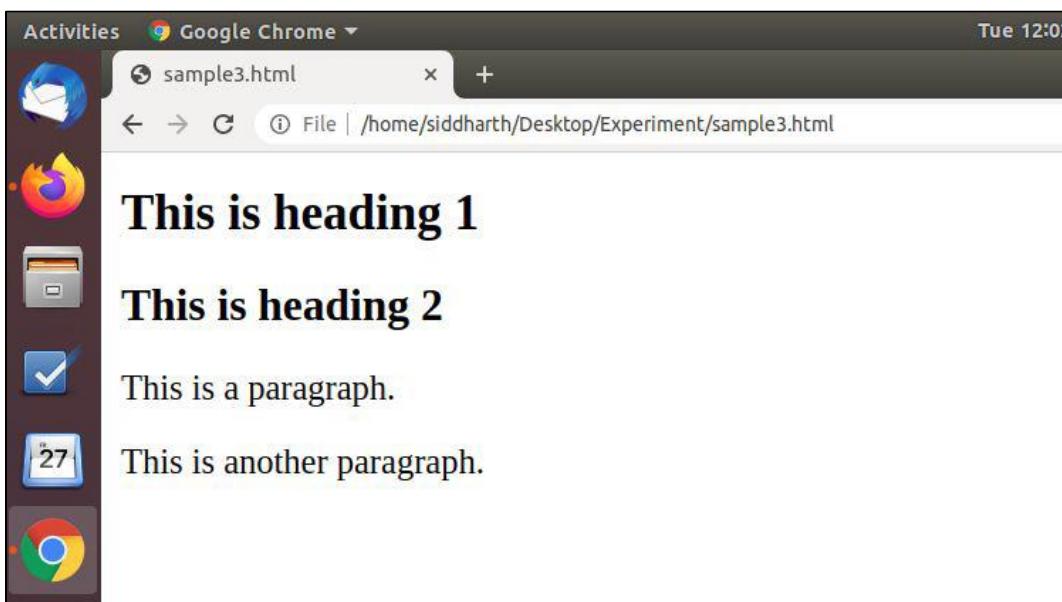
```
<!DOCTYPE html>

<html>
  <head>
    <style>
      /*setting the font size of the heading tag h1*/
      h1 {
        font-size: 20px;
      }
      /*setting the font size of the heading tag h2*/
      h2 {
        font-size: 18px;
      }
      /*setting the font size of the paragraph*/
      p {
        font-size: 14px;
      }
    </style>
  </head>
  <body>
    <h1>Hello World!</h1>
    <h2>This is a heading</h2>
    <p>This is a paragraph</p>
  </body>
</html>
```

```
    }  
  
</style>  
  
</head>  
  
<body>  
  
    <h1>This is heading 1</h1>  
  
    <h2>This is heading 2</h2>  
  
    <p>This is a paragraph.</p>  
  
    <p>This is another paragraph.</p>  
  
</body>  
  
</html>
```

Output/Results snippet

Applied CSS on heading and paragraph.



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 31

Aim: Create CSS document with font weight thinner, thicker, bold

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default GEDIT) and a Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
  <head>
    <style>
      /*setting the font weight of the paragraph of class ".normal"*/
      p.normal {
        font-weight: normal;
      }
      /*setting the font weight of the paragraph of class ".light"*/
      p.light {
        font-weight: lighter; }
      /*setting the font weight of the paragraph of class ".thick"*/
      p.thick {
        font-weight: bold; }
```

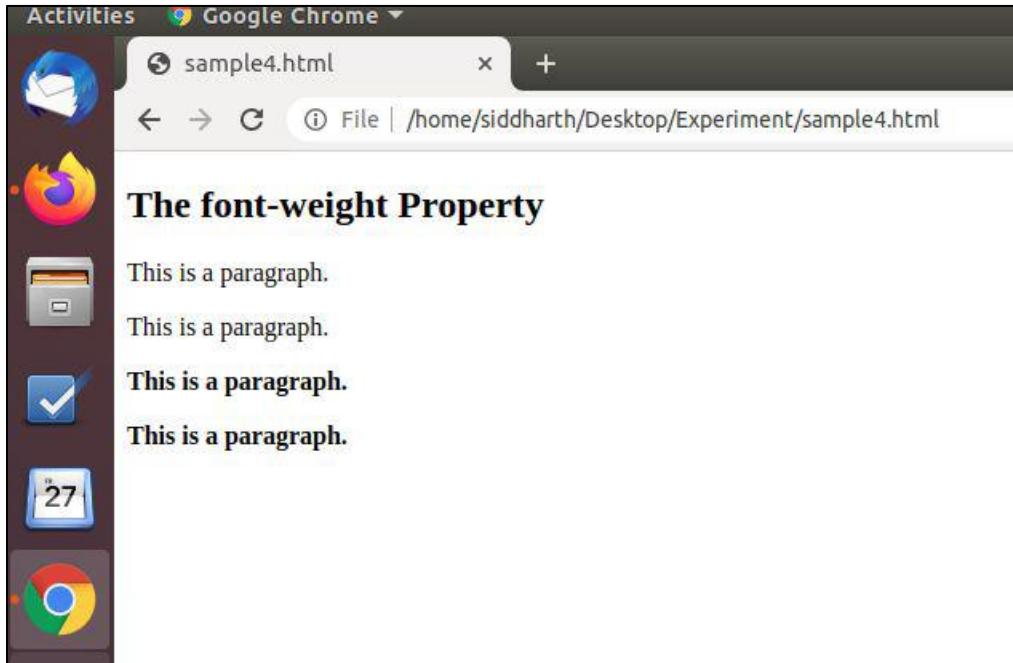
```
/*setting the font weight of the paragraph of class ".thicker"*/
p.thicker {
    font-weight: 900; }

</style>

</head>

<body>
    <h2>The font-weight Property</h2>
    <p class="normal">This is a paragraph.</p>
    <p class="light">This is a paragraph.</p>
    <p class="thick">This is a paragraph.</p>
    <p class="thicker">This is a paragraph.</p>
</body>
</html>
```

Output/Results snippet



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 32

Aim: Create CSS document with alignment center, right and left

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (default Gedit) and a Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
  <head>
    <style>
      /*setting the alignment of the div of class ".a"*/
      div.a {
        text-align: center;
      }
      /*setting the alignment of the div of class ".b"*/
      div.b {
        text-align: left;
      }
      /*setting the alignment of the div of class ".c"*/
      div.c {
        text-align: right;
      }
    </style>
  </head>
  <body>
    <div class="a">center</div>
    <div class="b">left</div>
    <div class="c">right</div>
  </body>
</html>
```

```
}

/*setting the alignment of the div of class ".d"*/

div.d {

    text-align: justify;

}

</style>

</head>

<body>

    <h2>The text-align Property</h2>

    <div class="a">

        <h2>text-align: center;</h2>

        <p>Welcome to alignment Welcome to alignment Welcome to
        alignment Welcome to alignment</p>

    </div>

    <div class="b">

        <h2>text-align: left;</h2>

        <p>Welcome to alignment Welcome to alignment Welcome to
        alignment Welcome to alignment</p>

    </div>

    <div class="c">

        <h2>text-align: right;</h2>

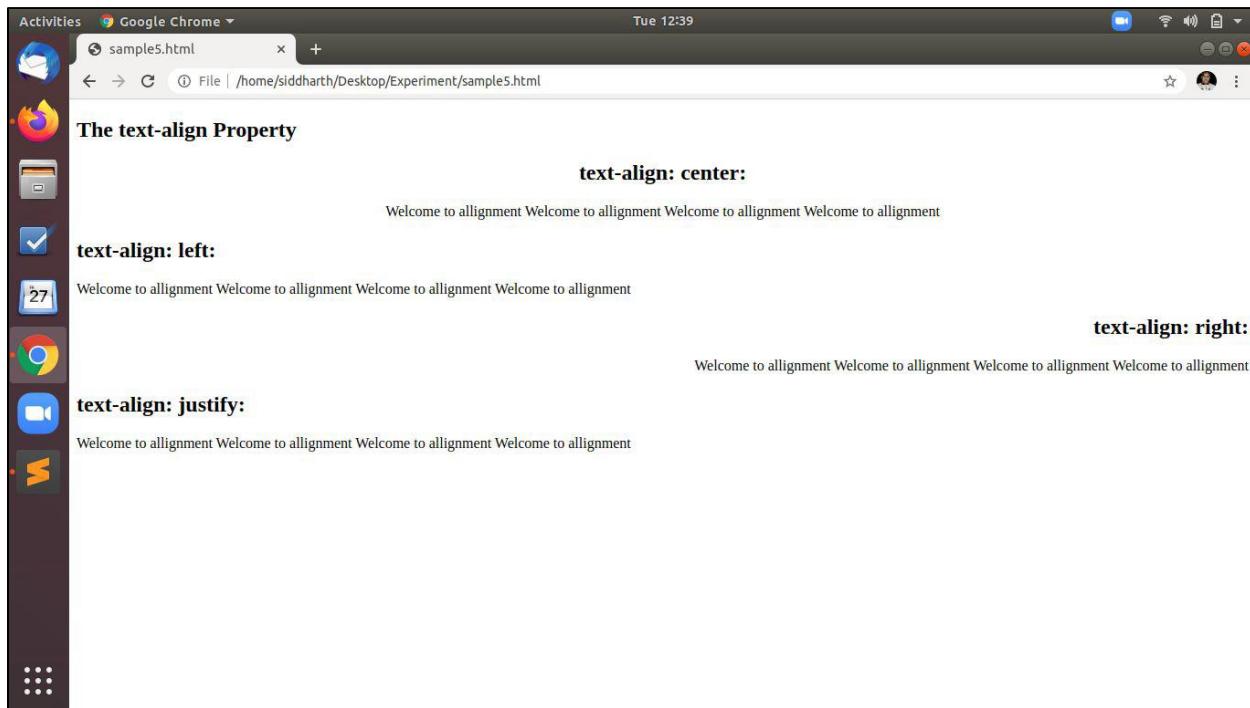
        <p>Welcome to alignment Welcome to alignment Welcome to
        alignment Welcome to alignment</p>

    </div>
```

```
<div class="d">  
    <h2>text-align: justify;</h2>  
  
    <p>Welcome to alignment Welcome to alignment Welcome to  
        alignment Welcome to alignment</p>  
    </div>  
  
</body>  
  
</html>
```

Output/Results snippet

Alignment of the divisions with text-align property.



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 33

Aim: Create CSS document with background colors and font colors

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default GEDIT) with a Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
  <head>
    <style>
      /*setting the background color of body */
      body {
        background-color: #fefbd8; }

      /*setting the background color of heading and also change its color */
      h1 {
        background-color: #80ced6;
        color: #006699; }

      /*changing the background color of division with its color */
      div {
        background-color: #d5f4e6;
```

```
        color: #4CAF50; }

/*setting the background color of span tag */

span {

    background-color: #f18973; }

</style>

</head>

<body>

<h1>Background Color</h1>

<div>Set a background color for a div element.</div>

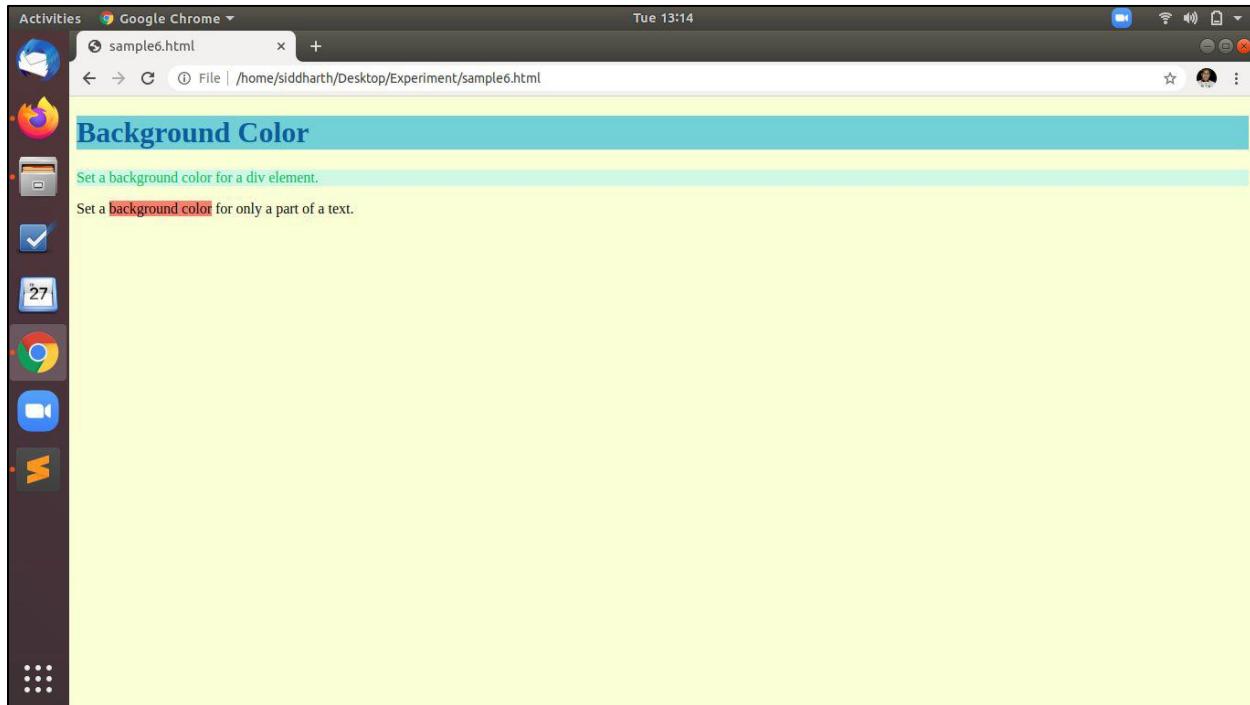
<p>Set a <span>background color</span> for only a part of a text.</p>

</body>

</html>
```

Output/Results snippet

Background color changes for heading, div and span.



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 34

Aim: Create CSS document with text hovering

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default GEDIT) with a Browser

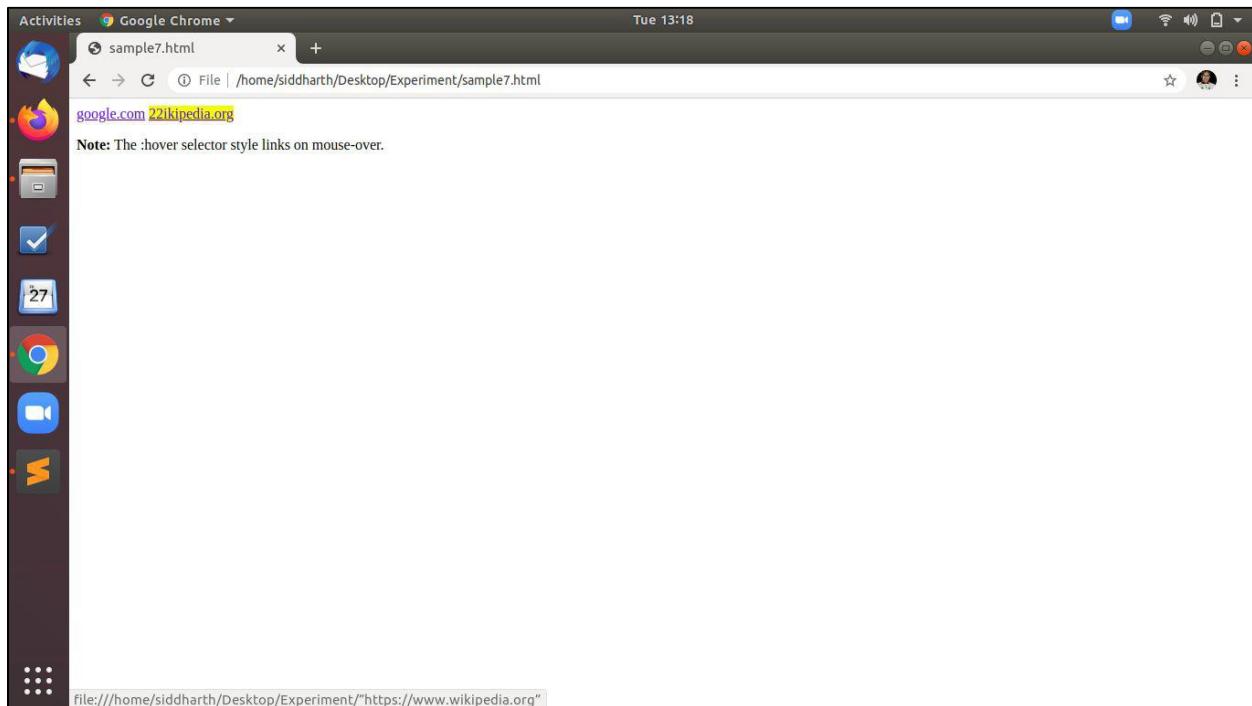
Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>
  <head>
    <style>
      /*setting the background color on hover of the mouse */
      a:hover {
        background-color: yellow;
      }
    </style>
  </head>
  <body>
    <a href="https://www.google.com">google.com</a>
    <a href="https://www.wikipedia.org">22ikipedia.org</a>
    <p><b>Note:</b> The :hover selector style links on mouse-over.</p>
  </body>
</html>
```

Output/Results snippet

A mouse occurs when a mouse pointer is above link.



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 35

Aim: Create CSS document with text decoration

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (default gedit) with Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

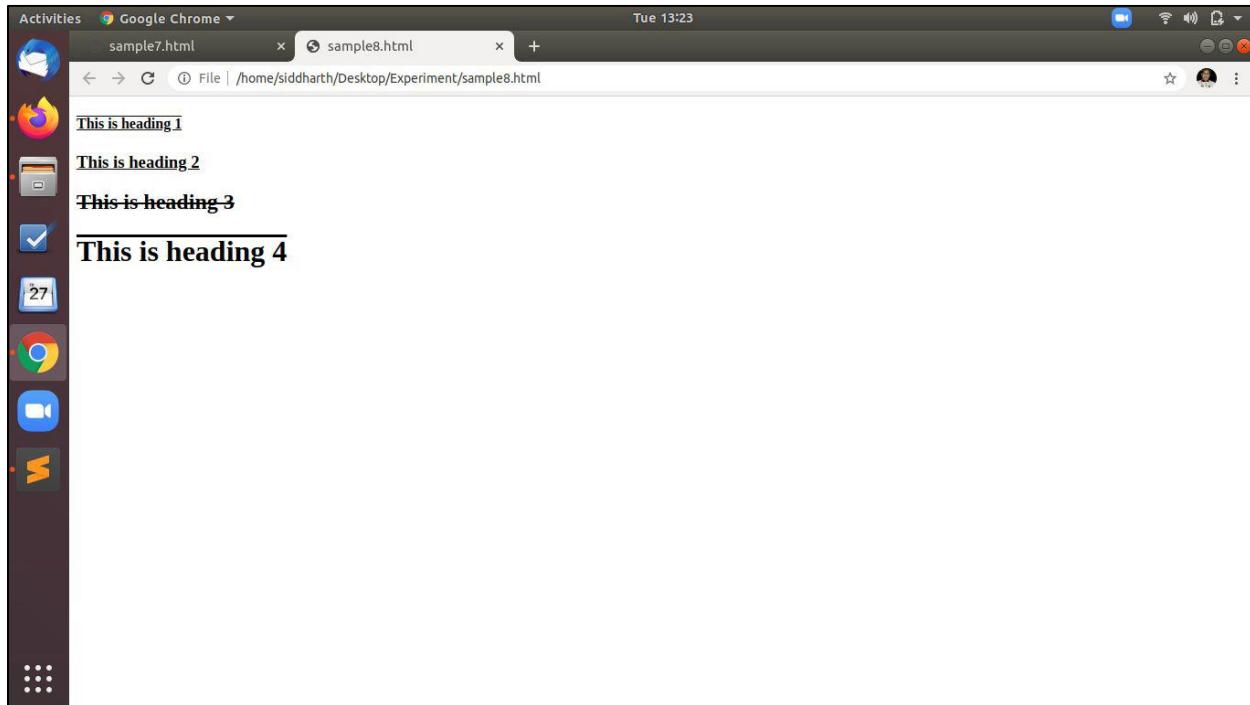
<html>
  <head>
    <style>
      /*setting the text decoration with overline property on h1 tag */
      h1 {
        text-decoration: overline;
      }
      /*setting the text decoration with line-through property on h2 tag */
      h2 {
        text-decoration: line-through;
      }
      /*setting the text decoration with underline property on h3 tag */
      h3 {
        text-decoration: underline;
      }
    </style>
  </head>
  <body>
    <h1>Hello World!</h1>
    <h2>This is a heading</h2>
    <h3>This is a heading</h3>
  </body>
</html>
```

```
/*setting the text decoration with overline & underline property on  
h4 tag */
```

```
h4 {  
    text-decoration: underline overline; }  
  
</style>  
  
</head>  
  
<body>  
  
    <h4>This is heading 1</h4>  
  
    <h3>This is heading 2</h3>  
  
    <h2>This is heading 3</h2>  
  
    <h1>This is heading 4</h1>  
  
</body>  
  
</html>
```

Output/Results snippet

Decorate heading with line-through property.



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 36

Aim: Create CSS document with block elements and objects

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default Gedit or any other) and a Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

    <body>

        <div>Hello</div>

        <div>World</div>

        <p>The DIV element is a block element, and will start on a new line.</p>

        <span>Hello</span>

        <span>World</span>

        <p>The SPAN element is an inline element, and will not start on a new
line.</p>

        <!-- setting the style i.e background color , color , padding with inline css
-->

        <div style="background-color: black; color: white; padding:20px;">

            <h2>London</h2>
```

```
<p>London is the capital city of England. It is the most populous city in the United Kingdom, with a metropolitan area of over 13 million inhabitants.</p>
```

```
<p>Standing on the River Thames, London has been a major settlement for two millennia.</p>
```

```
</div>
```

```
<!-- setting the style i.e color with inline css -->
```

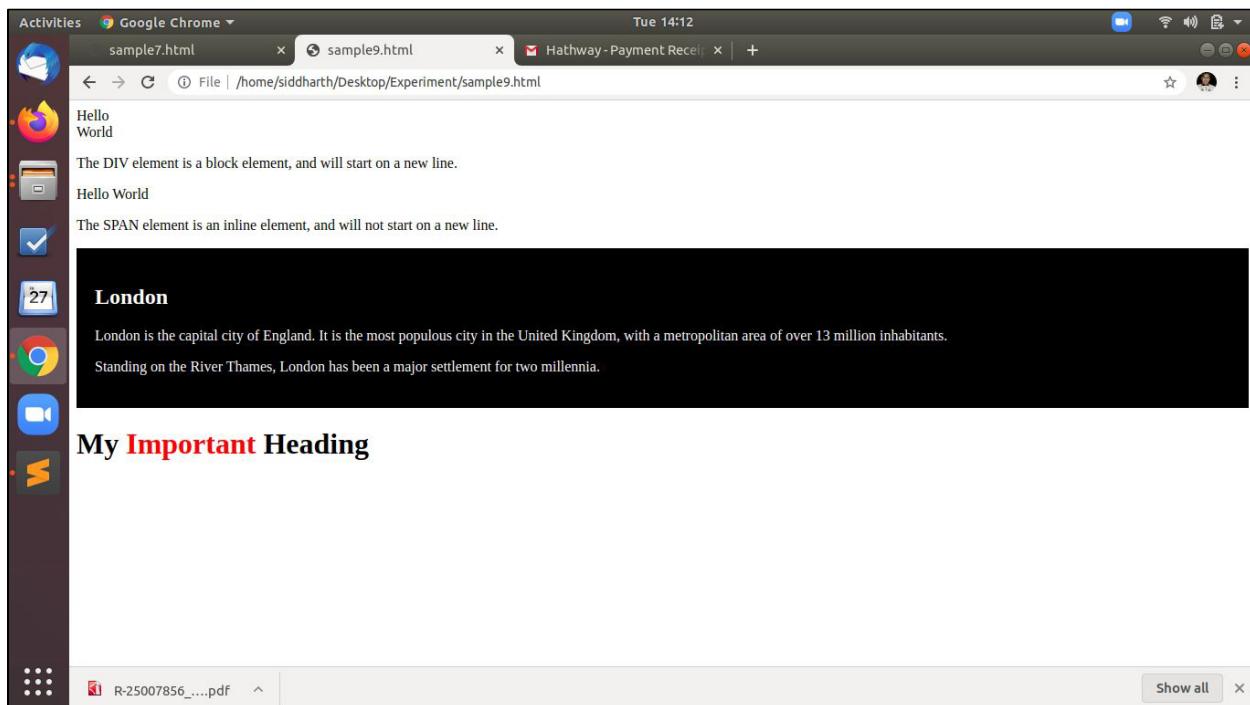
```
<h1>My <span style="color:red">Important</span> Heading</h1>
```

```
</body>
```

```
</html>
```

Output/Results snippet

Design of a web page using div , span and CSS.



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 37

Aim: Create Lists and Tables

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
2. Editor (Default Gedit or any other) and a Browser

Code/Program/Procedure (with comments):

```
<html>
  <head>
    <style>
      /*setting the list style type of class a */
      ul.a {
        list-style-type: circle;
      }
      /*setting the list style type of class b */
      ul.b {
        list-style-type: square;
      }
      /*setting the list style type of class c */
      ol.c {
        list-style-type: upper-roman;
      }
    </style>
  </head>
  <body>
    <ul class="a">
      <li>Item A1</li>
      <li>Item A2</li>
    </ul>
    <ul class="b">
      <li>Item B1</li>
      <li>Item B2</li>
    </ul>
    <ol class="c">
      <li>Item C1</li>
      <li>Item C2</li>
    </ol>
  </body>
</html>
```

```
/*setting the list style type of class d */
ol.d {
    list-style-type: lower-alpha;
}

/*setting the border collapse and width of table */
table {
    border-collapse: collapse;
    width: 100%;
}

/*setting alignment and padding of table heading and table data */
th, td {
    text-align: left;
    padding: 8px;
}

/*setting the background color property of table row */
tr:nth-child(even) {background-color: #f2f2f2; }

</style>
</head>

<body>
    <p>Example of unordered lists:</p>
    <ul class="a">
        <li>Coffee</li>
        <li>Tea</li>
    
```

```
<li>Coca Cola</li>
</ul>

<ul class="b">
    <li>Coffee</li>
    <li>Tea</li>
    <li>Coca Cola</li>
</ul>

<p>Example of ordered lists:</p>

<ol class="c">
    <li>Coffee</li>
    <li>Tea</li>
    <li>Coca Cola</li>
</ol>

<ol class="d">
    <li>Coffee</li>
    <li>Tea</li>
    <li>Coca Cola</li>
</ol>

<h2>Striped Table</h2>

<p>For zebra-striped tables, use the nth-child() selector and add a background-color to all even (or odd) table rows:</p>

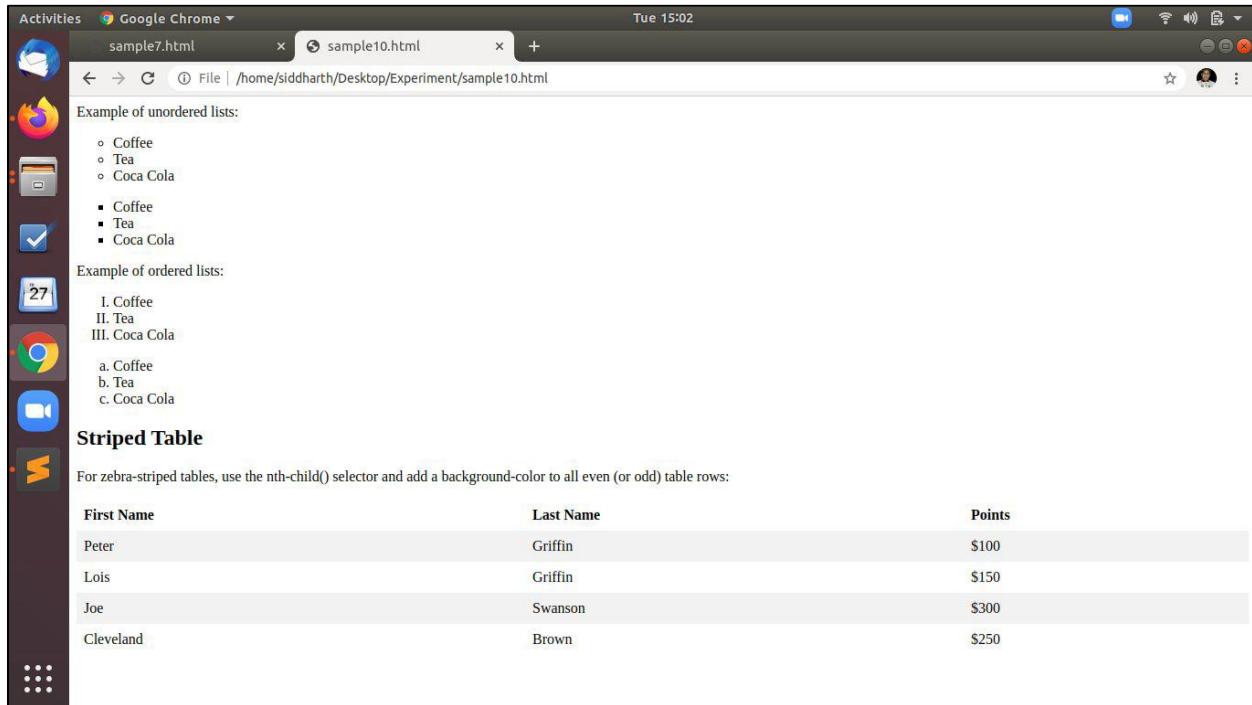
<table>
    <tr>
        <th>First Name</th>
```

Last Name	Points
Peter	Griffin
Lois	Griffin
Joe	Swanson
Cleveland	Brown

```
</table>  
</body>  
  
</html>
```

Output/Results snippet

Designing of List and Tables using CSS.



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Activity 38

Aim: Create Box Model by using borders, Padding and Margin

Learning outcome: Able to create style of web pages using CSS.

Duration: 1 hour

List of Hardware/Software requirements:

3. Laptop/Computer with Linux OS - Ubuntu 18.04 LTS
4. Editor (Default Gedit or any other) and a Browser

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html>

    <head>

        <style>

            /*setting border padding and margin property */

            div {

                background-color: lightgrey;

                width: 300px;

                border: 25px solid green;

                padding: 25px;

                margin: 25px; }

        </style>

    </head>

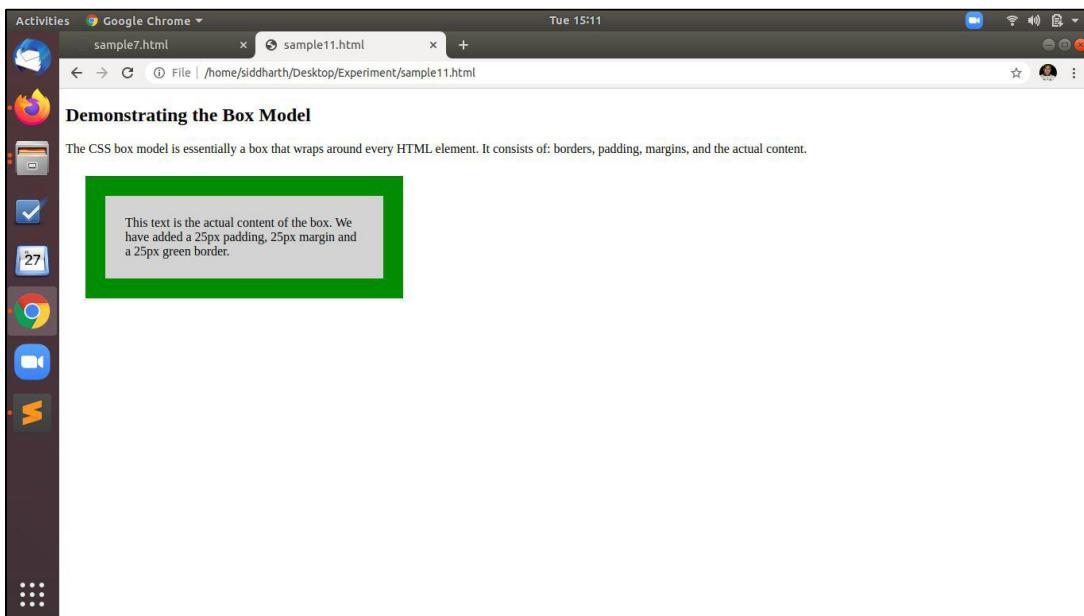
    <body>

        <h2>Demonstrating the Box Model</h2>
```

```
<p>The CSS box model is essentially a box that wraps around every  
HTML element. It consists of: borders, padding, margins, and the actual  
content.</p>  
  
<div>This text is the actual content of the box. We have added a 25px  
padding, 25px margin and a 25px green border.</div>  
  
</body>  
  
</html>
```

Output/Results snippet

Created a Box with border and color.



References:

- https://www.w3schools.com/html/html_intro.asp
- <https://www.tutorialspoint.com/css/index.htm>
- <https://www.javatpoint.com/css-tutorial>

Learning Outcome - After completing this module, the student should be able to understand JavaScript

To meet the learning outcome, a student has to complete the following activities

1. Write a JavaScript function that reverse a number. (30 mins)
2. Write a JavaScript function that returns a passed string with letters in alphabetical order. (30 mins)
3. Write a JavaScript function that accepts a string as a parameter and counts the number of vowels within the string. (1 hr)
4. Write a JavaScript function that accepts a string as a parameter and converts the first letter of each word of the string in upper case. (1 hr)
5. Write a JavaScript program to calculate number of days left until next Christmas. (1 hr)
6. Write a JavaScript conditional statement to find the sign of product of three numbers. Display an alert box with the specified sign.
Sample numbers : 3, -7, 2
Output : The sign is - (1 hr)
7. Write a simple JavaScript program to join all elements of the following array into a string.
Expected Output : "Red,Green,White,Black"
"Red,Green,White,Black"
"Red+Green+White+Black" (1 hr)
8. Write a JavaScript function to check whether an `input` is an array or not.(1 hr)
9. Write a JavaScript function to clone an array.
Test Data : [1, 2, 4, 0]
[1, 2, [4, 0]] (1 hr)
10. Write a JavaScript program to sort the items of an array.
Sample array : var arr1 = [3, 8, 7, 6, 5, -4, 3, 2, 1];

Sample Output : -4,-3,1,2,3,5,6,7,8 (1 hr)

11. Write a JavaScript program to display the colors in the following way :

Here is the sample array:

```
color = ["Blue ", "Green", "Red", "Orange", "Violet", "Indigo", "Yellow "];  
o = ["th","st","nd","rd"]
```

Output : "1st choice is Blue ."

 "2nd choice is Green."

 "3rd choice is Red." (2 hr)

12. Create the following four functions in a separate JavaScript file. Also create a separate HTML file to test the functions.

- Create a function that uses an alert to display the hostname of the current URL when the button is clicked.
- Create a function to display a confirmation box with the message "Are you human?", and output what the user clicked
- Display a prompt box which asks the user for her/his name, store the user's response in person, and output a message; "Hello " + person + "! How are you today?
- Use the switch statement together with prompt () to execute a block of code based on user input. Click the button to display a dialog box which will ask for the user's favourite drink. (3 Hrs)

13. Write a JavaScript function to remove specified number of characters from a string.

(1 Hr)

14. Develop and demonstrate a HTML5 file that includes JavaScript script that uses functions for the following problems:

a. Parameter: A string

Output: The position in the string of the left-most vowel

b. Parameter: A number

Output: The number with its digits in the reverse order (2 Hrs)

15. Write a JavaScript code that displays text “TEXT-GROWING” with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays “TEXT-SHRINKING” in BLUE color. Then the font size decreases to 5pt. (3 Hrs)

16. Create a Tip Calculator as a single page web application (SPA). Design an interface that allows you to enter the amount of the tip. The percentage you would like to tip, and the

number of people to split the tip with. Do not use 3 text input elements! Calculate and dynamically display the tip. (3 Hrs)

17. Write a JavaScript function to validate whether a given value is object or not. (1 Hr)
18. Write a JavaScript function to validate whether a given value type is pure json object or not. (1 Hr)
19. Write a JavaScript program to count number of words in string.
Note :
Remove white-space from start and end position.
Convert 2 or more spaces to 1.
Exclude newline with a start spacing. (3 Hrs)
20. Write a JavaScript function to check a given value contains alpha, dash and underscore. (1 Hr)
21. Write a JavaScript function to check whether a given value represents a domain or not.
Write a JavaScript function to check whether a given value is html or not. (1 Hr)

Activity 1

Aim: Write a JavaScript function that reverse a number.

Learning outcome: Able to understand JavaScript

Duration: 30 min

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

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

<title>Program 1</title>

</head>

<body>

<input type="number" id="input_number" placeholder="Enter the number">

<input type="button" value="Find" id="input_button" >

<script>
```

```
//with build in function

function findReverse(){

    let number = Number(document.getElementById("input_number").value);

    let reverse = Number(String(number).split("").reverse().join(""));

    alert("Reverse : "+reverse);

}

let button=document.getElementById("input_button");

button.onclick=findReverse;

//without build in funtion

let rev = 0;

let num = 123456;

let lastDigit;

while(num != 0){
```

```
lastDigit = num % 10;  
  
rev = rev * 10 + lastDigit;  
  
num = Math.floor(num/10);  
  
}  
  
  
console.log("Reverse number : "+rev);  
  
</script>  
  
</body>  
  
</html>
```

Output:

Reverse number : 654321

Activity 2

Aim: Write a JavaScript function that returns a passed string with letters in alphabetical order.

Learning outcome: Able to understand JavaScript

Duration: 30 min

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Program 2</title>

</head>

<body>

    <script>

        function alpha(str) {

            var arr = str.split(""); // splits the string
```

```
res = arr.sort().join(""); // sort the array and joins to form a string

return res; // returns the result

}

console.log("taking geeksforgeeks as a string");

console.log(alpha("geeksforgeeks"));

</script>

</body>

</html>
```

Output:

taking geeksforgeeks as a string

eeeefggkkorss

taking geeksforgeeks as a string

eeeefggkkorss

Activity 3

Aim: Write a JavaScript function that accepts a string as a parameter and counts the number of vowels within the string.

Learning outcome: Able to understand JavaScript

Duration: 1 Hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Program 1</title>

</head>

<body>

    <script>

        function vowel_count(str1)

    {
```

```
var vowel_list = 'aeiouAEIOU';

var vcount = 0;

for(var x = 0; x < str1.length ; x++)

{

if (vowel_list.indexOf(str1[x]) !== -1)

{

vcount += 1;

}

}

return vcount;

}

console.log(vowel_count("The quick brown fox"));

</script>

</body>

</html>
```

Output:

Activity 4

Aim: Write a JavaScript function that accepts a string as a parameter and converts the first letter of each word of the string in upper case.

Learning outcome: Able to understand JavaScript

Duration: 1 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

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

<title>Program 1</title>

</head>

<body>

<script>
```

```
function uppercase(str){  
    var array1 = str.split(' ');\n    var newarray1 = [];\n\n    for(var x = 0; x < array1.length; x++){\n        newarray1.push(array1[x].charAt(0).toUpperCase()+array1[x].slice(1));\n    }\n\n    return newarray1.join(' ');\n}  
  
console.log(uppercase("the quick brown fox"));  
  
</script>  
</body>  
</html>
```

Output

The Quick Brown Fox

Activity 5

Aim: Write a JavaScript program to calculate number of days left until next Christmas.

Learning outcome: Able to understand JavaScript

Duration: 1 Hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Program 1</title>

</head>

<body>

    <script>

        today=new Date();

        //Get the date of next Christmas
        var nextChristmas = new Date("December 25, 2024");

        //Calculate the difference between the two dates
        var diff = nextChristmas - today;

        //Get the total number of milliseconds in a day
        var days = diff / (1000 * 60 * 60 * 24);

        //Output the result
        document.write("There are " + days + " days left until next Christmas.");
    </script>
</body>
</html>
```

```
var cmas=new Date(today.getFullYear(), 11, 25);

if (today.getMonth()==11 && today.getDate()>25)

{

cmas.setFullYear(cmas.getFullYear()+1);

}

var one_day=1000*60*60*24;

console.log(Math.ceil((cmas.getTime()-today.getTime())/(one_day))+

" days left until Christmas!");

</script>

</body>

</html>
```

Output

294 days left until Christmas!

Activity 6

Aim: Write a JavaScript conditional statement to find the sign of product of three numbers. Display an alert box with the specified sign. Sample numbers: 3, -7, 2 Output: The sign is –

Learning outcome: Able to understand JavaScript

Duration: 1 hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

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

<title>Program 1</title>

</head>

<body>

<script>
```

```
var x=3;  
  
var y=-7;  
  
var z=2;  
  
if (x>0 && y>0 && z>0)  
  
{  
  
    alert("The sign is +");  
  
}  
  
else if (x<0 && y<0 && z<0)  
  
{  
  
    console.log("The sign is -");  
  
}  
  
else if (x>0 && y<0 && z<0)  
  
{  
  
    console.log("The sign is +");  
  
}  
  
else if (x<0 && y>0 && z<0)  
  
{  
  
    console.log("The sign is +");  
  
}  
  
else
```

```
{  
  
    console.log("The sign is -");  
  
}  
  
</script>  
  
</body>  
  
</html>
```

Output

The sign is –

Activity 7

Aim: Write a simple JavaScript program to join all elements of the following array into a string.

Expected Output : "Red,Green,White,Black" "Red,Green,White,Black"
"Red+Green+White+Black"

Learning outcome: Able to understand JavaScript

Duration: 1 hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Program 1</title>

</head>

<body>

    <script>
```

```
myColor = ["Red", "Green", "White", "Black"];  
  
console.log(myColor.toString());  
  
console.log(myColor.join());  
  
console.log(myColor.join('+'));  
  
</script>  
  
</body>  
  
</html>
```

Output

Red,Green,White,Black
Red,Green,White,Black
Red+Green+White+Black

Activity 8

Aim: Write a JavaScript function to check whether an `input` is an array or not.

Learning outcome: Able to understand JavaScript

Duration: 1 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Program 1</title>

</head>

<body>

    <script>

        var is_array = function(input) {

            if (toString.call(input) === "[object Array]")

```

```
return true;

return false;

};

console.log(is_array('w3resource'));

console.log(is_array([1, 2, 4, 0]));

</script>

</body>

</html>
```

Output

False

True

Activity 9

Aim: Write a JavaScript function to clone an array. Test Data : [1, 2, 4, 0] [1, 2, [4, 0]]

Learning outcome: Able to understand JavaScript

Duration: 1 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Program 1</title>

</head>

<body>

    <script>

        var array_Clone = function(arr1) {
```

```
return arra1.slice(0);

};

console.log(array_Clone([1, 2, 4, 0]));

console.log(array_Clone([1, 2, [4, 0]]));

</script>

</body>

</html>
```

Output

[1,2,4,0]

[1,2,[4,0]]

Activity 10

Aim: Write a JavaScript program to sort the items of an array. Sample array : var arr1 = [3, 8, 7, 6, 5, -4, 3, 2, 1]; Sample Output : -4,-3,1,2,3,5,6,7,8

Learning outcome: Able to understand JavaScript

Duration: 1 Hrs

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Program 1</title>

</head>

<body>

    <script>

        var arr1=[-3,8,7,6,5,-4,3,2,1];

    </script>

</body>
```

```
var arr2=[];

var min=arr1[0];

var pos;

var max=arr1[0];

for (i=0; i<arr1.length; i++)

{

    if (max<arr1[i]) max=arr1[i];

}

for (var i=0;i<arr1.length;i++)

{

    for (var j=0;j<arr1.length;j++)

    {

        if (arr1[j]!="x")

        {

            if (min>arr1[j])

            {

                min=arr1[j];

                pos=j;

            }

        }

    }

}
```

```
        }  
  
    }  
  
    arr2[i]=min;  
  
    arr1[pos]="x";  
  
    min=max;  
  
}  
  
console.log(arr2);  
  
</script>  
  
</body>  
  
</html>
```

Output

[-4, -3, 1, 2, 3, 5, 6, 7, 8]

Activity 11

Aim: Write a JavaScript program to display the colors in the following way : Here is the sample array: color = ["Blue ", "Green", "Red", "Orange", "Violet", "Indigo", "Yellow "]; = ["th","st","nd","rd"] Output "1st choice is Blue ." "2nd choice is Green." "3rd choice is Red."

Learning outcome: Able to understand JavaScript

Duration: 2 hr

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Code/Program/Procedure (with comments):

```
<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Program 1</title>

</head>

<body>

    <script>

        var color = ["Blue ", "Green", "Red", "Orange", "Violet", "Indigo", "Yellow "];

    </script>

```

```
function Ordinal(n)

{
    var o = ["th", "st", "nd", "rd"],

    x = n%100;

    return x+(o[(x-20)%10]||o[x]||o[0]);
}

for(n = 0; n < color.length; n++){

    var ordinal = n + 1;

    var output = (Ordinal(ordinal) + " choice is " + color[n] + ".");

    console.log(output);
}

</script>

</body>

</html>
```

Output

1st choice is Blue .

2nd choice is Green.

3rd choice is Red.

4th choice is Orange.

5th choice is Violet.

6th choice is Indigo.

7th choice is Yellow .

Activity 12

Aim: Create the following four functions in a separate JavaScript file. Also create a separate HTML file to test the functions.

- a) Create a function that uses an alert to display the hostname of the current URL when the button is clicked.
- b) Create a function to display a confirmation box with the message "Are you human?", and output what the user clicked
- c) Display a prompt box which asks the user for her/his name, store the user's response in person, and output a message; "Hello " + person + "! How are you today?
- d) Use the switch statement together with prompt () to execute a block of code based on user input. Click the button to display a dialog box which will ask for the user's favourite drink.

Learning outcome: Able to understand JavaScript

Duration: 3 Hours

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">

<head>                                <! -- Document Head Starts -->

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>JS_Alert</title>

</head>                                <! -- Document Head Ends -->
```

```
<body>                                <! -- Document Body Starts -->

    <h1>The Window Object</h1>

    <h2>The alert() Method</h2>

    <p>Click the button to alert the hostname of the current URL.</p>      <!--Paragraph Element-->

        <button id="inp" style="color:red;font-weight: bold; border:2px solid blue;">Location</button>

        <script>                                //Javascript Starts

            function disp()  {

                window.alert(location.hostname);

                window.alert(location.pathname));

            }

            let button=document.getElementById("inp");

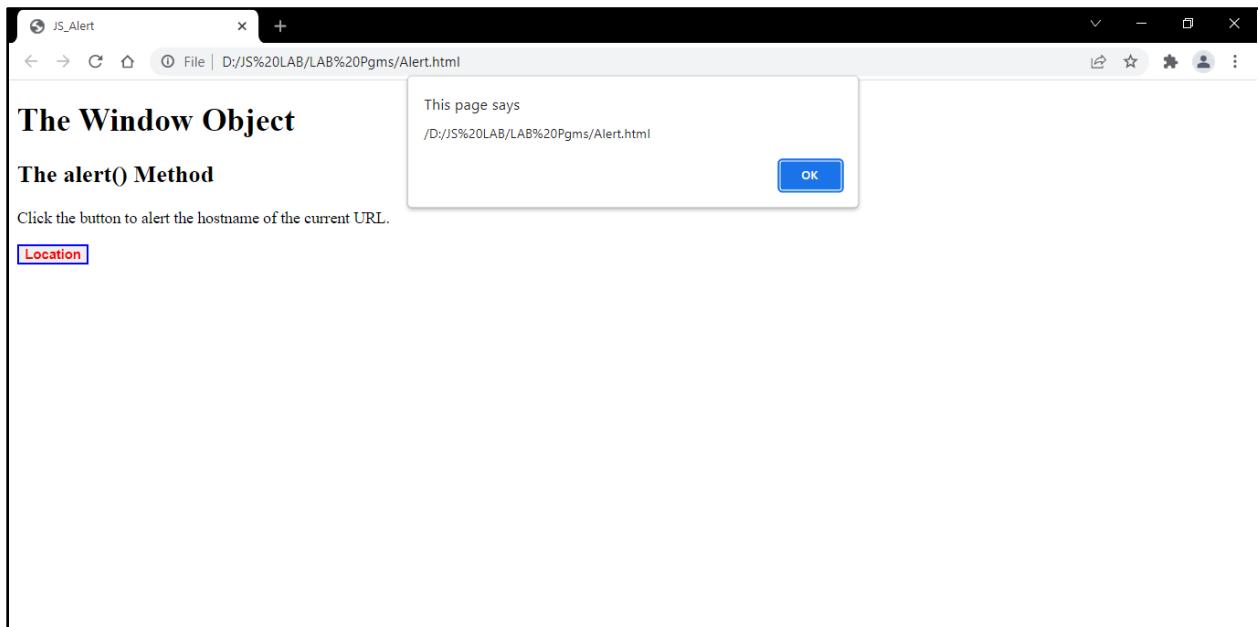
            button.onclick=disp;

        </script>                                //Javascript Ends

    </body>                                <! -- Document Body Ends -->

</html>
```

Output:



Program:

```
<!DOCTYPE html>

<html lang="en">
    <head>          <! -- Document Head Starts -->

        <meta charset="UTF-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title>JS_Confirm</title>

    </head>          <! -- Document Head Ends -->
```

```

<body>                                <! -- Document Body Starts -->

    <h1>The Window Object</h1>

    <h2>The confirm() Method</h2>

    <p>Click the button to display a confirm box</p> >   <!--Paragraph Element-->

    <button id="inp" style="color:red;font-weight: bold; border:2px solid blue;">Confirm</button>

    <p id="demo" style="background-color:yellow;color:red;display:inline;"></p>

    <script>                                //Javascript Starts

        function result()

        {

            let text;

            if (confirm("Press a button!")) == true) {

                text = "Are you Human?";

            } else

            {

                text = "You canceled!";

            }

            document.getElementById("demo").innerHTML = text;

        }

        let button=document.getElementById("inp");

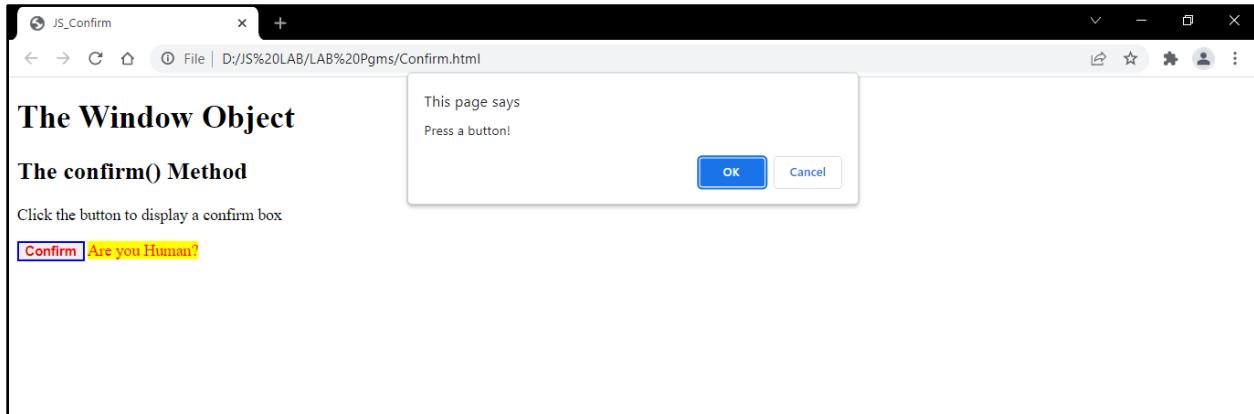
        button.onclick=result;

    </script>                                //Javascript Ends

</body>                                <! -- Document Body Ends -->

</html>

```

Output:**Program:**

```
<!DOCTYPE html>

<html lang="en">
    <head>          <!-- Document Head Starts -->

        <meta charset="UTF-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title>JS_Prompt</title>

    </head>          <!-- Document Head Ends -->

    <body>          <!-- Document Body Starts -->

        <h1>The Window Object</h1>
        <h2>The prompt() Method</h2>
        <p>Click the button to demonstrate the prompt box.</p>>      <!--Paragraph Element-->
```

```
<button id="inp" style="color:red;font-weight: bold; border:2px solid blue;">Click</button>

<p id="demo" style="background-color:yellow;color:red;display:inline;"></p>

<script>                                //Javascript Starts

function dispname()

{

let person = prompt("Please enter your name", "Harry");

if (person != null) {

    document.getElementById("demo").innerHTML ="Hello " + person + "! How are you today?";

}

}

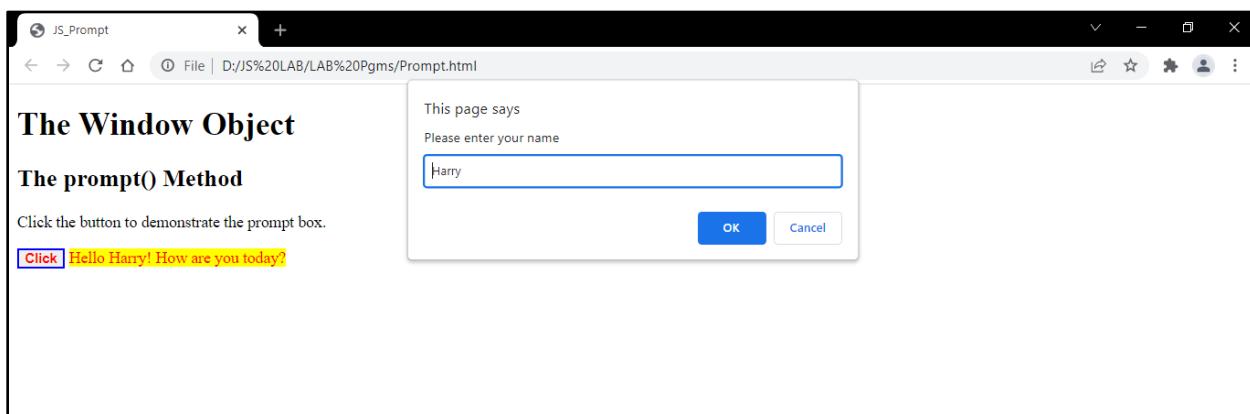
let button=document.getElementById("inp");

button.onclick=dispname;

</script>                                //Javascript Ends

</body>                                <! -- Document Body Ends -->

</html>
```

Output:

Program:

```
<!DOCTYPE html>

<html lang="en">

<head>                                <!-- Document Head Starts -->

    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>JS_SwitchPrompt</title>

</head>                                <!-- Document Head Ends -->

<body>                                <!-- Document Body Starts -->

    <h1>The Window Object</h1>
    <h2>The prompt() Method</h2>
    <p>Click the button to ask for your favorite drink</p>>  <!--Paragraph Element-->

    <button id="inp" style="color:red;font-weight: bold; border:2px solid blue;">Fav
Drink</button>

    <p id="demo" style="background-color:yellow;color:red; display:inline;"></p>

    <script>                                //JavaScript Starts

        function favdrink()
        {
            let text;
```

```
let favDrink = prompt("What's your favorite drink?", "Coca-Cola");

switch(favDrink) {

    case "Coca-Cola":
        text = "Excellent choice. Coca-Cola is good for your soul.";
        break;

    case "7up":
        text = "7up is my favorite too!";
        break;

    case "Sprite":
        text = "Really? Are you sure the Sprite is your favorite?";
        break;

    default:
        text = "I have never heard of that one..";

}

document.getElementById("demo").innerHTML = text;

}

let button=document.getElementById("inp");

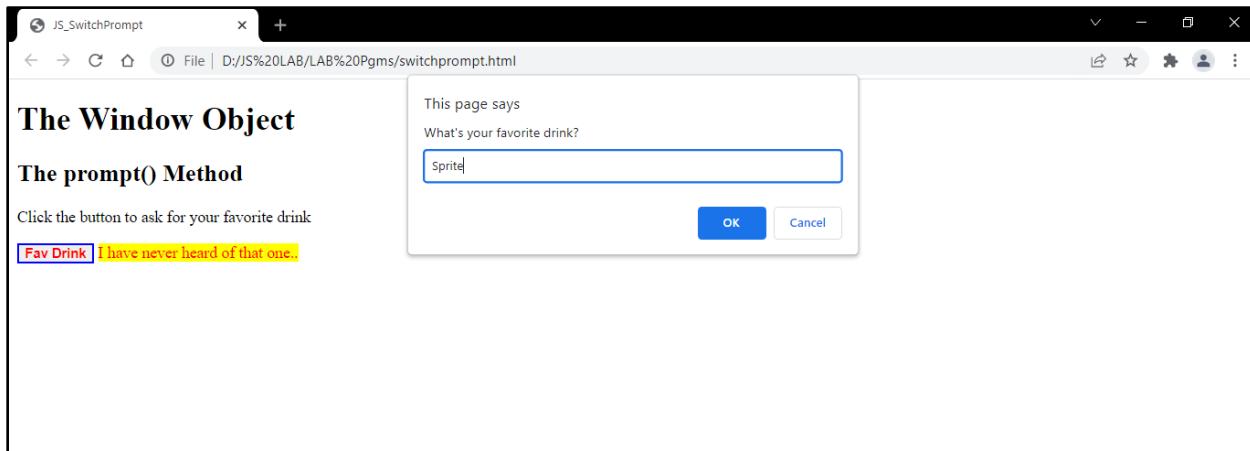
button.onclick=favdrink;

</script>                                //Javascript Ends

</body>                                     <! -- Document Body Ends -->

</html>
```

Output:



References:

- https://www.w3schools.com/jsref/met_win_alert.asp
- https://www.w3schools.com/jsref/met_win_prompt.asp

Activity 13

Aim: Write a JavaScript function to remove specified number of characters from a string.

Learning outcome: Able to understand JavaScript

Duration: 1 Hour

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">

<head>                                <! -- Document Head Starts -->

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>Remove Characters</title>

</head>                                <! -- Document Head Ends -->

<body>                                    <! -- Document Body Starts -->

    <p>JavaScript function to remove specified number of characters from a string</p>>

    <!--Paragraph Element-->

<script>                                //Javascript Starts

truncate_string = function (str1, length) {
```

```
if ((str1.constructor === String) && (length>0)) {  
    return str1.slice(0, length);  
}  
};  
  
var nofcar=4;  
  
document.write(truncate_string("Programming",nofcar));  
  
</script> //Javascript Ends  
  
</body> <! -- Document Body Ends -->  
  
</html>
```

Output:



References:

- <https://www.w3resource.com/javascript-exercises/javascript-string-exercise-4.php>

Activity 14

Aim: Develop and demonstrate a HTML5 file that includes JavaScript script that uses functions for the following problems:

- a. Parameter: A string

Output: The position in the string of the left-most vowel

- b. Parameter: A number

Output: The number with its digits in the reverse order

Learning outcome: Able to understand JavaScript

Duration: 2 Hours

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">

<head>                                <! -- Document Head Starts -->

    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Demons-Number & String</title>

</head>                                <! -- Document Head Ends -->

<body>                                    <! -- Document Body Starts -->
```

<p style="color:blue;">Develop and demonstrate a HTML5 file that includes JavaScript script that uses functions for the following problems:

a. Parameter: A string

Output: The position in the string of the left-most vowel

b. Parameter: A number

</p>

```
<script> //Javascript Starts

var str = prompt("Enter the Input", "");

if(!(isNaN(str)))

{

var num,rev=0,remainder;

num = parseInt(str);

while(num!=0) {

remainder = num%10;

num = parseInt(num/10);

rev = rev * 10 + remainder;

}

alert("Reverse of "+str+" is "+rev);

}

else

{

for(var i = 0; i<str.length; i++)

{

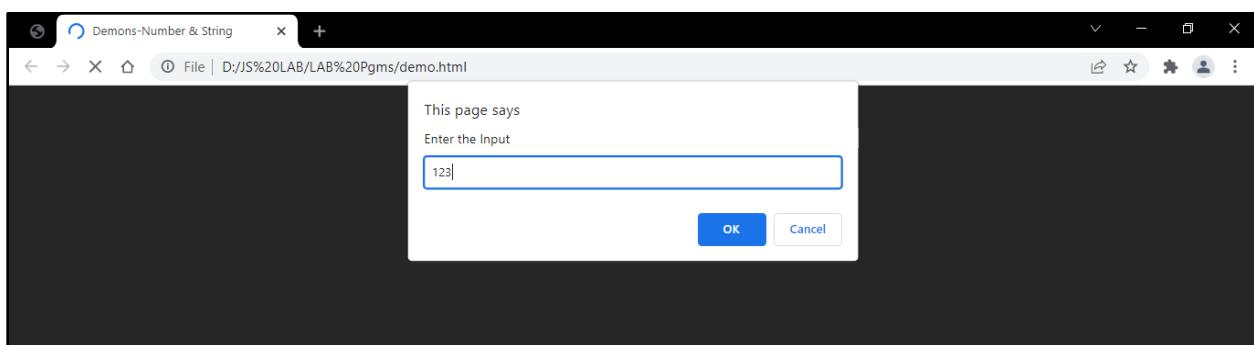
if (str.charAt(i) =='a' || str.charAt(i) == 'e' || str.charAt(i) =='i'
```

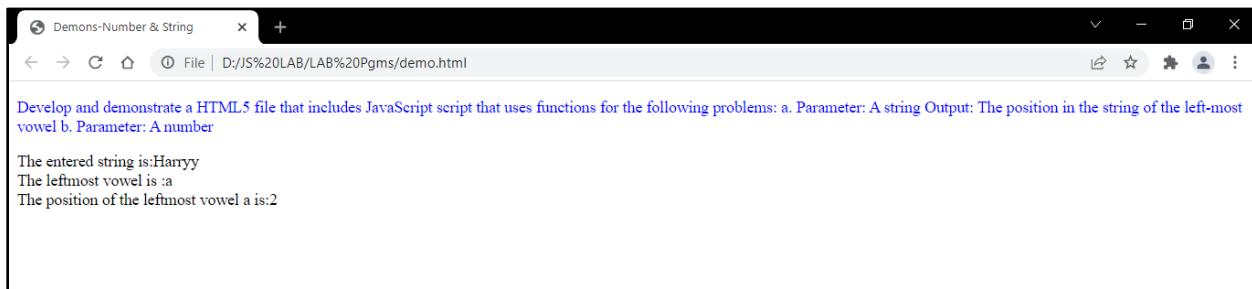
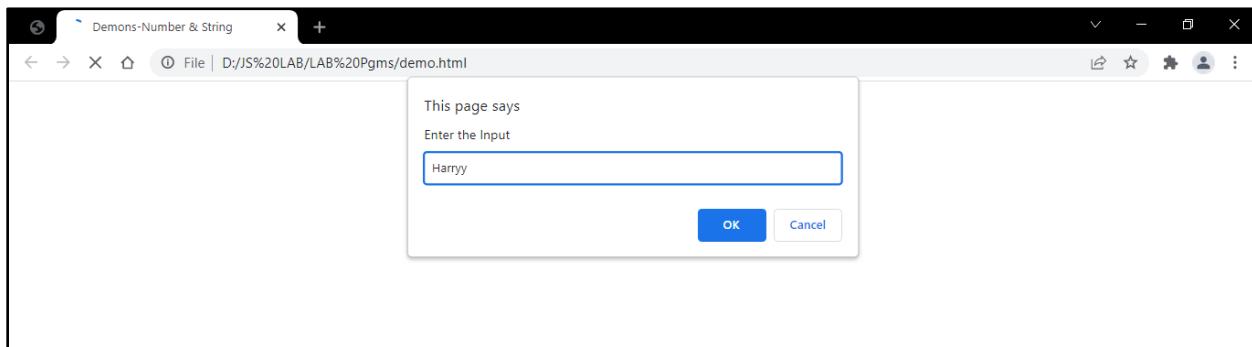
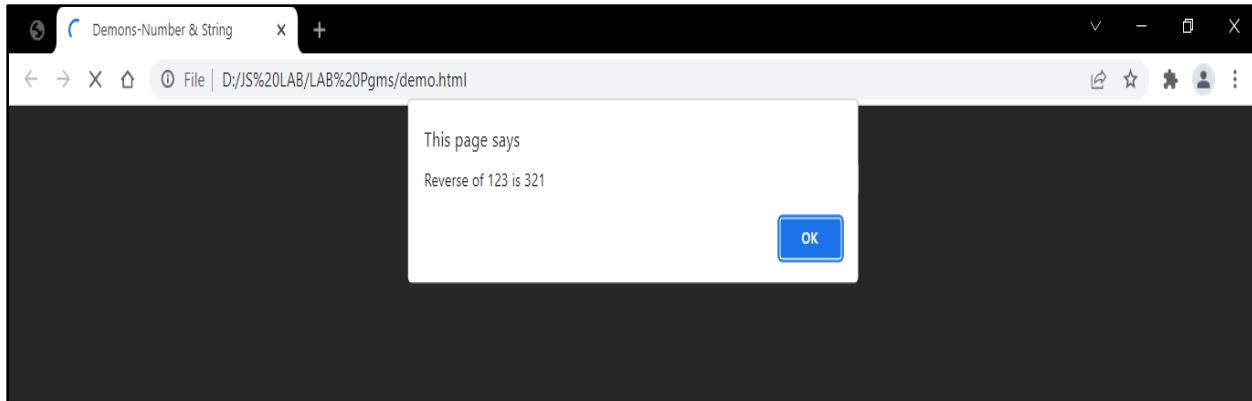
```
|| str.charAt(i) == 'o' || str.charAt(i) == 'u' || str.charAt(i) == 'A' ||
str.charAt(i) == 'E' || str.charAt(i) == 'I' || str.charAt(i) == 'O' || str.charAt(i) == 'U')
{
    document.write("The entered string is:" +str+ "<br/>");
    document.write("The leftmost vowel is :" +str.charAt(i)+ "<br/>");
    var pos = i+1;
    document.write("The position of the leftmost vowel " +str.charAt(i)+ " is:" +pos+"\n");
    exit;
}
document.write("The entered string is:" + str + "<br/>");
document.write("The entered string has no vowels");
}

</script> //Javascript Ends

</body> <! -- Document Body Ends -->

</html>
```

Output:



References:

- <https://vtucselabs.blogspot.com/2019/08/wt4.html>

Activity 15

Aim: Write a JavaScript code that displays text “TEXT-GROWING” with increasing font size in the interval of 100ms in RED COLOR, when the font size reaches 50pt it displays “TEXT-SHRINKING” in BLUE color. Then the font size decreases to 5pt.

Learning outcome: Able to understand JavaScript

Duration: 3 Hours

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">
  <head>                                         <!-- Document Head Starts -->
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Text- Grow & Shrink</title>
    <style>
      p {
        position: absolute;
        top: 50%;
        left: 50%;
        transform: translate(-50%, -50%);
      }
    </style>
  </head>
  <body>
    <p>TEXT-GROWING</p>
    <script>
      let text = document.querySelector('p');
      let size = 5;
      let direction = 'up';
      let interval = setInterval(() => {
        if (direction === 'up') {
          if (size === 50) {
            direction = 'down';
            text.style.color = 'blue';
          } else {
            size += 1;
            text.style.fontSize = `${size}pt`;
            text.style.color = 'red';
          }
        } else {
          if (size === 5) {
            direction = 'up';
            text.style.color = 'red';
          } else {
            size -= 1;
            text.style.fontSize = `${size}pt`;
            text.style.color = 'blue';
          }
        }
      }, 100);
    </script>
  </body>
</html>
```

```
</style>

</head>                                <! -- Document Head Ends -->

<body>                                    <! -- Document Body Starts -->

<h1>Text -Growing & Shrinking</h1>

<p id="demo"></p>

<script>                                //Javascript Starts

var var1 = setInterval(inTimer, 3000);

var fs = 5;

var ids = document.getElementById("demo");

function inTimer() {

ids.innerHTML = 'JS Program';

ids.setAttribute('style', "font-size: " + fs + "px; color: red"); fs += 5;

if(fs >= 50 ){

clearInterval(var1);

var2 = setInterval(deTimer, 2000);

}

}

function deTimer() {

fs -= 5;

ids.innerHTML = 'JS Program';

ids.setAttribute('style', "font-size: " + fs + "px; color: blue"); if(fs === 5 ){

clearInterval(var2);

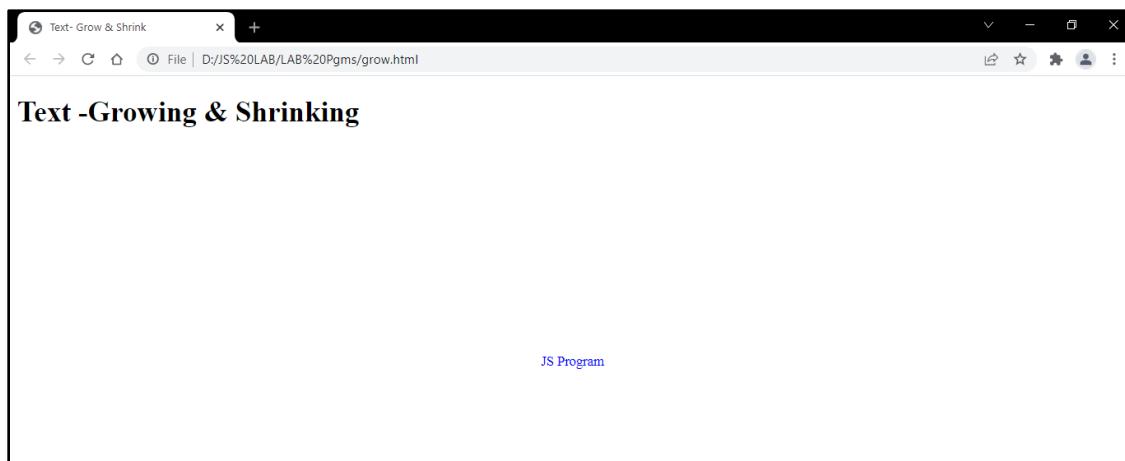
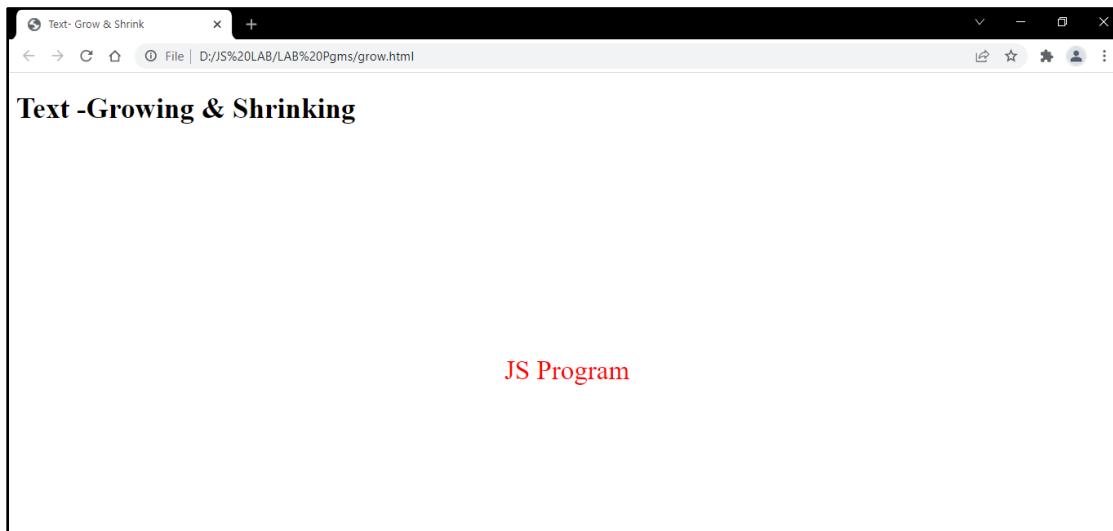
}
```

```
}
```

```
</script> //Javascript Ends
```

```
</body> <! -- Document Body Ends -->
```

```
</html>
```

Output:**References:**

- <https://vtucselabs.blogspot.com/2019/08/wt3.html>

Activity 16

Aim: Create a Tip Calculator as a single page web application (SPA). Design an interface that allows you to enter the amount of the tip. The percentage you would like to tip, and the number of people to split the tip with. Do not use 3 text input elements! Calculate and dynamically display the tip.

Learning outcome: Able to understand JavaScript

Duration: 3 Hours

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">
    <head>                                <!-- Document Head Starts -->
        <meta charset="UTF-8">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <meta http-equiv="X-UA-Compatible" content="ie=edge">
        <title>Document</title>
        <style media="screen">
            *,
            *:before,
            *:after {
                margin: 0;
                padding: 0;
```

```
box-sizing: border-box;  
}  
  
html {  
font-size: 100%;  
}  
  
body {  
width: 100%;  
height: 100vh;  
overflow: hidden;  
display: grid;  
place-items: center;  
background: rgb(12, 141, 195);  
font-family: "Lato", sans-serif;  
font-weight: 400;  
line-height: 1.75;  
}  
  
p {  
margin-bottom: 1rem;  
}  
  
h1{  
background: rgb(11, 108, 161);  
color: white;  
font-size: 27px;
```

```
text-align: center;  
margin-top: -17px;  
margin-left: -17px;  
margin-right: -17px;  
}  
  
.h3 {  
margin: 1.38rem 0;  
font-size: 1.424rem;  
}  
  
#tip-calculator {  
width: 80%;  
max-width: 350px;  
padding: 1rem;  
background: white;  

```

```
border-top: 1px solid hsl(149, 31%, 25%);  
}  
  
label {  
display: block;  
}  
  
  
input[type="number"] {  
width: 100%;  
max-width: 4em;  
background: none;  
border: none;  
font-size: 20px;  
color: rgb(26, 64, 237);  
border-bottom: 1px dashed black;  
  
/* Hide spinners and steppers - Firefox */  
-moz-appearance: textfield;  
}  
  
  
/* Hide spinners and steppers - Chrome, Safari, Edge, Opera */  
input[type="number"]::-webkit-outer-spin-button,  
input[type="number"]::-webkit-inner-spin-button {  
-webkit-appearance: none;
```

```
margin: 0;  
}  
  
#people {  
max-width: 3em;  
}  
  
#percentage {  
-webkit-appearance: none;  
width: 100%;  
margin: 2rem 0;  
height: 10px;  
background: hsl(193, 94%, 34%);  
border-radius: 3px;  
}  
  
  
#percentage::-webkit-slider-thumb {  
-webkit-appearance: none;  
appearance: none;  
width: 30px;  
height: 30px;  
border-radius: 50%;  
border: 2px solid rgb(5, 47, 156);  
background: hsl(255, 14%, 66%);  
cursor: pointer;
```

{

```
#percentage::-moz-range-thumb {  
width: 20px;  
height: 20px;  
background: hsl(149, 31%, 98%);  
border-radius: 50%;  
cursor: pointer;  
}
```

```
</style>  
</head>          <! -- Document Head Ends -->
```

```
<body>           <! -- Document Body Starts -->
```

```
<div id="tip-calculator">  
  <h1>Tip Calculator</h1>  
  
  <form id="form">  
    <label for="bill" class="h3">  
      Bill: $  
      <input type="number" min="0" step="0.01" value="50" name="bill"  
            id="bill" />  
    </label>  
    <label for="people" class="h3">  
      People:
```

```
<input type="number" min="1" step="1" value="1" name="people"
id="people" />

</label>

<label for="percentage" class="h3">
    Tip Percentage:
    <span id="percentage-output"></span>
    <input type="range" min="0" max="100" step="1" value="20"
name="percentage" id="percentage" />
</label>

</form>

<div id="output" class="h3"></div>

</div>

<script type="text/javascript">

// cached elements

const form = document.getElementById("form");

const totalBill = document.getElementById("bill");

const totalPeople = document.getElementById("people");

const tipPercentage = document.getElementById("percentage");

const percentageOutput = document.getElementById("percentage-output");

const output = document.getElementById("output");

// event listeners

form.addEventListener("change", calculateTip);
```

```
tipPercentage.oninput = calculateTip;

// event handlers

function calculateTip() {

    const dollarsPerPerson = (
        (totalBill.value * (tipPercentage.value / 100)) /
        totalPeople.value
    ).toFixed(2);

    displayTip(`${dollarsPerPerson}`);
    displayPercentage();
}

// helper functions

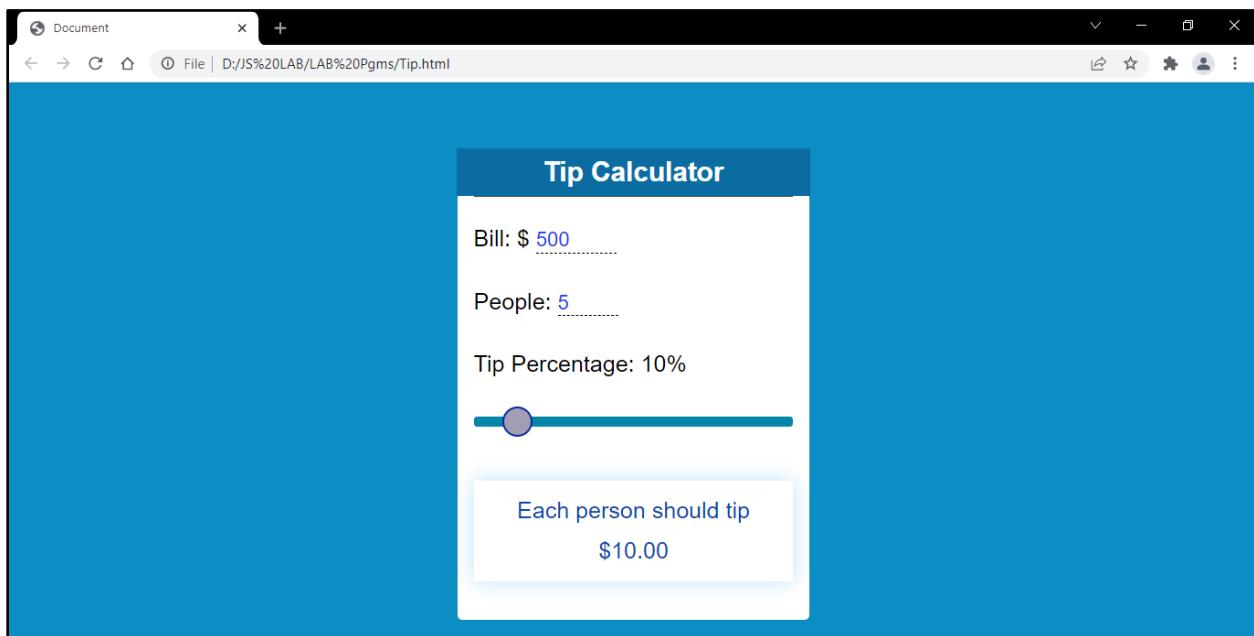
function displayTip(totalPerPerson) {

    output.innerText =
        totalPeople.value > 1
            ? `Each person should tip ${totalPerPerson}`
            : `You should tip ${totalPerPerson}`;
}

function displayPercentage() {

    percentageOutput.innerText = `${tipPercentage.value}%`;
}
```

```
// on load  
  
calculateTip();  
  
</script>                                //Javascript Ends  
</body>                                     <! -- Document Body Ends -->  
</html>
```

Output:**References:**

- <https://www.freecodecamp.org/news/how-to-build-a-tip-calculator-with-html-css-and-javascript/>

Activity 17

Aim: Write a JavaScript function to validate whether a given value is object or not.

Learning outcome: Able to understand JavaScript

Duration: 1 Hour

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">
    <head>                                <! -- Document Head Starts -->

        <meta charset="UTF-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title>JS_Object</title>

    </head>                                <! -- Document Head Ends -->

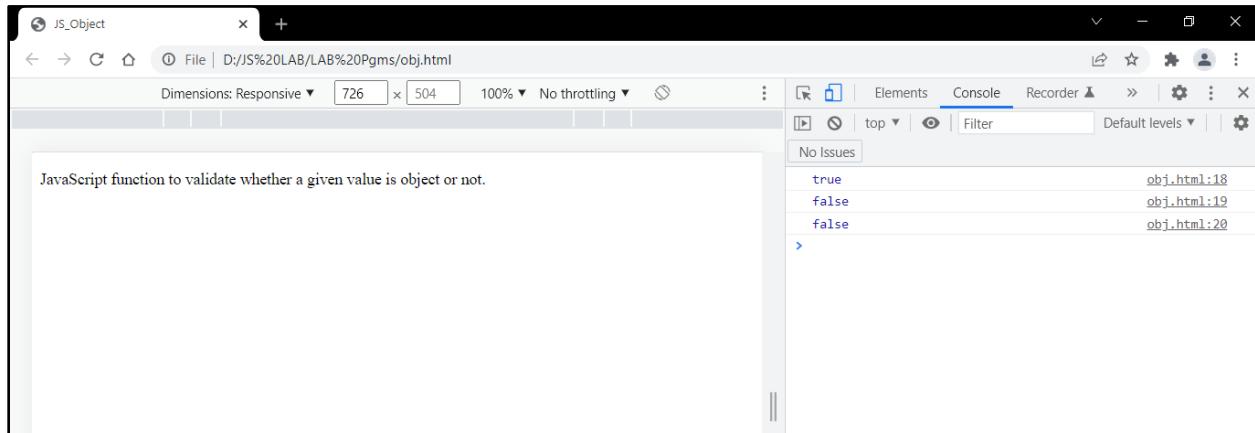
<body>                                    <! -- Document Body Starts -->

    <p>JavaScript function to validate whether a given value is object or not.</p>
    <script>                                //Javascript Starts

        function is_object(value)
    {
```

```
var datatype = typeof value;  
  
return datatype === 'function' || datatype === 'object' && !!value;  
  
}  
  
console.log(is_object({name: 'Robert'}));  
  
console.log(is_object('bar'));  
  
console.log(is_object(72));  
  
</script> //Javascript Ends  
  
</body> <! -- Document Body Ends -->  
  
</html>
```

Output:



References:

- <https://www.w3resource.com/javascript-exercises/validation/javascript-validation-exercise-6.php>

Activity 18

Aim: Write a JavaScript function to validate whether a given value type is pure json object or not

Learning outcome: Able to understand JavaScript

Duration: 1 Hour

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">

<head>                                <! -- Document Head Starts -->

    <meta charset="UTF-8">

    <meta http-equiv="X-UA-Compatible" content="IE=edge">

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

    <title>JS_Json Object</title>

</head>                                <! -- Document Head Ends -->

<body>                                <! -- Document Body Starts -->

    <p>JavaScript function to validate whether a given value type is pure json object or not</p>

    <script>                                //Javascript Starts

        function is_json(value)

        {

            return toString.call(value) === '[object Object]';

        }

    </script>
```

```
}

console.log(is_json({name: 'Robert'}));

console.log(is_json('bar'));

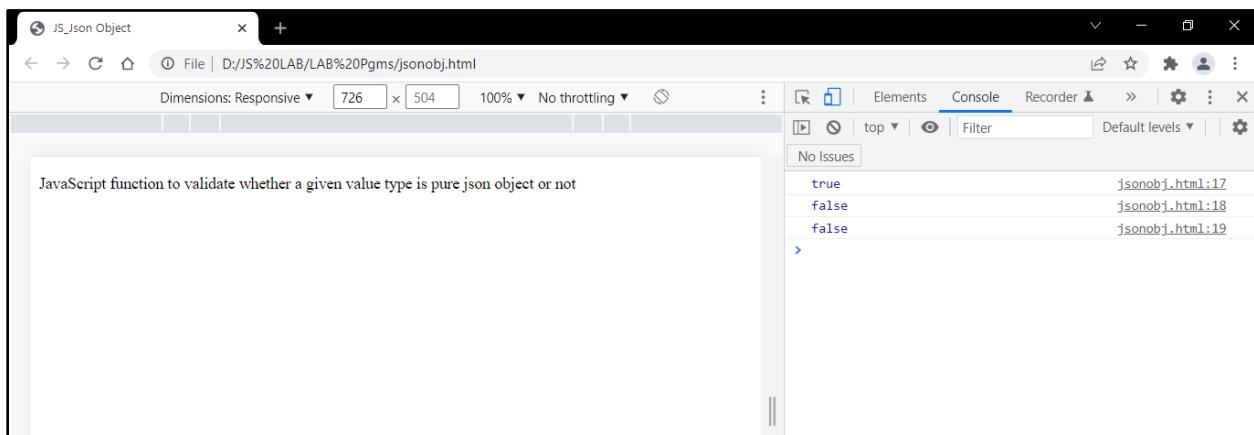
console.log(is_json(72));

</script>                                //Javascript Ends

</body>                                <! -- Document Body Ends -->

</html>
```

Output:



References:

- <https://www.w3resource.com/javascript-exercises/validation/javascript-validation-exercise-7.php>

Activity 19

Aim: Write a JavaScript program to count number of words in string.

Note:

- Remove white-space from start and end position.
- Convert 2 or more spaces to 1.
- Exclude newline with a start spacing.

Learning outcome: Able to understand JavaScript

Duration: 3 Hours

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">
    <head>                                <! -- Document Head Starts -->

        <meta charset="UTF-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title>No of Words</title>

        <style type="text/css">
            body {margin-top: 40px;}
        </style>
```

```
</head>                                <! -- Document Head Ends -->

<body>                                <! -- Document Body Starts -->

<p>Count number of words in a string</p>

<textarea id="InputText" cols="30" rows="4">India is our Country</textarea>

<br>

<input type="button" name="Convert" value="No. of Words" onClick="count_words();">

<input id = "noofwords" type="text" value="" size="6">

<script>                                //Javascript Starts

function count_words()

{
    str1= document.getElementById("InputText").value;

    //exclude start and end white-space

    str1 = str1.replace(/(^|\s*)|(\s*$)/gi,"");

    //convert 2 or more spaces to 1

    str1 = str1.replace(/\s{2,}/gi," ");

    // exclude newline with a start spacing

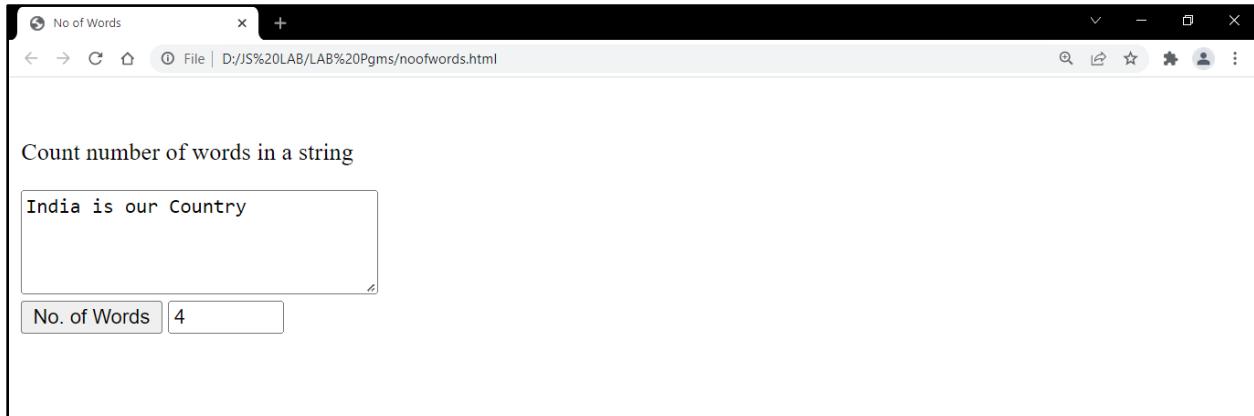
    str1 = str1.replace(/\n /,"\n");

    document.getElementById("noofwords").value = str1.split(' ').length;
}

</script>                                //Javascript Ends

</body>                                <! -- Document Body Ends -->

</html>
```

Output:**References:**

- <https://www.w3resource.com/javascript-exercises/javascript-regexp-exercise-6.php>

Activity 20

Aim: Write a JavaScript function to check a given value contains alpha, dash and underscore.

Learning outcome: Able to understand JavaScript

Duration: 1 Hour

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">
    <head>                    <! -- Document Head Starts -->

        <meta charset="UTF-8">
        <meta http-equiv="X-UA-Compatible" content="IE=edge">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
        <title>Special Character</title>

    </head>                    <! -- Document Head Ends -->

<body>                      <! -- Document Body Starts -->

    <p>JavaScript function to check a given value contains alpha, dash and underscore</p>

    <script>                  //Javascript Starts

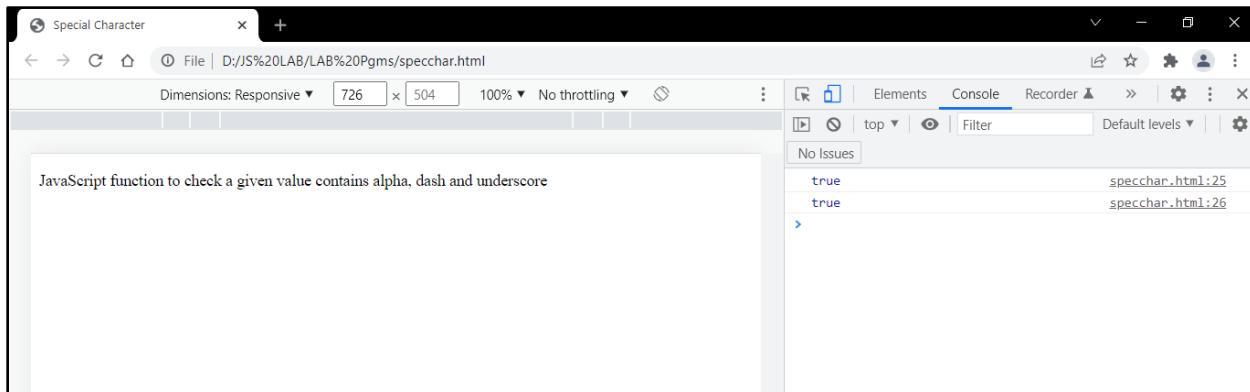
        function is_alphaDash(str)
        {

```

```
regexp = /^[a-zA-Z0-9_\-\-]+$/i;
```

```
if (regexp.test(str))  
{  
    return true;  
}  
  
else  
{  
    return false;  
}  
  
}  
  
console.log(is_alphaDash('12-133'));  
console.log(is_alphaDash('100_23'));  
  
</script> //Javascript Ends  
  
</body> <! -- Document Body Ends -->  
  
</html>
```

Output:



References:

- <https://www.w3resource.com/javascript-exercises/javascript-regexp-exercise-20.php>

Activity 21

Aim: Write a JavaScript function to check whether a given value represents a domain or not.

Write a JavaScript function to check whether a given value is html or not.

Learning outcome: Able to understand JavaScript

Duration: 1 Hour

List of Hardware/Software requirements:

1. Windows/Ubuntu OS
2. Text Editors- Notepad++, VS Code, Sublime Text, etc.
3. Web Browser (Chrome/Firefox)

Program:

```
<!DOCTYPE html>

<html lang="en">
  <head>          <!-- Document Head Starts -->

    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Check Domain</title>

  </head>          <!-- Document Head Ends -->

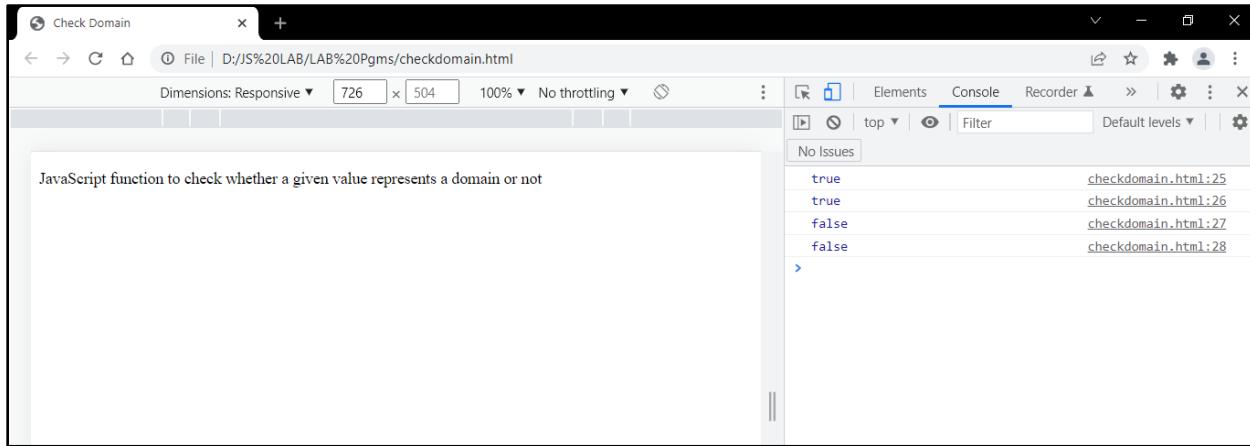
<body>          <!-- Document Body Starts -->
  <p>JavaScript function to check whether a given value represents a domain or not</p>
  <script>        //Javascript Starts
```

```
function is_domain(str)
{
    regexp = /^[a-zA-Z0-9]+([-.]{1}[a-zA-Z0-9]+)*\.[a-zA-Z]{2,6}$/i;

    if (regexp.test(str))
    {
        return true;
    }
    else
    {
        return false;
    }
}

console.log(is_domain('www.example.com'));
console.log(is_domain('www.npm.co.uk'));
console.log(is_domain('http://www.example.com'));
console.log(is_domain('https://www.example.com'));

</script>                                //Javascript Ends
</body>                                    <! -- Document Body Ends -->
</html>
```

Output:**Program:**

```
<!DOCTYPE html>

<html lang="en">

<head>                                <!-- Document Head Starts -->

    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Check HTML</title>

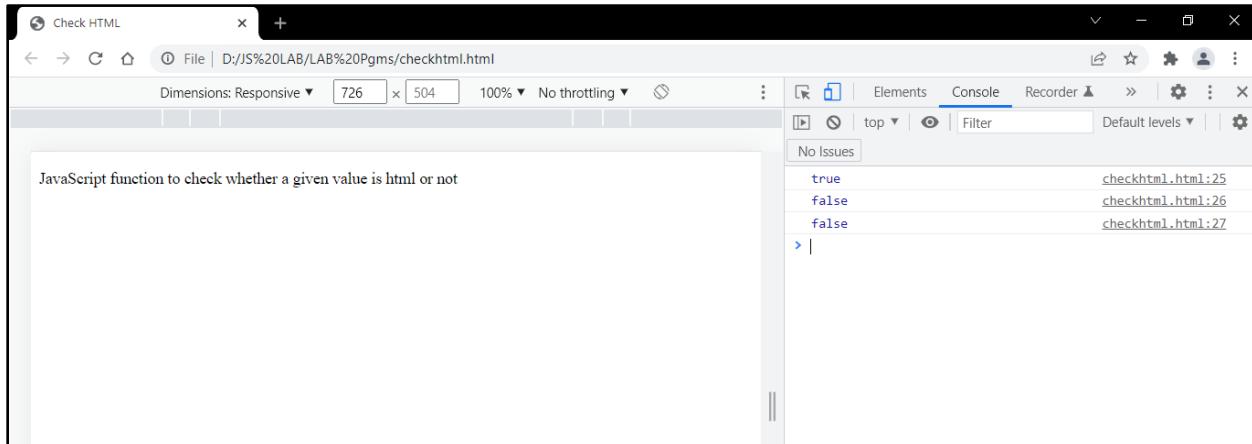
</head>                                <!-- Document Head Ends -->

<body>                                    <!-- Document Body Starts -->

    <p>JavaScript function to check whether a given value is html or not</p>
    <script>                                //Javascript Starts

        function is_html(str)
```

```
{  
  regexp = /<([a-z]+) *[^/]*?>/;  
  
  if (regexp.test(str))  
  {  
    return true;  
  }  
  else  
  {  
    return false;  
  }  
}  
  
console.log(is_html('<h1>'));  
console.log(is_html(""));  
console.log(is_html('.selector'));  
  
</script>          //Javascript Ends  
  
</body>            <! -- Document Body Ends -->  
  
</html>
```

Output:

JavaScript function to check whether a given value is html or not

```
true
false
false
```

References:

- <https://www.w3resource.com/javascript-exercises/javascript-regexp-exercise-18.php>
- <https://www.w3resource.com/javascript-exercises/javascript-regexp-exercise-19.php>

Learning Outcome

After completing this module, the student should be able to understand basic of bootstrap and jQuery.

To meet the learning outcome, a student has to complete the following activities

1. Building responsive webpage using bootstrap (20 hrs)
2. Use jQuery selectors to identify elements with these properties in a hypothetical page: (2 hrs)
3. Write jQuery Code to change the hyperlink and the text of a existing link. (30 mins)
4. How to Print a Page Using JQuery? (30 mins)
5. Display and hide message shown in the div tag on click of the buttons. (30 mins)
6. Create one button and a textbox. On click of the button the text written in text box should display on the button. (1 hr)
7. Toggle a specified class when an element is clicked. (30 mins)
8. Disable the submit button until the visitor has clicked a check box. (30 mins)
9. Create a text input field. Listen for the keyup event. Alert the value of the text box whenever keyup occurs. (1 hrs)
10. Set a timer to delay execution of subsequent items in the queue. (30 mins)
11. Find all the text nodes inside a paragraph and wrap them with an italic tag. (1 hr)
12. Write a jquery to attach a change event to the select element (Use to create a drop-down list.) that gets the text for each selected option and writes them in a paragraph.(1 hr)
13. Find the widths and heights of various elements. Get the scroll top and left of an element.Access the position of an element. (1 hr)"

Activity 1

Aim: Building responsive webpage using bootstrap

Learning outcome: Able to create simple web pages using bootstrap.

Duration: 20 hours

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program 1:

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="utf-8">

<meta name="viewport" content="width=device-width, initial-scale=1">

<title>Bootstrap 4 Responsive Layout</title>

<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/css/bootstrap.min.css"
rel="stylesheet">

<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.0.2/dist/js/bootstrap.bundle.min.js"></script>

</head>

<body>

<nav class="navbar navbar-expand-lg navbar-dark bg-dark">

<div class="container-fluid">

<a href="#" class="navbar-brand">Tutorial Republic</a>

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

```
<span class="navbar-toggler-icon"></span>
</button>
<div class="collapse navbar-collapse" id="navbarCollapse">
  <div class="navbar-nav">
    <a href="#" class="nav-item nav-link active">Home</a>
    <a href="#" class="nav-item nav-link">Services</a>
    <a href="#" class="nav-item nav-link">About</a>
    <a href="#" class="nav-item nav-link">Contact</a>
  </div>
  <div class="navbar-nav ms-auto">
    <a href="#" class="nav-item nav-link">Login</a>
    <a href="#" class="nav-item nav-link">Register</a>
  </div>
</div>
</div>
</div>
</div>
</div>
<div class="container">
  <div class="p-5 my-4 bg-light rounded-3">
    <h1>Learn to Create Websites</h1>
    <p class="lead">In today's world internet is the most popular way of connecting with the people. At <a href="https://www.tutorialrepublic.com" class="text-success" target="_blank">tutorialrepublic.com</a> you will learn the essential web development technologies along with real life practice examples, so that you can create your own website to connect with the people around the world.</p>
    <p><a href="https://www.tutorialrepublic.com" target="_blank" class="btn btn-success btn-lg">Get started today</a></p>
  </div>
```

```
<div class="row g-3">
  <div class="col-md-6 col-lg-4 col-xl-3">
    <h2>HTML</h2>
```

HTML is the standard markup language for describing the structure of the web pages. Our HTML tutorials will help you to understand the basics of latest HTML5 language, so that you can create your own website.

[Learn More »](https://www.tutorialrepublic.com/html-tutorial/)

```
</div>
<div class="col-md-6 col-lg-4 col-xl-3">
  <h2>CSS</h2>
```

CSS is used for describing the presentation of web pages. CSS can save a lot of time and effort. Our CSS tutorials will help you to learn the essentials of latest CSS3, so that you can control the style and layout of your website.

[Learn More »](https://www.tutorialrepublic.com/css-tutorial/)

```
</div>
<div class="col-md-6 col-lg-4 col-xl-3">
  <h2>JavaScript</h2>
```

JavaScript is the most popular and widely used client-side scripting language. Our JavaScript tutorials will provide in-depth knowledge of the JavaScript including ES6 features, so that you can create interactive websites.

[Learn More »](https://www.tutorialrepublic.com/javascript-tutorial/)

```
</div>
<div class="col-md-6 col-lg-4 col-xl-3">
  <h2>Bootstrap</h2>
```

Bootstrap is a powerful front-end framework for faster and easier web development. Our Bootstrap tutorials will help you to learn all the features of latest Bootstrap 4 framework so that you can easily create responsive websites.

<p>Learn More »</p>

</div>

<div class="col-md-6 col-lg-4 col-xl-3">

<h2>PHP</h2>

<p>PHP is the most popular server-side scripting language for creating dynamic web pages. Our PHP tutorials will help you to learn all the features of latest PHP7 scripting language so that you can easily create dynamic websites.</p>

<p>Learn More »</p>

</div>

<div class="col-md-6 col-lg-4 col-xl-3">

<h2>SQL</h2>

<p>SQL is a standard language designed for managing data in relational database management system. Our SQL tutorials will help you to learn the fundamentals of the SQL language so that you can efficiently manage your databases.</p>

<p><a href="https://www.tutorialrepublic.com/twitter-bootstrap-tutorial/"

target="_blank" class="btn btn-success">Learn More »</p>

</div>

<div class="col-md-6 col-lg-4 col-xl-3">

<h2>References</h2>

<p>Our references section outlines all the standard HTML5 tags and CSS3 properties along with other useful references such as color names and values, character entities, web safe fonts, language codes, HTTP messages, and more.</p>

<p>Learn More »</p>

</div>

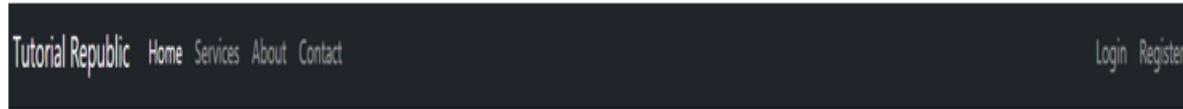
<div class="col-md-6 col-lg-4 col-xl-3">

<h2>FAQ</h2>

<p>Our Frequently Asked Questions (FAQ) section is an extensive collection of FAQs that provides quick and working solution of common questions and queries related to web design and development with live demo.</p>

```
<p><a href="https://www.tutorialrepublic.com/twitter-bootstrap-tutorial/"  
target="_blank" class="btn btn-success">Learn More &raquo;</a></p>  
  
</div>  
  
</div>  
  
<hr>  
  
<footer>  
  
<div class="row">  
  
<div class="col-md-6">  
  
<p>Copyright © 2021 Tutorial Republic</p>  
  
</div>  
  
<div class="col-md-6 text-md-end">  
  
<a href="#" class="text-dark">Terms of Use</a>  
  
<span class="text-muted mx-2">|</span>  
  
<a href="#" class="text-dark">Privacy Policy</a>  
  
</div>  
  
</div>  
  
</footer>  
  
</div>  
  
</body>  
  
</html>
```

Output/Results snippet:



The screenshot shows the top navigation bar of the Tutorial Republic website. It includes the site name "Tutorial Republic" and links for "Home", "Services", "About", and "Contact". On the right side, there are "Login" and "Register" buttons.

Learn to Create Websites

In today's world internet is the most popular way of connecting with the people. At tutorialrepublic.com you will learn the essential web development technologies along with real life practice examples, so that you can create your own website to connect with the people around the world.

[Get started today](#)

HTML

HTML is the standard markup language for describing the structure of the web pages. Our HTML tutorials will help you to understand the basics of latest HTML5 language, so that you can create your own website.

[Learn More »](#)

CSS

CSS is used for describing the presentation of web pages. CSS can save a lot of time and effort. Our CSS tutorials will help you to learn the essentials of latest CSS3, so that you can control the style and layout of your website.

[Learn More »](#)

JavaScript

JavaScript is the most popular and widely used client-side scripting language. Our JavaScript tutorials will provide in-depth knowledge of the JavaScript including ES6 features, so that you can create interactive websites.

[Learn More »](#)

Bootstrap

Bootstrap is a powerful front-end framework for faster and easier web development. Our Bootstrap tutorials will help you to learn all the features of latest Bootstrap 4 framework so that you can easily create responsive websites.

[Learn More »](#)

PHP

PHP is the most popular server-side scripting language for creating dynamic web pages. Our PHP tutorials will help you to learn all the features of latest PHP7 scripting language so that you can easily create dynamic websites.

[Learn More »](#)

SQL

SQL is a standard language designed for managing data in relational database management system. Our SQL tutorials will help you to learn the fundamentals of the SQL language so that you can efficiently manage your databases.

[Learn More »](#)

References

Our references section outlines all the standard HTML5 tags and CSS3 properties along with other useful references such as color names and values, character entities, web safe fonts, language codes, HTTP messages, and more.

[Learn More »](#)

FAQ

Our Frequently Asked Questions (FAQ) section is an extensive collection of FAQs that provides quick and working solution of common questions and queries related to web design and development with live demo.

[Learn More »](#)

Program 2:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrtxUkn"
        crossorigin="anonymous">

    <title>Bootstrap Responsive Webpage</title>
</head>

<body>

    <nav class="navbar navbar-expand-lg navbar-dark bg-dark">
        <a class="navbar-brand" href="#">Bootstrap Responsive Webpage</a>
        <button    class="navbar-toggler"    type="button"    data-toggle="collapse"    data-target="#navbarSupportedContent"
            aria-controls="navbarSupportedContent" aria-expanded="false"
            aria-label="Toggle navigation">
            <span class="navbar-toggler-icon"></span>
        </button>
```

```
<div class="collapse navbar-collapse" id="navbarSupportedContent">
  <ul class="navbar-nav mr-auto">
    <li class="nav-item active">
      <a class="nav-link" href="#">Home <span class="sr-only">(current)</span></a>
    </li>
    <li class="nav-item">
      <a class="nav-link" href="#">Link</a>
    </li>
    <li class="nav-item dropdown">
      <a class="nav-link dropdown-toggle" href="#" id="navbarDropdown" role="button"
         data-toggle="dropdown" aria-expanded="false">
        Dropdown
      </a>
      <div class="dropdown-menu" aria-labelledby="navbarDropdown">
        <a class="dropdown-item" href="#">Action</a>
        <a class="dropdown-item" href="#">Another action</a>
        <div class="dropdown-divider"></div>
        <a class="dropdown-item" href="#">Something else here</a>
      </div>
    </li>
    <li class="nav-item">
      <a class="nav-link disabled">Disabled</a>
    </li>
  </ul>
  <form class="form-inline my-2 my-lg-0">
```

```
<input class="form-control mr-sm-2" type="search" placeholder="Search"
aria-label="Search">

<button class="btn btn-outline-warning my-2 my-sm-0"
type="submit">Search</button>

</form>

</div>

</nav>

<div id="carouselExampleIndicators" class="carousel slide" data-ride="carousel">

<ol class="carousel-indicators">
  <li data-target="#carouselExampleIndicators" data-slide-to="0" class="active"></li>
  <li data-target="#carouselExampleIndicators" data-slide-to="1"></li>
  <li data-target="#carouselExampleIndicators" data-slide-to="2"></li>
</ol>

<div class="carousel-inner">

  <div class="carousel-item active">
    
  </div>

  <div class="carousel-item">
    
  </div>

  <div class="carousel-item">
    
  </div>

</div>
```

```
</div>

<button class="carousel-control-prev" type="button" data-target="#carouselExampleIndicators" data-slide="prev">
  <span class="carousel-control-prev-icon" aria-hidden="true"></span>
  <span class="sr-only">Previous</span>
</button>

<button class="carousel-control-next" type="button" data-target="#carouselExampleIndicators" data-slide="next">
  <span class="carousel-control-next-icon" aria-hidden="true"></span>
  <span class="sr-only">Next</span>
</button>

</div>

<div class="row mt-4 mb-2">
  <div class="col-sm-6">
    <div class="card bg-dark text-white">
      
      <div class="card-img-overlay">
        <h5 class="card-title text-dark font-weight-bold">Card title</h5>
        <p class="card-text text-dark font-weight-bold">This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit longer.</p>
        <p class="card-text text-dark font-weight-bold">Last updated 3 mins ago</p>
      </div>
    </div>
  </div>
</div>
```

```
<div class="col-sm-6">
  <div class="card bg-dark text-white">
    
    <div class="card-img-overlay">
      <h5 class="card-title text-dark font-weight-bold">Card title</h5>
      <p class="card-text text-dark font-weight-bold">This is a wider card with supporting
text below as a natural lead-in to
      additional content. This content is a little bit longer.</p>
      <p class="card-text text-dark font-weight-bold">Last updated 3 mins ago</p>
    </div>
  </div>
</div>
</div>
```



```
<div class="row mt-1 mb-4">
  <div class="col-sm-6">
    <div class="card bg-dark text-white">
      
      <div class="card-img-overlay">
        <h5 class="card-title text-dark font-weight-bold">Card title</h5>
        <p class="card-text text-dark font-weight-bold">This is a wider card with supporting
text below as a natural lead-in to
        additional content. This content is a little bit longer.</p>
        <p class="card-text text-dark font-weight-bold">Last updated 3 mins ago</p>
      </div>
    </div>
  </div>
```

```
</div>

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

  <div class="card bg-dark text-white">
    
    <div class="card-img-overlay">
      <h5 class="card-title text-dark font-weight-bold">Card title</h5>
      <p class="card-text text-dark font-weight-bold">This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit longer.</p>
      <p class="card-text text-dark font-weight-bold">Last updated 3 mins ago</p>
    </div>
  </div>

</div>

</div>

<div class="card bg-light mx-2 mb-3">

  <div class="card-header bg-light">
    Featured
  </div>
  <div class="card-body">
    <h5 class="card-title">Special title treatment</h5>
    <p class="card-text">With supporting text below as a natural lead-in to additional content.</p>
    <a href="#" class="btn btn-warning">Go somewhere</a>
  </div>
</div>
```

```
<div class="row container">
  <div class="col-sm-6">
    <div class="card">
      <div class="card-body">
        <h5 class="card-title">Special title treatment</h5>
        <p class="card-text">With supporting text below as a natural lead-in to additional content.</p>
        <a href="#" class="btn btn-warning">Go somewhere</a>
      </div>
    </div>
  </div>
  <div class="col-sm-6">
    <div class="card">
      <div class="card-body">
        <h5 class="card-title">Special title treatment</h5>
        <p class="card-text">With supporting text below as a natural lead-in to additional content.</p>
        <a href="#" class="btn btn-warning">Go somewhere</a>
      </div>
    </div>
  </div>
</div>

<div class="container bg-light mx-3 pb-2 mt-4 pt-2">
  <h3>Contact Us</h3>
  <form>
```

```
<div class="form-group row">
    <label for="inputEmail3" class="col-sm-2 col-form-label">Name</label>
    <div class="col-sm-10">
        <input type="text" class="form-control" id="inputEmail3">
    </div>
</div>

<div class="form-group row">
    <label for="inputEmail3" class="col-sm-2 col-form-label">Email</label>
    <div class="col-sm-10">
        <input type="email" class="form-control" id="inputEmail3">
    </div>
</div>

<label for="validationTextarea">Message</label>
<textarea class="form-control" id="validationTextarea" placeholder="Share your concern here"></textarea>

<div class="form-group row mt-2">
    <div class="col-sm-10">
        <button type="submit" class="btn btn-warning">Submit</button>
    </div>
</div>
</form>
</div>
```

```
<footer class="pt-4 my-md-5 pt-md-5 border-top container">
  <div class="row">
    <div class="col-12 col-md">
      
      <small class="d-block mb-3 text-muted">© 2017-2022</small>
    </div>
    <div class="col-6 col-md">
      <h5>Features</h5>
      <ul class="list-unstyled text-small">
        <li><a class="text-muted" href="#">Cool stuff</a></li>
        <li><a class="text-muted" href="#">Random feature</a></li>
        <li><a class="text-muted" href="#">Team feature</a></li>
        <li><a class="text-muted" href="#">Stuff for developers</a></li>
        <li><a class="text-muted" href="#">Another one</a></li>
        <li><a class="text-muted" href="#">Last time</a></li>
      </ul>
    </div>
    <div class="col-6 col-md">
      <h5>Resources</h5>
      <ul class="list-unstyled text-small">
        <li><a class="text-muted" href="#">Resource</a></li>
        <li><a class="text-muted" href="#">Resource name</a></li>
        <li><a class="text-muted" href="#">Another resource</a></li>
        <li><a class="text-muted" href="#">Final resource</a></li>
      </ul>
    </div>
  </div>
</footer>
```

```
</div>

<div class="col-6 col-md">
    <h5>About</h5>
    <ul class="list-unstyled text-small">
        <li><a class="text-muted" href="#">Team</a></li>
        <li><a class="text-muted" href="#">Locations</a></li>
        <li><a class="text-muted" href="#">Privacy</a></li>
        <li><a class="text-muted" href="#">Terms</a></li>
    </ul>
</div>
</div>
</footer>

<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"
    integrity="sha384-DfXdz2htPH0lsSS5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj"
    crossorigin="anonymous"></script>
<script src="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/js/bootstrap.bundle.min.js"
    integrity="sha384-fQybjgWLrvvRgtW6bFlB7jaZrFsaBXjsOMm/tB9LTS58ONXgqbR9W8oWht/amnpF"
    crossorigin="anonymous"></script>

</body>

</html>
```

Output/Results snippet:

Bootstrap Responsive Webpage Home Link Dropdown ▾ Disabled Search

Card title
This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit longer.
Last updated 3 mins ago

Card title
This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit longer.
Last updated 3 mins ago

Card title
This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit longer.
Last updated 3 mins ago

Card title
This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit longer.
Last updated 3 mins ago

Featured

Special title treatment
With supporting text below as a natural lead-in to additional content.
[Go somewhere](#)

Special title treatment
With supporting text below as a natural lead-in to additional content.
[Go somewhere](#)

Contact Us

Name

Email

Message
Share your concern here

[Submit](#)



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Features

- Cool stuff
- Random feature
- Team feature
- Stuff for developers
- Another one
- Last time

Resources

- Resource
- Resource name
- Another resource
- Final resource

About

- Team
- Locations
- Privacy
- Terms

References:

1. <https://www.geeksforgeeks.org/create-a-single-page-responsive-website-using-bootstrap/>
2. [https://getbootstrap.com/ \(v4.6\)](https://getbootstrap.com/)
3. <https://unsplash.com/>

Activity 2

Aim: Use jQuery selectors to identify elements with some properties in a hypothetical page

Learning outcome: Able to identify elements with following properties in a hypothetical page:

- All p tags that have no children, but only if they don't have a class of ignore
- Any element with the text ""REPLACE_ME"" in it.
- All div tags with a child that has a class of special will fade out
- All heading elements (h1, h2, h3, h4, h5, h6)
- Every other visible li

Duration: 2 hours

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program 1: All p tags that have no children, but only if they don't have a class of ignore

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->

    <meta charset="utf-8">

    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->

    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrtxUkn"
        crossorigin="anonymous">
```

```
<title>App P tags</title>
</head>
<body>
<div class="container">
<h3>Task -1<br>All p tags that have no children, but only if they don't have a class of ignore will hide when
click on bellow button
</h3>
<button type="button" name="click" id="click">Click me</button>
</div>
<div class="container">
<p>
<h4>1.p tag having one child</h4>
</p>
<p>2. p tag don't have any child</p>
<p>
<h4 class="ignore">3.p tag have child with class ignore</h4>
</p>
<p>4.p tag don't have any child</p>
<p class="ignore">5.p tag don't have any child but have class ignore</p>
</div>
<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSS5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrCXaRkfj"
```

```
crossorigin="anonymous"></script>

<script>
$(document).ready(function(){
    $('#click').click(function(){
        $('p:not(.ignore)').hide();
    });
});
</script>

</body>
</html>
```

Output/Results snippet:**Task -1**

All p tags that have no children, but only if they don't have a class of ignore will hide when click on bellow button

[Click me](#)

- 1.p tag having one child
2. p tag don't have any child
- 3.p tag have child with class ignore
- 4.p tag don't have any child
- 5.p tag don't have any child but have class ignore

Task -1

All p tags that have no children, but only if they don't have a class of ignore will hide when click on bellow button

[Click me](#)

- 1.p tag having one child
- 3.p tag have child with class ignore
- 5.p tag don't have any child but have class ignore

Program 2: Any element with the text ""REPLACE_ME"" in it.

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->

    <meta charset="utf-8">

    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->

    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/e
        SrtxUkn" crossorigin="anonymous">

    <title>Replace me</title>

</head>

<body>

    <div class="container">

        <h3>Task-2<br>Any element with the text "REPLACE_ME" in it, it will replace with
        "REPLACED!" on click of bellow

        <button>Click me</button>

        <div>

            <p> REPLACE_ME </p>
            <p> Hi </p>
            <p> REPLACE_ME </p>

    
```

```
<p> Lorem ipsum dolor sit amet. </p>
<p> Whatsapp...! </p>
</div>
</div>

<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUe
w+OrCxaRkfj"
crossorigin="anonymous"></script>

<script>
$(document).ready(function () {
    $('#click').click(function () {
        $('p:contains(REPLACE_ME)').replaceWith("REPLACED!");
    });
});
</script>

</body>
</html>
```

Output/Results snippet:

Task-2

Any element with the text "REPLACE_ME" in it, it will replace with "REPLACED!" on click of bellow button

REPLACE_ME

Hi

REPLACE_ME

 Lorem ipsum dolor sit amet.

 Whatsapp...!

Task-2

Any element with the text "REPLACE_ME" in it, it will replace with "REPLACED!" on click of bellow button

```


REPLACED!
Hi

REPLACED!
Lorem ipsum dolor sit amet.

Whatsapp...!
```

Program 3: All div tags with a child that has a class of special will fade out

```

<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/e
        SrtxUkn" crossorigin="anonymous">

    <title>All div tags with a child that has a class of special will shift left on click of bellow
    button</title>

    <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
    <script>

        $(document).ready(function () {
            $('#click').click(function () {
```

```
$( "div.block:has(p.special)" ).fadeOut("slow");
});

});

</script>

</head>

<body>

<div class="container">

<h3>Task-2<br>All div tags with a child that has a class of special class will fade out.

</h3>

<button type="button" name="click" id="click">Click here</button>

<div class="block">

<p class="special">I am Special Class in p tag

</div>

</div>

</body>

</html>
```

Output/Results snippet:

Task-2
All div tags with a child that has a class of special class will fade out.
[Click here](#)
I am Special Class in p tag

Task-2
All div tags with a child that has a class of special class will fade out.
[Click here](#)

Program 4: All heading elements (h1, h2, h3, h4, h5, h6)

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->

    <meta charset="utf-8">

    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->

    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/e
        SrtxUkn" crossorigin="anonymous">

        <title>All Heading elements</title>

</head>

<body>

    <div class="container">

        <h3>Task-4<br>All heading elements (h1,h2,h3,h4,h5,h6) change on click of bellow
button</h3>

        <button type="button" name="click" id="click">Click me</button>

        <div>

            <p>its paragraph tag</p>

            <h1>its h1 tag</h1>

            <h2>its h2 tag</h2>

            <p>its paragraph tag</p>

        </div>

    </div>


```

```
<h3>its h3 tag</h3>
<h4>its h4 tag</h4>
<h5>its h5 tag</h5>
<p>its paragraph tag</p>
<h6>its h6 tag</h6>
</div>
</div>
<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+
OrCXaRkfj"
crossorigin="anonymous"></script>
<script>
$(document).ready(function () {
    $('#click').click(function(){
        $('#header').css({"color":"red"});
    });
});
</script>
</body>
</html>
```

Output/Results snippet:

Task-4

All heading elements (h1,h2,h3,h4,h5,h6) change on click of bellow button

its paragraph tag

its h1 tag

its h2 tag

its paragraph tag

its h3 tag

its h4 tag

its h5 tag

its paragraph tag

its h6 tag

Task-4

All heading elements (h1,h2,h3,h4,h5,h6) change on click of bellow button

its paragraph tag

its h1 tag

its h2 tag

its paragraph tag

its h3 tag

its h4 tag

its h5 tag

its paragraph tag

its h6 tag

References:

1. https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_eff_show_hide
2. https://www.w3schools.com/jquery/html_replacewith.asp
3. <https://api.jquery.com/replacewith/>
4. https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_eff_fadeout_fadein
5. <https://sebastian.com/jquery-change-background-color/>

Activity 3

Aim: Write jQuery Code to change the hyperlink and the text of an existing link

Learning outcome: Able to change the hyperlink and the text of an existing link

Duration: 30 minutes

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->

    <meta charset="utf-8">

    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->

    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
        xUkn" crossorigin="anonymous">

    <title>change the hyperlink and the text</title>

</head>

<body>
```

```
<div class="container">

<h3>Write a jQuery Code to change the hyperlink and the text of a existing link</h3>

<a href="https://www.w3schools.com/jquery/default.asp" >w3schools - Jquery</a>

</div>

<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrC
XaRkfj"
crossorigin="anonymous"></script>

<script>

    $("a").attr("href", "https://www.w3schools.com/js/default.asp");

    $("a").text("w3schools - Javascript");

</script>

</body>

</html>
```

Output/Results snippet:

Write a jQuery Code to change the hyperlink and the text of a existing link

w3schools - Javascript

References:

1. <https://www.w3resource.com/jquery-exercises/jquery-core/exercise-9.php>

Activity 4

Aim: How to Print a Page Using jQuery

Learning outcome: To Print a Page Using JQuery

Duration: 30 minutes

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->

    <meta charset="utf-8">

    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->

    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
        xUkn" crossorigin="anonymous">

    <title>Print this page</title>

</head>

<body>
```

```
<div class="container">

<h3>Print a Page Using JQuery</h3>

<div>

    <p>Lorem, ipsum dolor sit amet consectetur adipisicing elit. Tempora corrupti animi
    voluptas sunt beatae eum harum veniam in labore tenetur, quos at, velit consectetur quas!</p>

    <a class="printPage" href="#">Print</a>

</div>

</div>

<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrC
XaRkfj"
crossorigin="anonymous"></script>

<script>

    $('a.printPage').click(function(){

        window.print();

        return false;

    });

</script>

</body>

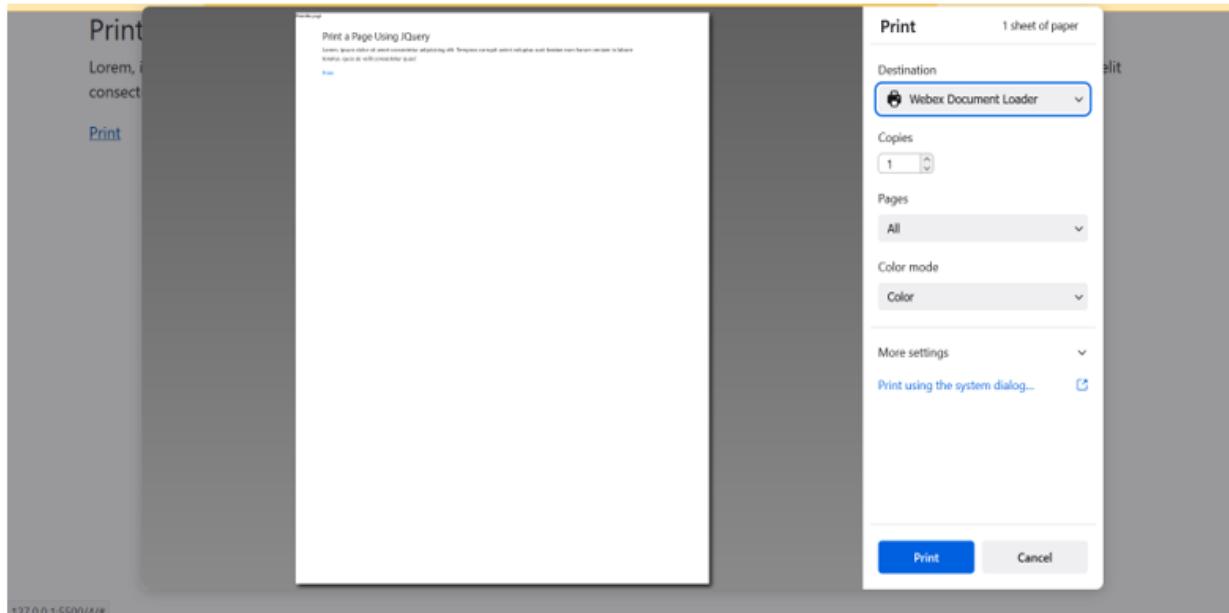
</html>
```

Output/Results snippet:

Print a Page Using JQuery

Lorem, ipsum dolor sit amet consectetur adipisicing elit. Tempora corrupti animi voluptas sunt beatae eum harum veniam in labore tenetur, quos at, velit consectetur quas!

[Print](#)



References:

1. <https://www.geeksforgeeks.org/how-to-print-a-page-using-jquery/>

Activity 5

Aim: Display and hide message shown in the div tag on click of the buttons

Learning outcome: Able to display and hide message shown in the div tag on click of the buttons

Duration: 30 minutes

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->

    <meta charset="utf-8">

    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->

    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
        xUkn" crossorigin="anonymous">

    <title>Display and hide message</title>

</head>

<body>
```

```
<span class="container">  
    <h3>Display and hide message shown in the div tag on click of the buttons.</h3>  
    </span>  
  
<div>Lorem, ipsum dolor sit amet consectetur adipisicing elit. Tempora corrupti animi voluptas  
sunt beatae eum harum  
    veniam in labore tenetur, quos at, velit consectetur quas!</div>  
  
<button id="hide">Hide</button>  
  
<button id="show">Show</button>  
  
<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"  
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrC  
XaRkfj"  
crossorigin="anonymous"></script>  
  
<script>  
    $(document).ready(function () {  
        $("#hide").click(function () {  
            $("div").hide();  
        });  
        $("#show").click(function () {  
            $("div").show();  
        });  
    });  
</script>  
</body>
```

</html>

Output/Results snippet:

Display and hide message shown in the div tag on click of the buttons.

 Lorem ipsum dolor sit amet consectetur adipisicing elit. Tempora corrupti animi voluptas sunt beatae eum harum veniam in labore tenetur, quos at, velit consectetur quas!

Display and hide message shown in the div tag on click of the buttons.

References:

1. https://www.w3schools.com/howto/howto_js_toggle_hide_show.asp

Activity 6

Aim: Create one button and a textbox. On click of the button the text written in text box should display on the button

Learning outcome: Able to create one button and a textbox. On click of the button the text written in text box should display on the button

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->

    <meta charset="utf-8">

    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">

    <!-- Bootstrap CSS -->

    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
        xUkn" crossorigin="anonymous">

    <title>Create a button and a textbox. On click of the button the text written in text box should
        display on the button</title>
```

```
<script type="text/javascript"
src="http://ajax.googleapis.com/ajax/libs/jquery/1.8.3/jquery.min.js"></script>

<script type="text/javascript">
$(function () {
    $("input[name=btnPassport]").click(function () {
        if ($(this).val() == "Yes") {
            $("#dvPassport").show();
        } else {
            $("#dvPassport").hide();
        }
    });
});

</script>

</head>

<body>

<div class="container">

    <h3>Create a button and a textbox. On click of the button the text written in text box should display on the button</h3>

    <span>Do you have Passport?</span>
    <input type="button" value="Yes" name="btnPassport" />
    <input type="button" value="No" name="btnPassport" />
    <hr />

</div>

</body>
```

```
<div id="dvPassport" style="display: none">  
    Passport Number:  
    <input type="text" id="txtPassportNumber" />  
</div>  
</div>  
</body>  
</html>
```

Output/Results snippet:

Create a button and a textbox. On click of the button the text written in text box should display on the button

Do you have Passport?

Create a button and a textbox. On click of the button the text written in text box should display on the button

Do you have Passport?

Passport Number:

References:

1. <https://www.aspsnippets.com/Articles>Show-Hide-TextBox-on-Button-Click-using-JavaScript-and-jQuery.aspx>

Activity 7

Aim: Toggle a specified class when an element is clicked

Learning outcome: Able to toggle a specified class when an element is clicked

Duration: 30 minutes

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">
  <head>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
      href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
      integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
      xUkn" crossorigin="anonymous">
  <style>
    p {
      margin: 5px;
      font-size: 15px;
    }
  </style>
```

```
cursor: pointer;  
}  
.highlight {  
background:  
#F4FA58;  
}  
</style>  
  
<title>Toggle a specified class</title>  
  
</head>  
  
<body>  
  
    <div class="container">  
  
        <h3>Toggle a specified class when an element is clicked.</h3>  
  
        <p>Click on the Paragraphs</p>  
  
        <p>jQuery Exercises</p>  
  
        <p>JavaScript Exercises</p>  
  
    </div>  
  
<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"  
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrC  
XaRkfj"  
crossorigin="anonymous"></script>  
  
<script>  
    $("p").click(function () {  
        $(this).toggleClass("highlight");  
    });
```

```
</script>  
</body>  
</html>
```

Output/Results snippet:

Toggle a specified class when an element is clicked.

Click on the Paragraphs
jQuery Exercises
JavaScript Exercises

Toggle a specified class when an element is clicked.

Click on the Paragraphs
jQuery Exercises
JavaScript Exercises

References:

1. <https://www.w3resource.com/jquery-exercises/jquery-css-exercise-10.php>

Activity 8

Aim: Disable the submit button until the visitor has clicked a check box

Learning outcome: To disable the submit button until the visitor has clicked a check box

Duration: 30 minutes

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">
  <head>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
      href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
      integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
      xUkn" crossorigin="anonymous">
  <title>Disable the submit button until the visitor has clicked a check box.</title>
  </head>
  <body>
    <div class="container">
```

<h3>Disable the submit button until the visitor has clicked a check box.</h3>

<form>

<div class="mb-3">

<label for="exampleInputEmail1" class="form-label">Email address</label>

<input type="email" class="form-control" id="exampleInputEmail1"

aria-describedby="emailHelp">

</div>

<div class="mb-3 form-check">

<input id="accept" name="accept" type="checkbox" value="y"/>

<label class="form-check-label" for="exampleCheck1">I accept</label>

</div>

<input id="submitbtn" disabled="disabled" name="Submit" type="submit"

value="Submit" />

</form>

</div>

<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"

integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUe
w+OrCXAkfkj"

crossorigin="anonymous"></script>

<script>

\$('#accept').click(function () {

if (\$('#submitbtn').is(':disabled')) {

\$('#submitbtn').removeAttr('disabled');

} else {

```
        $('#submitbtn').attr('disabled', 'disabled');  
    }  
});  
</script>  
</body>  
</html>
```

Output/Results snippet:

Disable the submit button until the visitor has clicked a check box.

Email address

I accept

Disable the submit button until the visitor has clicked a check box.

Email address

I accept

References:

1. <https://www.w3resource.com/jquery-exercises/part1/jquery-practical-exercise-4.php>

Activity 9

Aim: Create a text input field. Listen for the key up event. Alert the value of the text box whenever key up occurs

Learning outcome: To create a text input field and listen for the key up event and also alert the value of the text box whenever key up occurs

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
        xUkn" crossorigin="anonymous">

    <title>Create a text input field. Listen for the keyup event. Alert the value of the text box
    whenever keyup occurs.

    </title>
```

```

</head>

<body>

<div class="container">

    <h3>Create a text input field. Listen for the keyup event. Alert the value of the text box
    whenever keyup

    occurs. </h3>

    <form>

        <div class="mb-3">

            <label for="exampleInputEmail1" class="form-label">Enter your name: </label>

            <input type="text" class="form-control" id="exampleInputEmail1" aria-
            describedby="emailHelp">

        </div>

    </form>

</div>

<script src="https://cdn.jsdelivr.net/npm/jquery@3.5.1/dist/jquery.slim.min.js"
integrity="sha384-DfXdz2htPH0lsSSs5nCTpuj/zy4C+OGpamoFVy38MVBnE+IbbVYUew+OrC
XaRkfj"
crossorigin="anonymous"></script>

<script>

$(document).ready(function () {

    $("input").keydown(function () {

        $("input").css("background-color", "yellow");

    });

    $("input").keyup(function () {

        $("input").css("background-color", "pink");

    });

});

```

```
});  
});  
</script>  
  
</body>  
  
</html>
```

Output/Results snippet:

Create a text input field. Listen for the keyup event. Alert the value of the text box whenever keyup occurs.

Enter your name:

Create a text input field. Listen for the keyup event. Alert the value of the text box whenever keyup occurs.

Enter your name:

Create a text input field. Listen for the keyup event. Alert the value of the text box whenever keyup occurs.

Enter your name:

References:

1. https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_event_keydown_keyup

Activity 10

Aim: Set a timer to delay execution of subsequent items in the queue

Learning outcome: To set a timer and delay execution of subsequent items in the queue

Duration: 30 minutes

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">
  <head>
    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
      href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
      integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
      xUkn" crossorigin="anonymous">
  <title>Set a timer to delay execution of subsequent items in the queue.
  </title>
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
  <script>
```

```
$(document).ready(function () {  
    $("button").click(function () {  
        $("#div1").delay("slow").fadeIn();  
        $("#div2").delay("fast").fadeIn();  
        $("#div3").delay(800).fadeIn();  
        $("#div4").delay(2000).fadeIn();  
        $("#div5").delay(4000).fadeIn();  
    });  
});  
</script>  
</head>  
<body>  
<div class="container">  
    <h3>Set a timer to delay execution of subsequent items in the queue. </h3>  
    <p>delay() method sets different speed values.</p>  
    <button>Click to fade in boxes with a delay</button></p>  
    <div id="div1" style="width:90px;height:90px;display:none;background-color:black;"></div><br>  
    <div id="div2" style="width:90px;height:90px;display:none;background-color:green;"></div><br>  
    <div id="div3" style="width:90px;height:90px;display:none;background-color:blue;"></div><br>  
    <div id="div4" style="width:90px;height:90px;display:none;background-color:red;"></div><br>
```

```
color:red;"></div><br>
<div id="div5" style="width:90px;height:90px;display:none;background-
color:purple;"></div><br>
</div>
</body>
</html>
```

Output/Results snippet:

Set a timer to delay execution of subsequent items in the queue.

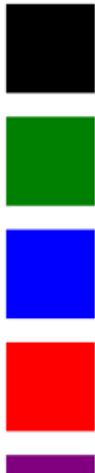
delay() method sets different speed values.

[Click to fade in boxes with a delay](#)

Set a timer to delay execution of subsequent items in the queue.

delay() method sets different speed values.

[Click to fade in boxes with a delay](#)



References:

1. https://www.w3schools.com/jquery/eff_delay.asp

Activity 11

Aim: Find all the text nodes inside a paragraph and wrap them with an italic tag

Learning outcome: Able to find all the text nodes inside a paragraph and wrap them with an italic tag

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlf
        G/eSrtxUkn" crossorigin="anonymous">
    <title>Find all the text nodes inside a paragraph and wrap them with an italic tag.</title>
</head>

<body>
```

```
<div class="container">

<h3>Find all the text nodes inside a paragraph and wrap them with an italic tag. </h3>

<p><a href="https://www.w3resource.com/jquery-exercises/">jQuery</a> Exercises,
   Practice and Solution</p>

<p><a href="https://www.w3resource.com/javascript-exercises/">JavaScript</a> Exercises,
   Practice and Solution

</p>
</div>

<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>

<script>

  $("p")
    .contents()
    .filter(function () {
      return this.nodeType !== 1;
    })
    .wrap("<i></i>");

</script>

</body>

</html>
```

Output/Results snippet:

Find all the text nodes inside a paragraph and wrap them with an italic tag.

[jQuery Exercises, Practice and Solution](#)

[JavaScript Exercises, Practice and Solution](#)

References:

1. <https://www.w3resource.com/jquery-exercises/2/jquery-fundamental-exercise-60.php>

Activity 12

Aim: Write a jquery to attach a change event to the select element (Use to create a drop-down list.) that gets the text for each selected option and writes them in a paragraph

Learning outcome: To attach a change event to the select element (Use to create a drop-down list.) that gets the text for each selected option and writes them in a paragraph

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlf
        G/eSrtxUkn" crossorigin="anonymous">
```

<title>Write a jquery to attach a change event to the select element (Use to create a drop-down list.) that gets the

text for each selected option and writes them in a paragraph.</title>

</head>

```
<body>
<div class="container">
    <h3>Write a jquery to attach a change event to the select element (Use to create a drop-down list.) that gets the text for each selected option and writes them in a paragraph.</h3>
    <select name="colors" multiple="multiple">
        <option>Red</option>
        <option>Green</option>
        <option>Blue</option>
        <option>Orange</option>
        <option>Black</option>
        <option>White</option>
    </select>
    <p></p>
</div>
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>
<script>
    var foo = function (value) {
        console.log("foo: " + value);
    };
    var callbacks = $.Callbacks();
    $("select")
        .change(function () {
            var str = "";
            $("select option:selected").each(function () {

```

```
str += $(this).text() + " ";  
});  
  
    $("p").text("Selected Colors: " + str).css("color", "blue");  
})  
  
.change();  
  
</script>  
  
</body>  
  
</html>
```

Output/Results snippet:

Write a jquery to attach a change event to the select element (Use to create a drop-down list.) that gets the text for each selected option and writes them in a paragraph.



Selected Colors:

Write a jquery to attach a change event to the select element (Use to create a drop-down list.) that gets the text for each selected option and writes them in a paragraph.



Selected Colors: Blue

References:

1. <https://www.w3resource.com/jquery-exercises/2/jquery-fundamental-exercise-53.php>

Activity 13

Aim: Find the widths and heights of various elements. Get the scroll top and left of an element. Access the position of an element.

Learning outcome: Able to find the widths and heights of various elements. Get the scroll top and left of an element. Access the position of an element.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with Windows OS
2. Bootstrap v4.6 and a Browser

Program:

```
<!doctype html>

<html lang="en">

<head>

    <!-- Required meta tags -->
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
    <!-- Bootstrap CSS -->
    <link rel="stylesheet"
        href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.1/dist/css/bootstrap.min.css"
        integrity="sha384-zCbKRCUGaJDkqS1kPbPd7TveP5iyJE0EjAuZQTgFLD2ylzuqKfdKlfG/eSrt
        xUkn" crossorigin="anonymous">

    <title>Find the widths and heights of various elements. Get the scroll top and left of an element.
        Access the position of an element.</title>

    <style>
        p {
```

```
margin-top: 20px;  
margin-left: 10px;  
padding: 5px;  
border: 2px solid #666;  
}  
</style>  
</head>  
<body>  
    <div class="container">  
        <h3>Find the widths and heights of various elements. Get the scroll top and left of an element.  
Access the position of an element.</h3>  
        <div  
            style="height:75px;width:200px;padding:10px;margin:3px;border:1px solid rgba(15, 95,  
25, 0.678);background-color:#035770;">  
            </div>  
        </div>  
        <p> </p>  
        <p>This is a paragraph.</p>  
        <button>Return the top and left position of the p element</button>  
        <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></script>  
        <script>  
            console.log("The width of the h3 tag is:" + $("h3").width());  
            console.log("The width of the div is:" + $("div").width());  
            console.log("Scroll left, top position of the Paragraph are:" + $("p").scrollLeft() + ',' +  
$("p").scrollTop());
```

```

</script>

<script>
$(document).ready(function () {
    $("button").click(function () {
        var x = $("p").position();
        alert("Top position: " + x.top + " Left position: " + x.left);
    });
});
</script>

</body>
</html>

```

Output/Results snippet:

Find the widths and heights of various elements. Get the scroll top and left of an element. Access the position of an element.



This is a paragraph.
Return the top and left position of the p element

Find the widths and heights of various elements. Get the scroll top and left of

The width of the h3 tag is:1110
The width of the div is:1110
Scroll left, top position of the Paragraph are:0,0
Live reload enabled.

References:

1. <https://www.w3resource.com/jquery-exercises/jquery-css-exercise-4.php>
2. https://www.w3schools.com/jquery/tryit.asp?filename=tryjquery_css_position
3. <https://www.w3resource.com/jquery-exercises/jquery-css-exercise-3.php>

Learning Outcome - Able to understand database and its commands

After achieving this learning outcome, a student will be able to understand concept of databases. In order to achieve this learning outcome, a student has to complete the following:

1. Installing MySQL (1 hrs)
2. Creating and Manipulating Database objects and Applying Constraints (DDL) (2 hrs)
3. Manipulating Data with Database Objects (DML) (1 hrs)
4. SQL Single Row Functions (1 hrs)
5. Displaying Data from Multiple Tables (Join) (2 hrs)
6. SQL Multiple Row Functions (Aggregate Function) (1 hrs)
7. SQL using sub query (2 hrs)

Activity 1

Aim: Installing MySQL on windows

Learning outcome: Able to install MySQL.

Duration: 1 hour

List of Hardware/Software requirements:

1. Laptop/Computer with windows OS

Code/Program/Procedure (with comments):

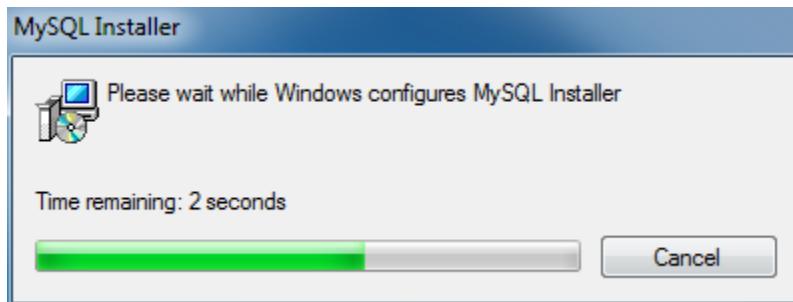
If you want to install MySQL on the Windows environment, using MySQL installer is the easiest way.

To download MySQL installer, go to the following link <http://dev.mysql.com/downloads/installer/>. There are two installer files:

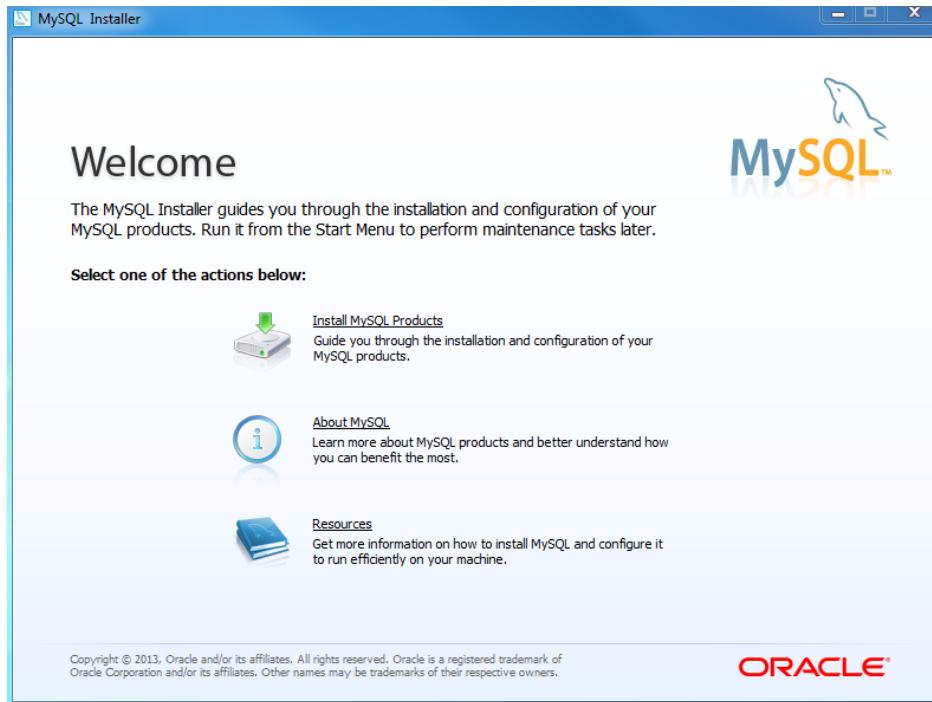
- If you are connecting to the internet while installing MySQL, you can choose the online installation version mysql-installer-web-community-<version>.exe.
- In case you want to install MySQL offline, you can download the mysql-installer-community-<version>.exe file.

Install MySQL via MySQL Installer

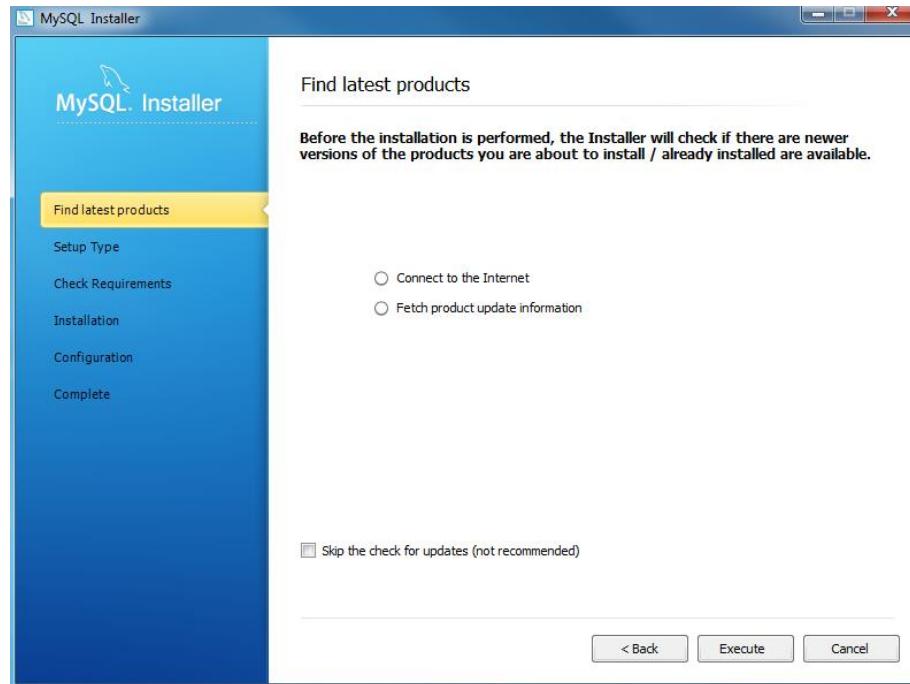
To install MySQL using the MySQL installer, double-click on the MySQL installer file and follow the steps below:



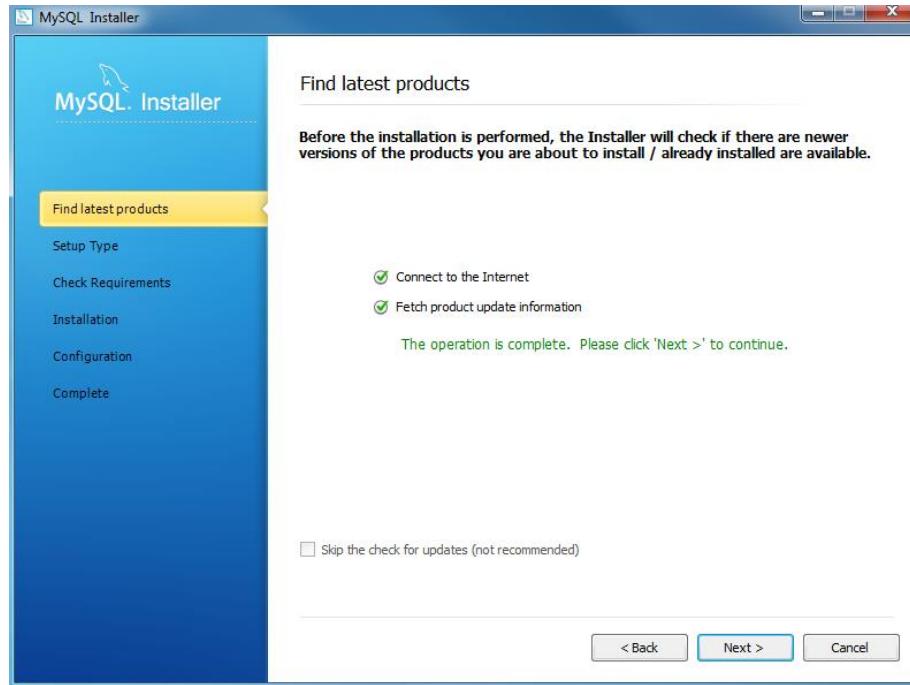
Install MySQL Step 1: Windows configures MySQL Installer



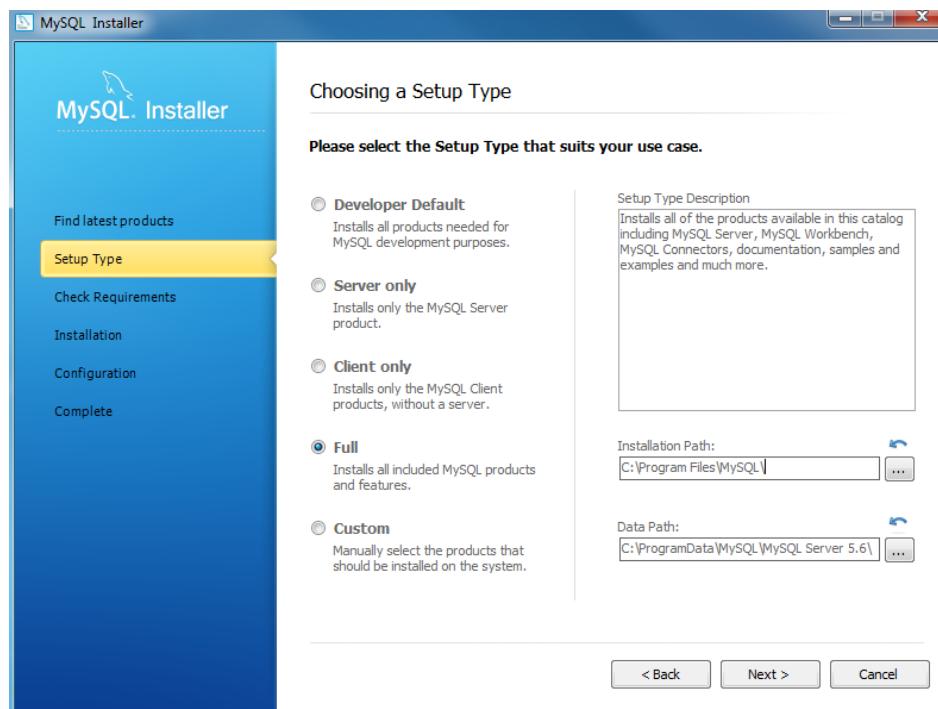
Install MySQL Step 2 – Welcome Screen: A welcome screen provides several options. Choose the first option: Install MySQL Products



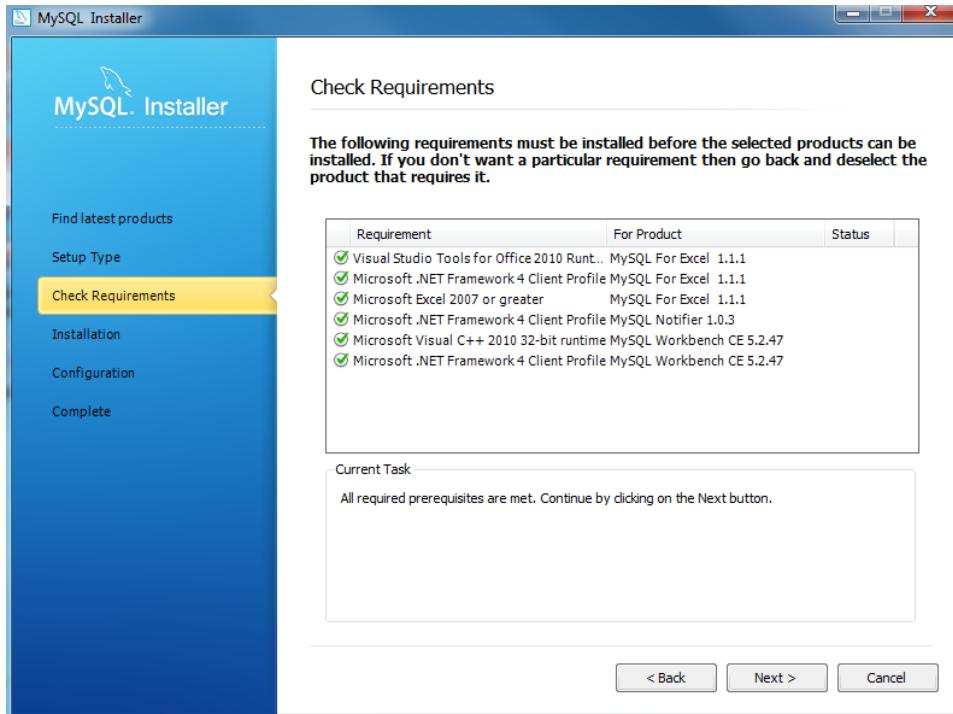
Install MySQL Step 3 – Download the latest MySQL products: MySQL installer checks and downloads the latest MySQL products including MySQL server, MySQL Workbench, etc.



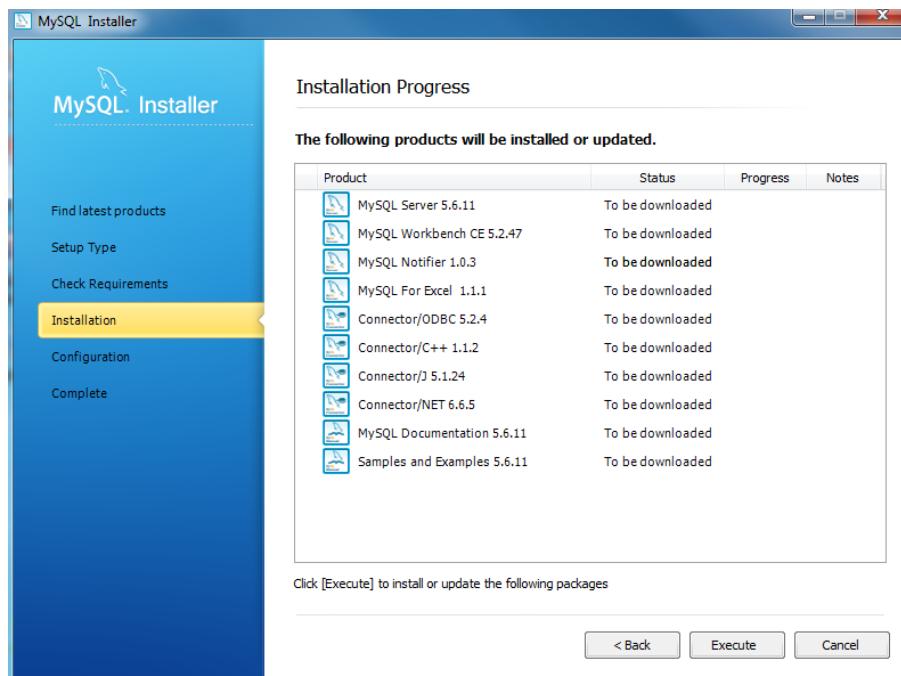
Install MySQL Step 4: Click the Next button to continue



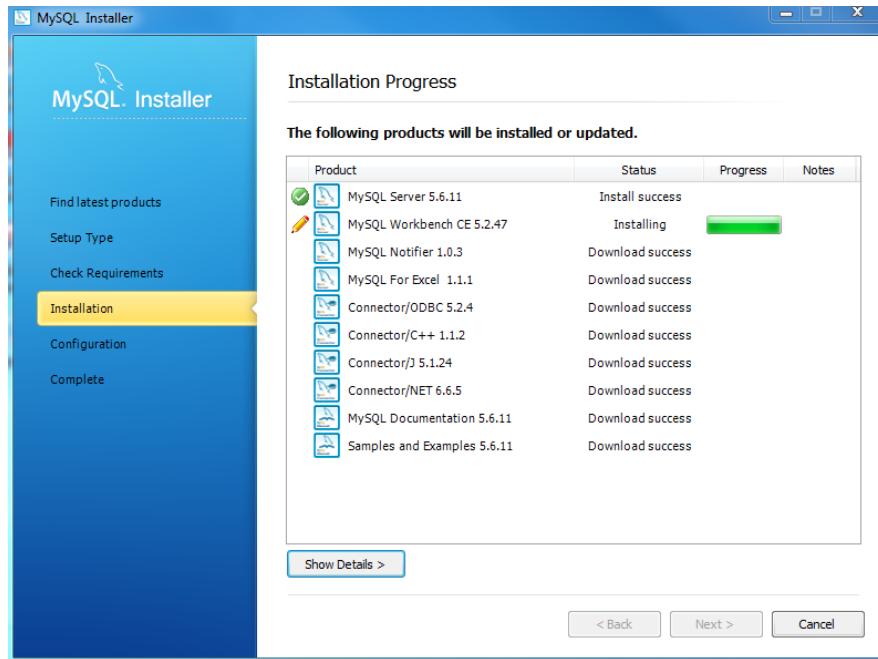
Install MySQL Step 5 – Choosing a Setup Type: there are several setup types available. Choose the Full option to install all MySQL products and features.



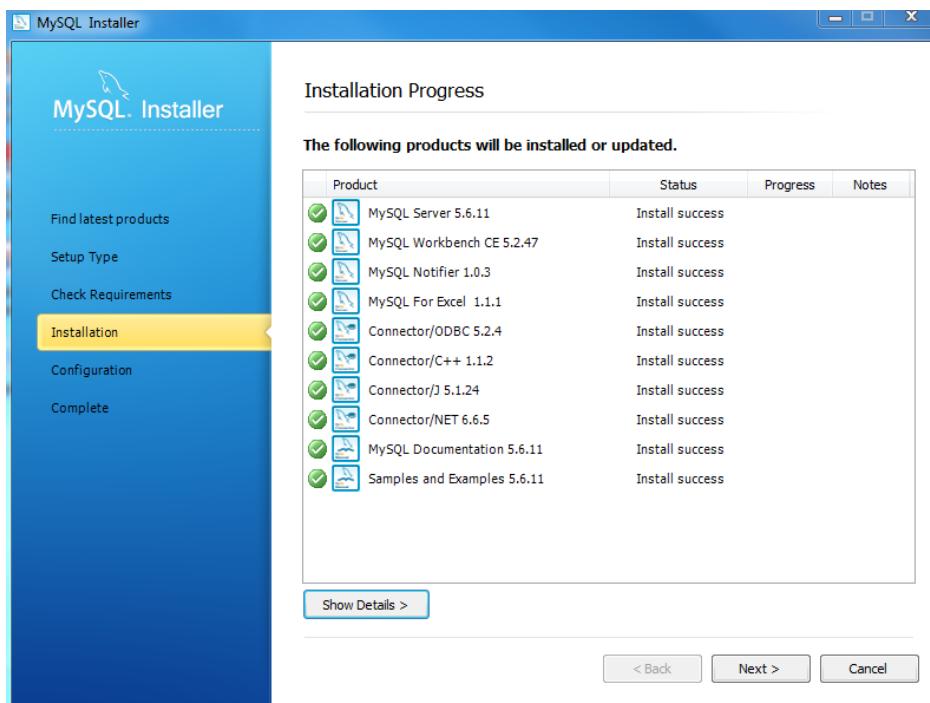
Install MySQL Step 6 – Checking Requirements



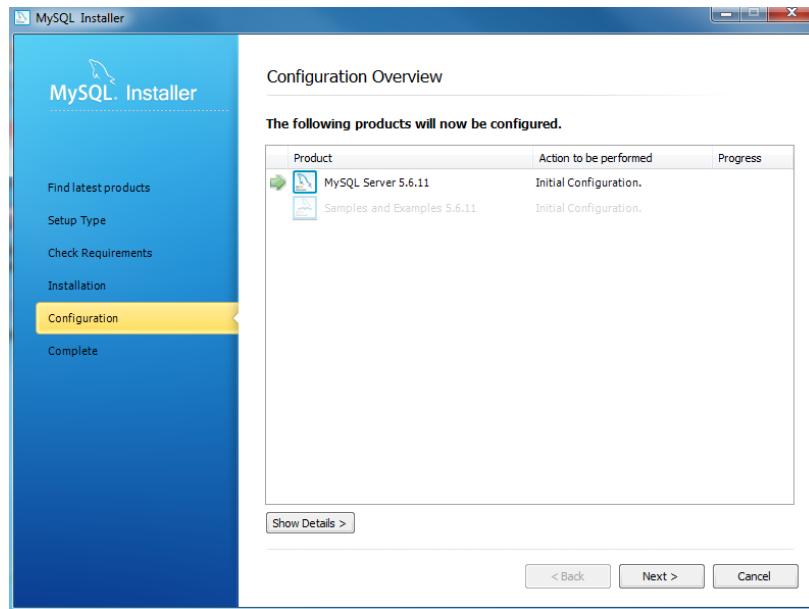
Install MySQL Step 7 – Installation Progress: MySQL Installer downloads all selected products. It will take a while, depending on which products you selected and the speed of your internet connection.



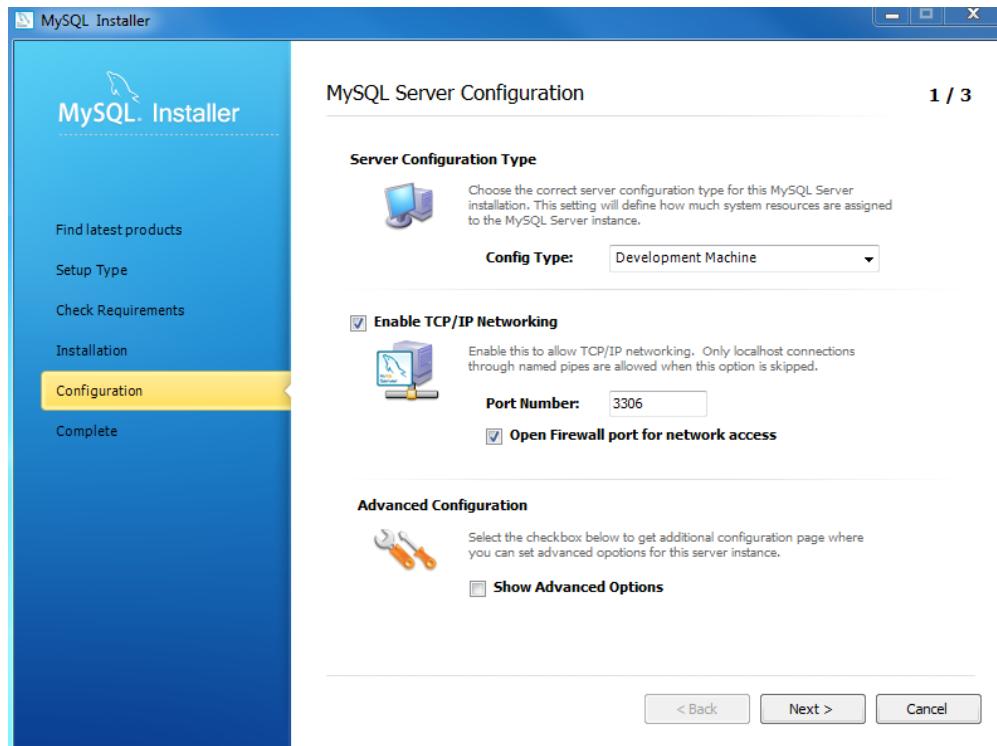
Install MySQL Step 7 – Installation Progress: downloading Products in progress.



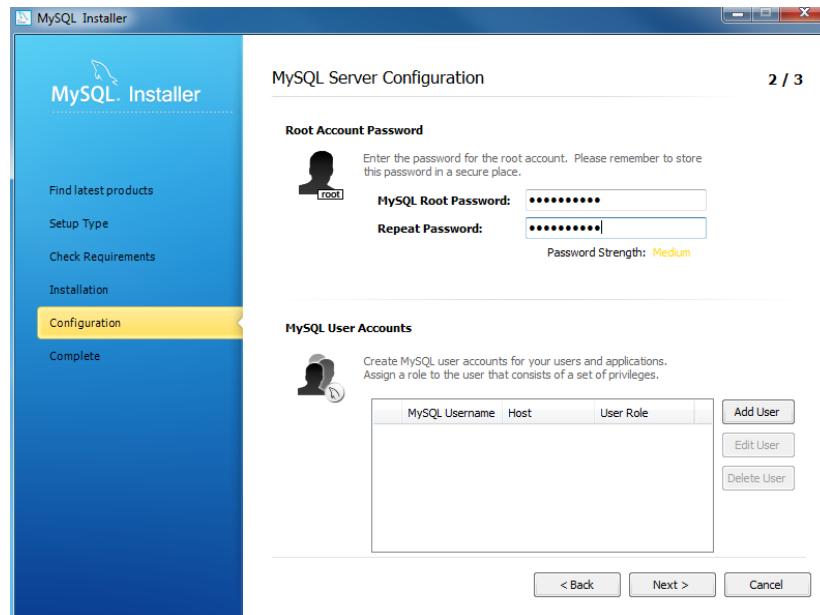
Install MySQL Step 7 – Installation Progress: Complete Downloading. Click the **Next** button to continue...



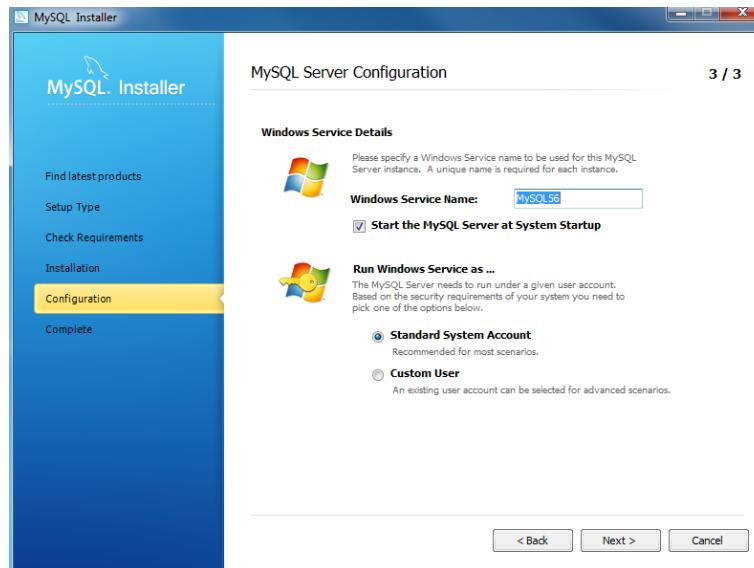
Install MySQL Step 8 – Configuration Overview. Click the Next button to configure MySQL Database Server



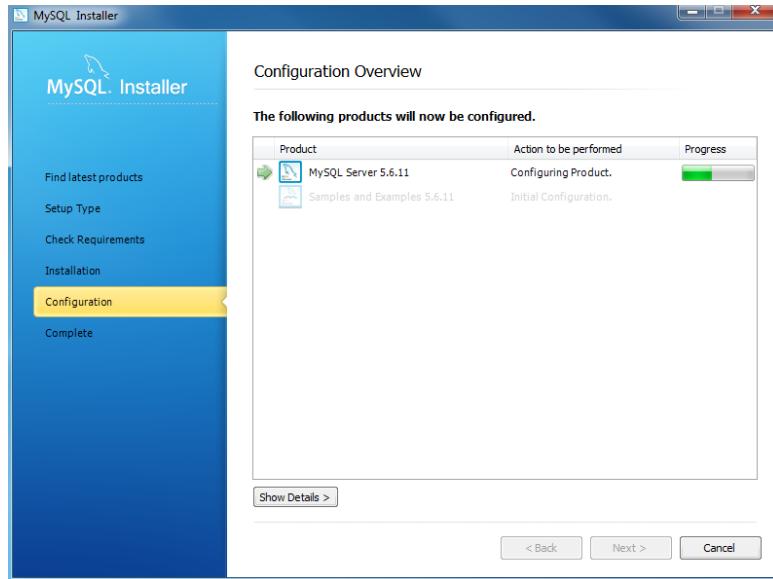
Install MySQL Step 8.1 – MySQL Server Configuration: choose Config Type and MySQL port (3006 by default) and click Next button to continue.



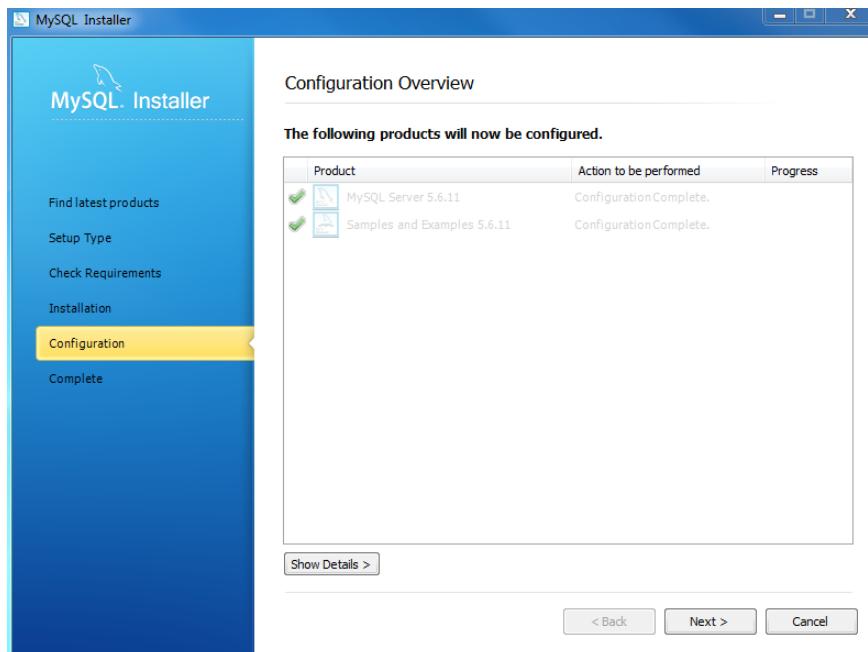
Install MySQL Step 8.1 – MySQL Server Configuration: choose a password for the root account. Please note the password download and keep it securely if you are installing MySQL database server on a production server. If you want to add a more MySQL user, you can do it in this step.



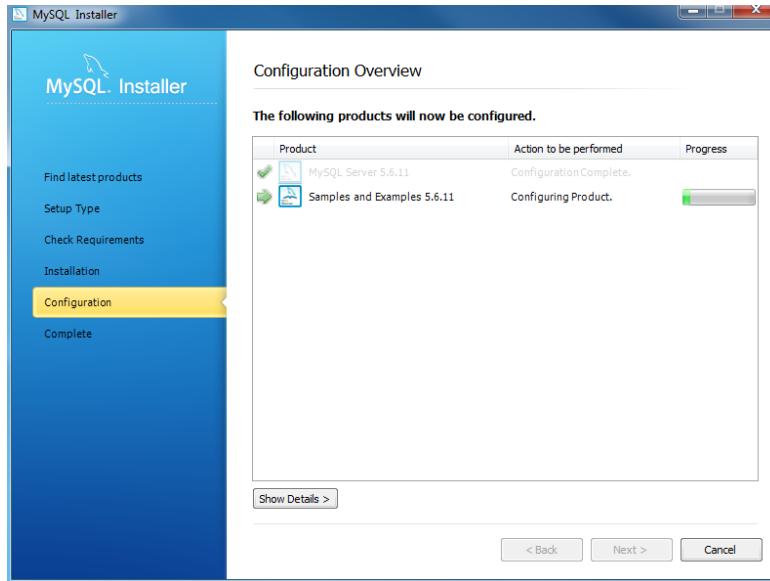
Install MySQL Step 8.1 – MySQL Server Configuration: choose Windows service details including Windows Service Name and account type, then click Next button to continue.



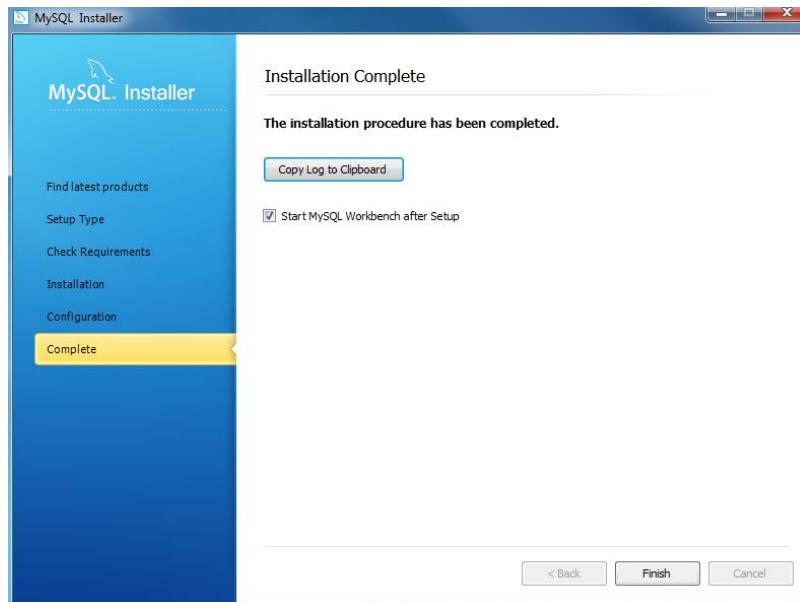
Install MySQL Step 8.1 – MySQL Server Configuration – In Progress: MySQL Installer is configuring MySQL database server. Wait until it is done and click the Next button to continue.



Install MySQL Step 8.1 – MySQL Server Configuration – Done. Click the Next button to continue.



Install MySQL Step 8.2 – Configuration Overview: MySQL Installer installs sample databases and sample models.



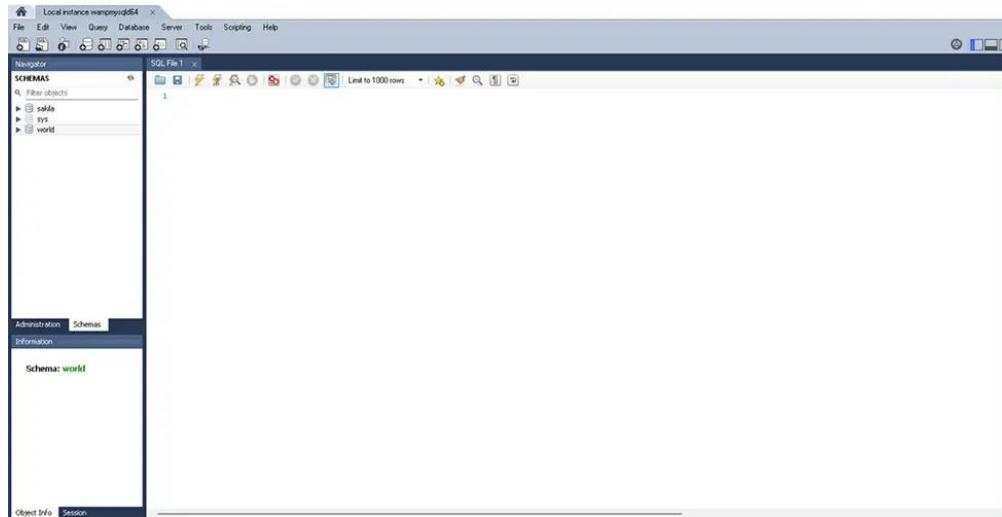
Install MySQL Step 9 – Installation Completes: the installation completes. Click the **Finish** button to close the installation wizard and launch the MySQL Workbench.

If you chose to start the Workbench after finishing the installation, you'll see the following screen:



Choose the connection to the server you created and log into it.

This is your working space:



Notice in the **SCHEMAS** window that you already have a few sample databases to play with. In the **Information** window, you can see the database you have selected. Of course, you have the main window to write SQL code.

