

## Lab: Web Technologies (CMP708)

1. Design a web page using different text formatting tags.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Bold Text Example</title>
  </head>
  <body>
    <p>This is normal text.</p>
    <p><b>This is bold text.</b></p>
    <p><strong>This is strong text with logical importance.</strong>
    <i>This is italics text.</i>
    <del>This make a strike throught text</del>
  </body>
</html>
```

This is normal text.

**This is bold text.**

This is strong text with logical importance.

*This is italics text.*

~~This make a strike throught text~~

2. Design a web page with different types of Marquee.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <style>
      body {
        font-family: "Arial", sans-serif;
        margin: 0;
        overflow: hidden;
      }
      header {
        background-color: #2a2a2a;
        color: white;
        text-align: center;
        animation: scrollText 10s linear infinite;
      }
      @keyframes scrollText {
        0% {
          transform: translateX(100%);
        }
        100% {
          transform: translateX(-100%);
        }
      }
    </style>
    <title>Marquee Web Page</title>
  </head>
  <body>
    <header>
      <h1>This is a Scrolling Header</h1>
    </header>
    <div style="padding: 20px; text-align: center">
      <h2>Other Content Goes Here</h2>
      <p>This is some additional content on the web page.</p>
    </div>
  </body>
</html>
```

**This is a Scrolling Header**

**Other Content Goes Here**

This is some additional content on the web page.

3. Design a web page with links to different pages and allow navigation between pages.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1">
  <title>Main Page</title>
</head>
<body>
  <header>
    <h1>Welcome to the Main Page</h1>
  </header>

  <nav>
    <ul>
      <li><a href="page1.html">Page 1</a></li>
      <li><a href="page2.html">Page 2</a></li>
      <li><a href="page3.html">Page 3</a></li>
    </ul>
  </nav>

  <main>
    <p>This is the main content of the main page.</p>
  </main>
</body>
</html>
```

# Welcome to the Main Page

- [Page 1](#)
- [Page 2](#)
- [Page 3](#)

This is the main content of the main page.

4. Design a web page with Image and Imagemaps.

```
<!DOCTYPE html>
<html>
<body>
<style>
  body {
    text-align: center;
  }
</style>
<h2>Image Maps</h2>



<map name="deskmap">
  <area
    shape="rect"
    coords="175,242,420,358"
    alt="Keyboard"
    target="_blank"
    href="https://en.wikipedia.org/wiki/Computer_keyboard"
  />

  <area
    shape="rect"
    coords="444,251,481,357"
    alt="Mouse"
    target="_blank"
    href="https://en.wikipedia.org/wiki/Computer_mouse"
  />

  <area
    shape="rect"
    coords="375,14,481,357"
    alt="Diary"
    target="_blank"
    href="https://en.wikipedia.org/wiki/Book"
  />
</map>
</body>
</html>
```

## Image Maps



5. Create a student table with the following fields. Student Id, Name, DOB, Course, Address, E-mail id and apply Embedded cascading style sheet CSS with the following attributes: Font size, color, style, bold, italic, border color, set the background image & set the center align of table & text.

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Student Table</title>
    <style>
      body {
        background-image: url("background_image.jpg");
        background-size: cover;
        text-align: center;
        font-family: Arial, sans-serif;
      }
      table {
        width: 60%;
        margin: 20px auto;
        border-collapse: collapse;
      }
      th {
        padding: 10px;
        border: 1px solid #000;
      }
      tr {
        background-color: #f2f2f2;
      }
      td {
        font-size: 14px;
        color: #333;
      }
      .bold-text {
        font-weight: bold;
      }
      .italic-text {
        font-style: italic;
      }
      .highlight-text {
        color: #ff0000;
      }
    </style>
  </head>
  <body>
    <h3>Student Information Table</h3>
    <table>
      <thead>
        <tr>
          <th>Student ID</th>
          <th>Name</th>
          <th>DOB</th>
          <th>Course</th>
          <th>Address</th>
          <th>E-mail ID</th>
        </tr>
      </thead>
      <tbody>
        <tr>
          <td class="bold-text">John Doe</td>
          <td class="italic-text">1990-05-15</td>
          <td>Computer Science</td>
          <td class="highlight-text">123 Main St, City</td>
          <td>john.doe@example.com</td>
        </tr>
      </tbody>
    </table>
  </body>
</html>
```

Student Information Table

Student ID	Name	DOB	Course	Address	E-mail ID
1	John Doe	1990-05-15	Computer Science	123 Main St, City	john.doe@example.com

6. Create an external CSS for above and apply to the web page.

```
body {
  background-image: url('background_image.jpg'); /* Set background image */
  background-size: cover;
  text-align: center;
  font-family: Arial, sans-serif;
  margin: 0;
  padding: 0;
}

h1 {
  color: #fff;
}

table {
  width: 60%;
  margin: 50px auto;
  border-collapse: collapse;
  background-color: rgba(255, 255, 255, 0.8);
}

th, td {
  padding: 12px;
  border: 1px solid #333;
}

th {
  background-color: #f2f2f2;
}

td {
  font-size: 14px;
  color: #333;
}

.bold-text {
  font-weight: bold;
}

.italic-text {
  font-style: italic;
}

.highlight-text {
  color: #ff0000;
}
```

7. Create a frameset that divides browser window into horizontal and vertical framesets.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Frameset Example</title>
</head>
<frameset rows="50%,50%">
  <!-- Top Frameset (Horizontal) -->
  <frame src="top.html" name="topFrame" scrolling="auto" noresize>

  <frameset cols="50%,50%">
    <!-- Left Frameset (Vertical) -->
    <frame src="left.html" name="leftFrame" scrolling="auto" noresize>

    <!-- Right Frameset (Vertical) -->
    <frame src="right.html" name="rightFrame" scrolling="auto" noresize>
  </frameset>
</frameset>
</html>
```

8. Write the javascript code to enter five numbers in the prompt box. Calculate addition of the numbers & average.

```
function calculateSumAndAverage() {
    var numbers = [];
    for (var i = 1; i <= 5; i++) {
        var userInput = prompt("Enter number " + i + ":");
        var num = parseFloat(userInput);
        if (!isNaN(num)) {
            numbers.push(num);
        } else {
            alert("Invalid input. Please enter a valid number.");
            i--;
        }
    }

    var sum = 0;
    for (var i = 0; i < numbers.length; i++) {
        sum += numbers[i];
    }
    var average = sum / numbers.length;
    alert("Sum: " + sum + "\nAverage: " + average);
}
calculateSumAndAverage();
```

9. Create a web page with image and text apply javascript Mouse events – onmouseover , onmouseout, onclick on the image and text.

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>Mouse Events Example</title>
    <style>
        body {
            text-align: center;
        }

        img {
            width: 300px;
            height: auto;
            border: 2px solid #333;
            margin: 20px;
            cursor: pointer; /* Change cursor to pointer on hover */
        }

        #output-text {
            font-size: 18px;
            margin: 20px;
        }
    </style>
</head>
<body>
    

    <p id="output-text">Mouse events will be displayed here.</p>

    <script>
        function onMouseOver() {
            document.getElementById("output-text").innerHTML = "Mouse Over Image!";
        }

        function onMouseOut() {
            document.getElementById("output-text").innerHTML =
                "Mouse Out of Image.";
        }

        function onClick() {
            document.getElementById("output-text").innerHTML = "Image Clicked!";
        }
    </script>
</body>
</html>
```

10. Create a page which displays Javascript popupboxes : 1. Alert 2. Confirm 3. Prompt.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>Popup Boxes Example</title>
</head>
<body>
  <h1>JavaScript Popup Boxes</h1>

  <button onclick="showAlert()">Show Alert</button>
  <button onclick="showConfirm()">Show Confirm</button>
  <button onclick="showPrompt()">Show Prompt</button>

  <script>
    function showAlert() {
      alert("This is an Alert!");
    }

    function showConfirm() {
      var result = confirm("Do you want to proceed?");
      if (result) {
        alert("You clicked OK!");
      } else {
        alert("You clicked Cancel!");
      }
    }

    function showPrompt() {
      var userInput = prompt("Please enter your name:", "John
Doe");
      if (userInput !== null) {
        alert("Hello, " + userInput + "!");
      } else {
        alert("You clicked Cancel!");
      }
    }
  </script>
</body>
</html>
```



11. Design a form and validate all the controls placed on the form using Java Script.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device width, initial scale=1.0">
  <title>Form with JavaScript Validation</title>
</head>
<body>
  <h1>Form with JavaScript Validation</h1>
  <form onsubmit="return validateForm()">
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" required>
    <label for="email">Email:</label>
    <input type="email" id="email" name="email" required>
    <label for="password">Password:</label>
    <input type="password" id="password" name="password" required>
    <input type="submit" value="Submit">
  </form>

  <div id="error-message"></div>

  <script>
    function validateForm() {
      var name = document.getElementById('name').value;
      var email = document.getElementById('email').value;
      var password = document.getElementById('password').value;
      var errorMessage = "";

      if (name.trim() === "") {
        errorMessage += "Name is required.<br>";
      }

      if (email.trim() === "") {
        errorMessage += "Email is required.<br>";
      }

      if (password.trim() === "") {
        errorMessage += "Password is required.<br>";
      }

      if (errorMessage !== "") {
        document.getElementById('error-message').innerHTML =
        errorMessage;
        return false; // Prevent form submission
      } else {
        document.getElementById('error-message').innerHTML = "";
        return true; // Allow form submission
      }
    }
  </script>
</body>
</html>
```

12. Design a DTD, corresponding XML document and display it in browser using CSS.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Library Catalog</title>
  <style>
    body { font-family: Arial, sans-serif; margin: 20px; }
    book { display: block; border: 1px solid #ccc; margin-bottom: 15px; padding: 10px; }
    title { font-size: 18px; font-weight: bold; }
    author, genre, price { font-size: 16px; }
    price { color: green; }
  </style>
</head>
<body>
  <h1>Library Catalog</h1>
  <div id="xml-content"></div>

  <script>
    fetch('library.xml')
      .then(response => response.text())
      .then(xml => new DOMParser().parseFromString(xml, 'application/xml'))
      .then(xmlDoc => document.getElementById('xml-content').innerHTML = new
XMLSerializer().serializeToString(xmlDoc.documentElement))
      .catch(error => console.error('Error fetching XML:', error));
  </script>
</body>
</html>
```

13. Design an XML document and display it in browser using.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Example Items</title>
  <style>
    body { font-family: Arial, sans-serif; margin: 20px; }
    item { display: block; border: 1px solid #ccc; margin-bottom: 15px; padding: 10px; }
    name { font-size: 18px; font-weight: bold; }
    price { font-size: 16px; color: green; }
  </style>
</head>
<body>
  <script>
    fetch('example.xml')
      .then(response => response.text())
      .then(xml => fetch('example.xsl')
        .then(response => response.text())
        .then(xsl => {
          const processor = new XSLTProcessor();
          processor.importStylesheet(new DOMParser().parseFromString(xsl, 'application/xml'));
          document.body.appendChild(processor.transformToFragment(new
DOMParser().parseFromString(xml, 'application/xml'), document));
        })
      )
      .catch(error => console.error('Error fetching XML or XSL:', error));
  </script>
</body>
</html>
```

14. Design XML Schema and corresponding XML document.

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
  <xs:element name="library">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="book" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="title" type="xs:string"/>
              <xs:element name="author" type="xs:string"/>
              <xs:element name="genre" type="xs:string"/>
              <xs:element name="price" type="xs:decimal"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

```
<library xmlns="http://www.example.com">
  <book>
    <title>The Catcher in the Rye</title>
    <author>J.D. Salinger</author>
    <genre>Fiction</genre>
    <price>19.99</price>
  </book>
  <book>
    <title>To Kill a Mockingbird</title>
    <author>Harper Lee</author>
    <genre>Classics</genre>
    <price>15.50</price>
  </book>
  <!-- Add more books as needed -->
</library>
```

15. Create a web site with Minimum 3 pages Home, Page 1 and Page2 Incorporate all HTML & DHTML elements. The pages should be linked.

# Welcome to My Website

- [Home](#)
- [Page 1](#)
- [Page 2](#)

## Home Page Content

This is the home page of my website. Explore the other pages using the navigation links.

© 2023 My Website. All rights reserved.

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>My Website - Home</title>
</head>
<body>
  <header>
    <h1>Welcome to My Website</h1>
  </header>

  <nav>
    <ul>
      <li><a href="index.html">Home</a></li>
      <li><a href="page1.html">Page 1</a></li>
      <li><a href="page2.html">Page 2</a></li>
    </ul>
  </nav>

  <section>
    <h2>Home Page Content</h2>
    <p>This is the home page of my website. Explore the other pages using the navigation links.</p>
  </section>

  <footer>
    <p>&copy; 2023 My Website. All rights reserved.</p>
  </footer>
</body>
</html>

```

```

<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>My Website - Page 1</title>
</head>
<body>
  <header>
    <h1>Page 1</h1>
  </header>

  <nav>
    <ul>
      <li><a href="index.html">Home</a></li>
      <li><a href="page1.html">Page 1</a></li>
      <li><a href="page2.html">Page 2</a></li>
    </ul>
  </nav>

  <section>
    <h2>Page 1 Content</h2>
    <p>This is the content of Page 1. Go back to the <a href="index.html">Home Page</a> or visit <a href="page2.html">Page 2</a>.</p>
  </section>

  <footer>
    <p>&copy; 2023 My Website. All rights reserved.</p>
  </footer>
</body>
</html>

```

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>My Website - Page 2</title>
</head>
<body>
  <header>
    <h1>Page 2</h1>
  </header>

  <nav>
    <ul>
      <li><a href="index.html">Home</a></li>
      <li><a href="page1.html">Page 1</a></li>
      <li><a href="page2.html">Page 2</a></li>
    </ul>
  </nav>

  <section>
    <h2>Page 2 Content</h2>
    <p>This is the content of Page 2. Return to the <a href="index.html">Home Page</a> or navigate to
    <a href="page1.html">Page 1</a>.</p>
  </section>

  <footer>
    <p>©copy; 2023 My Website. All rights reserved.</p>
  </footer>
</body>
</html>
```

## Page 2

- [Home](#)
- [Page 1](#)
- [Page 2](#)

## Page 2 Content

This is the content of Page 2. Return to the [Home Page](#) or navigate to [Page 1](#).

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