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Full Stack Web Development
Assignment # 1

Github:
https://github.com/daewoodd/FSWDassignment-1

Create a document summarizing the key terms and concepts related to HTML and CSS.

HTML (HyperText Markup Language) and CSS (Cascading Style Sheets) are fundamental technologies used for creating and styling web pages on the internet. Here's an extensive summary of key terms and concepts related to HTML and CSS:

HTML (HyperText Markup Language):
HTML is the standard markup language used to create and design web pages. It provides the structure and content of a webpage by using a system of markup tags. These tags describe the layout, formatting, and organization of text, images, multimedia, and other elements within a webpage. HTML documents are composed of various elements, each serving a specific purpose. These elements are enclosed in angle brackets and typically come in pairs, with an opening tag and a closing tag.

CSS (Cascading Style Sheets):
CSS is a style sheet language used for describing the presentation of a document written in HTML. It enhances the appearance and layout of HTML elements by defining styles such as colors, fonts, spacing, and positioning. With CSS, web developers can separate the content of a webpage from its presentation, making it easier to maintain and update the design of a website. CSS rules are applied to HTML elements through selectors, targeting specific elements or groups of elements, and defining the desired styling properties.

Basic Structure of an HTML Document:
An HTML document follows a specific structure, consisting of several key elements:

1. `<!DOCTYPE html>`: This declaration defines the document type and version of HTML being used. It ensures that web browsers interpret the document correctly.

2. `<html>`: The `<html>` element serves as the root element of an HTML page. It wraps all the content on the entire page.

3. `<head>`: The `<head>` element contains meta-information about the document, such as its title, character encoding, stylesheets, and scripts. This section is not displayed on the web page itself.

4. `<title>`: The `<title>` element specifies the title of the document, which appears in the browser's title bar or tab.

5. `<body>`: The `<body>` element contains the content of the document, including text, images, links, and other elements that are visible to the user.

HTML Elements vs. Attributes:
HTML documents consist of elements and attributes, which serve different roles:

- *HTML Elements:* Elements are the building blocks of HTML documents. They define the structure and content of the page. Elements are enclosed in tags and can contain other elements or text. Examples of HTML elements include `<p>` for paragraphs, `<h1>` for headings, `<div>` for divisions, `<img>` for images, `<a>` for links, and many more.

- *HTML Attributes:* Attributes provide additional information about HTML elements. They are used to modify the behavior or appearance of elements. Attributes are placed within the opening tag of an element and are written as name-value pairs. Examples of attributes include `src` for specifying the source of an image, `href` for specifying the destination of a link, `class` for applying CSS classes, `id` for uniquely identifying an element, `alt` for providing alternative text for images, and so on.

Understanding these key terms and concepts is essential for anyone looking to develop web pages or understand how websites are structured and styled on the internet. HTML and CSS form the foundation of modern web development, empowering developers to create visually appealing and interactive experiences for users across different devices and platforms.

Create a simple HTML document with various elements, attributes, and inline styles. Write a short paragraph explaining the purpose of each element used.

HTML: (file attached with assignment)

```
<!DOCTYPE html>
<html>
<head>
   <title>Simple HTML Document</title>
   <meta charset="UTF-8">
   <style>
      /* Inline styles */
      .red-text {
         color: red;
      }
   </style>
</head>
<body>
   <h1>Welcome to My Website</h1>
   <p>This is a paragraph of <span class="red-text">red</span> text.</p>

   <h2>Links</h2>
   <p>Click <a href="https://example.com">here</a> to visit Example website.</p>
```

```
    <h2>Tables</h2>
    <table border="1">
        <tr>
            <th>Name</th>
            <th>Age</th>
        </tr>
        <tr>
            <td>John</td>
            <td>25</td>
        </tr>
        <tr>
            <td>Jane</td>
            <td>30</td>
        </tr>
    </table>

    <h2>Forms</h2>
    <form>
        <label for="name">Name:</label>
        <input type="text" id="name" name="name"><br><br>
        <label for="email">Email:</label>
        <input type="email" id="email" name="email"><br><br>
        <input type="submit" value="Submit">
    </form>
</body>
</html>
```

Welcome to My Website

This is a paragraph of red text.

Links

Click here to visit Example website.

Tables

Name	Age
John	25
Jane	30

Forms

Name:

Email:

Submit

Explanation of Elements and Attributes:

- `<head>`: The `<head>` element contains meta-information about the document, such as its title, character encoding, stylesheets, and scripts. It's not displayed on the webpage itself but serves important functions for search engines and browsers.

- `<body>`: The `<body>` element contains the content of the document that's visible to users. It includes text, images, links, tables, forms, and other elements.

- `<p>`: The `<p>` element represents a paragraph of text. It's used to structure and format text content on the webpage.

- `<a>`: The `<a>` element creates a hyperlink, allowing users to navigate to another webpage when clicked. The `href` attribute specifies the destination URL.

- `<table>`: The `<table>` element is used to create tabular data. It consists of rows (`<tr>`) and columns (`<td>` for table data and `<th>` for table headers).

- `<form>`: The `<form>` element creates a form for user input. It can contain various input elements like text fields (`<input type="text">`), email fields (`<input type="email">`), checkboxes, radio buttons, etc. The `action` attribute specifies where the form data should be submitted, and the `method` attribute defines how it should be submitted (typically `GET` or `POST`).

Significance of Links, Tables, and Forms:

- *Links:* Links are essential for navigation within a website and linking to external resources. They facilitate seamless browsing experiences for users.

- *Tables:* Tables are used to organize and display tabular data in a structured format. They are commonly used in reports, pricing tables, and any situation where data needs to be presented in rows and columns.

- *Forms:* Forms allow users to input data, submit queries, and interact with web applications. They are crucial for collecting information, processing user requests, and enabling various types of interactions on websites.

Role of Inline Styling in HTML:

Inline styling in HTML allows developers to apply CSS styles directly to individual HTML elements using the `style` attribute. While it's generally recommended to use external or internal stylesheets for better maintainability and organization, inline styles can be useful for quick styling changes or when the style is specific to a single element. However, inline styles can make the HTML code less readable and harder to maintain, especially in larger projects. Therefore, they should be used judiciously, preferably for small-scale or temporary styling adjustments.

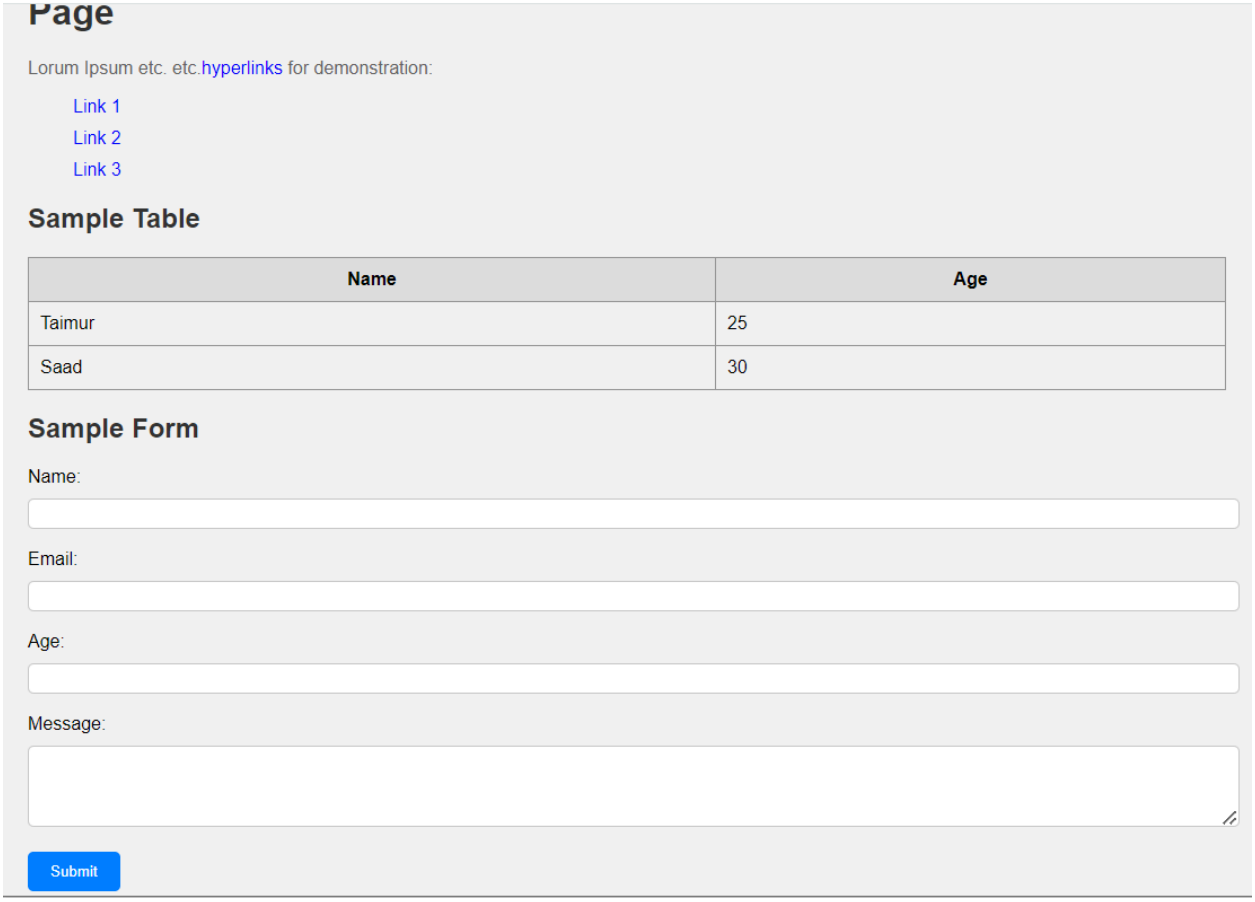
Develop a webpage that includes hyperlinks, tables, and a form with various input types. Customize the appearance using inline styling.

HTML:

```
<!DOCTYPE html>
<html>
<head>
   <title>Title</title>
   <meta charset="UTF-8">
</head>
<body style="font-family: Arial, sans-serif; background-color: #f4f4f4; padding: 20px;">

   <h1 style="color: #333;">Page</h1>

   <p style="font-size: 16px; color: #666;">Lorum Ipsum etc. etc.<a href="#" style="color: blue; text-decoration: none;">hyperlinks</a> for demonstration:</p>

   <ul style="list-style-type: none;">
      <li style="margin-bottom: 10px;"><a href="#" style="color: blue; text-decoration: none;">Link 1</a></li>
```

```
      <li style="margin-bottom: 10px;"><a href="#" style="color: blue; text-decoration:
none;">Link 2</a></li>
      <li style="margin-bottom: 10px;"><a href="#" style="color: blue; text-decoration:
none;">Link 3</a></li>
   </ul>

   <h2 style="color: #333;">Sample Table</h2>

   <table style="width: 100%; border-collapse: collapse;">
      <thead>
         <tr style="background-color: #ddd;">
            <th style="padding: 10px; border: 1px solid #999;">Name</th>
            <th style="padding: 10px; border: 1px solid #999;">Age</th>
         </tr>
      </thead>
      <tbody>
         <tr>
            <td style="padding: 10px; border: 1px solid #999;">Taimur</td>
            <td style="padding: 10px; border: 1px solid #999;">25</td>
         </tr>
         <tr>
            <td style="padding: 10px; border: 1px solid #999;">Saad</td>
            <td style="padding: 10px; border: 1px solid #999;">30</td>
         </tr>
      </tbody>
   </table>

   <h2 style="color: #333;">Sample Form</h2>

   <form style="margin-bottom: 20px;">
      <label for="name" style="display: block; margin-bottom: 10px;">Name:</label>
      <input type="text" id="name" name="name" style="padding: 5px; width: 100%; border: 1px
solid #ccc; border-radius: 5px;"><br><br>

      <label for="email" style="display: block; margin-bottom: 10px;">Email:</label>
      <input type="email" id="email" name="email" style="padding: 5px; width: 100%; border:
1px solid #ccc; border-radius: 5px;"><br><br>

      <label for="age" style="display: block; margin-bottom: 10px;">Age:</label>
      <input type="number" id="age" name="age" style="padding: 5px; width: 100%; border: 1px
solid #ccc; border-radius: 5px;"><br><br>

      <label for="message" style="display: block; margin-bottom: 10px;">Message:</label>
```

```
    <textarea id="message" name="message" rows="4" style="padding: 5px; width: 100%; border: 1px solid #ccc; border-radius: 5px;"></textarea><br><br>

    <input type="submit" value="Submit" style="padding: 10px 20px; background-color: #007bff; color: #fff; border: none; border-radius: 5px; cursor: pointer;">
  </form>
</body>
</html>
```



- Hyperlinks are created using <a> tags.
- A table is created using <table>, <tr>, <th>, and <td> tags.
- A form is created using <form> and various input types like text, email, and number, as well as a textarea for multi-line text input.
- Inline styling is applied to modify the appearance of elements, including colors, fonts, borders, padding, and spacing.

Q4-a: Write a brief analysis of the impact of effective page layouts on user experience.
Effective page layouts in HTML design play a pivotal role in enhancing user experience (UX) by:

Visual Hierarchy: Guiding users through content logically using headings, subheadings, and visual cues for importance.

Readability and Scannability: Organizing content for easy digestion, ensuring readability and quick scanning.

Consistency and Familiarity: Maintaining consistent layouts across pages for familiarity and reducing cognitive load.

Responsive Design: Adapting layouts to various screen sizes for a seamless experience on different devices.

Accessibility: Designing layouts with accessibility principles for all users, including those with disabilities.

Loading Speed: Optimizing layouts to improve loading times by prioritizing essential content and minimizing unnecessary elements.

Call to Action Placement: Strategically positioning call-to-action elements to drive user engagement and conversions.

In essence, well-crafted layouts prioritize readability, consistency, responsiveness, and strategic element placement to provide users with a positive and engaging browsing experience.

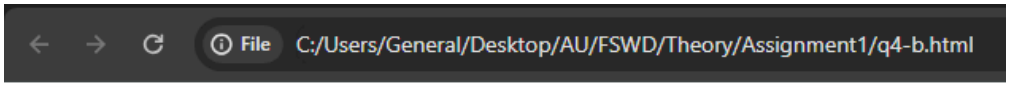
Q4-b: Create a table comparing different HTML form elements based on their functionality.

HTML:

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>title</title>
</head>
<body>
   <table class="styled-table">
      <thead>
         <tr>
            <th>Form Element</th>
            <th>Functionality</th>
         </tr>
      </thead>
      <tbody>
```

```
        <tr>
            <td> input </td>
            <td> Allows user input (text, password, checkbox, etc.)</td>
        </tr>
        <tr class="active-row">
            <td>select</td>
            <td>Provides a dropdown list of options  </td>
        </tr>
        <tr>
            <td> textarea </td>
            <td> Allows multi-line text input </td>
        </tr>
        <tr class="active-row">
            <td>button</td>
            <td>Triggers an action or submits a form   </td>
        </tr>
        <tr>
            <td> label </td>
            <td> Associates a label with a form element </td>
        </tr>
        <tr class="active-row">
            <td>fieldset</td>
            <td> Groups related form elements        </td>
        </tr>
        <tr>
            <td> legends </td>
            <td> provides caption for field set</td>
        </tr>
        <tr class="active-row">
            <td>form</td>
            <td>Wraps form elements and handles form submission     </td>
        </tr>
        <!-- and so on... -->
    </tbody>
</table>
<style>
    .styled-table {
    border-collapse: collapse;
    margin: 25px 0;
    font-size: 0.9em;
    font-family: sans-serif;
    min-width: 400px;
    box-shadow: 0 0 20px rgba(0, 0, 0, 0.15);
    }
```

```
        .styled-table thead tr {
        background-color: #009879;
        color: #ffffff;
        text-align: left;
     }

     .styled-table th,
    .styled-table td {
        padding: 12px 15px;
    }

    .styled-table tbody tr {
        border-bottom: 1px solid #dddddd;
    }

    .styled-table tbody tr:nth-of-type(even) {
        background-color: #f3f3f3;
    }

    .styled-table tbody tr:last-of-type {
        border-bottom: 2px solid #009879;
    }

    .styled-table tbody tr.active-row {
    font-weight: bold;
    color: #009879;
}
    </style>
</body>
</html>
```



Form Element	Functionality
input	Allows user input (text, password, checkbox, etc.)
select	Provides a dropdown list of options
textarea	Allows multi-line text input
button	Triggers an action or submits a form
label	Associates a label with a form element
fieldset	Groups related form elements
legends	provides caption for field set
form	Wraps form elements and handles form submission

Q5: Develop a webpage that incorporates CSS for styling and layout. Include a variety of HTML elements to showcase the integration of HTML and CSS.

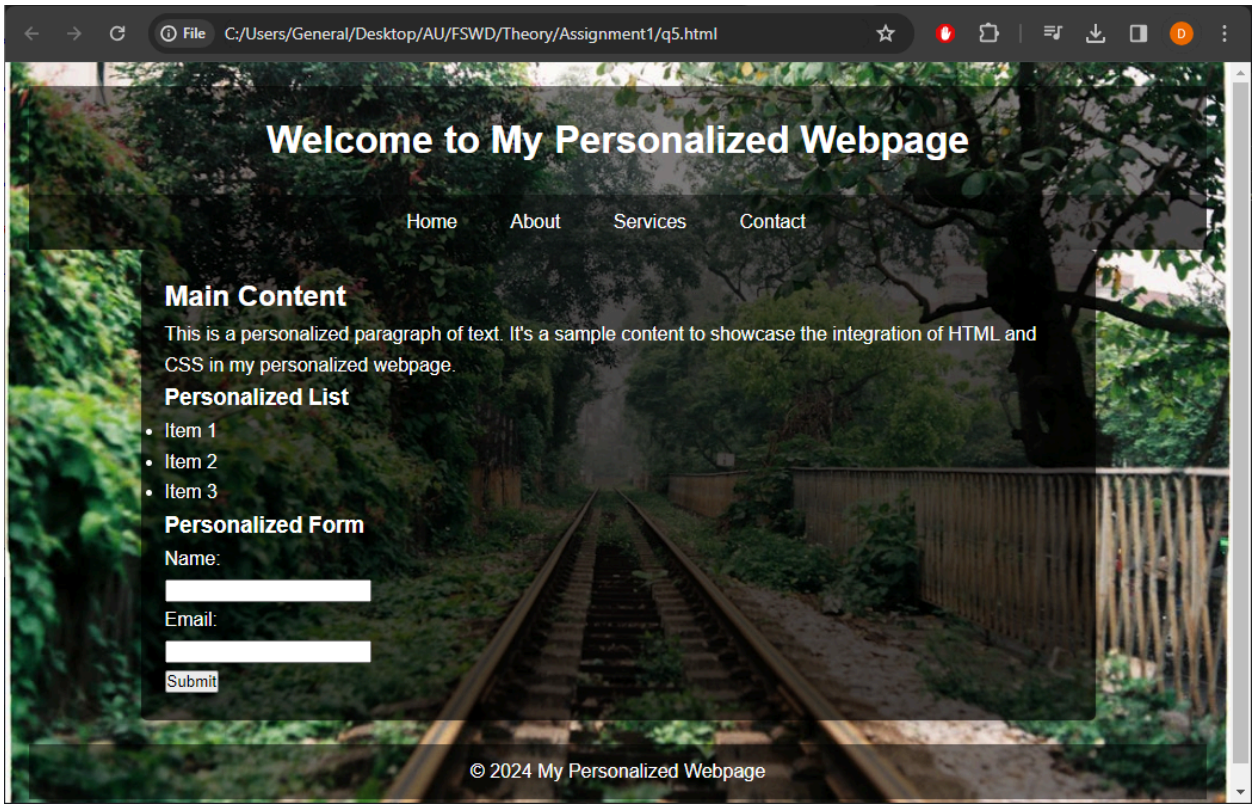
HTML:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>My Personalized Webpage</title>
    <style>
        /* Resetting default margin and padding for all elements */
        * {
            margin: 0;
            padding: 0;
            box-sizing: border-box;
        }

        /* Body styling */
        body {
            font-family: Arial, sans-serif;
            background-image:
url('https://images.pexels.com/photos/20110848/pexels-photo-20110848/free-photo-of-railway.jpeg?auto=compress&cs=tinysrgb&w=1260&h=750&dpr=1');
```

```
    background-size: cover;
    background-position: center;
    color: #fff;
    line-height: 1.6;
    padding: 20px;
}

/* Header styling */
header {
    background-color: rgba(0, 0, 0, 0.5);
    color: #fff;
    padding: 20px;
    text-align: center;
}

/* Navigation menu styling */
nav {
    background-color: rgba(0, 0, 0, 0.7);
    padding: 10px;
}

nav ul {
    list-style-type: none;
    text-align: center;
}

nav ul li {
    display: inline;
    margin-right: 20px;
}

nav ul li a {
    text-decoration: none;
    color: #fff;
    padding: 5px 10px;
    border-radius: 5px;
    transition: background-color 0.3s;
}

nav ul li a:hover {
    background-color: #555;
}

/* Main content styling */
```

```
        .container {
            max-width: 800px;
            margin: auto;
            padding: 20px;
            background-color: rgba(0, 0, 0, 0.7);
            border-radius: 5px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.3);
        }

        /* Footer styling */
        footer {
            text-align: center;
            margin-top: 20px;
            padding: 10px 0;
            background-color: rgba(0, 0, 0, 0.5);
            color: #fff;
        }
    </style>
</head>
<body>
    <header>
        <h1>Welcome to My Personalized Webpage</h1>
    </header>

    <nav>
        <ul>
            <li><a href="#">Home</a></li>
            <li><a href="#">About</a></li>
            <li><a href="#">Services</a></li>
            <li><a href="#">Contact</a></li>
        </ul>
    </nav>

    <div class="container">
        <h2>Main Content</h2>
        <p>This is a personalized paragraph of text. It's a sample content to showcase the
integration of HTML and CSS in my personalized webpage.</p>
        <div>
            <h3>Personalized List</h3>
            <ul>
                <li>Item 1</li>
                <li>Item 2</li>
                <li>Item 3</li>
            </ul>
```

```
        </div>
        <div>
            <h3>Personalized Form</h3>
            <form>
                <label for="name">Name:</label><br>
                <input type="text" id="name" name="name"><br>
                <label for="email">Email:</label><br>
                <input type="email" id="email" name="email"><br>
                <input type="submit" value="Submit">
            </form>
        </div>
    </div>

    <footer>
        <p>&copy; 2024 My Personalized Webpage</p>
    </footer>
</body>
</html>
```

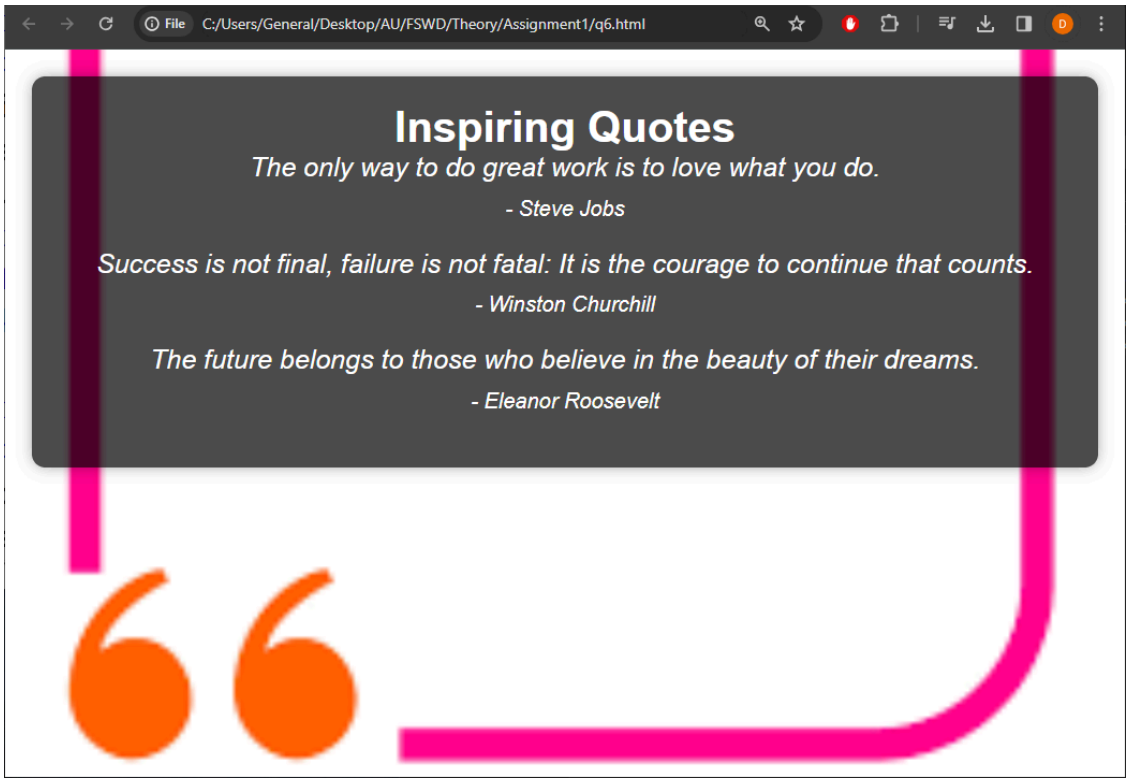


Q6-a: Create a webpage that includes quotations in a meaningful context.
HTML:

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <link rel="stylesheet" href="./style.css">
   <title>Q6_FSWD</title>
</head>
<body>
   <blockquote class="blockquote"><p>
      Great things in business are never done by one person. They're done by a team of people.

   </p></blockquote>
      <br />
   <blockquote class="otro-blockq<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Inspiring Quotes</title>
   <style>
      /* Resetting default margin and padding for all elements */
      * {
         margin: 0;
         padding: 0;
         box-sizing: border-box;
      }

      /* Body styling */
      body {
         font-family: Arial, sans-serif;
         background-image:
url('https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQ6tVajx4hib_lohSk0-XdgsSEMqT
O2lnYL_g&usqp=CAU');
         background-size: cover;
         background-position: center;
         color: #fff;
         padding: 20px;
         text-align: center;
      }
```

```
        /* Container styling */
        .container {
            max-width: 800px;
            margin: auto;
            padding: 20px;
            background-color: rgba(0, 0, 0, 0.7);
            border-radius: 10px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.3);
        }

        /* Quotation styling */
        blockquote {
            font-style: italic;
            margin-bottom: 20px;
        }

        blockquote p {
            font-size: 20px;
            margin-bottom: 10px;
        }

        blockquote footer {
            font-size: 16px;
        }
    </style>
</head>
<body>
    <div class="container">
        <h1>Inspiring Quotes</h1>

        <blockquote>
            <p>The only way to do great work is to love what you do.</p>
            <footer>- Steve Jobs</footer>
        </blockquote>

        <blockquote>
            <p>Success is not final, failure is not fatal: It is the courage to continue that counts.</p>
            <footer>- Winston Churchill</footer>
        </blockquote>

        <blockquote>
            <p>The future belongs to those who believe in the beauty of their dreams.</p>
            <footer>- Eleanor Roosevelt</footer>
```

```
        </blockquote>
    </div>
</body>
</html>
```



Q6-b: Write a short essay comparing the pros and cons of using external CSS and inline styling.

External CSS:

Pros:
- Separation of concerns: Keeps HTML and CSS separate, promoting cleaner code structure.
- Reusability: Styles can be reused across multiple pages, ensuring consistency in design.
- Browser cache: External CSS files can be cached, improving website performance for subsequent visits.
- Ease of maintenance: Styles are consolidated in a single file, facilitating easier management and updates.

Cons:
- HTTP requests: Requires additional HTTP requests, potentially delaying page rendering.
- Potential for unused styles: Accumulation of unused styles can increase file size and affect performance.

- Dependency on network: Failure to load external CSS files can result in unstyled webpages.

Inline Styling:

Pros:
- Specificity: Inline styles have higher specificity, overriding other styles easily.
- No additional HTTP requests: Faster initial page rendering without extra server requests.
- Portability: Styles are self-contained within HTML, making code snippets easier to copy and paste.

Cons:
- Lack of separation: Mixes content and presentation concerns, reducing code readability.
- Reduced reusability: Styles applied directly to elements are less reusable compared to external stylesheets.
- Difficulty in maintenance: Changes to inline styles often require manual editing of each element, leading to code duplication.