Experiment No:- 1

Aim: To create a basic webpage using HTML and CSS.

Theory:

HTML (HyperText Markup Language): HTML is the standard markup language used to create and structure content on the web. It forms the skeleton of a webpage by defining the structure of text, images, videos, links, and other multimedia elements. HTML uses a series of elements, known as "tags," to wrap and format content.

Key Features of HTML:

1. **Elements and Tags:** HTML documents are made up of elements enclosed in opening and closing tags. For example, <p> is a paragraph tag, and </p> closes it.
2. **Attributes:** HTML elements can have attributes that provide additional information or settings. For instance, an image tag (<img>) uses an src attribute to define the source of the image: <img src="image.jpg">.
3. **Document Structure:** An HTML document follows a basic structure with elements like <head>, <body>, <title>, and <link>.

CSS (Cascading Style Sheets): CSS is used for styling HTML elements, providing control over the layout, design, and visual aspects of the page. With CSS, you can change the color, fonts, margins, padding, and position of elements.

Types of CSS:

1. **Inline CSS:** Applied directly within an HTML element using the style attribute. For example: <p style="color: red;">This is red text.</p>.
2. **Internal CSS:** Defined within a <style> tag inside the <head> section of an HTML document. For example:

<head><style>p { color: blue; }</style></head>

3. **External CSS:** Written in a separate .css file and linked to the HTML document using the <link> tag. For example: <link rel="stylesheet" href="style.css">.

Key Features of CSS:

1. **Selectors:** CSS uses selectors to target HTML elements and apply styles. For example, h1 { color: red; } changes the color of all <h1> elements to red.
2. **Box Model:** CSS controls the spacing of elements through the box model, which consists of content, padding, border, and margin.

3. **Animations and Transitions:** CSS allows for smooth animations and transitions, enhancing user interaction.

CSS Transformations and Transitions:

1. **Transform - Scale:** The transform: scale(); property allows elements to be resized. For example, transform: scale(1.5); increases the size of the element by 1.5 times.
2. **Ease Transition:** The ease keyword in transitions creates a smooth start and end effect. For example, transition: transform 0.5s ease; smoothly scales an element over 0.5 seconds.

HTML5 and CSS3: New Features and Enhancements:
HTML5 and CSS3 introduced many new features and improvements, focusing on better support for modern web applications, improved accessibility, and mobile responsiveness.

Key New Features:

1. **New Semantic Elements:** Elements like <header>, <footer>, <article>, <section>, and <nav> enhance the structure and meaning of content.
2. **Advanced Selectors:** CSS3 introduced more specific selectors like nth-child and nth-of-type.
3. **Animations and Transitions:** Smooth animations and transitions can be applied to properties like color, position, and opacity.
4. **Flexbox and Grid Layout:** Advanced techniques for creating responsive and complex layouts.
5. **Border Radius and Shadows:** CSS3 allows for rounded corners and drop shadows to enhance design aesthetics.

Files:

1. **HTML:**

```
<!DOCTYPE html>
<html>
<head>
  <title>Experiment 1</title>
  <link rel="stylesheet" href="style.css">
  <style>
```

```
body {
    background-color: #f4f4f4;
}
h2 {
    color: #333;
}
```

```css
        .container {

            animation: fadeIn 1s ease-in-out;

        }

    </style>

</head>

<body>

    <div class="container">

        <h2>About Me</h2>

        <img src="image.png" alt="Picture">

        <p>Hello! I'm a beginner learning web development. I love coding and creating amazing web pages!</p>

        <a href="#" class="button">Know More</a>

    </div>

    <div class="container faq">

        <h2>Frequently Asked Questions</h2>

        <h3>What is this page about?</h3>

        <p>This page demonstrates fundamental web development concepts using HTML, CSS, animations, and transitions.</p>

        <h3>What technologies are used?</h3>

        <p>This page uses HTML, CSS, animations, and CSS transitions.</p>

        <h3>How can I learn more?</h3>

        <p>Experiment with building simple web pages and try applying styles, animations, and transitions!</p>

    </div>

</body>

</html>
```

2. **CSS:**

```css
body {

    font-family: Arial, sans-serif;

    background-color: white;

    margin: 0;

    padding: 0;

    text-align: center;

}

.container {

    background-color: white;

    width: 50%;

    margin: 50px auto;

    padding: 20px;

    border-radius: 10px;

    transition: transform 0.5s ease, 0.5s ease;

}

.container:hover {

    transform: scale(1.25);
```

```css
        }

        img {

            width: 150px;

            height: 150px;

            border-radius: 50%;

            border: 3px solid #333;

            transition: transform 0.5s ease;

        }

        img:hover {

            transform: rotate(360deg);

        }

        .button {

            display: inline-block;

            padding: 10px 20px;

            margin-top: 10px;

            background-color: #28a745;

            color: white;

            text-decoration: none;

            border-radius: 5px;

            transition: background-color 0.3s ease,
transform 0.3s ease;

        }

        .button:hover {

            background-color: hwb(133 13% 47%);

        }

        }

        @keyframes fadeIn {

            from {

                opacity: 0;

                transform: translateY(20px);

            }

            to {

                opacity: 1;

                transform: translateY(0);

            }

        }

        .faq h3 {

            cursor: pointer;

            color: #333;

            transition: color 0.3s ease;

        }

        .faq h3:hover {

            color: #007bff;

        }

        .faq p {

            max-height: 0;

            overflow: hidden;

            opacity: 0;
```
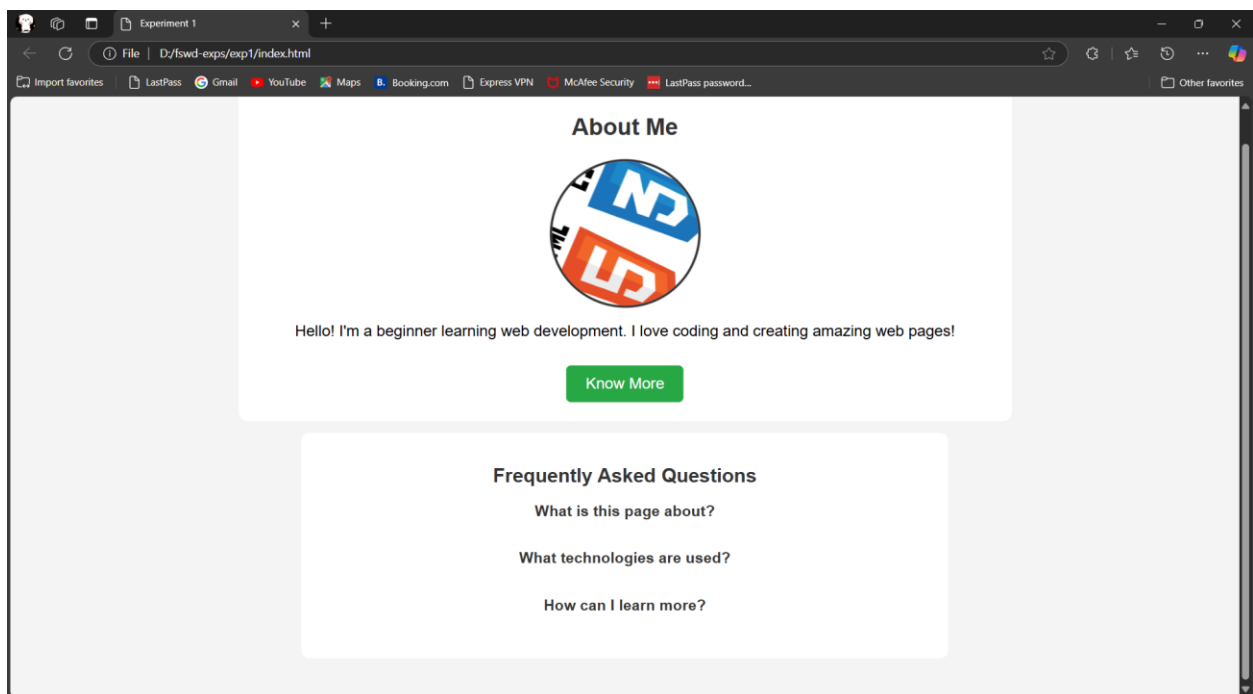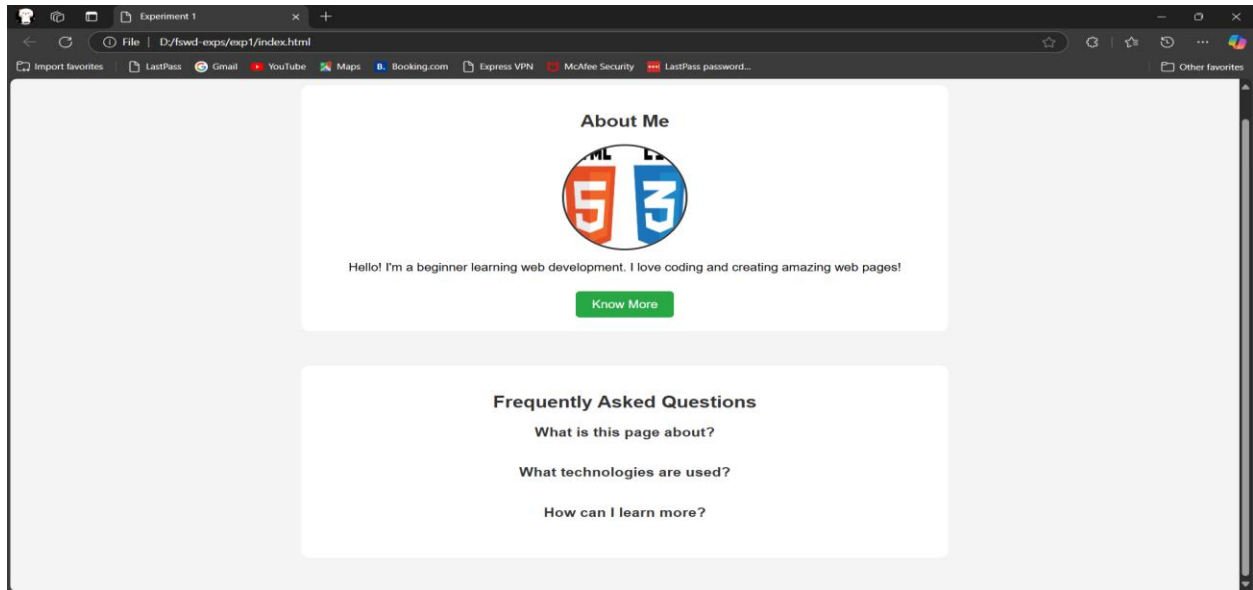
```css
    transition: max-height 0.5s ease, opacity          max-height: 100px;
0.3s ease;
                                                        opacity: 1;
}
                                                    }
.faq h3:hover + p {
```
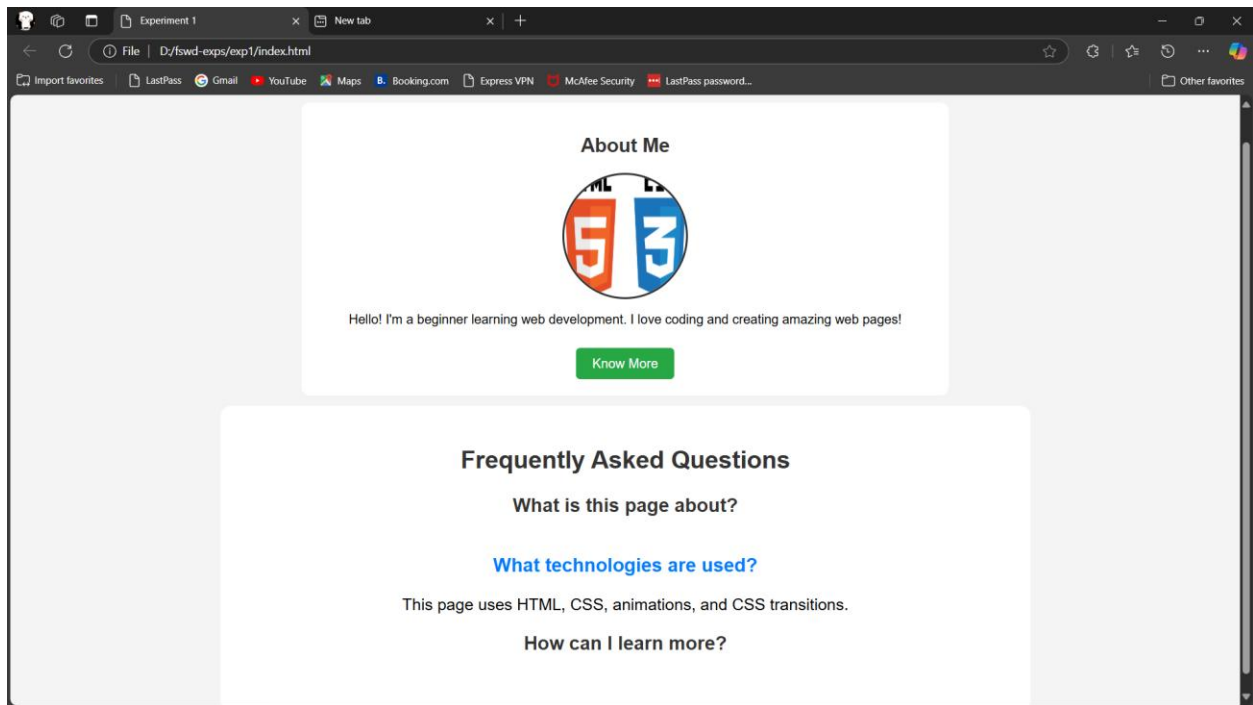
Output:

Conclusion:

Through this experiment, I built a simple webpage using HTML and CSS, adding animations and transitions to enhance its look and feel. This hands-on experience deepened my understanding of web development, showing me how to create pages that are not only functional but also interactive and visually appealing. Most importantly, I learned that even small design elements, like smooth transitions, can greatly improve user experience. This project has given me the confidence to explore more advanced techniques and continue improving my web design skills.