LAB NO. 1

OBJECTIVE: TO WRITE I/O PROGRAMS IN JAVASCRIPT.

HARDWARE/SOFTWARE REQUIREMENTS:

- PC
- Text Editor (Visual Studio Code)
- Browser (Chrome/ Microsoft Edge)

JavaScript (JS) is a powerful and widely-used programming language primarily employed for client-side scripting in web development. First introduced in 1995, it allows developers to create dynamic and interactive elements on websites. JavaScript enhances user interfaces by enabling real-time content updates, form validation, and modification of page elements. It is essential for building modern web applications and is supported by all major web browsers. JavaScript is an object-oriented language that offers flexibility and robustness, making it possible to create engaging and responsive web experiences.

There are two primary ways to include JavaScript in HTML documents: **Internal JavaScript** and **External JavaScript**.

- **Internal JavaScript** is written directly within the HTML document. This is done by embedding JavaScript code inside the <script> tag, which can be placed in the <head> or <body> sections of the HTML page. This method is often used for small scripts or when the JavaScript is specific to a particular page.
- **External JavaScript** refers to placing the JavaScript code in a separate .js file. This file is then linked to the HTML document using the <script> tag with the src attribute pointing to the external JavaScript file. This approach is preferred for larger scripts or when the same code is used across multiple pages, promoting better organization and maintainability.

JavaScript provides several built-in functions, such as alert, confirm, and prompt, that create interactive pop-up dialog boxes for user interaction:

- The **alert** function displays a simple message in a pop-up dialog box. It is commonly used to inform users or provide notifications and warnings.
- The **confirm** function shows a dialog box with **OK** and **Cancel** buttons, and returns a Boolean value (true if the user clicks OK, false if Cancel is clicked). It is often used to confirm actions, like whether the user wants to delete an item.
- The **prompt** function presents a dialog box with a message and an input field, allowing the user to enter information. It is useful for collecting input from users, such as asking for their name or other details.

While these functions are part of the core JavaScript language and provide simple ways to interact with users, they have become less common in modern web development. Today, more

advanced and user-friendly UI components are typically used to provide a better overall user experience. Despite this, alert, confirm, and prompt still play a role in simple, quick interactions within web applications.

LAB WORK

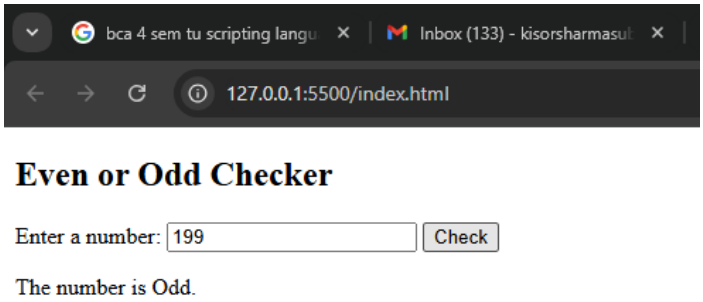
1. WAP USING INTERNAL JAVASCRIPT TO INPUT A NUMBER &

DISPLAY WHETHER ITS EVEN OR ODD.

SOURCE CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Even or Odd</title>
    <script>
        function checkEvenOdd() {
            const num = parseInt(document.getElementById('number').value);
            const result = (num % 2 === 0) ? "Even" : "Odd";
            document.getElementById('output').textContent = `The number is ${result}.`;
        }
    </script>
</head>
<body>
    <h2>Even or Odd Checker</h2>
    <label for="number">Enter a number:</label>
    <input type="number" id="number" />
    <button onclick="checkEvenOdd()">Check</button>
    <p id="output"></p>
</body>
</html>
```

OUTPUT



2. WAP USING EXTERNAL JS TO INPUT NAME, AGE, GENDER AND DISPLAY A MESSAGE ACCORDINGLY.

SOURCE CODE

Index.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Input and Display</title>
    <script src="script.js" defer></script>
</head>
<body>
    <h2>User Information</h2>
    <form id="userForm">
        <label for="name">Name:</label>
        <input type="text" id="name" required><br><br>

        <label for="age">Age:</label>
        <input type="number" id="age" required><br><br>

        <label for="gender">Gender:</label>
        <select id="gender" required>
            <option value="Male">Male</option>
```

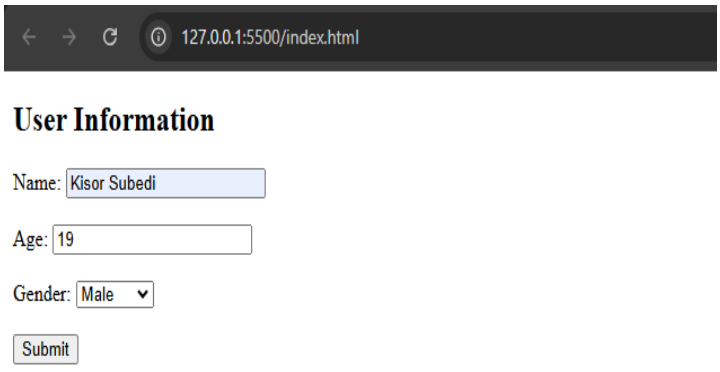
```
            <option value="Female">Female</option>
            <option value="Other">Other</option>
        </select><br><br>

        <button type="button" onclick="displayMessage()">Submit</button>
    </form>
    <p id="output"></p>
</body>
</html>
```

Script.js

```
function displayMessage() {
    const name = document.getElementById('name').value;
    const age = document.getElementById('age').value;
    const gender = document.getElementById('gender').value;
    const message = `Hello ${name}! You are a ${age}-year-old ${gender}.`;
    document.getElementById('output').textContent = message;
}
```

OUTPUT



3. WAP IN JAVASCRIPT USING CONFIRM BOX.

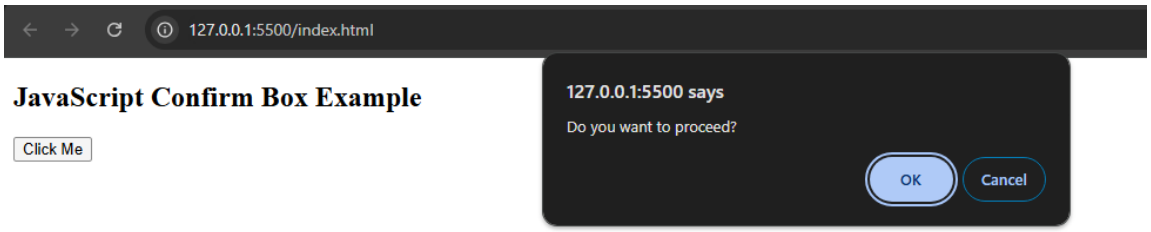
SOURCE CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
```

```
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Confirm Box Example</title>
    <script>
        function showConfirmBox() {
            const userResponse = confirm("Do you want to proceed?");

            if (userResponse) {
                alert("You clicked OK!");
            } else {
                alert("You clicked Cancel!");
            }
        }
    </script>
</head>
<body>
    <h2>JavaScript Confirm Box Example</h2>
    <button onclick="showConfirmBox()">Click Me</button>
</body>
</html>
```

OUTPUT



CONCLUSION

In summary, using JavaScript for Input/output (I/O) programs has several advantages. Its ease of learning, cross-platform development capabilities, and strong community support further enhance its appeal. However, the suitability of JavaScript depends on the project's specific requirements, and some scenarios may benefit from specialized languages or tools.

LAB NO. 2

OBJECTIVE: USING JAVASCRIPT TO CREATE A BMI CALCULATOR USING BASIC JS FUNCTIONS.

HARDWARE/SOFTWARE REQUIREMENTS:

- PC
- Text Editor (Visual Studio Code)
- Browser (Chrome/ Microsoft Edge)

THEORY

Body Mass Index (BMI) is a widely recognized tool used to evaluate an individual's body composition and assess potential health risks associated with their body weight. It is a straightforward mathematical calculation that compares a person's weight to their height, producing a numerical value that can be classified into specific categories: underweight, normal weight, overweight, or obesity. BMI serves as a quick screening method to identify whether a person may be at risk for certain health conditions related to their weight.

The formula to calculate BMI is:

BMI=weight (kg)height (m)2\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m)}^2}BMI=height (m)2weight (kg)

Where:

- **weight** is the person's weight in kilograms (kg),
- **height** is the person's height in meters (m).

The resulting BMI value is categorized as follows:

- **Underweight**: BMI less than 18.5
- **Normal weight**: BMI between 18.5 and 24.9
- **Overweight**: BMI between 25 and 29.9
- **Obesity**: BMI of 30 or higher

While BMI is a useful screening tool, it does not directly measure body fat percentage or distribution. Therefore, it should be considered along with other health indicators for a more comprehensive understanding of an individual's health status.

LABWORK

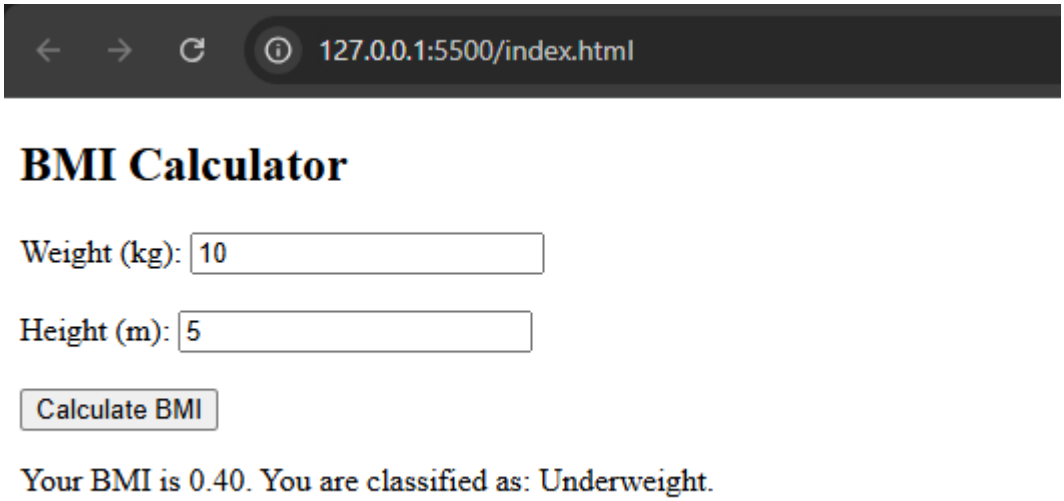
1. USE JS TO CREATE A BMI CALCULATOR.

SOURCE CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Confirm Box Example</title>
    <script>
        function showConfirmBox() {
            const userResponse = confirm("Do you want to proceed?");

            if (userResponse) {
                alert("You clicked OK!");
            } else {
                alert("You clicked Cancel!");
            }
        }
    </script>
</head>
<body>
    <h2>JavaScript Confirm Box Example</h2>
    <button onclick="showConfirmBox()">Click Me</button>
</body>
</html>
```

OUTPUT



CONCLUSION

In conclusion, implementing a BMI calculator using JavaScript offers a convenient and accessible way to assess an individual& body mass index on the web. By utilizing the BMI formula within a JavaScript program, users can quickly input their weight and height, receiving immediate feedback on their BMI category.