

Unit 4: Introduction to JavaScript - Programs with Details

1. Introduction to JavaScript (Basic Script in HTML)

Aim: To introduce JavaScript and display a simple message in a web page.

Description: This program demonstrates how to include JavaScript code inside HTML using the `<script>` tag.

Program:

```
<!DOCTYPE html>
<html>
<head>
  <title>Intro to JavaScript</title>
</head>
<body>
  <h2>My First JavaScript Program</h2>
  <script>
    document.write("Welcome to JavaScript!");
  </script>
</body>
</html>
```

Output: The output will display a heading 'My First JavaScript Program' and the text 'Welcome to JavaScript!'.

Result: The program successfully displayed a message using JavaScript.

2. How to Add a Script to Your Pages

Aim: To demonstrate how to add JavaScript code within an HTML page.

Description: This program defines a JavaScript function inside the `<head>` section and executes it on button click.

Program:

```
<!DOCTYPE html>
<html>
<head>
  <title>Add Script Example</title>
  <script>
    function sayHello() {
      alert("Hello! Script is working.");
    }
  </script>
</head>
<body>
  <button onclick="sayHello()">Click Me</button>
</body>
</html>
```

Output: When the button is clicked, an alert box with the message 'Hello! Script is working.' will appear.

Result: The program successfully showed how to add a script to an HTML page.

3. Comments in JavaScript

Aim: To illustrate how to write comments in JavaScript.

Description: This program demonstrates single-line and multi-line comments in JavaScript.

Program:

```
<!DOCTYPE html>
<html>
<head>
  <title>Comments Example</title>
</head>
<body>
  <script>
    // This is a single-line comment
    var x = 10; // variable with value 10

    /*
      This is a multi-line comment
      The following code prints a message
    */
    document.write("Comments Example in JavaScript");
  </script>
</body>
</html>
```

Output: The output will display 'Comments Example in JavaScript' on the webpage.

Result: The program successfully explained the usage of comments in JavaScript.

4. Create an External JavaScript

Aim: To demonstrate how to create and use an external JavaScript file.

Description: This program separates JavaScript code into an external file (script.js) and links it to HTML using <script src>.

Program:

HTML File (index.html):

```
<!DOCTYPE html>
<html>
<head>
  <title>External JS Example</title>
  <!-- Linking external JavaScript file -->
  <script src="script.js"></script>
</head>
<body>
  <h2>External JavaScript Demo</h2>
  <button onclick="showMessage()">Click Me</button>
</body>
</html>
```

External File (script.js):

```
function showMessage() {
  alert("Hello from External JavaScript!");
}
```

Output: When the button is clicked, an alert box with the message 'Hello from External JavaScript!' will appear.

Result: The program successfully executed JavaScript from an external file.

5. Input and Output in JavaScript

Aim: To demonstrate input and output operations in JavaScript.

Description: This program uses prompt() for input, document.write() for output, and alert() for message display.

Program:

```
<!DOCTYPE html>
<html>
<head>
  <title>Input and Output</title>
</head>
<body>
  <script>
    // Taking input from user
    var name = prompt("Enter your name:");

    // Output to browser
    document.write("Hello, " + name + "<br>");

    // Output using alert
    alert("Welcome " + name + "!");
  </script>
</body>
</html>
```

Output: The program asks the user to enter their name, displays it on the webpage, and shows a welcome message in an alert box.

Result: The program successfully demonstrated input and output operations in JavaScript.