

<b>Ex. No.: 4</b>	<b>JAVASCRIPT – DOM ELEMENTS AND EVENTS</b>
<b>13.01.2026</b>	

**Aim**

To create a web page which demonstrates dynamic actions for user interactions using JavaScript document object model methods and events.

**Description****Document Object Model:**

A Document object represents the HTML document that is displayed in that window. The document object has various properties that refer to other objects which allow access to and modification of document content. The way a document content is accessed and modified is called the Document Object Model, or DOM. Finding HTML Element by Id var myElement = document.getElementById("intro"); Finding HTML Elements by Tag Name var x = document.getElementsByTagName("p"); Finding HTML Elements by Class Name var x = document.getElementsByClassName("intro"); Finding HTML Elements by CSS Selectors var x = document.querySelectorAll("p.intro"); Attach event handler to the document document.addEventListener("click" function() { document.getElementById("demo").innerHTML = "Karunya"; });

**JavaScript Events:**

JavaScript's interaction with HTML is handled through events that occur when the user or the browser manipulates a page.

**Code**

HTML:

```
<!DOCTYPE html>
<html lang="en">
```

```
<head>
  <meta charset="UTF-8">
  <title>Experiment 4 - DOM & Events</title>
  <meta name="viewport" content="width=device-width, initial-scale=1.0">

<style>
  body {
    font-family: Arial, sans-serif;
    background: #f4f6f8;
    margin: 0;
    padding: 20px;
  }

  h2 {
    text-align: center;
    color: #1f2933;
  }

  .container {
    max-width: 900px;
    margin: auto;
    background: white;
    padding: 20px;
    border-radius: 8px;
  }

  .box {
    border: 1px solid #ccc;
    padding: 15px;
    margin-bottom: 20px;
    border-radius: 6px;
  }
```

```
label {
    font-weight: bold;
}
input, select, button {
    width: 100%;
    padding: 8px;
    margin: 8px 0;
}

button {
    background: #2563eb;
    color: white;
    border: none;
    cursor: pointer;
}

button:hover {
    background: #1d4ed8;
}

.result {
    background: #e5e7eb;
    padding: 10px;
    margin-top: 10px;
    font-weight: bold;
}

@media (max-width: 600px) {
    body {
        padding: 10px;
    }
}

</style>
```

```

</head>
<body onload="pageLoaded()">
<h2>Experiment 4 – JavaScript DOM & Events</h2>
<div class="container">
  <!-- TC01, TC02, TC03: DOM Access -->
  <div class="box">
    <p id="intro">Welcome to DOM Experiment</p>
    <p class="demo">Paragraph 1</p>
    <p class="demo">Paragraph 2</p>
    <button onclick="changeText()">Change Text</button>
  </div>
  <!-- TC04, TC08: onclick & Calculation -->
  <div class="box">
    <h3>Simple Calculator (onclick)</h3>
    <input type="number" id="num1" placeholder="Enter first number">
    <input type="number" id="num2" placeholder="Enter second number">
    <button onclick="calculate()">Calculate</button>
    <div class="result" id="calcResult">Result:</div>
  </div>
  <!-- TC04, TC07, TC08: onkeyup & DOM update -->
  <div class="box">
    <h3>BMI Calculator (onkeyup)</h3>
    <input type="number" id="weight" placeholder="Weight (kg)" onkeyup="calculateBMI()">
    <input type="number" id="height" placeholder="Height (cm)" onkeyup="calculateBMI()">
    <div class="result" id="bmiResult">BMI:</div>
  </div>
  <!-- TC05: onchange -->
  <div class="box">
    <h3>Currency Converter (onchange)</h3>
    <input type="number" id="amount" placeholder="Enter amount">
    <select id="currency" onchange="convertCurrency()">
      <option value="">Select Currency</option>
      <option value="80">USD to INR</option>
    </select>
  </div>
</div>

```

```

        <option value="90">EUR to INR</option>
        <option value="100">GBP to INR</option>
        <option value="1">INR to INR</option>
    </select>
    <div class="result" id="currencyResult">Converted Amount:</div>
</div>
<!-- TC05: onsubmit -->
<div class="box">
    <h3>Form Submission (onsubmit)</h3>
    <form onsubmit="return submitForm()">
        <input type="text" id="username" placeholder="Enter your name">
        <button type="submit">Submit</button>
    </form>
    <div class="result" id="formResult"></div>
</div>
</div>
<script>
    /* TC06: onload */
    function pageLoaded() {
        document.getElementById("intro").innerHTML += " (Page Loaded)";
    }
    /* TC01, TC02, TC03: DOM Access */
    function changeText() {
        document.getElementById("intro").style.color = "blue";
        let items = document.getElementsByClassName("demo");
        for (let i = 0; i < items.length; i++) {
            items[i].innerHTML = "Updated using Class Name";
        }
        let tags = document.getElementsByTagName("p");
        tags[0].style.fontWeight = "bold";
    }
    /* TC04, TC08 */
    function calculate() {

```

```

    let a = parseFloat(document.getElementById("num1").value);
    let b = parseFloat(document.getElementById("num2").value);
    let result = a + b;
    document.getElementById("calcResult").innerHTML = "Result: " + result;
}

/* TC04, TC07, TC08 */
function calculateBMI() {
    let w = document.getElementById("weight").value;
    let h = document.getElementById("height").value / 100;
    if (w && h) {
        let bmi = (w / (h * h)).toFixed(2);
        let status = "Normal";
        if (bmi < 18) status = "Underweight";
        else if (bmi >= 25 && bmi < 30) status = "Overweight";
        else if (bmi >= 30) status = "Obese";
        document.getElementById("bmiResult").innerHTML =
            "BMI: " + bmi + " (" + status + ")";
    }
}

/* TC05 */
function convertCurrency() {
    let amount = document.getElementById("amount").value;
    let rate = document.getElementById("currency").value;
    if (amount && rate) {
        document.getElementById("currencyResult").innerHTML =
            "Converted Amount: " + (amount * rate);
    }
}

/* TC05 */
function submitForm() {
    let name = document.getElementById("username").value;
    document.getElementById("formResult").innerHTML =
        "Form submitted by " + name;
}

```

```

    return false; // prevent reload }
</script>
</body>
</html>

```

## Input & Output

The screenshot shows a web browser window titled "Experiment 4 - DOM & Events" with the URL "C:/Users/Mesadini/Desktop/AIWD%20LAB/exp4.html". The page content is titled "Experiment 4 – JavaScript DOM & Events" and contains three main sections:

- Welcome to DOM Experiment (Page Loaded)**: This section shows two lines of text, "Updated using Class Name", and a blue button labeled "Change Text".
- Simple Calculator (onclick)**: This section features two input fields containing the numbers "1" and "2", a blue button labeled "Calculate", and a result display showing "Result: 3".
- BMI Calculator (onkeyup)**: This section includes two input fields with the values "60" and "162", a result display showing "BMI: 22.86 (Normal)", and a "Currency Converter (onchange)" section below it.

The "Currency Converter (onchange)" section has an input field with the value "20", a dropdown menu set to "USD to INR", and a result display showing "Converted Amount: 1600".

## Result

The experiment is successfully completed.