Web Lab Exercise 9

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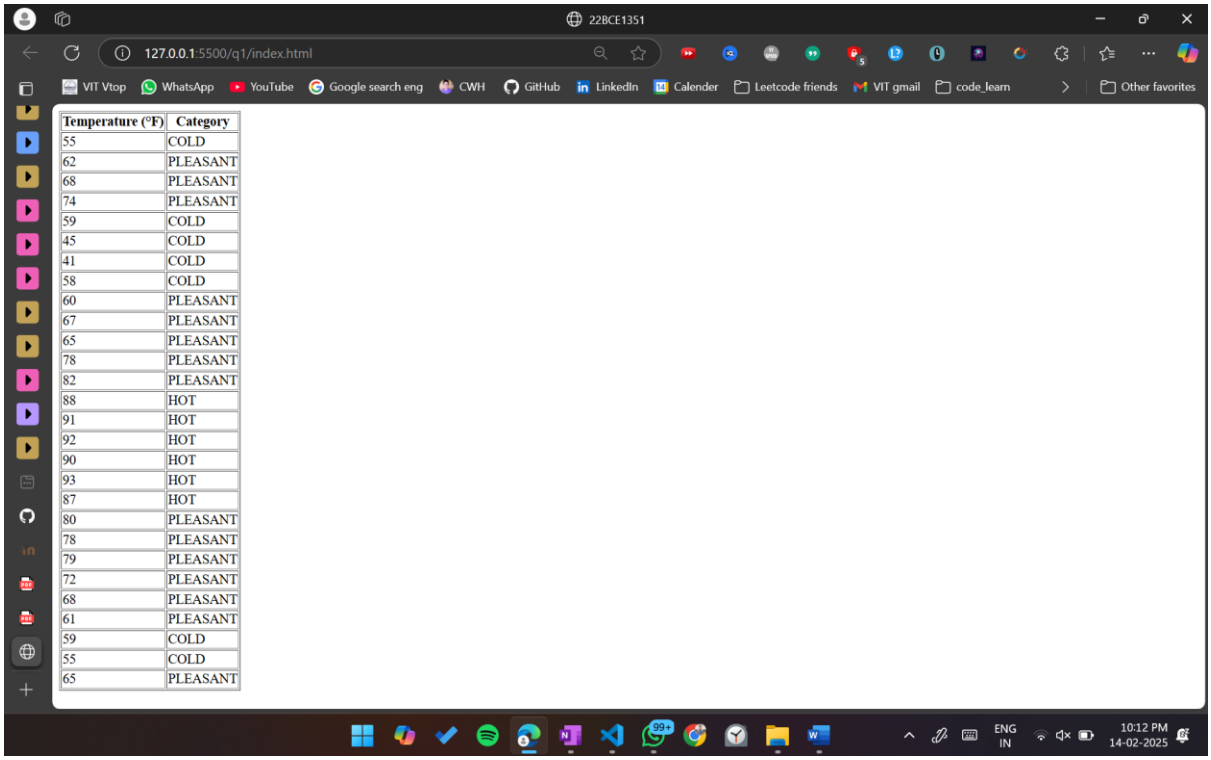
Subject	Web Programming
Slot	L15+L16+L19+L20
Venue	AB3 – 202

Exercise 9: JavaScript

1. The following are the daily temperature recordings of NEWYORK city (In Fahrenheit) 55,62,68,74,59,45,41,58,60,67,65,78,82,88,91,92,90,93,87,80,78,79,72,68,61,59,55,65 Your JavaScript program should count and print the number of HOT days (High Temperature: 85 or higher), the number of PLEASANT days (High temperature: 60-84) and the number of COLD days (High temperature<60) in the city. It should also display the category of each temperature in an HTML Table.



Temperature (°F)	Category
55	COLD
62	PLEASANT
68	PLEASANT
74	PLEASANT
59	COLD
45	COLD
41	COLD
58	COLD
60	PLEASANT
67	PLEASANT
65	PLEASANT
78	PLEASANT
82	PLEASANT
88	HOT
91	HOT
92	HOT
90	HOT
93	HOT
87	HOT
80	PLEASANT
78	PLEASANT
79	PLEASANT
72	PLEASANT
68	PLEASANT
61	PLEASANT
59	COLD
55	COLD
65	PLEASANT

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>22BCE1351</title>
  </head>
  <body>
    <table border="1">
      <tr>
        <th>Temperature (°F)</th>
        <th>Category</th>
      </tr>
    </table>

    <script>
```

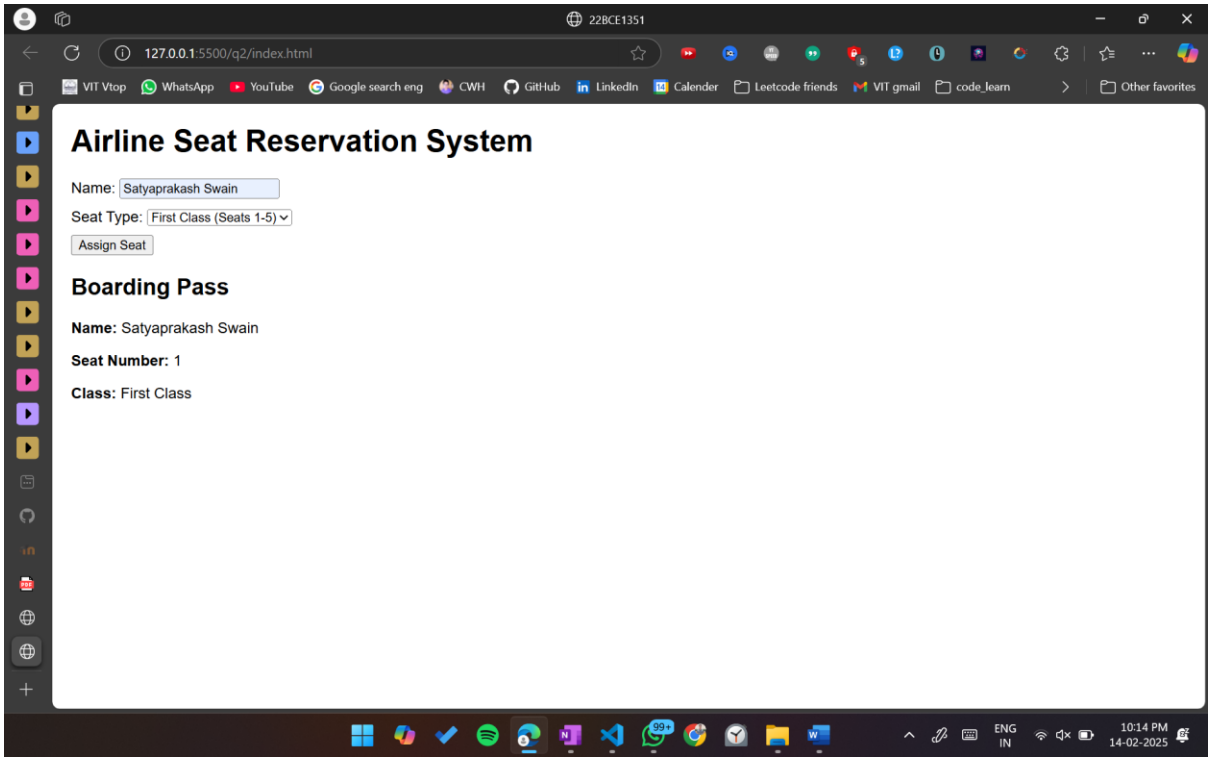
```
      const temperatures = [
        55, 62, 68, 74, 59, 45, 41, 58, 60, 67, 65, 78, 82, 88, 91, 92, 90,
93,
        87, 80, 78, 79, 72, 68, 61, 59, 55, 65,
      ];

      let hotDays = 0;
      let pleasantDays = 0;
      let coldDays = 0;

      const table = document.querySelector("table");

      temperatures.forEach((temp) => {
        let category;
        if (temp >= 85) {
          hotDays++;
          category = "HOT";
        } else if (temp >= 60) {
          pleasantDays++;
          category = "PLEASANT";
        } else {
          coldDays++;
          category = "COLD";
        }

        const row = document.createElement("tr");
        row.innerHTML = `<td>${temp}</td><td>${category}</td>`;
        table.appendChild(row);
      });

      console.log(`HOT days: ${hotDays}`);
      console.log(`PLEASANT days: ${pleasantDays}`);
      console.log(`COLD days: ${coldDays}`);
    </script>
  </body>
</html>
```

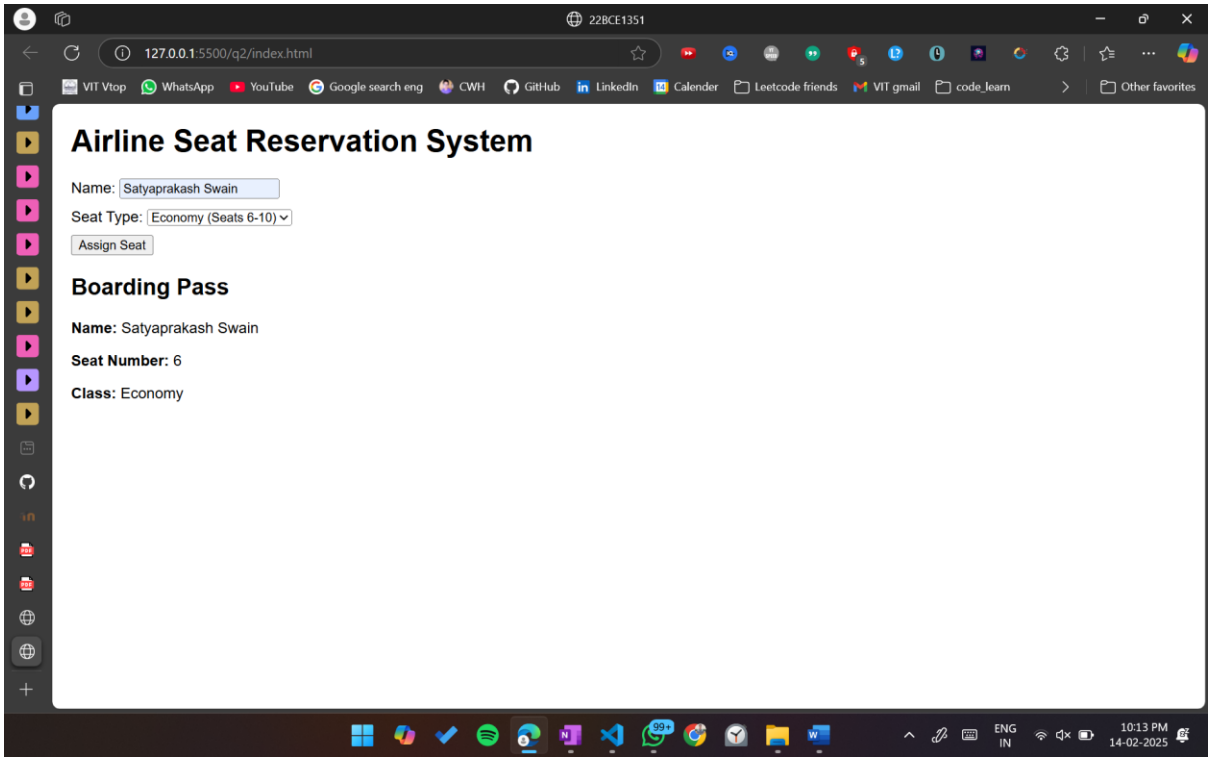
2. A small airline has just purchased a computer for its newly automated reservations system. Write a JavaScript program to assign seats on each flight (capacity: 10 seats). Your program should display the following:

   - If the person types 1, assign a seat in the first-class section (seats 1–5).
   - If the person types 2, assign a seat in the economy section (seats 6–10).
   - When the first-class section is full, your program should ask the person if it is acceptable to be placed in the economy section (and vice versa)

   Allot the seats based on the above choices. Print a boarding pass indicating the person's name, seat number and class

   Use one-dimensional array to represent the seating chart of the plane. Initialize all the elements of the array to 0 to indicate that all the seats are empty. As each seat is assigned, set the corresponding elements of the array to 1 to indicate that the seat is no longer available.






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

<head>
  <meta charset="UTF-8" />
  <meta name="viewport" content="width=device-width, initial-scale=1.0" />
  <title>22BCE1351</title>
  <style>
    body {
      font-family: Arial, sans-serif;
      margin: 20px;
    }

    .seat {
      margin-bottom: 10px;
    }
  </style>
</head>

<body>
  <h1>Airline Seat Reservation System</h1>
  <div class="seat">
    <label for="name">Name:</label>
    <input type="text" id="name" placeholder="Enter your name" />
  </div>
```

```
  <div class="seat">
    <label for="seatType">Seat Type:</label>
    <select id="seatType">
      <option value="1">First Class (Seats 1-5)</option>
      <option value="2">Economy (Seats 6-10)</option>
    </select>
  </div>
  <button onclick="assignSeat()">Assign Seat</button>
  <div id="boardingPass" style="margin-top: 20px"></div>

  <script>

    let seatingChart = [0, 0, 0, 0, 0, 0, 0, 0, 0, 0];

    function assignSeat() {
      const name = document.getElementById("name").value;
      const seatType = document.getElementById("seatType").value;
      let seatNumber = -1;

      if (seatType === "1") {

        seatNumber = assignSeatInSection(1, 5);
      } else if (seatType === "2") {

        seatNumber = assignSeatInSection(6, 10);
      }

      if (seatNumber === -1) {

        const isAcceptable = confirm(
          "Your preferred section is full. Is it acceptable to be placed in
the other section?"
        );
        if (isAcceptable) {
          if (seatType === "1") {
            seatNumber = assignSeatInSection(6, 10);
          } else {
            seatNumber = assignSeatInSection(1, 5);
          }
        }
      }

      if (seatNumber !== -1) {

        seatingChart[seatNumber - 1] = 1;

        displayBoardingPass(
          name,
```

```
          seatNumber,
          seatNumber <= 5 ? "First Class" : "Economy"
        );
      } else {
        alert("Sorry, the flight is full.");
      }
    }

    function assignSeatInSection(start, end) {
      for (let i = start - 1; i < end; i++) {
        if (seatingChart[i] === 0) {
          return i + 1;
        }
      }
      return -1;
    }

    function displayBoardingPass(name, seatNumber, seatClass) {
      const boardingPassDiv = document.getElementById("boardingPass");
      boardingPassDiv.innerHTML = `
                <h2>Boarding Pass</h2>
                <p><strong>Name:</strong> ${name}</p>
                <p><strong>Seat Number:</strong> ${seatNumber}</p>
                <p><strong>Class:</strong> ${seatClass}</p>
            `;
    }
  </script>
</body>

</html>
```

3. Use JavaScript to develop the web page as given in Fig.1 to calculate the Body Mass Index (BMI) and display the adult's status through appropriate popup boxes. For example, the BMI rate of the men is 21, and then prints the status through a popup box as "Ideal Range" by triggering the event on a "Calculate" button.

Note: Refer Table.1 to get the BMI criteria information.

$$BMI=703*weight/Height^2$$

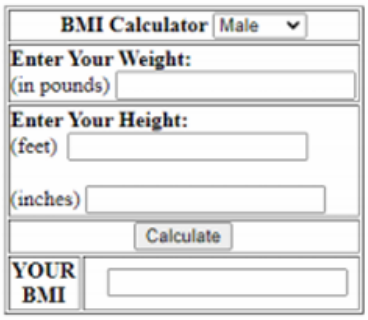


Fig.1. BMI Calculator

Table.1 BMI Criteria

Adults	Women	Men
Anorexia	Less than 17.50	
Underweight	17.51-19.10	17.501-20.70
Ideal range	**19.11-25.80**	**20.71-26.40**
Marginally overweight range	25.81-27.30	26.41-27.80
Overweight range	27.31-32.30	27.81-31.10
Very overweight or Obese range	More than 32.30	More than 31.10

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <title>22BCE1351</title>
    <style>
      body {
        font-family: Arial, sans-serif;
        background-color: #f4f4f4;
        display: flex;
        flex-direction: column;
```

```
    justify-content: center;
    align-items: center;
    height: 100vh;
    margin: 0;
    padding: 20px;
  }
  .bmi-calculator {
    background-color: #fff;
    border-radius: 8px;
    box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
    margin-bottom: 20px;
    max-width: 400px;
    width: 100%;
    padding: 20px;
    box-sizing: border-box;
  }
  .bmi-calculator h2 {
    margin-bottom: 20px;
    text-align: center;
  }
  .bmi-calculator label {
    display: block;
    margin-bottom: 5px;
  }
  .bmi-calculator input[type="number"] {
    padding: 8px;
    margin-bottom: 10px;
    border: 1px solid #ccc;
    border-radius: 4px;
    width: calc(100%);
    box-sizing: border-box;
  }
  .bmi-calculator button {
    width: 100%;
    padding: 10px;
    background-color: #007bff;
    color: #fff;
    border: none;
    border-radius: 4px;
    cursor: pointer;
  }
  .bmi-calculator button:hover {
    background-color: #0056b3;
  }
  .bmi-calculator .result {
    margin-top: 20px;
    padding: 10px;
    border: 1px solid #ccc;
```

```
      border-radius: 4px;
      text-align: center;
      background-color: #e9f7ef;
    }
    .table-container {
      background-color: #fff;
      padding: 20px;
      border-radius: 8px;
      box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
      width: fit-content;
    }
    table {
      width: 100%;
      border-collapse: collapse;
    }
    th,
    td {
      border: 1px solid #ddd;
      padding: 12px;
      text-align: left;
    }
    th {
      background-color: #f2f2f2;
    }
    tr:nth-child(even) {
      background-color: #f9f9f9;
    }
    caption {
      font-size: 1.5em;
      margin-bottom: 10px;
      color: #333;
    }
  </style>
</head>
<body>
  <div class="bmi-calculator">
    <h2>BMI Calculator</h2>
    <label for="weight">Enter Your Weight (in pounds):</label>
    <input
      type="number"
      class="inputbox"
      id="weight"
      placeholder="Weight in pounds"
    />

    <label for="feet">Enter Your Height (feet):</label>
    <input type="number" id="feet" placeholder="Feet" />
```

```
    <label for="inches">Enter Your Height (inches):</label>
    <input type="number" id="inches" placeholder="Inches" />

    <button onclick="calculateBMI()">Calculate</button>

    <div class="result" id="result">Your BMI will be displayed here.</div>
  </div>

  <div class="table-container">
    <table>
      <caption>
        BMI Criteria
      </caption>
      <thead>
        <tr>
          <th>Adults</th>
          <th>Women</th>
          <th>Men</th>
        </tr>
      </thead>
      <tbody>
        <tr>
          <td>Anorexia</td>
          <td>Less than 17.50</td>
          <td>Less than 17.50</td>
        </tr>
        <tr>
          <td>Underweight</td>
          <td>17.51-19.10</td>
          <td>17.501-20.70</td>
        </tr>
        <tr>
          <td><strong>Ideal range</strong></td>
          <td><strong>19.11-25.80</strong></td>
          <td><strong>20.71-26.40</strong></td>
        </tr>
        <tr>
          <td>Marginally overweight range</td>
          <td>25.81-27.30</td>
          <td>26.41-27.80</td>
        </tr>
        <tr>
          <td>Overweight range</td>
          <td>27.31-32.30</td>
          <td>27.81-31.10</td>
        </tr>
        <tr>
          <td>Very overweight or Obese range</td>
```

```
            <td>More than 32.30</td>
            <td>More than 31.10</td>
          </tr>
        </tbody>
      </table>
    </div>

    <script>
      function calculateBMI() {
        const weight = parseFloat(document.getElementById("weight").value);
        const feet = parseFloat(document.getElementById("feet").value);
        const inches = parseFloat(document.getElementById("inches").value);

        if (isNaN(weight) || isNaN(feet) || isNaN(inches)) {
          document.getElementById("result").innerText =
            "Please enter valid numbers.";
          return;
        }

        const heightInInches = feet * 12 + inches;
        const bmi = (weight / (heightInInches * heightInInches)) * 703;
        document.getElementById(
          "result"
        ).innerText = `Your BMI is: ${bmi.toFixed(2)}`;
      }
    </script>
  </body>
</html>
```


Thank you!