Contents

QUESTION 1: WATER BOTTLE PURCHASE WEBSITE

<--HEAD SECTION-->

```html
<html lang="en"> <!-- Sets the language to English -->
<head>
  <meta charset="UTF-8"> <!-- Allows special characters (like emojis, symbols) --
>
  <meta name="viewport" content="width=device-width, initial-scale=1.0"> <!--
Makes the website responsive -->
  <title>EcoSmart Water Bottle</title> <!-- Title shown in the browser tab -->
```

<!-- CSS FOR STYLING THE PAGE -->

```html
<!--2.CSS PART-->
  <style>
    body {
      font-family: monospace; /* Sets a cool code-style font */
      margin: 0; /* Removes default spacing around the body */
      padding: 0;
      font-size: xx-large; /* Makes everything pretty big */
    }

    nav {
      background-color: #333; /* Dark navbar background */
      color: white; /* Text color */
      padding: 40px 20px 10px 20px; /* Space inside the nav: top, right, bottom,
left */
      text-align: center; /* Centers the text horizontally */
      height: 60px; /* Fixes nav height */
    }

    nav ul {
      list-style-type: none; /* Removes bullets from list items */
      margin: 0;
      padding: 0;
    }

    nav ul li {
      display: inline; /* Makes the list items appear in a row */
      margin-right: 20px; /* Space between links */
    }
```

```css
nav ul li a {
  color: white; /* Link color */
  text-decoration: none; /* Removes underline */
}

.water-container {
  text-align: center; /* Center content inside the div */
  margin: 20px;
  padding: 20px;
  transition: background-color 0.3s ease; /* Smooth background color change
*/
}

.button-1,
.button-2 {
  background-color: #4CAF50; /* Green buttons */
  border: none; /* No border outline */
  color: white;
  font-family: monospace;
  border-radius: 5px; /* Rounded corners */
  padding: 15px 32px;
  text-align: center;
  text-decoration: none;
  display: inline-block;
  font-size: 19px;
  margin: 4px 2px;
  cursor: pointer; /* Makes cursor a pointer on hover */
}

.contact-container {
  text-align: center;
  margin: 20px;
  font-family: monospace;
  font-size: xx-large;
  background-color: #333; /* Dark background */
  padding: 30px;
  color: white; /* Text color */
}

footer div h2 {
  font-family: monospace;
  font-size: xx-large;
}
```

```css
  #name,
  #email,
  #message {
    width: 50%;
    padding: 10px;
    margin: 10px 0;
    border-radius: 5px;
    border: 1px solid #ccc; /* Light grey border */
  }

  #terms-conditions {
    margin: 0 auto; /* Center horizontally */
    width: 50%;
    padding: 10px;
    font-size: large;
    text-align: left;
  }

  textarea {
    width: 50%;
    height: 100px;
    padding: 10px;
    margin: 10px 0;
    border-radius: 5px;
    border: 1px solid #ccc;
  }

  #color-select {
    font-size: 18px;
    padding: 8px 12px;
    margin: 10px;
    border-radius: 5px;
    font-family: monospace;
  }
  </style>
</head>
```

<--HTML BODY SECTION-->

```html
<body>

  <!-- NAVIGATION BAR -->
  <nav>
    <ul>
      <li><a href="#">Home</a></li> <!-- Link to home -->
      <li><a href="#">Features</a></li> <!-- Link to features -->
      <li><a href="#">Pricing</a></li> <!-- Link to pricing -->
      <li><a href="#">Contact Us</a></li> <!-- Link to contact -->
    </ul>
  </nav>




  <!-- MAIN PRODUCT SECTION -->

  <div class="water-container">
    <h1>EcoSmart Water Bottle</h1>
    <img src="waterBottle.jpg" alt="Water Bottle" width="300px" height="300px">
<!-- Product image -->
    <p>EcoSmart Water Bottle</p>

    <!-- COLOR DROPDOWN -->
    <label for="color-select">Choose a color:</label>
    <select id="color-select"> <!-- Dropdown to choose color -->
      <option value="white">White</option>
      <option value="lightblue">Light Blue</option>
      <option value="lightgreen">Light Green</option>
      <option value="lightpink">Light Pink</option>
      <option value="lightgray">Light Gray</option>
    </select>

    <br>
    <button class="button-1">Buy Now</button> <!-- Buy button -->
    <p id="price">Total Price: R750.00</p> <!-- Default price text -->
  </div>

  <!-- FOOTER CONTACT SECTION -->
  <footer>
    <div class="contact-container">
```

```html
        <h2>Contact Us</h2>
        <input type="text" placeholder="Your name" id="name" required><br> <!--
Name field -->
        <input type="text" placeholder="Your email" id="email" required><br> <!--
Email field -->
        <textarea id="message" placeholder="Your message"></textarea><br> <!--
Message textarea -->
        <p id="terms-conditions">
          <input type="checkbox"> I agree to the <a href="#">Terms and
Conditions</a> <!-- Terms checkbox -->
        </p>
        <button class="button-2">Submit</button> <!-- Submit button -->
    </div>
  </footer>
```

<!-- JAVASCRIPT FUNCTIONALITY -->

```html
  <!-- JAVASCRIPT FUNCTIONALITY -->
  <script>

    const colorSelect = document.getElementById("color-select"); // Get the color
dropdown
    const waterContainer = document.querySelector(".water-container"); // Get
product section
    const priceTag = document.getElementById("price"); // Get price text

    colorSelect.addEventListener("change", function () { // When user changes
color
      const selectedColor = colorSelect.value; // Store selected color
      waterContainer.style.backgroundColor = selectedColor; // Change background
color

      // Set price based on selected color
      let price;

      if (selectedColor === "lightblue") {
        price = "R800.00"; // Ocean edition
      } else if (selectedColor === "lightgreen") {
        price = "R850.00"; // Eco edition
      } else if (selectedColor === "lightpink") {
        price = "R780.00"; // Cute edition
      } else if (selectedColor === "lightgray") {
        price = "R770.00"; // Minimal edition
      } else {
        price = "R750.00"; // Default white
      }

      priceTag.textContent = `Total Price: ${price}`; // Update price on screen
    });
  </script>

</body>
</html>
```

CORRESPONDING OUTPUT

QUESTION 2

<--HEAD SECTION-->

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

<head>
    <!-- Sets the character encoding and makes site responsive on mobile -->
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">

    <!-- Webpage title shown on the browser tab -->
    <title>To-do List</title>

    <!-- Link to external CSS file -->
    <link rel="stylesheet" href="style.css">

    <!-- Link to external JavaScript file  -->
    <script src="todolist.js"></script>

    <!-- Font Awesome Icons for the trash/delete icon -->
    <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.4.0/css/all.min.css">
</head>
```

<!-- CSS FOR STYLING THE PAGE -->

```
<!-- CSS for styling the page -->
<style>
    /* Body styling */
    body {
        font-family: monospace;
        width: 800px;
        margin: 0 auto;
        padding: 20px;
        background-color: #fffefe;
        border: 1px solid #838282;
        border-radius: 10px;
    }

    /* Heading style */
    h1 {
        margin: 0;
        padding: 0;
        width: fit-content;
    }

    /* Container for filter buttons */
    .button-options {
        display: flex;
        justify-content: flex-end;
        gap: 10px;
    }

    /* Button base styles */
    button {
        background-color: #fffefe;
        color: #000000;
        border: 1px solid #000000;
        border-radius: 5px;
        font-family: monospace;
        padding: 10px 20px;
        font-size: 16px;
        margin: 4px 2px;
        cursor: pointer;
```

```css
}

/* Button active state */
button:active {
    background-color: #080808;
    color: aliceblue;
}

/* Button hover animation */
button:hover {
    background-color: #000000;
    color: #fffefe;
    transition: 0.3s ease;
}

/* Input box styling */
#todo-input {
    width: 87%;
    padding: 10px;
    font-size: 16px;
    font-family: monospace;
    border: 1px solid #000000;
    border-radius: 5px;
}

/* To-do list style */
#todo-list {
    margin-top: 20px;
    padding: 0;
    list-style-type: none;
    font-size: medium;
}

/* Each list item */
#todo-list li {
    display: flex;
    align-items: center;
    gap: 10px;
    padding: 10px;
    border-radius: 5px;
    margin-bottom: 10px;
}

/* Checkbox styling */
#todo-list li input[type="checkbox"] {
```

```css
        width: 20px;
        height: 20px;
    }

    /* To-do text */
    #todo-list li span {
        flex-grow: 1;
        padding-left: 10px;
        font-size: 16px;
    }

    /* Completed task style */
    .completed {
        text-decoration: line-through;
        color: #808080;
    }

    /* Delete/trash icon */
    .delete-icon {
        color: red;
        cursor: pointer;
        margin-left: 10px;
    }
</style>
```

<--HTML BODY SECTION-->

```html
<body>
    <!-- Title and filter buttons -->
    <div class="heading-container">
        <h1>To-Do List</h1>

        <!-- Buttons to filter tasks -->
        <div class="button-options">
            <button onclick="filterTodos('all')">All</button>
            <button onclick="filterTodos('active')">Active</button>
            <button onclick="filterTodos('completed')">Completed</button>
            <!-- Button to load fake tasks from an API -->
            <button onclick="fetchApiTodos()">API</button>
        </div>
    </div>

    <!-- Input field and add button -->
    <div class="add-todo">
        <input type="text" placeholder="Add a new to-do..." id="todo-input">
        <button onclick="addTodo()">+ Add</button>
    </div>

    <!-- List where tasks will be displayed -->
    <ul id="todo-list"></ul>
```

<!-- JAVASCRIPT FUNCTIONALITY -->

```html
<!-- JavaScript functionality -->
    <script>
        // Load to-dos when page loads
        window.onload = function () {
            loadTodos();
        };

        // Toggle the "completed" style when checkbox is clicked
        function toggleStrike(checkbox) {
            const li = checkbox.parentElement;
            const span = checkbox.nextElementSibling;

            span.classList.toggle("completed");
            li.setAttribute("data-status", checkbox.checked ? "completed" :
"active");

            saveTodos(); // Save the updated list
        }

        // Remove a to-do from the list
        function deleteTodo(icon) {
            const li = icon.parentElement;
            li.remove();
            saveTodos();
        }


 // Add new to-do item
        function addTodo() {
            const input = document.getElementById("todo-input");
            const todoText = input.value.trim();
            if (todoText === "") return;

            const ul = document.getElementById("todo-list");

            const li = document.createElement("li");
            li.setAttribute("data-status", "active");

            li.innerHTML = `
```

```
                <input type="checkbox" onclick="toggleStrike(this)">
                <span>${todoText}</span>
                <i class="fas fa-trash delete-icon"
onclick="deleteTodo(this)"></i>
            `;

        ul.appendChild(li);
        input.value = "";

        saveTodos();
    }

    // Filter the list based on status
    function filterTodos(filter) {
        const tasks = document.querySelectorAll("#todo-list li");

        tasks.forEach(task => {
            const status = task.getAttribute("data-status");
            task.style.display = (filter === "all" || filter === status) ?
"flex" : "none";
        });
    }

    // Save current to-dos to browser's localStorage
    function saveTodos() {
        const todos = [];
        document.querySelectorAll("#todo-list li").forEach(li => {
            const checkbox = li.querySelector("input[type='checkbox']");
            const span = li.querySelector("span");
            todos.push({
                text: span.textContent,
                completed: checkbox.checked
            });
        });

        localStorage.setItem("todos", JSON.stringify(todos));
    }

    // Load saved to-dos from localStorage
    function loadTodos() {
        const todos = JSON.parse(localStorage.getItem("todos")) || [];
        const ul = document.getElementById("todo-list");
        ul.innerHTML = "";

        todos.forEach(todo => {
```

```
                const li = document.createElement("li");
                li.setAttribute("data-status", todo.completed ? "completed" :
"active");

                li.innerHTML = `
                    <input type="checkbox" onclick="toggleStrike(this)"
${todo.completed ? "checked" : ""}>
                    <span class="${todo.completed ? "completed" :
""}">${todo.text}</span>
                    <i class="fas fa-trash delete-icon"
onclick="deleteTodo(this)"></i>
                `;

                ul.appendChild(li);
            });
        }

        // Load fake todos from external API for testing/demo
        function fetchApiTodos() {
            fetch("https://jsonplaceholder.typicode.com/todos?_limit=10")
                .then(response => response.json())
                .then(todos => {
                    const ul = document.getElementById("todo-list");
                    ul.innerHTML = "";

                    todos.forEach(todo => {
                        const li = document.createElement("li");
                        li.setAttribute("data-status", todo.completed ?
"completed" : "active");

                        li.innerHTML = `
                            <input type="checkbox" onclick="toggleStrike(this)"
${todo.completed ? "checked" : ""}>
                            <span class="${todo.completed ? "completed" :
""}">${todo.title}</span>
                            <i class="fas fa-trash delete-icon"
onclick="deleteTodo(this)"></i>
                        `;

                        ul.appendChild(li);
                    });
                });
        }
    </script>
</body>
```

```html
</html>
```

C

CORRESPONDING OUPUT

COMPLETED TASKS

To-Do List

[All] [Active] [Completed] [API]

[Add a new to-do...] [+ Add]

☑ ~~et porro tempora~~ 🗑

☑ ~~quo adipisci enim quam ut ab~~ 🗑

☑ ~~illo est ratione doloremque quia maiores aut~~ 🗑

ADDED TASKS

ALL TASKS

To-Do List

[All] [Active] [Completed] [API]

| Add a new to-do... | + Add |

- ☐ delectus aut autem 🗑
- ☐ quis ut nam facilis et officia qui 🗑
- ☐ fugiat veniam minus 🗑
- ☐ laboriosam mollitia et enim quasi adipisci quia provident illum 🗑
- ☐ qui ullam ratione quibusdam voluptatem quia omnis 🗑
- ☐ illo expedita consequatur quia in 🗑
- ☐ molestiae perspiciatis ipsa 🗑
- ☐ JAVASCRIPT IS HARD 🗑
- ☐ MATHS IS SLOWLY KILING ME 🗑
- ☐ PYTHON WILL BE THE DEATH OF ME 🗑

ACTIVE TASKS

To-Do List

[All] [Active] [Completed] [API]

| Add a new to-do... | + Add |

- ☐ fugiat veniam minus 🗑
- ☐ qui ullam ratione quibusdam voluptatem quia omnis 🗑
- ☐ molestiae perspiciatis ipsa 🗑
- ☐ JAVASCRIPT IS HARD 🗑
- ☐ MATHS IS SLOWLY KILING ME 🗑
- ☐ PYTHON WILL BE THE DEATH OF ME 🗑

QUESTION 3 : PIE CHART

<--HEAD SECTION-->

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

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Pie Chart</title>
    <link rel="stylesheet" href="style.css">
    <!-- Link to Chart.js CDN -->
    <script src="https://cdn.jsdelivr.net/npm/chart.js"></script>
</head>
```

<--HTML BODY SECTION-->

```html
<body>
    <center>
        <h1>My Pie Chart</h1>
        <!-- Canvas where the pie chart will be drawn -->
        <canvas id="myPieChart" width=" 500" height="500"></canvas>
```

<!-- JAVASCRIPT FUNCTIONALITY -->

```html
    <script>
        const ctx = document.getElementById('myPieChart').getContext('2d');

        new Chart(ctx, {
            type: 'pie', // Pie chart type
            data: {
                labels: ['DAD PARTY', 'PPP PARTY', 'CCCC PARTY', 'MCD
PARTY'], // Labels for each slice
                datasets: [{
                    data: [45, 5, 27, 23], // Values for each slice
                    backgroundColor: ['#FAA0A0', '#99C5C4', '#A7C7E7',
'#C1E1C1'], // Slice colors
                    borderColor: 'white', // Border color between slices
                    borderWidth: 4 // Width of the border between slices
(space)
                }]
            },
            options: {
                responsive: false, // Disable responsiveness
                plugins: {
                    legend: {
                        position: 'bottom',
                        labels: {
                            color: '#333',
                            font: {
                                size: 16
                            }
                        }
                    }
                }
            }
        });
    </script>
    </center>
</body>

</html>
```
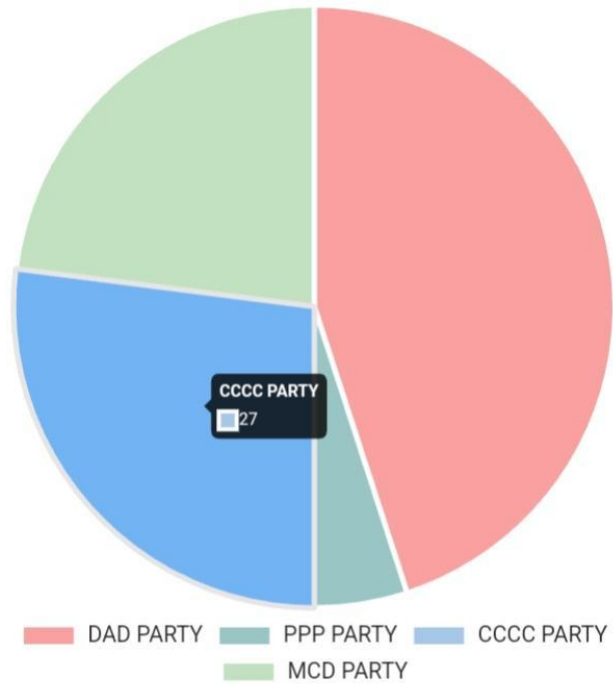
CORRESPONDING OUTPUT

Web view

My Pie Chart

CCCC PARTY
27

DAD PARTY   PPP PARTY   CCCC PARTY   MCD PARTY

My Pie Chart

DAD PARTY
45

Legend: DAD PARTY, PPP PARTY, CCCC PARTY, MCD PARTY