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| **Web Engineering**  **Assignment 03** | |
| **Course Code: SESD3233** | **Instructor: Muhammad Zahid Hussain** |
| **Marks: 20** | **Semester: Spring 2025** |
| **Due Date: 10th June 2025,11pm on portal only soft copy with screenshots**  **Instructions:**   * **Submission:**   + **All submissions will be on UCP Portal only. Upload zip files of code + screenshots.**   + **Ensure the code is functional and well-documented with comments**   + **You have to submit soft copy.**      - **For soft copy submission, upload a zip file containing all the required code files and screen shot of the output, name and roll number to the UCP Portal before 17th June 2025, 11:59pm.** * **Plagiarism Policy:** * **Strictly no plagiarism; ensure all work is original. In case of plagiarism, zero marks will be awarded.** | |
| |  |  | | --- | --- | | **Name** | **Roll Number** | |  |  | | |
| **Section: \_\_\_\_\_\_** | |

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| CLO 3 | Cognitive Level | Keywords |
| Students will be able to demonstrate frontend development proficiency by implementing best coding practices, utilizing modular JavaScript, functional programming, and showcasing technical knowledge and communication skills through project development, presentations, and viva assessment | C6 | Write, Create |

**Question 01 (CLO-03) 05 Marks**

**Task 01: Accessing HTML Elements and Changing Attribute Values with Events**

**Objective:** Learn how to access HTML elements using JavaScript and dynamically modify their attributes in response to user events like click or mouseover.

**Description:** Create a simple interactive webpage that displays an image representing daytime. When the user clicks a button, the image should be changed to nighttime — and the button text should be updated accordingly (Like initially button text should be “night”, and image should be daytime, when user clicks on button its text changes to “day” and images changes to night time). Additionally, when the user hovers over the image, its appearance (e.g., border or shadow) should change using inline CSS modifications.

**Question 02 (CLO-03) 05 Marks**

**Task 02: Dynamic Content Replacement with Events**

**Objective:** Practice replacing content dynamically within HTML elements triggered by JavaScript events.

**Description:** Create a webpage with a list of items. Upon clicking on any item in the list (click event), JavaScript events will dynamically replace its content with new text or HTML elements.

**Question 03 (CLO-03) 05 Marks**

**Task 03: Adding New HTML Elements Dynamically with Events**

**Objective:** Understand how to dynamically add new HTML elements to the DOM using JavaScript and user input via events.

**Description:** Create a webpage that allows users to dynamically add content by interacting with a button. When the user clicks the "Add Element" button:

1. Prompt the user to enter:

* A **heading level** (h1, h2, h3, etc.)
* The **text content** for the heading
* A **paragraph text** to accompany the heading

1. Use JavaScript to dynamically create and insert:

* A heading element with the user-selected level and text.
* A paragraph (<p>) element with the user-provided content.

1. Append these new elements to the page in a visually structured format.

**Question 04 (CLO-03) 05 Marks**

**Task 04: Creating Interactive Forms with Events**

**Objective:** Explore interactive form creation and validation using DOM manipulation and JavaScript events.

**Description:** Ceate a form containing input fields for **name, password, a textarea** for comments, and a submit button. Using JavaScript events (**submit**), write a code to dynamically **validate** the form upon submission. **Error messages** will be displayed next to the respective input fields if the user enters invalid data. The validation conditions are as follows:

* **Name Field:** Ensure that the name field is not empty and contains only letters and spaces. Minimum length should be 3 characters.
* **Password Field:** Validate that the password field contains at least 8 characters, including at least one uppercase letter, one lowercase letter, one number, and one special character.
* **Textarea (Comments) Field:** Ensure that the textarea is not empty and does not exceed 200 characters.