

Assignment 4

Title:

"To enhance the understandability of concepts related to JavaScript"

Objective:

The objective of this assignment is to help students gain hands-on experience in JavaScript by implementing various concepts, including **variables, functions, conditions, loops, pop-up boxes, event handling, forms & validation, JavaScript objects, DOM manipulation, AJAX, and regular expressions.**

Assignment Tasks:

1. JavaScript Implementation

A. Variables, Functions, Conditions, and Loops

- Declare and use **variables** (var, let, const).
- Write JavaScript **functions** to perform basic calculations (e.g., a BMI calculator, temperature converter).
- Implement **conditions** (if-else, switch-case) to validate user input.
- Use **loops** (for, while, do-while) to generate lists dynamically (e.g., a dynamic table of users).

B. Pop-up Boxes (Alerts, Confirm, and Prompt)

- Display an **alert box** when the user submits a form.
- Use a **confirmation box** before deleting an item from a list.
- Implement a **prompt box** to ask the user for input and display it on the page.

C. Event Handling & DOM Manipulation

- Change **text, style, or images** when a button is clicked.
- Implement **hover effects** using JavaScript events (onmouseover, onmouseout).
- Create a **dynamic list** where users can add or remove items.

D. Forms & Validation (Using Regular Expressions)

- Validate a **registration form** with fields like **name, email, phone number, and password**.
- Ensure the **email format** is correct using a **regular expression**.
- Check that the **password is strong** (contains uppercase, lowercase, numbers, special characters).
- Show real-time validation messages using JavaScript.

E. JavaScript Standard Objects & AJAX

- Use **Date Object** to display the current date & time.
 - Work with **Math Object** (e.g., generate a random number).
 - Implement **AJAX** to fetch data from an API (e.g., fetch weather data from OpenWeather API and display it on the webpage).
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Advanced topics to be implemented in assignment

- ✓ Create a **To-Do List** app using JavaScript where users can add, delete, and mark tasks as completed.
 - ✓ Build a **simple chatbot** using JavaScript event handling and conditions.
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Expected Outcome:

By completing this assignment, students will gain practical knowledge of **JavaScript fundamentals, form validation, DOM manipulation, event handling, AJAX, and regular expressions**, helping them build **dynamic and interactive web applications**.