Diploma In Software Engineering
(FMD-1)
(Developers Stack Academy)
Assignment 1

Time: 4 hours Marks: 100

Part A [60 marks]

1. What is JavaScript, and how does it differ from Java?
2. Explain how var, let, and const differ in JavaScript.
3. What are arrow functions in JavaScript?
4. What is the difference between null and undefined in JavaScript?
5. What is hoisting in JavaScript?
6. How does JavaScript handle scope (global, function, block scope)?
7. What is the this keyword in JavaScript, and how is it used?
8. What are template literals in JavaScript?
9. How do you handle errors in JavaScript using try...catch?
10. Explain the difference between == and === in JavaScript.
11. What are JavaScript data types?
12. How can you convert a string to a number in JavaScript?
13. What is the difference between map() and forEach()?
14. How do you create and manipulate objects in JavaScript?
15. How do you handle default parameters in JavaScript functions?
16. What is a higher-order function in JavaScript?
17. Explain what function currying is in JavaScript.
18. What is an immediately-invoked function expression (IIFE) in JavaScript?
19. What are generators in JavaScript, and how do you use them?
20. What is memoization in JavaScript, and when would you use it?
21. How can you remove duplicates from an array in JavaScript?
22. What are the various ways to merge arrays in JavaScript?
23. How do you validate user input in JavaScript?
24. What is the typeof operator in JavaScript, and what are its possible return values?
25. How can you check if a variable is an array in JavaScript?

26. Explain what a Symbol is in JavaScript and provide an example of its use.
27. How does the for...in loop differ from for...of in JavaScript?
28. What are rest and spread operators in JavaScript, and how are they used?
29. How can you flatten a multi-dimensional array in JavaScript?
30. What is the difference between let and const in terms of reassignment and scope?
31. What is NaN in JavaScript, and how can you check if a value is NaN?

Part B [40 marks]

Description:

Create a simple To-Do List application using HTML, CSS, and JavaScript that allows users to manage tasks using an array. The application should enable users to:

- Add Tasks: Provide an input field for users to type a task and a button to add the task to an array. Display the updated list of tasks below the input field.
- Display Tasks: Render the tasks from the array on the webpage. Each task should be displayed in a list format.
- Mark Tasks as Complete: Each task should have a checkbox. When checked, visually indicate that the task is completed (e.g., by striking through the task text).
- Delete Tasks: Each task should have a delete button next to it that allows users to remove the task from the array and update the displayed list.
- Edit Tasks: Implement functionality that allows users to click on a task to edit it, updating the corresponding item in the array and refreshing the displayed list.

Requirements:

- Use JavaScript arrays to manage the list of tasks.
- Ensure that the UI updates dynamically whenever tasks are added, edited, or deleted.
- Provide clear feedback to the user (e.g., confirmation when a task is deleted).