

1. Write an example showing how `let` and `const` are block-scoped, whereas `var` is function-scoped.
2. Write a JavaScript program to check the data type of different variables (e.g., string, number, boolean).
3. Write a JavaScript function that checks if a number is positive, negative, or zero using `if...else` statements.
4. Write a JavaScript switch statement that assigns a grade (A, B, C, D, or F) based on a numerical score.
5. Write a while loop to sum the numbers from 1 to 100.
6. Write a do-while loop that prints the numbers from 1 to 5.
7. Write a function declaration that returns the square of a number.
8. Write a function expression that returns the cube of a number.
9. Create a JavaScript object representing a book with properties for title, author, and year. Write a function to display these properties.
10. Write a method within an object that returns a formatted string with the object's properties.
11. Create an array of numbers and use the `push` and `pop` methods to add and remove elements.
12. Use the `map` method to create a new array with each element squared.
13. Use the `filter` method to create a new array with only the even numbers from an existing array.
14. Use the `reduce` method to find the sum of an array of numbers.
15. Write a JavaScript function that uses a closure to create a counter that increments by 1 each time it is called.
16. Write a simple example of a callback function in JavaScript.
17. Write an async function that fetches data from an API and logs the response to the console.
18. Use template literals to create a string that includes variables for a person's name and age.

19. Write an arrow function that takes an array of numbers and returns a new array with each number doubled.
20. Use object destructuring to extract properties from an object.
21. Write a try...catch block that catches an error and logs an error message to the console.
22. Write a function that throws a custom error if a required parameter is missing.

## **ADVANCED TASKS:**

1. Create an HTML page with a button. Write the JavaScript code to change the button's text to "Clicked!" when it is clicked.
2. Create a todo project.
3. Create a calculator.
4. Create a responsive website with HTML, CSS And JavaScript.