🗓️ Day 1: JavaScript Basics

📌 **Concepts:**

- Variables (`let` , `const` , `var`)
- Data types (String, Number, Boolean, Null, Undefined, Symbol, BigInt)
- Operators (Arithmetic, Comparison, Logical)
- Conditional Statements (`if-else` , `switch`)
- Loops (`for` , `while` , `do-while`)

🖍️ **Practice Exercises:**

1. Declare variables for a user's name, age, and isStudent (boolean). Print them.
2. Create a program that takes user input (via `prompt()`) and checks if they are eligible to vote (18+).
3. Write a loop that prints numbers 1 to 10.
4. Create a multiplication table generator using a loop.
5. Write a program that calculates the sum of even numbers from 1 to 100.

🔗 **Resources:**

- JavaScript Basics on MDN
- Loops in JavaScript

🗓️ Day 2: Functions and Scope

📌 **Concepts:**

- Function declaration vs. function expression
- Arrow functions (`()=>{}`)
- Default parameters
- Scope (`var` , `let` , `const` , global vs. local scope)
- Higher-order functions (callbacks, `map()` , `filter()` , `reduce()`)

🏏 **Practice Exercises:**

1. Write a function to find the square of a number.
2. Create a function that converts Celsius to Fahrenheit.
3. Write a function that reverses a string.
4. Use `map()` to double each number in an array.
5. Use `filter()` to get only even numbers from an array.
6. Use `reduce()` to find the sum of all numbers in an array.

🔗 **Resources:**

- JavaScript Functions
- Array Methods

🗓️ Day 3: Objects & Arrays

📌 **Concepts:**

- Objects (`{ key: value }` structure)
- Object methods
- Arrays (push, pop, shift, unshift, splice)
- Iterating over arrays (`forEach`, `map`, `filter`)
- Destructuring

🖍️ **Practice Exercises:**

1. Create an object representing a car with properties like brand, model, and year.
2. Write a function that takes an array of numbers and returns the largest number.
3. Convert an array of strings to uppercase using `map()`.
4. Remove duplicates from an array.
5. Merge two arrays without using `concat()`.

🔗 **Resources:**

- Objects in JavaScript
- Array Methods

🗓️ Day 4: DOM Manipulation & Events

📌 **Concepts:**

- Selecting elements (`getElementById`, `querySelector`)
- Modifying elements (`innerText`, `innerHTML`, `style`)
- Handling events (`onclick`, `addEventListener`)
- Creating & removing elements (`appendChild`, `removeChild`)

🖍️ **Practice Exercises:**

1. Create a button that changes the background color of a page when clicked.
2. Add a list item to a `<ul>` when the user clicks a button.
3. Remove a clicked item from a list.
4. Display an alert when a form is submitted.
5. Build a simple to-do list app.

🔗 **Resources:**

- DOM Basics
- Event Listeners

🗓️ Day 5: Asynchronous JavaScript

📌 **Concepts:**

- Callbacks
- Promises (`resolve`, `reject`, `.then()`, `.catch()`)
- `async` & `await`
- Fetch API (GET, POST requests)

🖍️ **Practice Exercises:**

1. Create a function that uses a **callback** to print "Hello, World!" after 2 seconds.
2. Convert a function using callbacks to use **Promises** instead.
3. Use `fetch()` to get data from a public API (e.g., JSONPlaceholder).
4. Create an `async` function that fetches and displays user data.

🔗 **Resources:**

- JavaScript Promises
- Fetch API

🗓️ Day 6: ES6+ Features & Modules

📌 **Concepts:**

- ES6+ features: `let` vs `const`, template literals, spread/rest operator
- Object destructuring
- Modules (`import` & `export`)
- Local Storage & Session Storage

🖍️ **Practice Exercises:**

1. Use **template literals** to print "Hello, [your name]!".
2. Use the **spread operator** to merge two arrays.
3. Destructure an object and print its values.
4. Save a user's input in **localStorage** and retrieve it.
5. Create two JavaScript files, export a function from one, and import it into another.

🔗 **Resources:**

- ES6 Features
- Local Storage

🗓️ Day 7: Mini Projects & Review

📌 **Final Review:**

- Revisit topics you found difficult.
- Solve coding challenges on **LeetCode, CodeWars, or JavaScript30**.

🛠️ **Mini Projects:**

1. **Countdown Timer** – Create a countdown timer that takes user input for time and displays the remaining seconds.
2. **Weather App** – Fetch weather data from an API and display it.
3. **Calculator** – Implement a basic calculator with addition, subtraction, multiplication, and division.
4. **Notes App** – Allow users to add, edit, and delete notes, saving them in localStorage.
5. **Quiz Game** – Create a multiple-choice quiz with scoring.

🔗 **Resources:**

- JavaScript30 (30 JavaScript Challenges)
- CodeWars - JavaScript Challenges
- LeetCode - JavaScript Problems