

# JavaScript

## 1: Introduction to JavaScript

- **What is JavaScript?**
  - Overview and history
  - Role of JavaScript in web development
- **Setting up the environment**
  - Using a browser console
  - Introduction to text editors (VS Code, Sublime, etc.)
- **Embedding JavaScript in HTML**
  - `<script>` tag
  - External and internal JavaScript

## 2: Basics of JavaScript

- **Variables and Data Types**
  - var, let, const
  - Primitive data types (String, Number, Boolean, Null, Undefined, Symbol)
- **Operators**
  - Arithmetic operators
  - Comparison operators
  - Logical operators (&&, ||, !)
  - Assignment operators

## 3: Control Structures

- **Conditional Statements**
  - if, else if, else
  - Ternary operators
  - switch statements
- **Loops**
  - for loop
  - while and do-while loops
  - for...of and for...in loops

## 4: Functions

- **Introduction to Functions**
  - Declaring functions
  - Function expressions
  - Arrow functions
- **Parameters and Arguments**
  - Default parameters
  - Return statements
- **Scope**
  - Global vs. local scope
  - Block scope with let and const

## 5: Objects and Arrays

- **Objects**
  - Defining objects
  - Accessing and modifying properties
  - Methods in objects

- **Arrays**
  - Defining arrays
  - Accessing elements
  - Array methods (push, pop, shift, unshift, etc.)

## 6: DOM Manipulation

- **Introduction to DOM**
  - Document Object Model (DOM) basics
- **Selecting Elements**
  - getElementById(), getElementsByClassName(), querySelector()
- **Manipulating Elements**
  - Changing text and HTML content
  - Changing CSS properties
  - Adding and removing elements

## 7: Events

- **Event Listeners**
  - addEventListener()
  - Common events: click, mouseover, keydown, etc.
- **Event Handling**
  - Preventing default actions
  - Event propagation and bubbling

## 8: Error Handling

- **Try-Catch Statements**
  - Using try and catch blocks
  - finally block
  - Throwing custom errors

## 9: Introduction to ES6+ Features

- **Template literals**
- **Destructuring**
- **Spread and Rest operators**
- **Promises and Async/Await**

## 10: Basic Project

- **Mini-project:** Simple interactive webpage
  - Form validation
  - DOM manipulation based on user input