

# Java Script Course Content

## 1. Introduction to JavaScript

- What is JavaScript?
- History and evolution of JavaScript
- How JavaScript works in the browser (client-side scripting)
- Embedding JavaScript in HTML (internal, external, and inline scripts)
- JavaScript syntax (case sensitivity, semicolons, and comments)

## 2. Variables and Data Types

- Declaring variables using var, let, and const
- JavaScript data types
- Type conversion (implicit and explicit)
- Checking data types with typeof

## 3. Operators

- Arithmetic operators
- Assignment operators
- Comparison operators
- Logical operators
- Conditional operator
- Ternary operator
- Operator precedence

## 4. Control Flow

- Conditional statements:
  - if, else if, else
  - Switch statement (switch case)
- Loops:
  - for loop
  - while loop
  - do...while loop
  - Loop control with break and continue

## 5. Functions

- Defining and calling functions
- Function parameters and arguments

- Returning values from functions
- Function expressions and anonymous functions
- Arrow functions (=> syntax)

## **6. Objects and Arrays**

- Creating objects (object literals)
- Accessing and modifying object properties
- Object methods
- Arrays

## **7. Events**

- Introduction to event-driven programming
- Handling events with `addEventListener`
- Common events:
  - Click events (`onclick`)
  - Mouse events (`onmouseover`, `onmouseout`, `mousemove`)
  - Keyboard events (`onkeydown`, `onkeyup`)
  - Form events (`onsubmit`, `onchange`)
- Event object and its properties

## **8. DOM Manipulation**

- What is the DOM (Document Object Model)?
- Selecting elements with:
  - `getElementById`
  - `getElementsByClassName`
  - `getElementsByTagName`
  - `querySelector` and `querySelectorAll`
- Modifying DOM elements:
  - Changing HTML content (`innerHTML`, `textContent`)
  - Changing styles (`style` property)
  - Adding and removing classes (`classList`)
- Creating and appending new elements to the DOM

## **9. Error Handling**

- Understanding errors in JavaScript (syntax vs runtime errors)
- Using `try`, `catch`, `finally` blocks

- Throwing custom errors with `throw`

## **10. Timers and Intervals**

- Using `setTimeout` for delayed actions
- Using `setInterval` for repeated actions
- Clearing timers with `clearTimeout` and `clearInterval`

## **11. JavaScript Objects and Built-in Methods**

- Built-in objects
- String methods (`toUpperCase`, `toLowerCase`, `slice`, `substring`, `split`)
- Array methods (filtering, reducing, sorting arrays)