

# 1. Introduction to JavaScript

- 1.1 What is JavaScript?
- 1.2 Role of JavaScript in Web Development
- 1.3 Setting Up the Environment (Browser Console, Code Editors)
- 1.4 JavaScript Syntax and Structure

# 2. Basics of JavaScript

- 2.1 Variables and Constants (`var`, `let`, `const`)
- 2.2 Data Types (String, Number, Boolean, Undefined, Null, Object)
- 2.3 Operators (Arithmetic, Assignment, Comparison, Logical)
- 2.4 Conditional Statements (`if`, `else`, `else if`, `switch`)
- 2.5 Loops (`for`, `while`, `do-while`, `for...in`, `for...of`)

# 3. Functions in JavaScript

- 3.1 Defining and Calling Functions
- 3.2 Function Parameters and Return Values
- 3.3 Arrow Functions (`=>`)
- 3.4 Callback Functions
- 3.5 IIFE (Immediately Invoked Function Expression)

# 4. JavaScript Objects

- 4.1 Introduction to Objects
- 4.2 Object Properties and Methods
- 4.3 Object Destructuring

### 4.4 Object-Oriented Programming Concepts

#### 4.4.1 Classes and Constructors

#### 4.4.2 Prototypes and Inheritance

## 5. Arrays and Array Methods

### 5.1 Creating and Accessing Arrays

### 5.2 Common Array Methods (`push`, `pop`, `shift`, `unshift`)

### 5.3 Advanced Array Methods (`map`, `filter`, `reduce`, `forEach`)

### 5.4 Multidimensional Arrays

## 6. DOM Manipulation

### 6.1 What is the DOM?

### 6.2 Selecting Elements (`getElementById`, `querySelector`, etc.)

### 6.3 Changing Element Content and Styles

### 6.4 Adding and Removing Elements (`appendChild`, `removeChild`)

### 6.5 Event Handling (`addEventListener`, Inline Events)

## 7. JavaScript Events

### 7.1 Mouse Events (`click`, `dblclick`, `mouseover`, etc.)

### 7.2 Keyboard Events (`keydown`, `keyup`)

### 7.3 Form Events (`submit`, `change`, `input`)

### 7.4 Event Bubbling and Capturing

## 8. JavaScript Error Handling

### 8.1 Understanding Errors in JavaScript

### 8.2 `try`, `catch`, `finally` Blocks

8.3 Throwing Custom Errors

## **9. Advanced JavaScript Concepts**

**9.1 Closures and Scope**

**9.2 Asynchronous JavaScript**

9.2.1 Callbacks

9.2.2 Promises

9.2.3 `async` and `await`

**9.3 ES6+ Features**

9.3.1 Template Literals

9.3.2 Destructuring

9.3.3 Default Parameters

9.3.4 Spread and Rest Operators

## **10. JavaScript APIs**

10.1 Introduction to Browser APIs

10.2 Working with the `fetch` API

10.3 Local Storage and Session Storage

10.4 Geolocation API

10.5 Working with JSON

## **11. Debugging and Best Practices**

11.1 Debugging in the Browser

11.2 Using `console.log` and Breakpoints

11.3 Writing Clean and Modular Code

11.4 Avoiding Common Mistakes

## **12. Introduction to Frameworks and Libraries**

12.1 What are JavaScript Frameworks and Libraries?

12.2 Introduction to jQuery

12.3 Overview of Modern Frameworks (React, Angular, Vue.js)

## **13. Project**

13.1 Building an Interactive Web Page

13.2 Implementing Dynamic Content with JavaScript

13.3 Using APIs for Data Fetching

13.4 Adding Event Handling and DOM Manipulation