

Day 15

Basics of JavaScript

JavaScript is a versatile and widely-used programming language essential for modern web development. It enables dynamic content and interactive features on webpages, enhancing user experience by allowing websites to respond to user actions and inputs.

Introduction to JavaScript

1. Role in Web Development:

- Purpose: JavaScript adds interactivity and functionality to webpages, allowing developers to create dynamic and responsive web applications.
- Execution: Unlike HTML and CSS, which define the structure and style of a webpage, JavaScript is a programming language that executes in the browser to control the behavior and logic of the web page.
- Integration: JavaScript can be embedded directly into HTML documents or included through external files. It runs in the client's browser, which enables real-time updates and interactions without needing to reload the page.

Variables, Data Types, and Operators

1. Variables:

- Purpose: Variables are used to store data that can be manipulated and accessed throughout the JavaScript code.
- Usage: Variables are assigned names that reference specific values, making it easier to manage and use data in your scripts.

2. Data Types:

- Purpose: Data types define the kind of data that variables can hold and how they can be used.
- Common Types:
 - Numbers: Represent numerical values, which can be integers or floating-point numbers.
 - Strings: Represent sequences of characters used for text.
 - Booleans: Represent true or false values, often used in conditional statements.
 - Arrays: Store multiple values in a single variable, which can be accessed by index.
 - Objects: Represent complex data structures that group related data and functions together.

3. Operators:

- **Purpose:** Operators perform operations on variables and values, such as arithmetic calculations or logical comparisons.
- **Types:**
 - Arithmetic Operators: Perform basic calculations like addition, subtraction, multiplication, and division.
 - Comparison Operators: Compare values and return a boolean result (true or false), such as equality and greater-than checks.
 - Logical Operators: Combine multiple conditions and return a boolean result, including operators like AND, OR, and NOT.