JS Basics

What is JavaScript?

JavaScript is a high-level, interpreted programming language mainly used to make web pages interactive. While HTML provides the structure of a webpage and CSS controls its design and style, JavaScript adds behavior—it allows pages to respond to user actions such as clicks, typing, scrolling, or form submissions. Almost every modern website uses JavaScript, making it one of the most essential languages to learn in web development.

Basic Syntax

JavaScript syntax is simple and similar to other programming languages like C, Java, or Python. Statements usually end with semicolons, though they can sometimes be optional. Variables can be declared in three ways:

- **var** – the old way of declaring variables (function-scoped).
- **let** – a modern way to declare variables (block-scoped).
- **const** – used for values that should not change.

```
let x = 5;
const pi = 3.14;
var name = "Alice";
```

Variables and Data Types

Variables store values that can be reused and manipulated in a program. JavaScript supports different data types, including:

- **Numbers** - integers or decimals (e.g., 10, 3.14).

- **Strings** - text values inside quotes (e.g., "Hello").

- **Booleans** - logical values (true or false).

- **Arrays** - ordered lists of values (e.g., [1, 2, 3]).

- **Objects** - collections of key-value pairs (e.g., {name: "John", age: 25}).s

Operators

Operators let you perform actions on values.

- **Arithmetic**: +, -, *, /, %

- **Assignment**: =, +=, -=

- **Comparison**: ==, ===, !=, <, >

- **Logical**: &&, ||, !

Comments

Comments help explain code and are ignored by the computer

```
// This is a single-line comment
/*
   This is a
   multi-line comment
*/
```

Console Output

The console is a tool for testing and debugging code.

```
console.log("This is a message");
```

Why Learn JavaScript?

Learning JavaScript is essential for modern web development because it powers dynamic features such as forms, animations, games, and interactive content. It is also the foundation for frameworks like React, Angular, and Vue.