JavaScript Tutorial for Beginners

# 1. Introduction

JavaScript is a programming language used to make websites interactive. While HTML gives structure and CSS gives style, JavaScript adds life to a webpage.

# 2. How to Run JavaScript

You can run JavaScript directly in a web browser:  
1. Open any browser (Chrome, Firefox, Edge).  
2. Right-click → Inspect → Console.  
3. Type JavaScript code like console.log('Hello World!');  
  
Or write inside an HTML file:  
  
<script>  
 console.log('Hello World');  
</script>

# 3. Variables

Variables are used to store values.

let name = 'Suraj';  
const pi = 3.14;  
var age = 20;

**var → Function-scoped (works inside the whole function).**

**let → Block-scoped (works only inside { } where it is defined).**

**== → compares only values (type coercion).**

**=== → compares both value and type (strict equality).**

# 4. Data Types

JavaScript supports different data types:  
- String: 'Hello'  
- Number: 25, 3.14  
- Boolean: true, false  
- Null: nothing  
- Undefined: variable declared but not assigned  
- Object: {name: 'Aman', age: 21}  
- Array: [10, 20, 30]

# 5. Operators

let a = 10, b = 5;  
console.log(a + b); // 15  
console.log(a - b); // 5  
console.log(a \* b); // 50  
console.log(a / b); // 2  
console.log(a % b); // 0

# 6. Conditional Statements

let age = 18;  
  
if (age >= 18) {  
 console.log('You can vote');  
} else {  
 console.log('You cannot vote');  
}

# 7. Loops

// For loop  
for (let i = 1; i <= 5; i++) {  
 console.log(i);  
}  
  
// While loop  
let j = 1;  
while (j <= 5) {  
 console.log(j);  
 j++;  
}

# 8. Functions

function greet(name) {  
 return 'Hello ' + name;  
}  
  
console.log(greet('Suraj')); // Hello Suraj

# 9. Arrays and Objects

let fruits = ['apple', 'banana', 'mango'];  
console.log(fruits[1]); // banana  
  
let student = { name: 'Ankit', age: 22, course: 'Web Dev' };  
console.log(student.course); // Web Dev

# 10. DOM Basics

<h2 id='title'>Hello</h2>  
<button onclick='changeText()'>Click Me</button>  
  
<script>  
function changeText() {  
 document.getElementById('title').innerText = 'Welcome to JS!';  
}  
</script>

# 11. Summary

- JavaScript makes websites dynamic and interactive.  
- Learn basics: variables, data types, operators, loops, functions.  
- Practice small projects like a counter or calculator.  
- Move on to DOM, ES6, and APIs as you grow.