

Complete JavaScript Course (Beginner to Advanced)

Presentation with Explanations and Real-World Examples

1. Introduction to JavaScript

JavaScript is a scripting language used to create and control dynamic website content. It runs in the browser and enables interactive web experiences such as real-time updates, interactive maps, and more.

2. JavaScript in HTML

JavaScript can be embedded in HTML using the `<script>` tag.

Example:

```
<script>
```

```
    alert('Hello, JavaScript!');
```

```
</script>
```

3. Variables and Data Types

JavaScript supports var, let, and const to declare variables.

Data types: String, Number, Boolean, Null, Undefined, Symbol, Object.

Example:

```
let name = 'Alice';
```

```
const age = 25;
```

4. Operators

JavaScript provides arithmetic, comparison, logical, assignment, and bitwise operators.

Example:

```
let sum = 5 + 3; // 8
```

5. Control Structures

JavaScript includes if, else, switch, for, while, and do...while statements.

Example:

```
if (age > 18) {  
    console.log('Adult');  
}
```

6. Functions

Functions help organize code into reusable blocks.

Example:

```
function greet(name) {  
    return 'Hello, ' + name;  
}
```

7. Arrays and Objects

Arrays hold multiple values in a list.

Objects hold properties in key-value pairs.

Example:

```
let fruits = ['apple', 'banana'];
```

```
let person = { name: 'Alice', age: 25 };
```


8. Loops

Use `for`, `while`, or `forEach` to iterate over arrays or data.

Example:

```
for(let i = 0; i < fruits.length; i++) {  
  console.log(fruits[i]);  
}
```

9. Events

JavaScript can respond to user actions using event listeners.

Example:

```
document.getElementById('btn').addEventListener('click', function() {  
    alert('Clicked!');  
});
```

10. DOM Manipulation

The Document Object Model (DOM) represents page structure. JavaScript can read and modify the DOM.

Example:

```
document.getElementById('demo').innerText = 'Updated';
```