

# JavaScript Basics

## 1. What is JavaScript?

JavaScript (JS) is a programming language used to make websites interactive. While HTML is the structure and CSS is the style, JavaScript is the "brain" or behavior of the website.

## 2. Including JavaScript

You can write JS directly in HTML or in a separate file.

**External (Recommended):**

HTML

```
<script src="script.js"></script>
```

**Internal:**

HTML

```
<script>  
alert("Hello World!");  
</script>
```

## 3. Outputting Data

There are different ways to show data in JS:

- `console.log("Message");` (Writes to the browser developer console—used for debugging).
- `alert("Message");` (Pops up a warning box).
- `document.write("Message");` (Writes directly onto the webpage).

## 4. Variables

Variables are containers for storing data.

- `var`: Old way (function scoped). Avoid if possible.
- `let`: New way (block scoped). Use for values that change.
- `const`: New way. Use for values that will **never** change.

JavaScript

```
let score = 10;
const pi = 3.14;
score = 20; // Allowed
// pi = 5; // Error! You cannot change a constant.
```

## 5. Data Types

- **String**: Text wrapped in quotes (`"Hello"`, `'World'`).

- **Number:** Integers or decimals (10, 5.5).
- **Boolean:** Logical values (true, false).
- **Undefined:** A variable that has been declared but not assigned a value.
- **Null:** Intentionally empty.