**JavaScript Notes**

**INTRODUCTION**

* **Java is:**
  + **Cross-platform**: Software or language can run on multiple operating systems (like Windows, macOS, Linux, Android, iOS) without major code changes.
  + **Dynamically Typed Language**: The datatype is automatically determined at run time.
  + It handles **server-side** as well as **browser-side** operations.
* **ECMAScript** is the official specification (standard) that defines how the JavaScript language should work.  
  Think of ECMAScript as the **blueprint**, and JavaScript as one of the **real-world implementations** of that blueprint.
* The **console** is a tool that shows messages and allows you to run JavaScript code interactively.
* **JavaScript is case sensitive.**

**Comments in JavaScript**

// a one line comment

/\* this is a longer,

\* multi-line comment

\*/

**Primitive Data Types**

🧱 There are **6 primitive types** in JavaScript:

| **Type** | **Description** | **Example** |
| --- | --- | --- |
| string | Text data | "Hello", 'World' |
| number | Numbers (integers or decimals) | 42, 3.14 |
| boolean | Logical values | true, false |
| null | Represents intentional absence of value | null |
| undefined | Variable declared but not assigned | undefined |
| symbol | Unique and immutable values (used in objects) | Symbol('id') |

**Other Concepts**

* Programming languages usually follow **PEMDAS** rule for order of operations.
* NaN stands for **Not a Number**.

**Variables**

Variables are like **labels** on boxes that store data.  
Example:

* When the label is **number**, you store numeric data.
* When the label is **string**, you store text data.

**Basic Syntax for Variable Declaration**

let VariableName = Value;

let year = 2004;