Variables and Data Types

> **Theory Assignment**

1. What are variables in JavaScript? How do you declare a variable?

Variables store data values.

- **var**: Function-scoped, can be updated and re-declared.

var x = 10;

- **let**: Block-scoped, can be updated but not re-declared in the same scope.

let y = 20;

- **const**: Block-scoped, cannot be updated or re-declared.

const z = 30;

---

2. What are the data types in JavaScript?

1. **String**: "Hello"

2. **Number**: 25

3. **Boolean**: true or false

4. **Undefined**: A variable declared but not assigned.

let x; // undefined

5. **Null**: Represents no value

let y = null;

6. **Object**: Complex data like { name: "Alice" }.

7. **Symbol**: Unique identifier, e.g., Symbol("id").

8. **BigInt**: Large numbers, e.g., 123456789n.

---

3. Difference between undefined and null

Feature	undefined	null
Meaning	Variable declared but not initialized.	Represents "no value".
Example	let x; // undefined	let y = null; // null