2. Variables and Data Types

Q1. What are variables in JavaScript? How do you declare a variable using var, let, and const?

Variables are containers used to store data values in a program. They help us store and reuse information like numbers, text, or objects.
In JavaScript, we can declare variables using var, let, and const:

- var - Old way to declare a variable (function-scoped).
- let - Used for block-scoped variables that can be updated later.
- const - Used for block-scoped variables whose value cannot be changed.

Example:

var city = "Ahmedabad";

let age = 20;

const country = "India";

Q2. Explain the different data types in JavaScript. Provide examples for each.

JavaScript has several data types which are mainly divided into two groups:

1. **Primitive Data Types**

   - **String** → "Hello"

   - **Number** → 45

   - **Boolean** → true or false

   - **Null** → null (no value)

   - **Undefined** → variable declared but no value assigned

   - **Symbol** → unique identifiers

2. **Non-Primitive Data Types**

   - **Object** → {name: "John", age: 22}

   - **Array** → ["apple", "banana", "mango"]

Q3. What is the difference between undefined and null in JavaScript?

- **Undefined** means a variable has been declared but no value has been given.
  Example:

- let data;

- console.log(data); // undefined

- **Null** means the variable has been assigned an empty or "nothing" value on purpose.
  Example:

- let info = null;

console.log(info); // null

In short, **undefined** happens automatically, while **null** is assigned manually.