JavaScript Fundamentals

JavaScript Coding Challenge

Write a Single-Line Comment and a multi-line comment in JavaScript

```
// This is a Single-line comment


/* This is a multi-line comment,useful for describing sections of code
*/
```

Write code to check and display the data type of the variable myVar

Let myVar = “Hello maryjane”

Console.log (typeof myVar)

Output “string”

Let num = 42;

Console.log (typeof num)

Output “number”

Which of these variable names are valid in Javascript?

Let 123test;
Let test123;
Let test-123;
Let $_test;
Let test;
Let Test;

A variable can not be declared starting with numbers

Let test-123; it will give syntax error because of the minus sign

So the answer can be 2nd 5th and 6th options

Presentation Questions

Explain the difference between primitive and reference types in Javascript . why is this distinction important

Javascript data types or values are categorized into two types

Primitive Types

Reference Types

This distinction is important because it affects how data is stored,copied and compared in your code.

Primitive Types

They are simple,immutable values stored directly in the memory.

Javascript has 7 Types

String eg “hello”

Number e.g 42, 3.14

Boolean (true, false)

Null (Intentional absence of value)

Undefined (Uninitialized variables)

Symbol (unique identifier “id”)

Bigint (large integers e.g 90071992541n)

Key behaviors

1. Stored by value -The actual value is stored in the memory

2. Immutable - it can not be changed after creation (instead a new value is created)

3. Copied by value - when assigned to another variable, a new copy is made.

Reference Type

They are object (including Arrays,functions and custom objects)

They hold reference pointer to object in memory, rather than the actual data

Example

Object {name; “maryjane”}

Arrays [1, 2, 3]

Functions ()

Key Behaviour

1. Stored by reference: The variable hold a pointer to the memory location,not the actual value

2. Mutable: It can be modified after creation

3. Copied by reference: Assigning a reference type to another variable copies the pointer, not the value

IMPORTANCE OF THE DISTINCTION

1.Equality check

Primitive are compared by value while Reference are compared by objects

2.Mutation Side Effects

changing a reference type affects all variables pointing to it. While Primitive avoid unintended side effect

3.Performance Implication

Primitive are lightweight (stored directly)

Objects require more memory (stored indirectly)