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1. What is a variable in JavaScript?

   • A variable is a container for storing data values. It allows you to save and reuse data in your code.

2. How do you declare a variable in JavaScript?

   declare a variable using var, let, or const.

   ex:-

   • var name = "Jeba";

   • let age = 25;

   • const city = "Mannar";

3. What are the differences between var, let, and const?

   • var is function-scoped, let and const are block-scoped.

   • let and const were introduced in ES6 and are preferred over var.

   • const variables cannot be reassigned after they are initialized.

4. Explain variable hoisting in JavaScript.

   • Hoisting is a JavaScript mechanism where variable and function declarations are moved to the top of their containing scope during compilation. This means you can use a variable before you declare it, but only with var.

5. What are the scoping rules for var, let, and const?

• var is function-scoped: it is accessible within the function it was declared. • let and const are block-scoped: they are only accessible within the block (e.g., {}) they were declared in.

6. How can you use template literals in JavaScript?

Template literals allow you to embed expressions inside string literals using backticks (`) and ${expression}.

Ex :-

• let name = "John";

• let greeting = `Hello, ${name}!`;

7. List the primitive data types in JavaScript.

• The primitive data types are: string, number, boolean, null, undefined, symbol, and bigint.

8. What is the difference between null and undefined?

• null is an assignment value that represents "no value" or "nothing".

• undefined means a variable has been declared but has not yet been assigned a value.

9. How do you check the type of a variable in JavaScript?

typeof operator.

Ex :-

• let name = "John";

• console.log(typeof name); // output : "string"

10. Explain the difference between primitive and reference data types.

• Primitive data types hold their values directly (e.g., number, string).

• Reference data types hold references to objects (e.g., arrays, functions, objects).

11. How does type coercion work in JavaScript?

• Type coercion is the automatic or implicit conversion of values from one data type to

another. For example, when adding a number and a string, JavaScript converts the number to a string.

12. What are the typeof operator and the instanceof operator used for?

- typeof checks the type of a variable.
- instanceof checks if an object is an instance of a specific class or constructor.

13. How do you convert a string to a number in JavaScript?

can use Number(), parseInt(), or parseFloat().

Ex :-

- let str = "123";
- let num = Number(str); // 123

14. How do you convert a number to a string in JavaScript?

can use the String() function or toString() method.

Ex :-

- let num = 123;
- let str = num.toString(); // "123"

15. What is implicit type conversion?

- mplicit type conversion, or type coercion, is when JavaScript automatically converts a value from one type to another, like converting a number to a string during concatenation. 16. What are the different methods to convert a string to a number? Explain with examples. Number(): Converts a string to a number.

- let str = "123";
- let num = Number(str); // 123

parseInt(): Converts a string to an integer.

- let str = "123.45";
- let num = parseInt(str); // 123

parseFloat: Converts a string to a floating-point number.

- let str = "123.45";
- let num = parseFloat(str); // 123.45

17. How can you handle type conversion when adding a number and a string? can explicitly convert the number to a string or the string to a number before performing the operation.

Ex :-

- let num = 123;
- let str = "456";
- let result = num + Number(str); // 579

18. Explain how parseInt() and parseFloat() functions work.
    - parseInt(): Parses a string and returns an integer. It stops parsing at the first non-digit character.

      parseInt("123abc"); // 123
    - parseFloat(): Parses a string and returns a floating-point number. It stops parsing at the first non-numeric character.

      parseFloat("123.45abc"); // 123.45

19. What are arrays and how do you declare them?
    - Arrays are used to store multiple values in a single variable. This declare using square brackets

      let fruits = ["Apple", "Banana", "Cherry"];

20. What is an object in JavaScript?
    - An object is a collection of key-value pairs. Each key is a string (also called a property), and each value can be any type (including other objects).

      Ex :-

      let person = {
      name: "John",
      age: 30,
      city: "New York" };