Assignment For Day 1☺🚀

1. Explain the use of JavaScript (or What you can do using a JavaScript)?

A. JavaScript is one of the most popular and widely used language.

We can use JS to build -

- Web/Mobile applications.
- Interactive websites.
- Building web servers and developing server applications. (Beyond websites and apps, developers can also use JavaScript to build simple web servers and develop the back-end infrastructure using Node.js)
- Real-time network applications (like chats and video streaming services).
- Command-line tools.
- Games.
- and many more..

2. What is the difference between client-side and server-side?

A. Client-side means that the processing takes place on the user's computer. It requires browsers to run the scripts on the client machine without involving any processing on the server.

Server-side means that the processing takes place on a web server. It is important to execute the tasks required by the user on the web.

Since the client-side script is executed on the client's computer, it is visible to the client. On the other hand, the server-side script is executed in the server; hence, it is not visible to the users.

3. What is Nodejs?

A. Node.js is an open-source, cross-platform, back-end JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser.

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4. Explain Scope in JavaScript?

A. Scope in JavaScript is directly related to lexical environment.

Lexical environment is the local memory along with lexical environment of its parent.

Global Scope :

- Global variables can be accessed from anywhere.
- In the context of a browser, they are found on the window object(aside from “let” and “const”).

Function Scope :

- Variables declared within a function can only be accessed within that function.

Block Scope :

- Variables declared within a “{ }” cannot be accessed outside of it.
- Once the execution of block is completed, we cannot access “let” and “const” declarations outside a block.
- But we can access “var” declaration outside the block or even after block ends because “var” declaration memory is created in global space.

5. JavaScript is asynchronous or synchronous?

A. JavaScript is a synchronous, blocking, single-threaded language. That just means that only one operation can be in progress at a time. That’s not the entire story, though!

you can manipulate JavaScript to behave in an asynchronous way. It’s not baked in, but it’s possible! Here are a few ways to make that happen by using :

- Asynchornous callbacks (like setTimeOut( )).
- Promises.
- Async/Await

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6. JavaScript is Single-threaded or Multi-threaded.

A. JavaScript is synchronous **single-threaded** language.

Synchronous Single Threaded means it can execute only one command at a time and in a specific order.

7. Explain DOM in your own word.

A. The Document Object Model (DOM) connects web pages to scripts or programming languages by representing the structure of a document—such as the HTML representing a web page—in memory. Usually it refers to JavaScript, even though modeling HTML, SVG, or XML documents as objects are not part of the core JavaScript language.

The DOM represents a document with a logical tree. Each branch of the tree ends in a node, and each node contains objects. DOM methods allow programmatic access to the tree. With them, you can change the document's structure, style, or content.