

# Assignment For Day 1



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

Ans - JavaScript is a lightweight, interpreted, or just-in-time compiled programming language with first-class functions. While it is most well known as the scripting language for web pages, many non-browser environments also use it, such as Node.js, Apache CouchDB and Adobe Acrobat. JavaScript is a prototype-based, multi-paradigm, single threaded, dynamic language, supporting object oriented, imperative and declarative styles.

Some of the uses of javascript are as follow -

- a) Web development- JavaScript is commonly used for creating web pages. It allows us to add dynamic behaviour to the webpage and add special effects to the webpage. On websites, it is mainly used for validation purposes. JavaScript helps us to execute complex actions and also enables the interaction of websites with visitors. Using JavaScript, it is also possible to load the content in a document without reloading the webpage.
- b) Mobile Applications - Nowadays mobile devices are broadly used for accessing the internet. Using JavaScript, we can also build an application for non-web contexts. The features and uses of JavaScript make it a powerful tool for creating mobile applications. React Native is the widely used JavaScript framework for creating mobile applications. Using React Native, we can build mobile applications for different operating systems. We do not require writing different codes for the iOS and Android operating systems. We only need to write it once and run it on different platforms.
- c) Game - JavaScript is also used for creating games. It has various libraries and frameworks for creating a game. The game can either be a 2D or 3D. Some JavaScript game engines such as PhysicsJS, Pixi.js help us to create a web game. We can also use the WebGL (web graphics library), which is the JavaScript API to render 2D and 3D images on browsers.
- d) Server application - A large number of web applications have a server-side to them. JavaScript is used to generate content and handle HTTP requests. JavaScript can also run on servers through Node.js. Node.js provides an environment containing the necessary tools required for JavaScript to run on servers.

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

Ans - Client-side- client side means that the processing takes place on the user's computer. It requires the browser to run the script on the client machine without involving any process on the server.

Server-side - server side means that the processing takes place on a web server. This process 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?**

Ans- 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. A Node.js app runs in a single process, without creating a new thread for every request. Node.js provides a set of asynchronous I/O primitives in its standard library that prevent JavaScript code from blocking and generally, libraries in Node.js are written using non-blocking paradigms, making blocking behaviour the exception rather than the norm.

4. **Explain Scope in JavaScript**

Ans- The current context of executions. The context in which values and expressions are visible or can be referenced. If a variable or other expression is not 'in the current scope' then it is not available for use. There are three types of scope block scope, Function scope and Global scope

5. **JavaScript is asynchronous or synchronous.**

Ans- By default javascript is a synchronous.

Synchronous- By default every line in a function executes sequentially, one line at a time. The same is applicable when multiple line of function is invoke this is related to synchronous.

Asynchronous- The word asynchronous means not occurring at the same time. What does it mean in the context of JavaScript?

Typically, executing things in sequence works well. But you may sometimes need to fetch data from the server or execute a function with a delay, something you do not anticipate occurring NOW. So, you want the code to execute asynchronously.

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

Ans- Yes, JavaScript is a Single threaded language, which means it has only one call stack that is used to execute the program

7. **Explain DOM in your own word.**

Ans - DOM stands for Document Object Model. It is a programming interface for web documents. It represents the page so that programs can change the document structure, style, and content. The DOM represents the document as nodes and objects; that way, programming languages can interact with the page. A web page is a document that can be either displayed in the browser window or as the HTML source. In both cases, it is the same document but the Document Object Model (DOM) representation allows it to be

manipulated. As an object-oriented representation of the web page, it can be modified with a scripting language such as JavaScript.