

In September 1995, Brendan Eich, a programmer at Netscape developed a programming language in just 10 days.

This language was initially called Mocha, then LiveScript.

In December 1995 Netscape and Sun(the organisation that owned Java) had a license agreement regarding Javascript

Today Javascript is used by millions of developers and is used in major sites such as Google, Facebook, Twitter, etc.

Client-Side Scripting and Server-Side Scripting:

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Intro:

*The static user interface(UI) that can be seen by the user is developed by using "Client-side" programming language.

*whenever we can enter mobilenumbers, or some credentials it will check in the server, we can say simply "server side " programming language.

*above these two are useful in web application development.(client side and server side)

What Is Server-side Programming?:

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=> the execution of the programs on backaend or server, specifically we can say, server side programming or server side scripting.

=> when we deal with huge collections of data, we need servers that have databases to store such a huge amount of data.

=> Then server-side programs are used to perform various operations on that data.

Server-Side Uses:

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1. Well organized Storage and Information Delivery.
2. Data Analysation and Decision Making
3. Notifying and Communicating with client
4. Application of Session Information
5. Tailored User Experience

6. Limited Content Accessibility

Programming Languages for Server-side Programming:

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the languages that offer Server-side programming.

- *PHP
- *Node.js
- *C# (read as 'C sharp')
- *Ruby
- *Python

Examples of Server-side Programming:

- *A user requests for some specific data by using his browser(client).
 - *the servers do some processing and only send that data to the user which was requested.

What is Client-side Programming?:

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- *The execution of several programs on the front-end or specifically the Client, is said to be Client-side programming.

- *Many functionalities are added in the web application for better user experience with the help of the programs that runs on the front-end.

- * Hence, this is also called Front-end Programming.

- ****The main motive of client-side programming is to create interactive and appealing web pages,

- **utilizing the power of temporary storages such as local storage and session storage and reducing the server load as well by executing some scripts on the client-side only.

- **The client side is also used to send requests to the server for various functions like data retrieval and sending.

Client-Side Uses:

1. Creating Static and Dynamic Web Pages
2. Client-side Validation
3. Immediate Responses
4. Utilizing Temporary Storages.
5. Server load Reduction

Client-side Programming languages:

HTML

CSS

JavaScript

VBScript

Examples of Client-side Programming:

*Form validation is one of the best examples of client-side programming.

**The data input by the user is verified before it is sent to the server.

*Once the data is validated on the client side, it is sent to the server for further process.

* when the user enters the email address, it is first checked on the client-side itself if it is having a proper structure like "@" symbol, "." extension like .com, .org, etc. Once it is verified, then it is passed on to the server to check if the entered email actually exists or not.

This helps in reducing the load on servers.

What is javascript:

=====>"Javascript is the duct tape of the Internet." -Charlie Campbell.

In a web page,

*HTML is used to structure the page.

*css is used to add styling like colors, fonts

But web page in the sence not only html+css, it gives only sttaic page , we canot interact with at page.

thats why javascript comes in picture.

Javascript is a cross-platform, interpreted, object-oriented, just-in-time compiled scripting language.

=>It is used to make web pages interactive.

(for example if the user clicks a button then the theme of the website changes, or after scrolling the page a pop-up message may be displayed).

=>It is used make dynamic web pages.

=>JavaScript has a standard library of objects, such as Array, Date, and Math, and a fundamental set of language elements

such as operators, control structures, and statements.

=> Javascript can be used for both client and server side programming.

=>The browser has an embedded engine sometimes called a "JavaScript virtual machine".

=>Different engines have different "codenames". For example:

V8 - in Chrome, Opera and Edge.

SpiderMonkey - in Firefox.

...There are other codenames like "Chakra" for IE, "JavaScriptCore", "Nitro" and "SquirrelFish" for Safari, etc.

==>JavaScript's capabilities greatly depend on the environment it's running in.

For instance, Node.js supports functions that allow JavaScript to read/write arbitrary files, perform network requests, etc.

==>In-browser JavaScript can do everything related to webpage manipulation, interaction with the user, and the webserver

Applications of JavaScript:

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*Excellent user interactivity

*Web and Mobile app creation

*server-side development

*Game development

Client side use of JavaScript:

Client side javascript is used to manipulate the contents of a webpage, provide user interaction etc.

Server side use of JavaScript:

Server side javascript is used for server side development it can do things like database queries, network requests, read/write files, running web servers, etc.

Server side javascript is possible because of Node.js.

Javascript engine:

*The Javascript engine is a special programme which can execute JS code. Different browsers use different engines.

Example: Chrome, Opera, Edge use V8 engine. Firefox uses SpiderMonkey IE uses Chakra

JS engines have 4 main steps-Parsing, Interpretation, Compilation, Execution.

What makes JavaScript Unique?:

A combination of three things makes Javascript unique - full integration with HTML and CSS, simplicity, support by all modern browsers, many frameworks, etc.

Advantages of JavaScript ::

Less server load runs on the client side, hence the load on the server is less.

Rich interface makes the creation of rich and complex interfaces possible.

Speed

Browser support

Versatility

Various frameworks

Interoperability

What is ECMAScript and how is javascript related to it?:

After its birth in 1995, Javascript grew rapidly hence there was a need to standardize it.

In 1997 this responsibility was given to ECMA (the European association for standardizing information and communication systems)

and a
standardized version of Javascript was created, this version is
ECMAScript.

*Standardized version of Javascript is ECMAScript.

*****An ES6 module is a JS file that can export its code to share with other files and import and use code from other JS files.

3 Ways of Printing Hello World in JavaScript with Examples:

You can print Hello World in JavaScript using console.log(), document.write(), alert() functions.

Using npm (Node Package Manager):

*We can use npm to manage the dependencies (the modules/packages required for our project to work properly) for our local projects.

*npm has the ability to install all the dependencies that are required in the application as a package in just a single command.

*npm (node package manager) is used to manage the packages

* We can get any package that is present in npm and use it in our application or project whenever necessary.

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