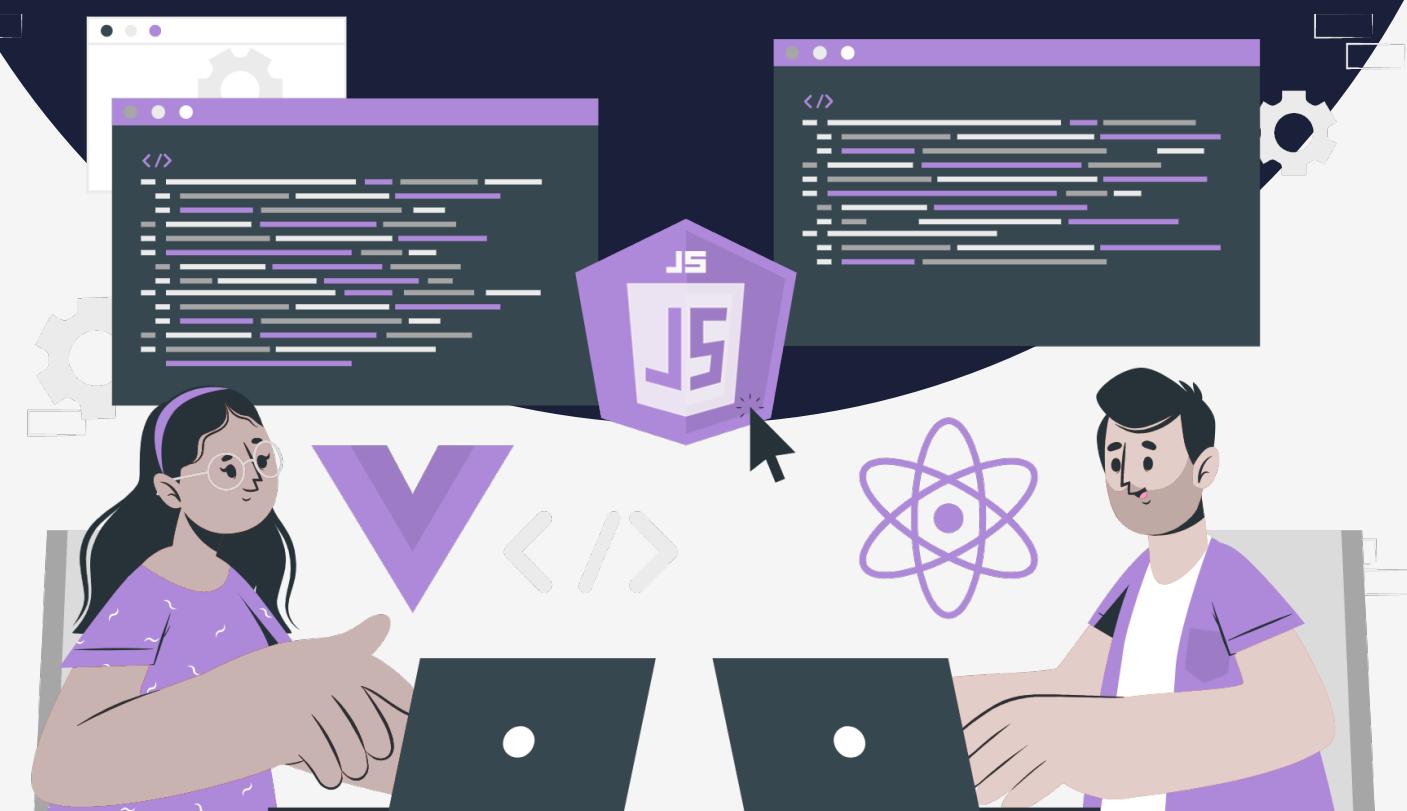


Lesson:

Why and What is JavaScript



Topics Covered :

1. Introduction
2. Advantages of learning Javascript
3. Overview of JavaScript
4. History of JavaScript
5. What is ECMAScript?
6. Versions of ECMAScript
7. Overview os TypeScript

Why JavaScript

JavaScript is a popular programming language that is widely used to build web applications. It is a client-side scripting language, which means that it is run by your web browser rather than on a server. This makes it a good choice for building web applications that need to be fast and responsive, as the code is run locally on the user's device rather than having to be sent back and forth between a server and a client. JavaScript is also used to build mobile apps, create interactive documents, and build server-side applications with the help of runtime environments such as Node.js.

There are several reasons why JavaScript has become so popular.

- 1. Ease of use:** JavaScript is a high-level language, which means that it is easy to learn and use. It is also a dynamically-typed language, which means that you don't have to specify the type of a variable when you declare it, making it easy to write code quickly.
- 2. Cross-platform compatibility:** JavaScript is supported by all modern web browsers, so you can use it to build web applications that will run on any device with a web browser.
- 3. A large developer community:** There is a large and active community of developers who use and contribute to JavaScript, which means that there are many resources available for learning the language and getting help when you need it.
- 4. Powerful capabilities:** JavaScript has a lot of powerful features that allow you to build complex and interactive applications. For example, you can use JavaScript to manipulate the HTML and CSS of a web page, make asynchronous network requests, and work with multimedia and other types of data.
- 5. Growing demand:** The demand for JavaScript developers is high and continues to grow, making it a good language to learn if you want to pursue a career in software development.

Overview of JavaScript.

JavaScript is a dynamic programming language that's used for web development, web applications, game development, and lots more. It allows you to implement dynamic features on web pages that cannot be done with only HTML and CSS.

It is a client-side scripting language, which means that it is executed by the web browser on the user's device rather than on a server, allowing for fast and responsive user interactions without the need for a page refresh. It is also an object-oriented language, which means it is based on the concept of objects and their methods, allowing for encapsulation and reusability of code.

JavaScript can be added to a web page by including it directly within the HTML file using a script tag, linking to a separate .js file, or through various frameworks and libraries such as jQuery, React, Angular, and Vue.js.

JavaScript also has a large and active developer community, and it is a language in high demand for web development, with many resources available for learning the language and getting help when you need it. It is constantly evolving with new updates, enhancements, and new tools. With the rise of web development and the proliferation of web-enabled devices and technology, it has become a must-have skill for any web developer or anyone looking to work in the tech industry.

History of JavaScript.

JavaScript was created in **1995** by Brendan Eich, a programmer at Netscape Communications Corporation. It was originally called **Mocha**, then changed to **LiveScript**, and finally, it was given the name **JavaScript** to leverage the popularity of Java, which was a popular programming language at the time. JavaScript was first introduced in Netscape Navigator 2.0, a popular web browser of the time.

In 1996, JavaScript was submitted to the European Computer Manufacturers Association (ECMA) and it was standardized as ECMAScript. This standardized version of JavaScript is still used today and is supported by all modern web browsers like Google Chrome, Mozilla Firefox, Apple Safari, Microsoft Edge, etc.

In the early days of JavaScript, it was primarily used for simple things like form validation and simple mouse interactions, but as browsers became more powerful and web standards evolved, JavaScript became more widely used for building more complex web applications. With the introduction of popular libraries and frameworks like jQuery, AngularJS, React, and Vue.js, it has become easier to build complex and powerful web applications using JavaScript.

The emergence of Node.js in 2009 made it possible to run JavaScript on the server side and it became more popular as a full-stack language, allowing for code reuse and sharing between the client side and the server side.

What is ECMAScript?

ECMAScript (often referred to as simply "JavaScript") is a programming language specification standardized by the European Computer Manufacturers Association (ECMA). It was first published in 1997 and is used to create scripts for the web and other environments. JavaScript is the most widely-used implementation of ECMAScript and is supported by all major web browsers.

ECMAScript defines the syntax, semantics, and features of the language, and specifies how it should be implemented. The specification includes things like:

- **Data types:** ECMAScript supports several data types such as numbers, strings, and objects.
- **Variables:** ECMAScript defines the way variables are declared and used.
- **Expressions and operators:** ECMAScript specifies the operators that can be used to manipulate data and create expressions.
- **Control flow:** ECMAScript defines the various control flow statements such as if-else, for, and while loops.
- **Functions:** ECMAScript defines how functions are created, called, and returned.
- **Objects:** ECMAScript specifies how to create and manipulate objects, including how to define properties and methods.

Versions of ECMAScript

ECMAScript has several versions, with the latest one being ECMAScript 2022 (ES13). Each new version of ECMAScript adds new features and updates the existing ones. The first version was introduced in 1997 as ECMAScript 1. In which they introduced basic JavaScript syntax and features. Major updates in JavaScript were introduced in ECMAScript 6 (2015) and they make JavaScript a more powerful, expressive, and efficient language, allowing developers to write more maintainable and scalable code.

Overview of TypeScript

TypeScript is a typed superset of JavaScript that adds optional static types, class-based object-oriented programming, and other features to the dynamic and flexible nature of JavaScript. It is designed to make large-scale JavaScript development more manageable and scalable.

One of the main features of TypeScript is its support for static type checking. This means that the TypeScript compiler can analyze the code and check for type-related errors, such as passing a string where a number is expected before the code is run. This can help to catch and prevent errors early on in the development process, which can save time and effort in the long run.