Java vs JavaScript: Which Is The Best Choice For 2021? (Updated)

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Many people assume that as JavaScript has "Java" in its name they both are somehow related. While many coders groan at this coupling and many even feel that this naming confusion is just a part of a marketing gimmick, the history of these two popular programming languages did intersect for a very brief moment in time during the early days of Netscape.

The evolution of the two programming languages took such different paths from that point forward that there is a common joke that ***Java is to JavaScript as ham is to a hamster***. But if you are reading this article, you are probably interested in a more useful explanation of these two popular languages, so let me compare the two.

If we travelled back in time for about 5 years, there would be a simple comparison like Java is a general-purpose coding language, and JavaScript is used on the web applications to make them interactive and animated. Now that JS has "grown-up," the comparison is much more complicated here.

First of all, have a look at some interesting facts and stats about Java and JavaScript:

- The primary name of Java was "Oak" and it was changed to Java by the marketing department of Sun's to "Java" when they already found that name was registered for some computer company.
- Java programming language was created by an accident. Around 1992, James Gosling was working at the Sun Labs. He along with his team was building a set-top box and which was started by "cleaning up" the C++ language and they all wound up with a new programming language called Java or at that time: Oak.
- Java is the second most popular programming language and is very popular among **web developers**.
- Java programming language is free from the concept of Pointer as adding pointers to the Java programming language would compromise security and robustness, making this programming language even more complex.
- In Java, the actual meaning of the Final keyword is not final. It has different meanings in Java. It can be the Final method, Final class, Final variable or Final field.
- Nowadays, Java is used by 95 percent of the enterprises as their primary programming language. It is much more than C and other programming languages.
- In a single year, Java gets downloaded for about one billion times.
- Today, Java runs on over 1 billion as Google's Android operating system uses Java APIs.

A Small Introduction

JavaScript

In the early days of the Internet, around 1990, Internet Explorer and Netscape Navigator were the two most popular web browsers used by the general public. In just 10 days, a developer named Brendan Eich at Netscape, Inc. was able to create a programming language that could instruct a computer to interact with the user upon receiving user input. He called this language "LiveScript" and integrated it directly into the navigator.

This meant that the browser was literally interpreting the user's commands; The code did not have to be compiled, and plug-ins were not required. Another programming language, Java, was gaining popularity around the same time, even though Java required a separate plug-in for the function. Netscape saw the opportunity and named its language "JavaScript". JavaScript was unavoidable in the early days of the Internet.

Java

Java is a programming language invented by James Gosling and developed by Sun Microsystems. It took a little over 10 days to develop — it was close to four years old. In 1991, a group of Sun Microsystem engineers worked the "Green Team" day and night to create Java. It was first released in 1995, and many new versions have been launched since then. Today's Internet is absolutely saturated with Java-based programming, and we have Java to thank for the many applications that make day-to-day life easier. Java is currently owned by Oracle.

Major Similarities

As they separate, there are some top-level similarities, which are worth considering, especially if you are looking at **web app development** when comparing Java to JavaScript.

Object-Oriented Programming (OOP). Both languages require the developer to code objects and their relationships in the context of each other. By extension, it gives both languages access to technologies such as inheritance, encapsulation, and polymorphism.

Front-end development. Both languages can be used in aspects of front-end development. JavaScript can be embedded directly into HTML, which is implemented as a framework or library; Java can be used as a Java applet.

Back-end development. Both languages can be used on the server-side. Java has long been used to power back-end technologies such as Apache, JBoss, and WebSphere. Node.js has become a launchpad for JavaScript-powered servers.

Difference Between Java and JavaScript

Java is an OOP (object-oriented programming) language that came into use in the year 1995. Java was developed at Sun Microsystems which was later acquired by Oracle company. Those programs or applications developed in the Java programming language will execute in a JVM (Java Virtual Machine), by which we can run the same program on different platforms and systems or devices etc. JS is an object-oriented scripting language from which you can create dynamic HTML pages. Interactive effects within a web page. JS was available in the browser until Google Chrome released its node engine as "node.js".

Both JavaScript and Java are assembled, written and executed differently, and each has a dramatic difference when it comes to what it's capable of.

Java is used in many places, including credit card programming, **Android applications**, and the creation of desktop applications and enterprise-level applications. By comparison, JavaScript is primarily used to make web app pages more interactive. It can be used as an alternative to Flash, although most web developers and programmers will tell you that JavaScript is more popular and has more functionality than Flash. JavaScript can be used to do monotonous things like creating animation in HTML.

In short, when it comes to how each programming language is used, Java is typically used for all server-side development, while creating client-side scripts for tasks such as JS validation and interactivity is reserved for.

Some other crucial differences are:

JavaScript code is all-text and Java code must be compiled.

Each language needs different plug-ins.

JS code is run on a browser only, whereas Java creates web applications that run in a browser or virtual machine.

Java is an object-oriented programming language (OOP), and JS is specifically an object-oriented scripting language.

A new student of programming will learn that both JavaScript and Java are meaningful programming languages to add to their coding repertoire. In fact, many coders say that learning these two programming languages quickly is a very wise move for a new programmer. Without a doubt, JavaScript and Java being under a belt will provide more employment to a coder and create more lucrative opportunities for employment down the road.

Basis of Comparison	Java	JavaScript
OOPS	Java is an object-oriented language that uses objects to perform any specific actions based on relations between objects.	JavaScript is an object-oriented scripting language that uses objects which are similar to Java.
Running Platform	Java applications and programs run in Java virtual machine (JVM) which required installing JRE and JDK on a system.	JS web applications run on a web browser and no need for any initial setup.
Mobile applications	Old applications of mobile phones are mostly written in Java and smartphone platforms like Android and Symbian also support Java	Using JavaScript we can develop mobile applications but there are a few limitations as we need to use 3rd party tools like PhoneGap to convert it to native programming code which mobile platform/OS can execute.
Learning Curve	Java has extensive documentation, online sources, online forums, communities from which one can learn easily. If we want to build applications and programming we can learn Java.	JavaScript also has an extensive list of online sources, documentation, online forums and communities by which one can easily learn as we can see its execution in the browser immediately. If we want to make web applications we can learn JavaScript.
Compilation	Java programs are compiled and interpreted as it is a programming language.	Whereas JavaScript is interpreted as it is a scripting language with a plain text code.
Support	Java is supported by most of the operating systems as almost every operating system supports.	JavaScript is supported by many web browsers that come with different OS and web developers can directly create scripts using JavaScript as it will be straightforward.
Syntax	Java language syntax is similar to C or C++ programming language. Java program will be in objects and classes.	JS language syntax is pretty similar to the C programming language but naming conventions are similar to Java programming language.
Scope	Java is available almost everywhere and it's an independent language that can run on different operating systems. Also, Java uses block-based scoping where variable goes out of scope once control comes out of a block.	JS is mostly used on different web browsers and completely relies on CSS and HTML due to which it's not available globally. JS uses function-based scoping as the variable can be accessed in function.