

# Overview of Java Programming

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**Abstract** :- In today's world there are plenty of programming languages available in the market. Java is a High-level language which is based on the features of C and C++ language. Java is the most used language in this modern world to develop several software, applications, systems, programs, games, etc. Java is a simple language. Java was developed by Sun Microsystems and was released in 1991. James Gosling is known as the father of Java. The latest technologies such as Machine learning, Artificial Intelligence, Data Science, etc. are all based on the Java Language. The main advantage of Java Programming is that it is Platform Independent which means developer can write a code on any operating system and run on the other operating system but the condition is the operating system should consist of Java Interpreter. As it is a simple language the writing, compiling and debugging of code is easy in Java.

**Keywords:-** Java SE, OOPS, IDEs, Java Interpreter.

## I. INTRODUCTION

Java is an object-oriented programming language developed by Sun Microsystems, and released in 1991. James Gosling first developed Java in Sun Microsystems (which was later run by Oracle Corporation). Java is a combination of features of C and C++ language. The format of Java is obtained from C language and OOP(Object Oriented Programming) features from C++ language. Java code works on the principle of write once, run anywhere(WORA) which means they can be run on any operating system with any processor as long as the Java Interpreter is available on the System. Java programming language is now being widely used as the primary programming language to develop software and applications. Java offers real possibility that most programs can be written in a type safe language. Java also has the feature of platform independency which makes it very powerful. Java has gained a lot of popularity and it will keep on growing with time.

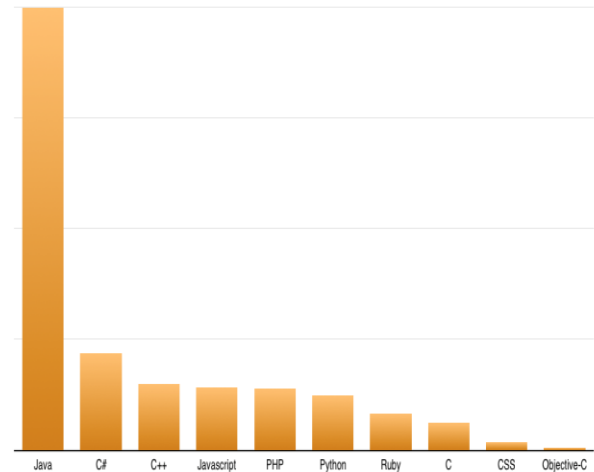


Fig.1: Popularity of Java Language

Java is a simple, fast, object-oriented, robust, secure, multi-threaded, and platform-independent programming language.

Java can be used to create complete applications that can run on a single computer or be distributed across servers and clients in a network.

## II. JAVA VERSIONS

1. JDK Alpha and Beta (1995)
2. JDK 1.0 (January 23, 1996)
3. JDK 1.1 (February 19, 1997)
4. J2SE 1.2 (December 8, 1998)
5. J2SE 1.3 (May 8, 2000)
6. J2SE 1.4 (February 6, 2002)
7. J2SE 5.0 (September 30, 2004)
8. Java SE 6 (December 11, 2006)
9. Java SE 7 (July 28, 2011)
10. Java SE 8 (March 18, 2014)
11. Java SE 9 (September 21, 2017)
12. Java SE 10 (March, 20, 2018)

### III. JAVA APPLICATION

1. Embedded System
2. Robotics
3. Desktop GUI Applications
4. Web Applications
5. Cloud Based Applications
6. Enterprise Applications
7. Standalone Applications
8. Mobile Applications
9. Smart Cards
10. Games

### IV. JAVA EDITIONS

1. Java SE (Java Standard Edition)
2. Java EE (Java Enterprise Edition)
3. Java ME (Java Micro Edition)
4. Java FX

### V. HISTORY

Java was developed by James Gosling, who is known as the father of Java, in 1995 by Sun Microsystems. James Gosling and his team members started the project in the early '90s. New versions for large and small platforms (J2EE and J2ME) soon were designed with the advent of "Java 2". Sun has not announced any plans for a "Java 3". Java was designed for interactive television, but it was advanced technology for the digital cable television industry at that time. The history of Java was started with the Green Team. Java team members were also known as **Green Team**. Java programming worked on the principle of Robust, Portable, Platform Independent, High Performance, Multithread, etc. Firstly designed for small, embedded systems in electronic appliances like set-top boxes. It was fairly secure and its security was configurable, allowing for network and file access to be limited.

### VI. SCOPE OF JAVA

Nowadays in the market we have lots of different languages capable of accomplishing a wide range of tasks. Java is the most popular programming language for back-end in web development, in others words, Java is the leading programming language used for server-side scripting. There is one clear trend from the multiple surveys on the most widely used programming language worldwide: **Java and JavaScript** still rule the coding world. Government projects like Digital India and

Demonetization surely will give rise to demand for Java Programmers in every company going digital.

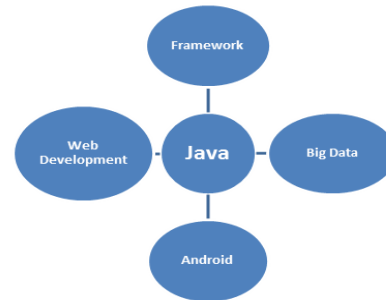


Fig.2: Java based Technologies

Java is most widely used programming language. It is present everywhere. It is the ocean of opportunities. Whichever domain you work in you would surely come across Java Programming.

### VII. TOOLS

Java tools are the software where we can write our code, these software are also called IDEs(Integrated Development Environment). Different tools or IDEs provide different features.

#### Tools:-

1. JDK (Java Development Kit)
2. Eclipse IDE
3. NetBeans
4. IntelliJ IDEA 13.1
5. Oracle JDeveloper
6. JUnit
7. Apache ANT
8. JRat (Java Runtime Analysis Toolkit)
9. Apache JMeter
10. Gradle
11. Clover
12. Mockito

These are the few examples of IDE which can be used to develop an application in Java. There are lots of tools or IDEs in the market.

### VIII. HOW TO LEARN

There are many online platforms from where we can learn Java from beginners level to advanced level, and some of these platforms also provide certification.

**Platforms:-**

1. Javatpoint
2. Udemy
3. JavaTutorial
4. Youtube
5. w3school
6. Tutorialspoint
7. Geeksforgeeks

These platforms consist of video tutorials and articles and some also provide an online editor for hands-on practice.

**IX. CONCLUSION**

Java is the most popular programming language, used to develop various applications which runs on the various platforms like Windows, Mac OS, and various versions of UNIX. Over ninety percent of the applications are powered by Java and in the future it is likely to increase.

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