

Fundamentals of Java Programming

Dr. Aftab Ahmed N.A

Assistant professor, Department of Computer Science & Engineering
KGR college of Engineering Moinabad, Telangana, India

Abstract:

Java language discovered by James Gosling in 1995 While he was working at sun Microsystems. Though it quickly Gained popularity after its release. Java is widely used programming language for coding web applications. Java is faster and more efficient than python. Java programming language is used for back-end development. Java is widely used object oriented programming language and software platform that runs on billions of devices, including notebook computers, mobile devices, gaming consoles, medical devices and many others. The rules and Syntax of java are based on the C and C++ languages.

Introduction:

Java is Fully an Object oriented programming language Which is Platform independent and a java program can be Written once and run Anywhere means a Java program can be Written only one time and can be run on any using any operating System(Dos,Unix,Windows) without any modification and the perfect output can be got.

Everything in java is seen as an object. The current long term support version(LTS) of java is java 21 released in September 2023.Java23 is not a java LTS version,Which means that it will only have premier support for six months.It includes one for support the goal of making java a more appealing development language for beginners.

Features

JAVA is simple because java does not support a complex concept like a pointer so that java program execution time

Will be less as well as less development time.

Java is really very simple because java added concept called garbage collection to destroy the useless object which free memory.

Java is an incredibly secure language and millions of developers use it. Its use of the JVM,Memory management

And built-in security features make it an ideal choice for developing secure Applications.As

such,it is no surprise that java is so widely adopted by developers and organizations alike

Java is considered Architecture-Neutral because it can run on any platform or operating System without requiring the code to be modified.this means that a java program written on one computer can be executed on another.

Robustness is the capacity of a computer system to handle the errors during execution and manage the incorrect input of data.Java is Robust because it utilizes strong memory management.

Multithreading in java is an act of Executing a complex process using virtual processing entities independent of each other. these entities are called threads.Threads in java are virtual and share the same memory location of the process.As the threads are virtual they exhibit a safer way of executing a process.

Why use JAVA:

Java was Designed to be easy to use and is therefore easy to write,compile,debug and learn than other programming languages.Java is object oriented this allows you to create modular programs and reusable code.

Java because of its Robustness,ease of use,cross platform capabilities and security features.It has become a language of choice for providing Worldwide internet solutions.

Uses of Java:

Developers use java to construct applications in laptops, Data centres, game consoles, scientific super computers, Cell phones and others devices. Java is the world's third most popular programming language, after python and c. According to the TIOBE index which evaluates programming language popularity.

Advantages:

IT is inherently object oriented which means it is based on the concepts of objects and classes

- 1) Java has rich standard library
- 2) Java has Multithreading concept
- 3) Java has strong memory management
- 4) Java has high security
- 5) Java is Robust and reliable
- 6) Java has large community and support
- 7) Enterprise presence

Disadvantages:

- 1) JAVA has non-native performance
- 2) java has lack of low level programming support
- 3) java has threat of vendor interference
- 4) confusing licensing models java has
- 5) java has jdk distro proliferation

Conclusion:

JAVA is known for its speed and performance which is why it is used in high performance applications like gaming and financial systems. In conclusion java is a powerful and versatile programming language that has become a staple in the world of software Development

Reference:

- 1) Java by Horstmann.
- 2) Effective java (3rd edition)
- 3) java-the complete Reference (11th Edition)
- 4) Thinking in java by Bruce Eckel