

What is Java :

Java is a **programming language** and a **platform**. Java is a high level, robust, object-oriented and secure programming language. It is a case-sensitive language.

Java was developed by *Sun Microsystems* (which is now the subsidiary of Oracle) in the year 1995. *James Gosling* is known as the father of Java.

History of Java :

Founded by	: SUN Mc Systems (Oracle Corporation)
Author	: James Gosling
Objective	: To prepare simple electronic consumer goods.
Project	: Green
First Version	: JDK 1.0 (1996, Jan-23rd)
Strong Features	: Object-oriented, Platform Independent, Robust, Portable, Dynamic, Secure.....

Features of Java :

Java language has the following features :

1) Simple:

Java is simple programming language, because,

- a) Java applications will take less memory and less execution time.
- b) Java has removed all most all the confusion oriented features like pointers, multiple inheritance,.....
- c) Java is using all the simplified syntaxes from C and C++.

2) Object Oriented:

Java is an object oriented programming language, because, JAVA is able to store data in the form of Objects only.

3) Platform Independent:

Java is platform independent programming Language, because, Java allows its applications to compile on one operating system and to execute on another operating system.

Java is platform independent because of its byte code (.class file)

4) Architecture Neutral:

It means that even if you write and compile a program on one hardware configuration and try to run on some other hardware configuration still it will execute.

5) Portable:

Java is a portable programming language, because, JAVA is able to run its applications under all the operating systems and under all the hardware Systems.

6) Robust:

Java is Robust programming language, because,

1) Java is having very good memory management system in the form of heap memory Management System, it is a dynamic memory management system, it allocates and deallocates memory for the objects at runtime.

2) JAVA is having very good Exception Handling mechanisms, because, Java has provided very good predefined library to represent and handle almost all the frequently generated exceptions in java applications.

7) Secure:

Java is very good Secure programming language, because,

1) JAVA has provided an implicit component inside JVM in the form of "Security Manager" to provide implicit security.

2) This makes Java popular for banking applications.

8) Dynamic:

If any programming language allows memory allocation for primitive data types at RUNTIME then that programming language is called as Dynamic Programming Language.

JAVA is a dynamic programming language, because, JAVA allows memory allocation for primitive data types at RUNTIME.

9) Distributed:

By using JAVA we are able to prepare two types of applications

1) Standalone Applications

2) Distributed Applications

1) Standalone Applications:

If we design any java application without using client-Server arch then that java application is called as Standalone application.

2) Distributed Applications:

If we design any java application on the basis of client-server arch then that java application is called as Distributed application.

To prepare Distributed applications, JAVA has provided a separate module that is "J2EE/JAVA EE".

10) Multi Threaded:

Thread is a flow of execution to perform a particular task.

Multithreaded means ability to allow more than one thread to execute application, It follows parallel execution, it will reduce execution time, it will improve application performance.

JAVA is following Multi Thread Model, JAVA is able to provide very good environment to create and execute more than one thread at a time, due to this reason, JAVA is Multi threaded Programming Language.

11) High Performance:

JAVA is high performance programming language due to its rich set of features like Platform independent, Arch Neutral, Portable, Robust, Dynamic,.....