

# FEATURES OF JAVA

Java is an Object-Oriented Programming language. It was developed by James Gosling in collaboration with Mike Sheridan, and Patrick Naughton in the year 1995. Following are the main features of the Java language-

1. Simple
2. Object Oriented
3. Platform independent
4. Secure
5. Robust
6. Portable
7. Dynamic
8. Interpreted
9. Portable
10. High Performance
11. Distributed
12. Multithreading

## SIMPLE:

Java is user-friendly.

Its syntax is clear and concise making it suitable for both aspiring programmers and experienced professionals.

It inherits many features from C, C++ and removes complex features like pointers, operator overloading, multiple inheritance, explicit memory allocation etc...

## OBJECT ORIENTED:

1. Java is an Object Oriented Programming language.
2. Everything in JAVA is an Object, Object is a real world entity.
3. Java supports Fundamental concepts of OOPs-
  - Object
  - Class
  - Inheritance
  - Polymorphism
  - Abstraction
  - Encapsulation

## PLATFORM INDEPENDENT:

Unlike other languages, Java is not limited to any specific machine and dependent on other factors to run. The Java platform is independent because:

1. It uses a runtime environment of its own, i.e. JVM.
2. it is a write-once, run-anywhere language.
3. It is a software-based platform that runs on top of other hardware-based platforms.

## SECURE:

1. Java is better known for its security, Java is secured because:
2. No explicit Pointer
3. Java runs inside a virtual machine(JVM)
4. In Java run time, a class loader separates the package for the classes of the local file system from the files imported from network sources.
5. Java also consists of Bytecode Verifier, which checks the code fragments for illegal code.

## ROBUST:

1. Java is robust because of following:
2. Built-in Exception handling.
3. Strong type checking .

## PORTABLE:

Java is portable because it facilitates you to carry the Java bytecode to any platform. It doesn't require any implementation.

## DYNAMIC:

Java is a dynamic language. It supports the dynamic loading of classes. It means classes are loaded on demand. It also supports functions from its native languages, i.e., C and C++.

Java supports dynamic compilation and automatic memory management (garbage collection).

## INTERPRETED:

The source code is first compiled into bytecode by the Java compiler.

Then this bytecode is interpreted by the JVM when the program runs.

## PORTABLE:

Java is portable because it facilitates you to carry the Java bytecode to any platform. It doesn't require any implementation.

## HIGH PERFORMANCE:

Java is faster than other traditional interpreted programming languages because Java bytecode is "close" to native code.

It is still a little bit slower than a compiled language (e.g., C++).

Java is an interpreted language that is why it is slower than compiled languages, e.g., C, C++, etc.

## DISTRIBUTED:

Java provides the network facility. i.e. programs can be access remotely from any machine on the network rather than writing program on the local machine.

HTTP and FTP protocols are developed in java.

## **MULTITHREADING:**

Java provides multitasking facility with the help of lightweight processes called threads.