

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-

- Simple
- Object Oriented
- Platform independent
- Secure
- Robust
- Portable
- Dynamic
- Interpreted
- Portable
- High Performance
- Distributed
- 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:

- Java is an Object Oriented Programming language.
- Everything in JAVA is an Object, Object is a real world entity.
- 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:

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

SECURE:

- Java is better known for its security, Java is secured because:
 - No explicit Pointer
 - Java runs inside a virtual machine(JVM)
- 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.
- Java also consists of Bytecode Verifier, which checks the code fragments for illegal code.

ROBUST:

Java is robust because of following:

- Built-in Exception handling.
- 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.