

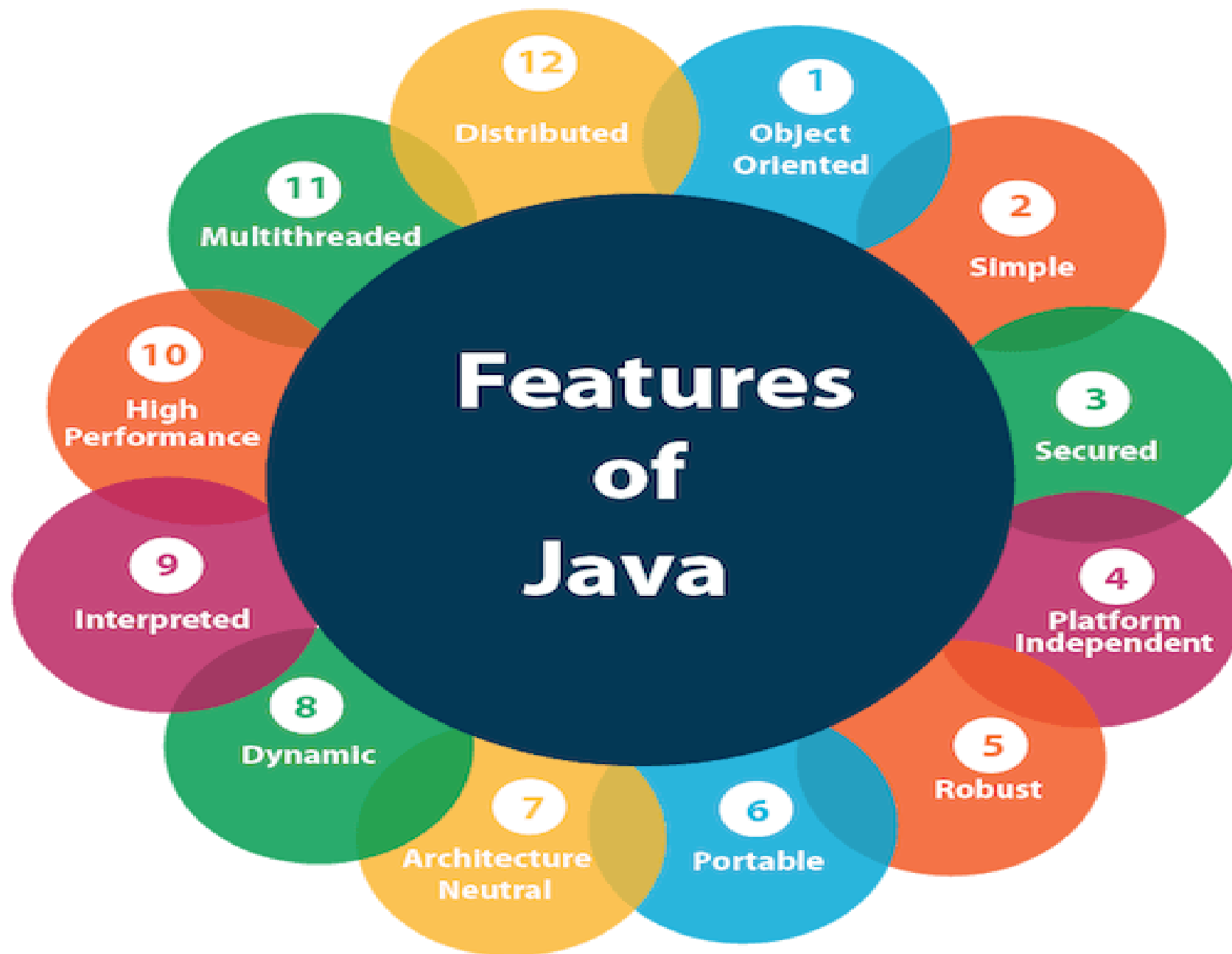
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Introduction To JAVA



Introduction To JAVA

- Java is a high-level programming language originally developed by Sun Microsystems and released in 1995.
- It runs on a variety of platforms, such as Windows, Mac OS, and the various versions of UNIX.
- It is an object oriented programming language, i.e., in Java everything is an object.
- It is used to develop desktop and mobile applications, big data processing, embedded systems, and so on.



Features Of Java

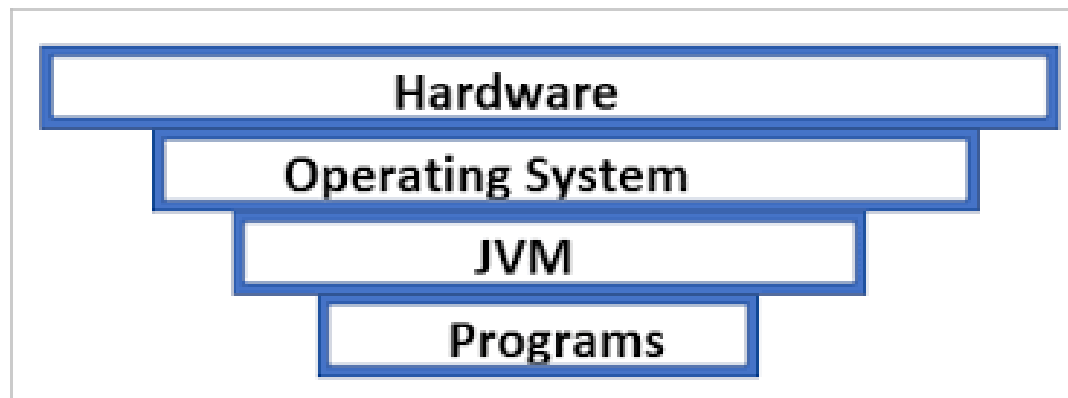
- **Object Oriented :** In Java, everything is an Object. Java can be easily extended since it is based on the Object model.
- **Platform Independent:** When Java is compiled, it is not compiled into platform specific machine, rather into platform-independent byte code. This byte code is distributed over the web and interpreted by the Virtual Machine (JVM) on whichever platform it is being run on.
- **Simple:** Java is designed to be easy to learn. If you understand the basic concept of OOP Java, it would be easy to master.
- **Secure:** With Java's secure feature it enables to develop virus-free, tamper-free systems. Authentication techniques are based on public-key encryption.
- **Robust:** Java makes an effort to eliminate error-prone situations by emphasizing mainly on compile time error checking and runtime checking.

Features Of Java

- **Multithreaded:** It is possible in Java to write programs that can perform many tasks simultaneously.
- **Interpreted:** Java byte code is translated on the fly to native machine instructions and is not stored anywhere. The development process is more rapid and analytical since the linking is an incremental and light-weight process.
- **High Performance:** Java enables high performance.
- **Distributed:** Java is designed for the distributed environment of the internet
- **Dynamic :** Java is considered to be dynamic since it is designed to adapt to an evolving environment.

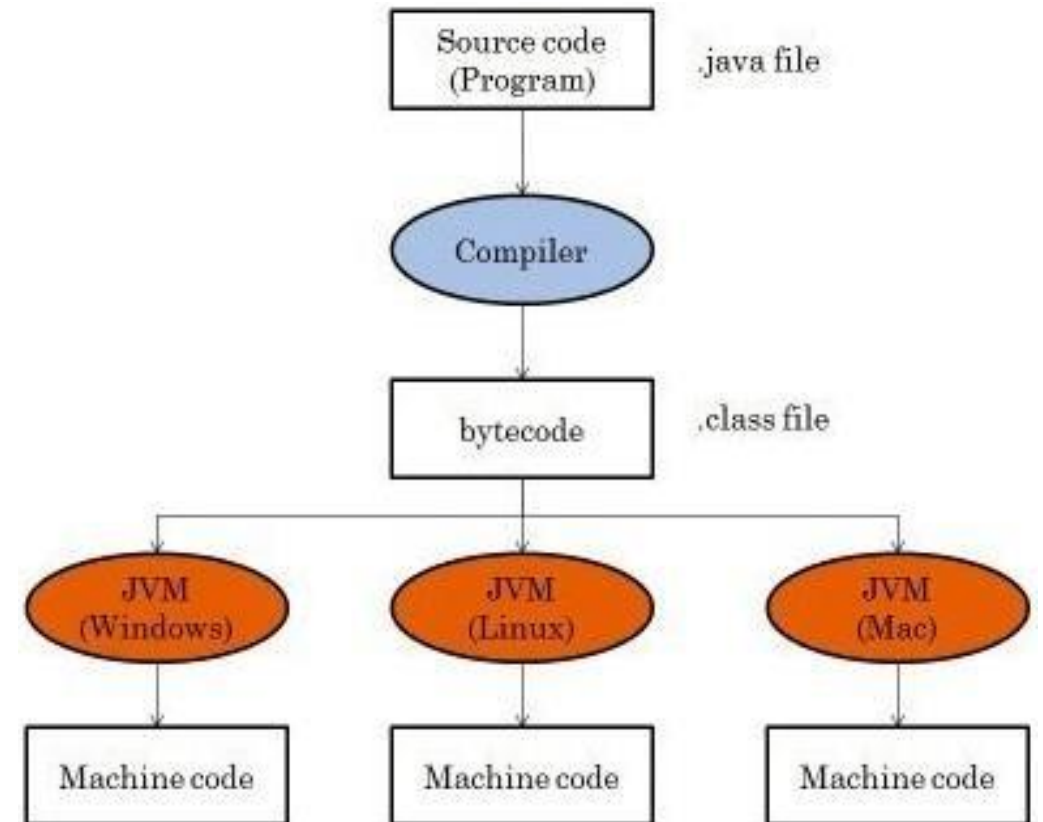
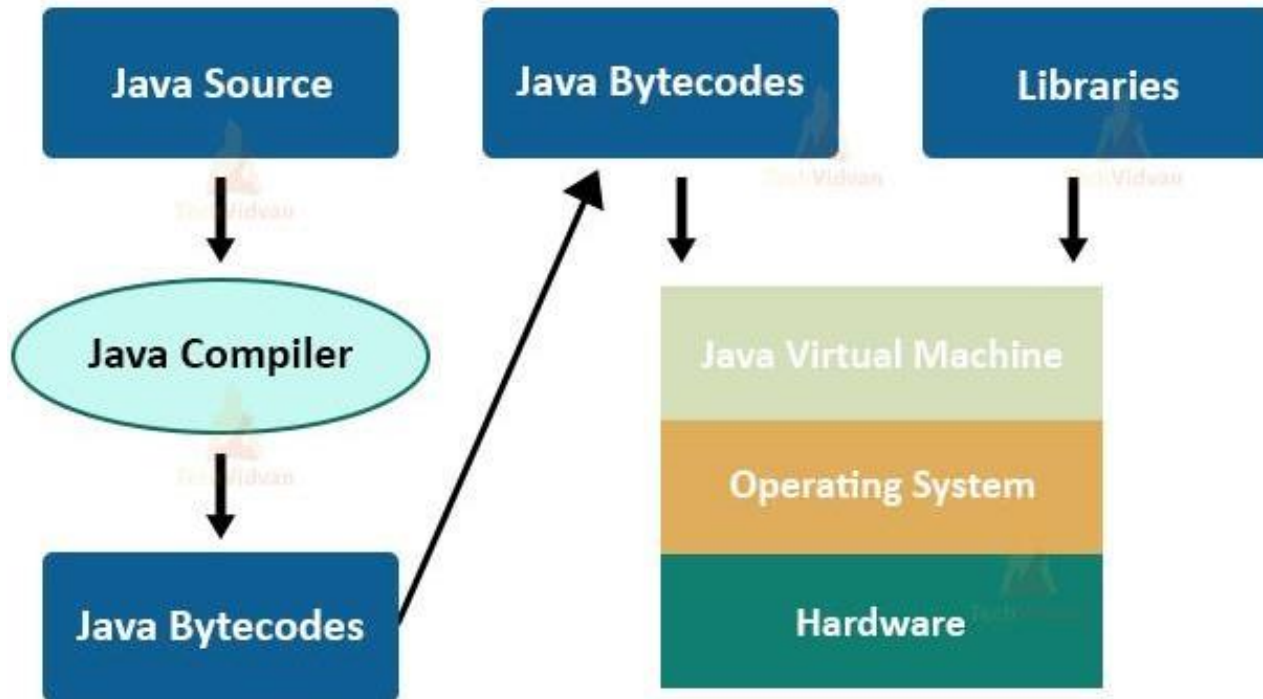
Bytecode And JVM

- **JVM (Java Virtual Machine)** is an abstract machine. It is a specification that provides runtime environment in which java bytecode can be executed.
- **Java bytecode** is the instruction set for the Java Virtual Machine. As soon as a java program is compiled, java bytecode is generated.
- In more apt terms, java bytecode is the machine code in the form of a .class file. With the help of java bytecode we achieve platform independence in java.



Working Of JVM and Bytecode

Working of JVM



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