

CSC207 - Introduction to Java

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History of Java



- ▶ Java was first created as **Greentalk**, renamed to **Oak**, and finally **Java** in 1991 by Canadian researcher James Gosling and his associates.
- ▶ Originally intended to be used in embedded systems in electronic appliances, it was quickly adapted to the everchanging World Wide Web.
- ▶ Today, Java not only permeates the Internet, but also is the invisible force behind many of the applications and devices that power our day-to-day lives.
- ▶ From mobile phones to handheld devices, games and navigation systems to e-business solutions, Java is everywhere!

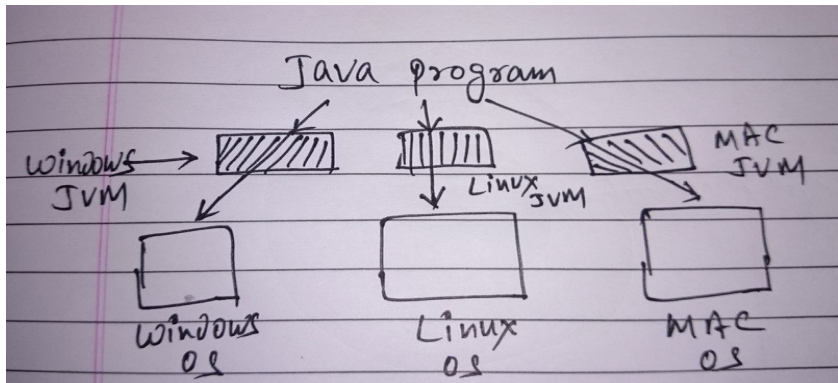
What is Java?

Java is a General Purpose, Class Based, Object Oriented, Platform Independent, Portable, Architecturally Neutral, Multithreaded, Distributed, Portable, Dynamic, Robust and Interpreted Programming Language.

- ▶ General Purpose:
 - ▶ Java capabilities are not limited to any specific application domain rather it can be used in various application domain.
- ▶ Class Based:
 - ▶ Java supports classes and inheritance as main features of object-oriented Programming Languages.
- ▶ Object Oriented:
 - ▶ Java is object-oriented means software developed in Java are combination of different types of objects.

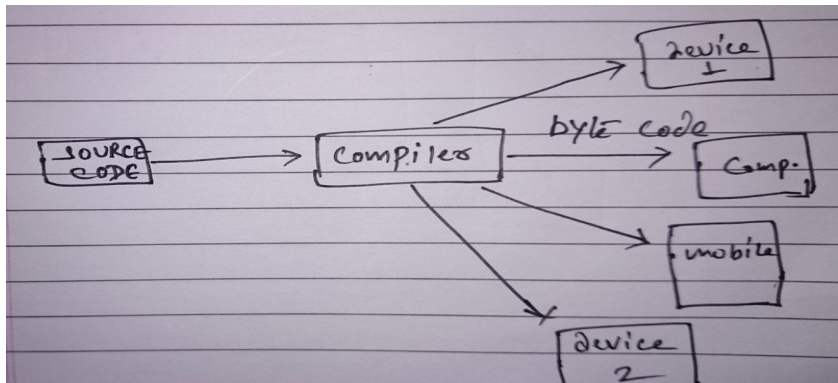
Java is platform independent

A Java code will run on any JVM (Java Virtual Machine). Literally you can run same Java code on Windows JVM, Linux JVM, Mac JVM or any other JVM practically and get same result every time.



Java programs are portable

A Java program when compiled produce bytecodes. They can be transferred via network and can be executed by any JVM, hence came the concept of 'Write once, Run Anywhere'.

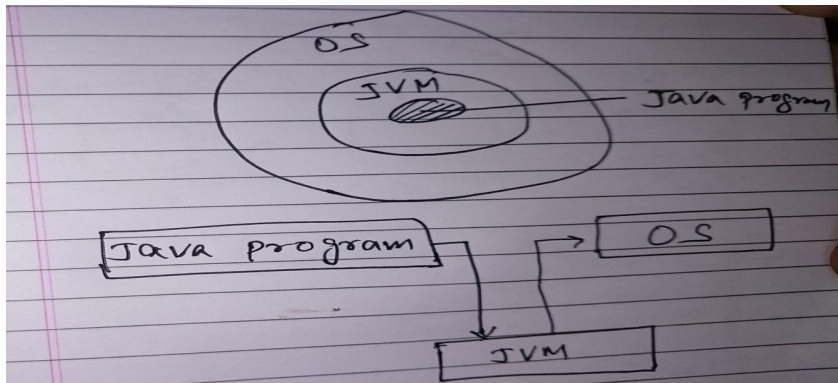


More on Java

- ▶ Architecturally Neutral:
 - ▶ A Java Application compiled on 64 bit architecture of any platform will run on 32 bit (or any other architecture) system without any issue.
- ▶ Multithreaded:
 - ▶ A thread in Java refers to an independent program. Java supports multithreading which means Java is capable of running many tasks simultaneously, sharing the same memory.
- ▶ Dynamic:
 - ▶ Java is a Dynamic programming language which means it executes many programming behaviors at runtime and dont need to be passed at compile time as in the case of static programming.
- ▶ Distributed:
 - ▶ Java Supports distributed systems which means we can access files over Internet just by calling various methods.

Java Security

Unlike other programming Language where Program interacts with OS using User runtime environment of OS, Java provides an extra layer of security by putting JVM between Program and OS.



Even more on Java

- ▶ Robust:
 - ▶ Java is a robust programming Language which means it can cope with error while the program is executing as well as keep operating with abnormalities to certain extent. Automatic Garbage collection, strong memory management, exception handling and type checking further adds to the list.
- ▶ Interpreted:
 - ▶ Java is a compiled programming Language which compiles the Java program into Java byte code. This JVM is then interpreted to run the program.
- ▶ Simple syntax:
 - ▶ Java is an improved c++ which ensures friendly syntax but with removed unwanted features and inclusion of Automatic Garbage collection.
- ▶ High Performance:
 - ▶ Java make use of Just-In-Time compiler for high performance. Just-In-Time compiler is a computer program that turns Java byte codes into instructions that can directly be sent to compilers.

Java facts

- ▶ 97% of Enterprise Desktops run Java
- ▶ 89% of Desktops (or Computers) in the U.S. Run Java
- ▶ 9 Million Java Developers Worldwide
- ▶ #1 Choice for Developers
- ▶ #1 Development Platform
- ▶ 3 Billion Mobile Phones Run Java
- ▶ 100% of Blu-ray Disc Players Ship with Java
- ▶ 5 Billion Java Cards in Use
- ▶ 125 million TV devices run Java
- ▶ 5 of the Top 5 Original Equipment Manufacturers Ship Java ME