

## EXPERIMENT NO. 1

### 1. What is JAVA?

Ans: JAVA is a **general-purpose** computer programming language that is **concurrent, class-based, object oriented** and specially designed to have as few implementation dependencies as possible.

### 2. Why JAVA is popular programming language?

Ans:

- 1) JAVA is **rich in API** (Application programming interfaces)
- 2) JAVA has great collection of **open source libraries**
- 3) JAVA has **bytecode which is platform independent**
- 4) JAVA is **free and opensource**
- 5) JAVA has wonderful community support
- 6) JAVA is an **object-oriented** programming language
- 7) JAVA is easy to learn and it has numerous buzzwords and is **robust** in nature

### 3. List out Different JAVA Editions.

Ans: Mainly there are three editions,

- 1) For desktop level J2SE – JAVA Standard Editionw.
- 2) For web level J2EE – JAVA Enterprise Edition
- 3) For mobile development J2ME – JAVA Micro Edition

### 4. List out Different JAVA SE Versions.

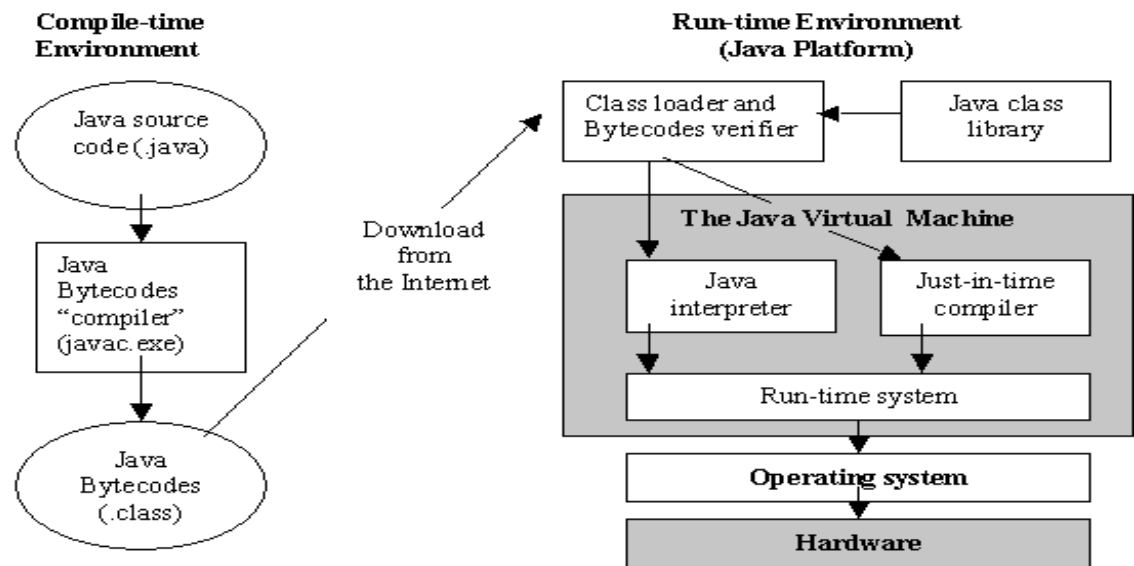
Ans:

- JAVA 1.0
- JAVA 1.1
- JAVA 2 (Second generation {1.2})
- JAVA 1.3
- JAVA 1.4
- JAVA 5.0 (J2SE 5)
- JAVA SE 6 (Version 1.6)
- JAVA SE 7 (Version 1.7)
- JAVA SE 8
- JAVA SE 9 (JDK 9)
- JAVA 10 (JDK 10) .... Current Version



### 5. Draw JAVA Architecture and Explain Compilation and Execution Phase.

Ans:



The compilation of code is done by **java compiler** it converts source code into java bytecode which is platform independent, it can move locally by network.

Java has compiler as well as interpreter as Java has been slower than some of the other programming languages in compile time so they provided just in time compiler.

### 6. What are different services are provided by JVM at runtime of any java application?

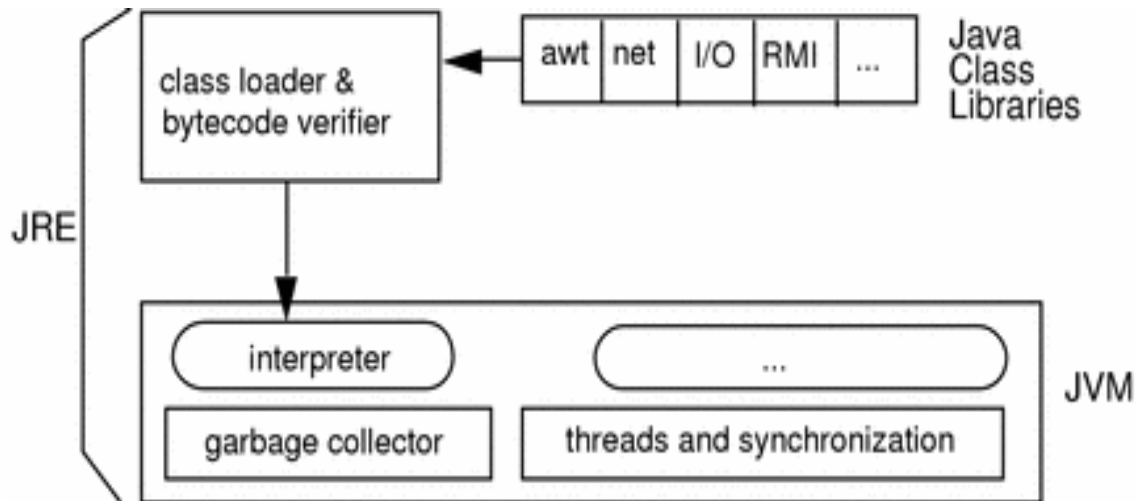
Ans: JVM operates on primitive values. The JVM provides garbage collector, class loader, bytecode verifier at runtime and lots of other services too.

### 7. Make Comment on JRE and JVM. (Differentiate)

Ans: JRE (Java runtime environment) is a superset of JVM (Java Virtual Machine) viz. the code which is compiled with java compilers (JAVAC) produces the bytecode (.class files).

JRE contains required libraries along with JVM which runs the bytecode and produces machine code that is in the machine readable format.





### 8. What is JAVA Hotspot?

Ans: JAVA Hotspot is the **virtual machine for desktop** and server computers, maintained and distributed by Oracle corporations.

Its feature improved performance via methods such as just-in-time compilation and adaptive optimization. The latest stable release is 23.25-b01 / January 1, 2016, 2 years ago.

### 9. What are the different JDK's are available from different vendors?

Ans: Here are some of JDKs,

- 1) Oracle JRockit
- 2) SAP Java Server VM
- 3) IBM J9
- 4) Zing and SAP VM

Some of the JVMs,

- |                   |                      |
|-------------------|----------------------|
| • MiniJVM         | -IOS/ android /Linux |
| • Avian           |                      |
| • Azul ZULU       | -Open JDK            |
| • Bck2 Brwsr      |                      |
| • CACAO           | -GNU classpath       |
| • Codename ONE    |                      |
| • Eclipse OpenJgk |                      |
| • Hotspot         | -Oracle and OpenJDK  |



**10. Why we set value for java PATH variable?**

Ans: We have to set path environment to be able to conveniently run the executables such as (javac.exe, java.exe, Javadoc.exe) and so on from any directory without having to type the full path command.

If you do not set path then you need to specify full path at every time of execution and running.

