

Department Of Computer Application
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BCA – Part III
JAVA PROGRAMMING LANGUAGE

1. java is platform independent Programming language – java program can run on the multiple operating system platform (OS) without any modification. Actually , java program is run through a special software machine installed on every OS known as Java virtual machine.
2. multithreading feature of Java:- multithreading is actually the capability to execute several task within the context of one large application. Java support multi threading i.e multiple small program can run in a single program easily .
3. java is robust and secure Programming language :- java has automatic garbage collection feature i.e user free from allocation and de -allocation of memory for the program component. Therefore, java programming is robust. Java always run the program by checking errors ,it has built in type checking facility therefore , java program is more secure and there is no run time errors in java .
4. high performance of java :- java is compiled as well as interpreted programming language . java program is converted into special code through JVM known as bytecode which is

further interpreted by just-in-time compiler(Interpreter) of java on the user machine according to their machine configuration . therefore, performance of java program execution is very fast. No means of architecture and configuration of user computer machine.

5. java is high portable programming language:- java byte code is easily portable on the other machine without modification and can run that machine as per their machine configuration.

6. internet access capability of java :- java program can easily combine with html code that easily move on the internet. Java provide , network and internet programming facility in the form of java Applet and Java Servlet programming for client side and server side programming facility . we can design network application with java with minimum effort.

7. Window programming feature :- java provide strong window library in the form of AWT and Swing component by which we can develop window application based software through java.

8 Mobile programming facility :- java provide programming through M-java by which we can develop mobile applications .

9. Distributed Programming :- Java provide facility of socket programming through which we can develop network distributed application easily.

10. Java has rich library for programming . i.e it has strong RAID tools for programming.

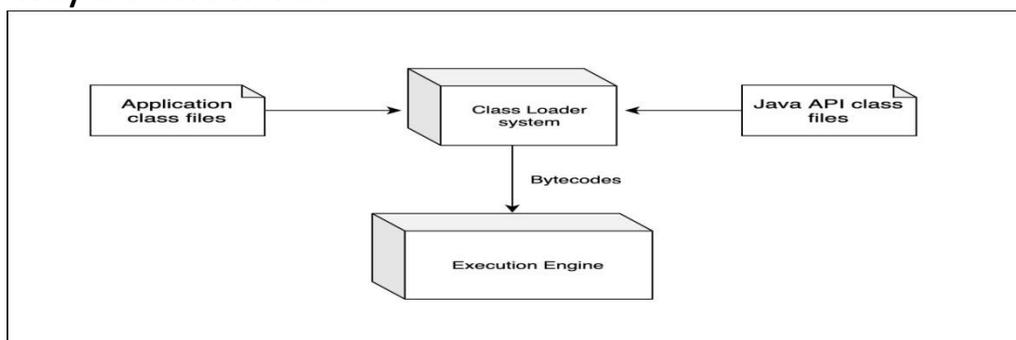
11. JDBC Facility :- Java provide Data base connectivity to create JDBC Application based three tier architectural software application program.

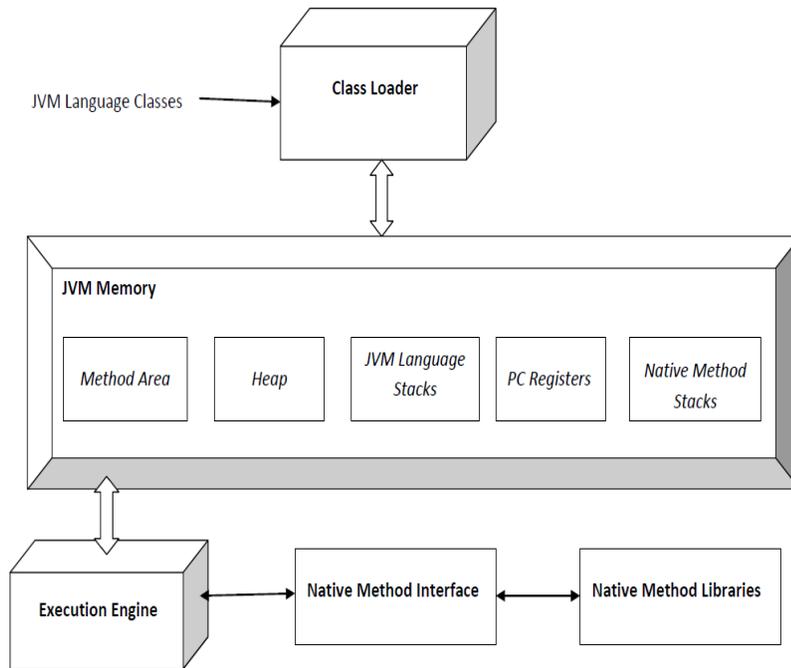
Different version of java and JVM & JDK.

Java Virtual machine :- JVM -> it is the main Engine of java programming language responsible to translate the bytecode into java runnable code according to the current machine architecture on which it installed. Every operating system , at present is compatible of JVM and generally distributed with the operating system software.

JVM comes with their own kernel inbuilt with some portion of Java Library package and JIT(JUST in time compiler).

It read the byte code form the source and convert the code into runnable form and execute on the current machine and produce output result. The process of JVM may be shown as





Java Development Kit (JDK) - >

JDK is the combined tools of different Java compilers and java API and class libraries (Package) to translate the java program in special code known as byte code. This tools is developed by javasoft , a division of Sun Microsystem, contains basic tools and libraries for creating and executing java program . we have different version of JDK that differ in version of java . as :

Jdk1.1

JDK 1.2 or JDK 1.2.1

JDK1.3 or JDK 1.3.1

JDK1.4

JDK1.5 i.e java 5 version.

Each version of java JDK differ in their class libraries facilities and API interfaces .

Java JDK is developed as open Source on the internet library from which every on load free of cost from sun microsystem sites.

At present JDK provide IDE tools for creating, translating and executing java program at the same environment or interface.

Some important IDE for Java :-

Blue j window/ linux

jGRASP

jEDIT

jCreator

NEtBeans

Database Tools :- SQL server / MySQL

Web server :- Apache tomcat Server.

Tools Available in JDK :-

1. Javac :- Java compiler , it translate the java program in corresponding byte code .
2. Java :- it is java interpreter which is responsible to translate javabyte code into machine executable code .

3. Javadoc :- this the generator tools that generate java documentation from the java source file. Actually documentation information is added in java program through java document instruction/comment.
4. Appletviewer :- it java interpreter responsible to convert java class into html document and display on the respective default browser.
5. Jdb :- it is java debugger that help in finding and fixing errors in java program.
6. Javap:- it is java disassemble that display the assembled function and data in a compiled class file. It is also display the meaning of java byte code

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