Features of Java:

1)Object Oriented
2)Robust
3)platform Independent
4)Multi Threading
5)Simple

Object Oriented:
In java everything is object. Object oriented means in java we organize our software as group of objects

Robust:
There are various features like automatic garbage collector which removes unused objects etc

Platform independent :
In java we can run a .class file of one System into another JVM enabled system

Multi Threading :

Can run multiple threads at a time so that it reduces the processing time

Simple :

Java is easy to learn and its syntax is simple

JVM Architecture

Java applications are (WORA) which means Write Once Run Any Where, which means programmer can develop code in one system and can run in any other java enabled system

When we compile a .java file, we get a .class file and when we run that file it goes through the steps present in the architecture

Class Loader:

1) Loading

2) Linking
3) Initialization

Loading:
Reads the dot class file and stores in method area. After loading JVM creates the object of type class to represent in heap memory

Linking:
Performs verification,preparation and optionally linking

Verification :
Checks whether the file is properly formatted and generated by valid compiler or not

Preparation :
Allocates memory for class variables and initializes memory to default values

Resolution :
Replaces symbolic references from the type with direct references

Initialization :

In this phase all the static variables are assigned with values defined in the code and static block

JVM Memory

Method Area :
In this all class level information like class name,parent name including static variables is stored

Heap Area : Information about objects is stored in heap area

Stack Area:
For every thread jvm creates run time stack which is stored here, and gets destroyed after the termination of thread

Pc Register:
Stores information of current executing thread

Native method stack :
For every thread separate native stack is created.It stores the information

Java Tools:
1)Javac
2)Javap
3)javah
4)javaw
5)javaws
6)javadoc
7)java-rmi
8)javafxpackager
9)java

Java:
Java launches java application, It does by starting JRE , loading specified class and invoking the classes main method
Javac:
Javac is used to compile the .java file and produce the .class file for running
Javap:
Javap describes the structure of the java file but it does not display the code
Javah:
Javah tool facilitates the implementation of native methods, it is compatible with javah tools provided by sun microsystems
Javaw:
Javaw is same as java, but it does not have associated console, e use it when we don't want command prompt window to appear

Javaws:
Javaws is used to launch java applications that is distributed through web.it has jnlp_url associated with such application to launch web application. It downloads application from url and launches it,It is used to distribute url to client users and gives central control to the provider to check for updates and to be updated if any required.when the application is launched it is cached in the local computer and every time the application is launched it checks for any updates available
Javadocs:

Javadocs parses set of declarations and documentation comments in set of files and produces set of html pages describing the classes,interfaces and methods and fields

Java-rmi:
RMI stands Remote Method Invocation. It is mechanism allows object running on one (JVM) enabled system to access object running on other (JVM) enabled system
JavaFxpackager:
JavaFx is used to build rich internet applications,applications built using this library can run in multiple platforms