JAVA TUTORIALS

Programming language:

Programming language is a language used to instruct a machine to perform a specific operation.

Types of languages:

Languages are classified into 3 types

1. Binary language/Low level language
2. Assembly language/Middle level language
3. Programming language/High level language

1.Binary language:

1. It is a language which is understandable by machine. It is also called as machine language

2. Binary language contains only 0s and 1s because machines understand only 0s and 1s. 0 represents logical low and 1 represents logical high

NOTE: Humans can't understand this binary language, hence programmers never use binary language to develop an application

2. Assembly language:

1. It is language which is understandable by microprocessor and microcontroller
2. In Assembly language there are some predefined words such as "ADD", "SUB", "MUL", "MOV" etc.. Know as nemonics which is converted into low level language with the help of assembler

3. High language:

1. It is a language which is understandable by humans
2. It is very easy to understand, read and write
3. It is programmer friendly language

History of Java:

1. James Gosline is the father of Java
2. JAVA is introduced in the year of 1991
3. The software was named as green talk and development team named as green team
4. Later it was renamed oak. Oak means strength and national tree of Germany
5. There was already existing company with the name oak technologies which has raised a

legal issue because of that oak has been converted into Java and the team's name also changed to sun micro systems

6. We can run Java on any platform like Windows, Linux, Mac....

Features of Java:

1. Simple
2. High performance
3. Object oriented
4. Portable
5. Multi-threading
6. Robust
7. Platform independent

Simple:

Java is called a simple programming language because it is developed using the English language along with numbers 0-9. To learn JAVA, another programming language is not required.

High performance:

Java is called a high-performance language because it takes less time to execute/run and less space to store the program.

Object oriented:

Java is object-oriented programming because in java we consider each and every thing as an object (object means block of memory).

Portable:

Java is called a portable programming language because it can be run on any platform.

Multi-threading:

In Java thread is nothing but a program so we can run multiple programs at a time.

Robust:

In English robustness is nothing but strong. Similarly Java can handle any errors by itself without damaging the software.

Platform independent:

Java's portable futures makes the platform independent, irrespective of the device Java will provide required output.

JAVA ARCHITECTURE

Java Architecture is a collection of components, i.e., **JVM, JRE,** and **JDK**. **It** integrates the process of interpretation and compilation. It defines all the processes involved in creating a Java program. **Java Architecture** explains each and every step of how a program is compiled and executed.

JDK: JDK stands for Java Development kit, it is used to develop and run an application. Inside JDK we have JRE and development tools like compiler

JRE: JRE stands for Java Runtime Environment, it provides an environment to run an application. Inside JRE we have JVM and inbuilt libraries

JVM: JVM stands for Java Virtual machine, it is used to execute the code, JVM will be executed line by line. Inside JVM we have class loader, execution engine, memory management.