JDK

-It stands for Java Development Kit.

-It is a software development environment which is used to develop java applications.

-It contains JRE+development tools.

JRE

- Java Runtime Environment

-It identifies all the helpful class libraries needed for execution.

JVM

-It stands for Java Virtual Machine

-To allow java programs to run on any device or OS and to manage & optimize program memory.

-JVM is a subclass of JRE that decodes the bytecode into machine language.

OOPs Concept

1.Class

-It is a blue print or prototype that defines the variables and the methods common to all java objects of a certain kind.

Example:Animal,Car etc.

Syntax:

class class\_name

{

//variables or data members

//methods

}

-main() method

public static void main(String[] args)

-public:the access modifier of the main method needs to be public so that the JRE can access and execute

this method.

-static:when the java program starts,there is no object of the class present.The main method has to be static so that the

JVM can load the class into memory and call the main method without creating an instance(object) of the class.

-void:It is a return type.The java main method return type is void because it doesn't return anything.

//complete class syntax:

class class\_name

{

//variables or data members

//methods

public static void main(String[] args)

{

//statements

}

}

2.Object

-It is an instance of class.

-It is a self-contained component which consists of methods & properties to make a particular type of data useful.

Example:Monkey,Elephant etc.

3.Encapsulation

-It is a process of wrapping up data into a single unit.

Example:Capsule etc.

4.Abstraction

-This process displays only the relevant/important attributes of objects and hides the unnecessary details from the user.

Example:Phone call,driving a car etc.

5.Polymorphism

-The ability of an object to take on many forms.

Example:Human behavior etc.

6.Inheritance

-The process in which the derived class acquires the features and behavior from its base class.

-Derived class(child class,sub class)

-Base class(Parent class, Super class)

EXample:Vehicle - base class

Car,Truck - derived class

Data Types in java

1.Primitive (built in data types)

2.Non-Primitive

**1.Primitive**

int,char,boolean,long,short,double,float,byte

i)**int** - stores whole numbers

* Size:4 bytes(32 bit)
* 1 byte- 8 bit
* Syntax:int variable\_name;
* Ex:int a;

ii)**short** - stores whole numbers

* Size:2 bytes(16 bit)
* 1 byte- 8 bit
* Syntax:short variable\_name;
* Ex:short a;

iii)**long** - stores whole numbers

* Size:8 bytes(64 bit)
* 1 byte- 8 bit
* Syntax:long variable\_name;
* Ex:long a;

iv)**byte** - stores whole numbers

* Size:1 byte(8 bit)
* Range: -128 to 127
* Syntax: byte variable\_name;
* Ex: byte a;

v)**float** - stores fractional numbers

* Size: 4 bytes(32 bit)
* Syntax:float variable\_name;
* Ex: float a=8.23f;

vi)**double** - stores fractional numbers

* Size:8 bytes(64 bit)
* Syntax: double variable\_name;
* Ex: double a=10.2783;

vii)**boolean** - stores true or false values

* Size:1 bit
* Syntax: boolean variable\_name;
* Ex: boolean a=true;
* Default value is false

viii)**char** - stores a single character

* Size: 2 bytes(16 bit)
* Syntax: char variable name;
* Ex: char a=’A’;

**2.Non-Primitive data type**

i)**String** : collection of characters

* Syntax: String variable\_name;
* Ex: String a=”Anju”;

ii)**Array**

ii)**Class**

iii)**Interface**