Lecture- 1 JAVA DT:23/10/21

Java is a **programming language** and a **platform**. Java is a high level, robust, object-oriented and secure programming language.

Java was developed by Sun Microsystems (which is now the subsidiary of Oracle) in the year 1995.

Setting up java:

Java have three components

1. jvm - Helps in compilation and execution of a program
2. jre - jvm runs a program in jre environment
3. jdk - It provides all the library and support to jre

IDE- integretated Development environment

* Jvm-Java virtual machine
* Jre - Java runtime Environment
* Jdk- Java development kit

**Setting up java in windows system :**

* Go to environment variable
* Click environment variable
* Click on new
* Variable name (JAVA\_HOME)
* Variable value (copy jdk path)
* Ok
* Double click on path variable
* New
* %JAVA\_HOME%\bin
* Ok
* Ok
* Close all cmd prompt windows
* Reopen cmd (to check install or not)
* java –version

**How to create a project in eclipse:**

* Click on fire
* New
* Java project
* Project name

**How to create a package:**

* Right click on src
* New
* Package
* Name format: com.name.name

Dt:-28/10/21

**Class :**

A class is an entity or a container which consists of data members and methods inside it .

Ex – public Teacher;

**How to create a class:**

* Right click on package
* New
* Class
* Give the name(first letter always be capital)

**Object :**

It is a instance of a class .It contains all the attributes and methods of a class. We can access the members and methods of class through an object.

Ex – public class Student {

Int rollNo=25;

String name = “Aman”;

Public void displayname( ){

system.out.println(name);

}

Student std =new student( );

}

Syntax for creating an object : Class name variable name = new classname( );

**Variables:**

Variables are entities which store some values in it. Variables can be of any type.

**Scope of Variable:**

* Global Variable:

These are the variables which are declared under a class and not inside any method or block. Since they are declared outside methods or blocks, they have a global access by all the methods of the class.

* Local Variable:

These are the variables which are declared inside a method or a block. They cannot be accessed outside the method or block in which they are declared.

Ex:

class Student {

int rollNo = 101; *//global variable*

String name = “Rahul”; *//global variable*

public void display() {

int var = 5; *//local variable*

}

}

**Data types :**

Data types refer to types of data which we use as a variable.

Ex - int a = 10;

char letter = ‘z’;

String name = “Aman”;

float c = 2.15F;

long z =12345678901L;

**There two types of data types :-**

1. Primitive datatypes
2. Non-primitive datatypes

**Primitive datatypes :-**

The primitive data types include **byte,short,char,boolean,int,long,float,double.**

**Non-primitive datatypes :-**

The non-primitive data types include **String,Array,Class,Object,Interface.**

//String = It is an Array of char.

**Methods:-**

Method is a block of code or collection of statements that perform a certain task or operation.

Ex-class Employee {

Public int displayrollNo( ){

}

}

Return statement:-

It returns a certain value to a methods caller.

Ex:- public int displayrollno( ){

return rollno;

}

Access specifier :-

There are three types of access specifier.

1. Public
2. Private
3. Protected

Public :-Public members or methods can be accessed in the same class or any other class even outside the package.

Private :-private members or methods can be accessed in same class.

Protected :-protected members or methods can be accessed in the same class or any other class in the same package.

Decision Control(If-Else):

If-Else blocks are used for execution of statements depending 1 or more conditions.



Syntax: if(condition…) {

----

----

}else{

----

----

}

If-else ladder:

If(condition) {

----

----

}else if(condition){

----

----

}else if(condition) {

----

----

}else{

----

----

}

In the above case, if-else is structured in ladder format. If we have multiple conditions and statements are to be executed on the basis of conditions we can use the above ladder format.

Example of the same is illustrated in the same github path.

String Class:

String is a class present in java.lang package.

It is immutable which means once a String is created it cannot be changed. But it can be replaced.

There are 2 ways of creating a String:

1. String str1 = new String(“Babu”);

Here, when a String is created using **new** keyword, a new instance/object of String is created in java heap memory. And the literal value is placed in **String Constant pool.**

1. String str2 = “Babu”;

Here, when we create a String with a literal value, a variable of String type is created directly referencing the value in the **Constant Pool.**

