**Day 13**

**Inheritance in Java**

* Inheritance in Java is the method to create a hierarchy between classes by inheriting from other classes. Java Inheritance is transitive.
* It is a relationship.
* The usage of Inheritance in Java is in **Method Overloading and Code reusability.**
* Parent class/super class – is the class that is being inherited.
* Sub class / child class – is the class which inherits the parent class

Syntax

class subclass extends superclass

{

//methods

}

Example:

class Employee

{

float salary =6000;

}

class programmer extends Employee

{

int bonus =2000;

public static void main(String args[])

{

programmer ob = new programmer();

System.out.println(ob.salary);

System.out.println(ob.bonus);

}

}

**Types of Inheritance**

There are mainly 3 types of Inheritance in Java, which can be inherited through class. They are:

1. Single Inheritance
2. Multilevel Inheritance and
3. Hierarchical Inheritance

Apart from these 3 there are 2 types of inheritance in Java, which cannot be inherited through class. They are:

1. Multiple Inheritance and
2. Hybrid Inheritance

**Single Inheritance**

A Parent class

B Child class. It has properties of parent class A and its own properties.

Example

class Sample

{

void display()

{

System.out.println(“Display”);

}

}

class Test extends Sample

{

void show()

{

System.out.println(“Show”);

}

}

class A

{

public static void main(String args[])

{

Test ob = new Test();

ob.display();

ob.show();

}

}

OUTPUT

Display

Show

**Multilevel Inheritance**

A Level 1

Single Inheritance. class B has properties of parent class A and that of class B

B Level 2

class C has the properties of both A and B and its own properties.

C Level 3

Example

class Parent

{

void display()

{

System.out.println(“Display”);

}

}

class Child extends Parent

{

void show()

{

System.out.println(“Show”);

}

}

class Test extends Child

{

void print()

{

System.out.println(“Print”);

}

}

class Sample

{

public static void main(String args[])

{

Test ob = new Test();

ob.display();

ob.show();

ob.print();

}

}

OUTPUT

Display

Show

Print

**Hierarchical Inheritance**

A

B C

Example

class Sample

{

void display()

{

System.out.println(“Display”);

}

}

class Test extends Sample

{

void show()

{

System.out.println(“Show”);

}

}

class A extends Sample

{

void print()

{

System.out.println(“Print”);

}

}

class B

{

public static void main(String args[])

{

A ob = new A();

ob.display();

ob.print();

}

}

OUTPUT

Display

Print