

# Inheritance.

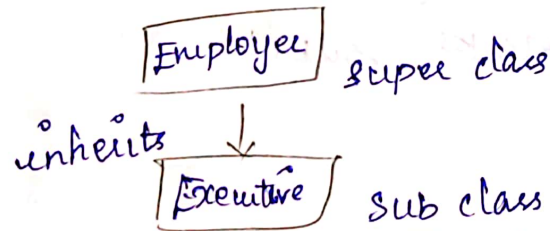
⇒ Inheritance in java is a mechanism in which one object acquires all the properties and behaviour of a parent object.  
⇒ Inheritance is one of the key features of object oriented program.

## Types of Inheritance.

- Single Inheritance
- Multi-level Inheritance
- Hierarchical inheritance
- Hybrid inheritance
- Multiple inheritance.

## Single Inheritance.

⇒ In single inheritance, a sub-class is derived from only one super class.  
⇒ It inherits the properties and behaviour of a single - parents class sometimes it is also known as simple inheritance.



Ex:-

```
Executive.java
class Employee
{
    float salary = 34534 * 12;
}
public class Executive extends employee
{
    float bonus = 3000 * 6;
    public static void main [String args[]]
```

```

}
Executive obj = new executive ();
system.out.println ("Total salary credited: " +
obj.salary);

system.out.println ("Bonus of six months: " +
obj.bonus);

```

```

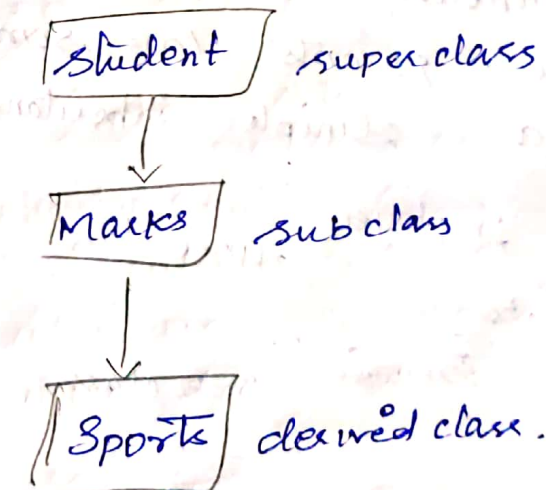
}
}
b/p
Total salary credited: 4144000
Bonus of six months: 1800.0

```

Multilevel inheritance.

⇒ In multi level inheritance a class is derived from another class is called multi-level inheritance.

⇒ In simple words we can say that class that has more than one parent class is called the multi-level inheritance.



Ex:-

```

// super class
class Student
{
    int reg_no

```

```

void get no (int no)
{
    reg-no = no;
}
void put no ()
{
    system.out.println ("registration number = " +
                           reg-no);
}
}

```

// intermediate subclass  
class marks extends student

```

{
    float marks;
    void get marks (float m)
    {
        marks = m;
    }
    void put marks ()
    {
        system.out.println ("Mark = " + marks);
    }
}

```

// derived class

class sports extends marks

```

{
    float score;
    void get score (float scr)
    {
        score = scr;
    }
    void put score ()
    {
        system.out.println ("Score" = + score);
    }
}
}

```

Public class Multi-level inheritance



```

    public static void main (String args[])
    {

```

```

        Sports ob = new Sports - s();

```

```

        ob.get NO (0987);

```

```

        ob.put NO ();

```

```

        ob.get marks (78);

```

```

        ob.put marks ();

```

```

        ob.get score (68.7);

```

```

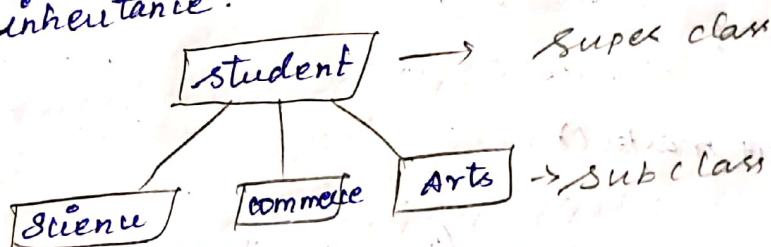
        ob.put score ();
    }
}

```

Output  
 registration no: 0987  
 marks: 78.0  
 score: 68.0

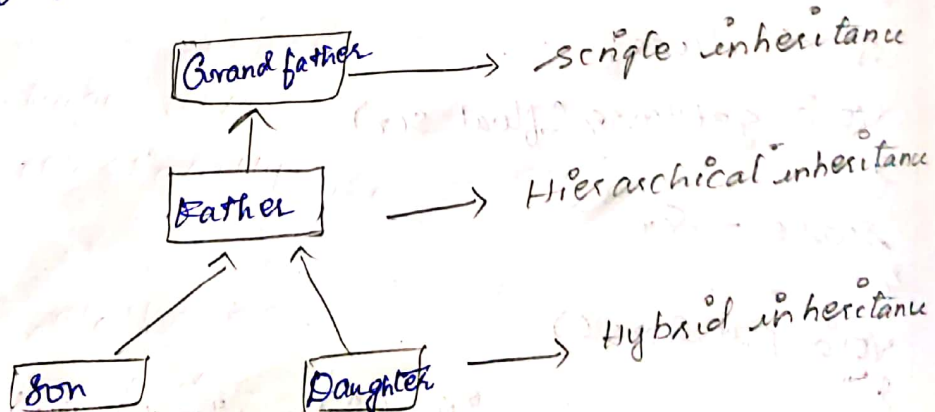
Hierarchical inheritance.

If a number of class are derived from a single base class it is called hierarchical inheritance.



Hybrid Inheritance.

Hybrid inheritance of more than one hybrid inheritance is the combination of two or more types of inheritance.



Multiple Inheritance.

Java does not support multiple inheritance due to ambiguity.