

Inheritance Types

By Umesh Sir

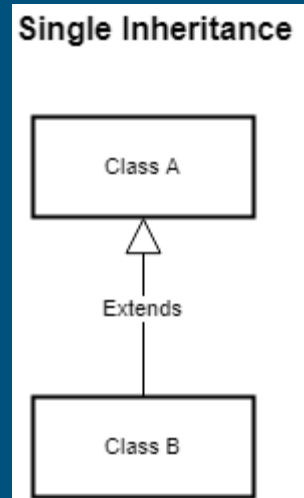
Contact us 7758094241

Inheritance Types

- ★ Single Inheritance
 - ★ Multilevel Inheritance
 - ★ Hierarchical Inheritance
 - ★ Multiple Inheritance (Through Interfaces)
 - ★ Hybrid Inheritance(Through Interfaces)
 - ★ Why multiple inheritance is not supported in java?
-

★ Single Inheritance

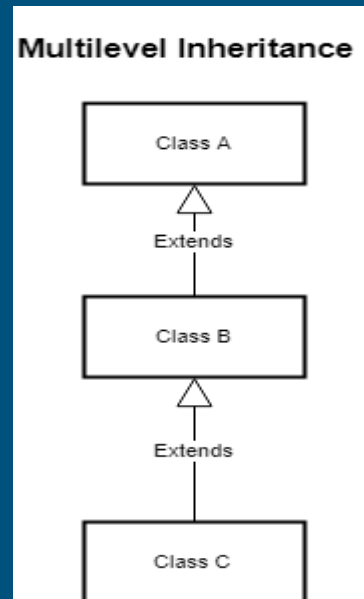
In single inheritance, One subclass inherit the features of one superclass.
In the image below, class A serves as a base class for the derived class B.



★ Multilevel Inheritance

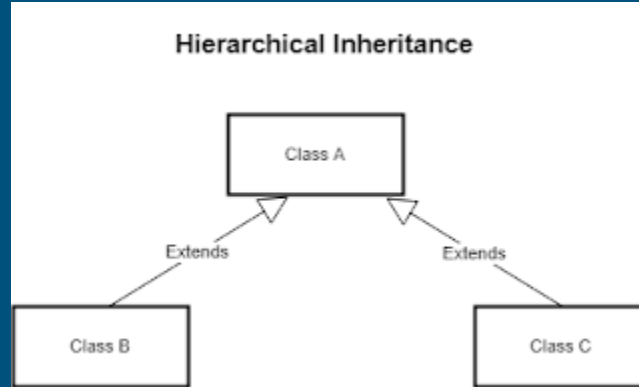
In Multilevel Inheritance, a derived class will be inheriting a base class, and as well as the derived class **also** act as the base class to other class.

In the below image, class A serves as a base class for the derived class B, which in turn serves as a base class for the derived class C.



★ Hierarchical Inheritance

In Hierarchical Inheritance, one class serves as a superclass (base class) for more than one subclass. In the below image, class A serves as a base class for the derived class B and class C.

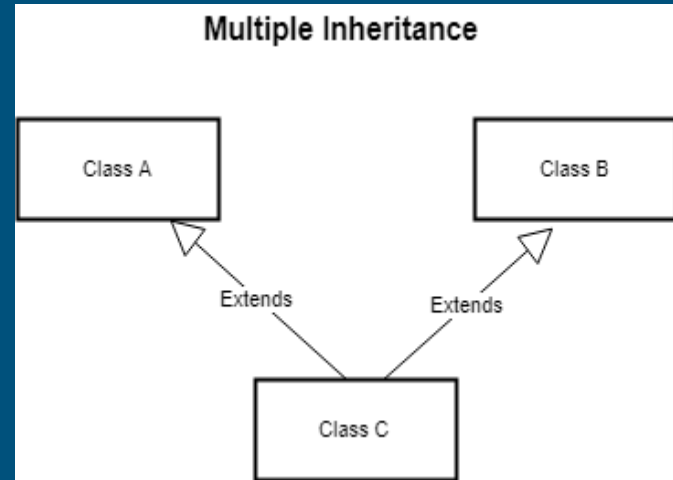


★ Multiple Inheritance (Through Interfaces)

In Multiple inheritances, one class can have more than one superclass and inherit features from all parent classes.

Please note that Java does not support multiple inheritances with classes. In Java, we can achieve multiple inheritances only through Interfaces.

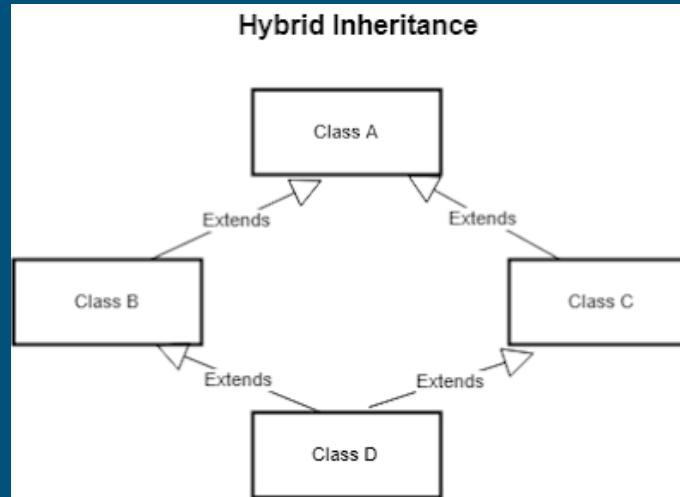
In the image below, Class C is derived from class A and class B.



★ Hybrid Inheritance(Through Interfaces)

It is a mix of the above types of inheritance. Since java doesn't support multiple inheritances with **classes**, hybrid inheritance is also not possible with classes.

In java, we can achieve hybrid inheritance only through Interfaces.



★ Why multiple inheritance is not supported in java?

- ★ To reduce the complexity and simplify the language, multiple inheritances is not supported in java.
- ★ Consider a scenario where A, B, and C are three classes. The C class inherits the A and B classes. If A and B classes have the same method and you call it from child class object, there will be ambiguity to call a method of A or B class.
- ★ Since compile-time errors are better than runtime errors, java renders compile-time error if you inherit 2 classes. So whether you have the same method or different, there will be a compile-time error now.

★ Why multiple inheritance is not supported in java?

```
class A{  
    void msg() { System.out.println("Hello"); } }  
  
class B{  
    void msg() { System.out.println("Welcome"); } }  
  
class C extends A, B { //suppose if it is supported  
    Public Static void main(String args[]) {  
        C obj=new C();  
        obj.msg(); //Now which msg() method would be invoked?  
    }  
}
```

Thank you

