What is Inheritance

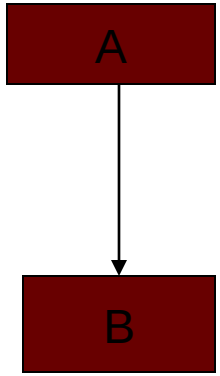
The mechanism of deriving a new class from an old one is called inheritance or derivation.

Definition of Inheritance:

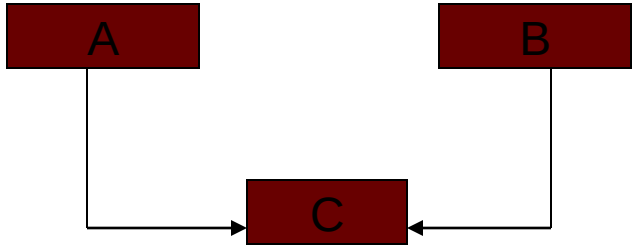
Inheritance is the mechanism which allows a class A to inherit properties of a class B.

Types of Inheritance:

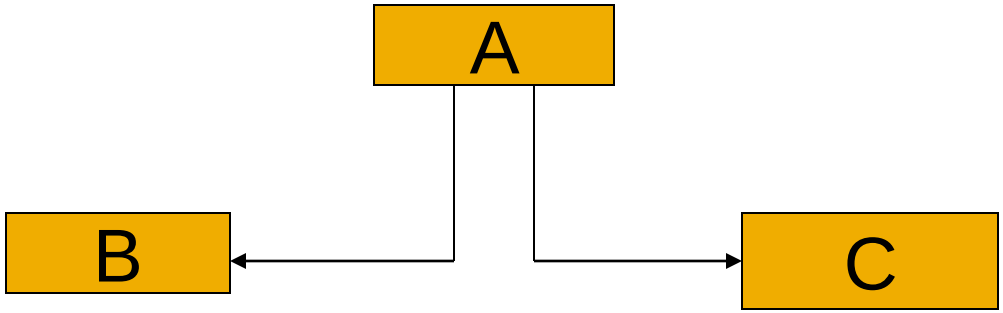
- **Single inheritance**



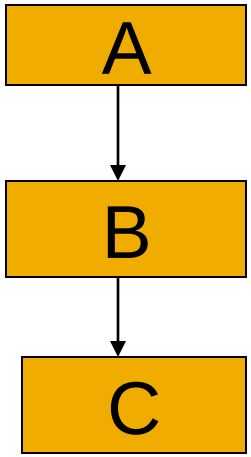
- **Multiple inheritance**



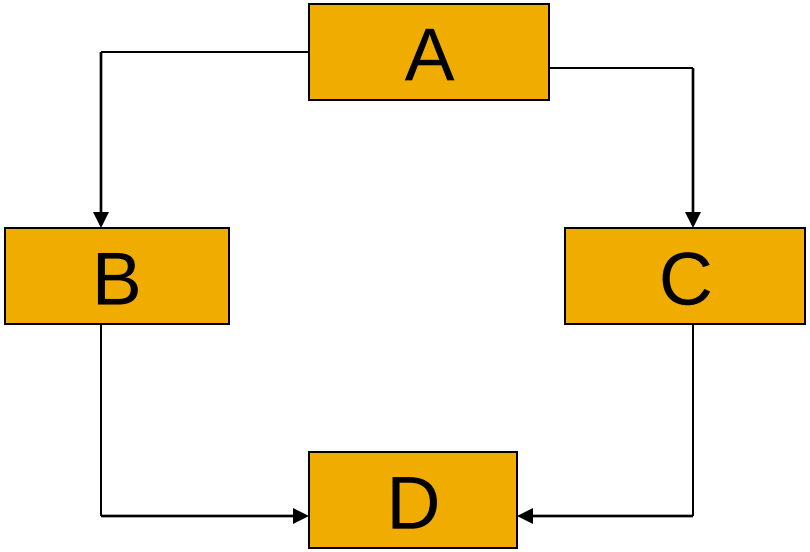
Hierachical Inheritance:



Multilevel Inheritance:



Hybrid Inheritance:



Advantages of Inheritance:

- The major advantage is the reusability. Once a base class is written and debugged,it need not be touched again,but can be used to work in different.
- It also reduces the frustration in complex programming.
- Reusing exiting code saves time.

Disadvantages of Inheritance:

- The larger the inheritance model gets, the "wider" the mapped table table gets, in that for every field in the entire inheritance hiearchy, a column must exit in the mapped table.

Private, public, protected:

- **Public:**

Exp: class A
{
Public:
Int x;
Private:
Int y;
};
Class B : public A
{
Private:
Int p;
}

Private, Public & protected

Base class	Derived class visibility		
Visibility	**Public derivation**	**Private derivation**	**Protected**
Private	Not inherited	Not inherited	Not inherited
Public	Public	Private	protected
protected	protected	private	Protected

Private Inheritance:

Exp:class a
{
Private:
Int x;
Public:
Int y; };
Class B : private A
{
Int p; };

Protected:

- Exp:

```
Class A : protected B
{
Private : int X;
};
```

Abstract class:

An abstract class is one that is not used to create objects.an abstract class is used only for base class.