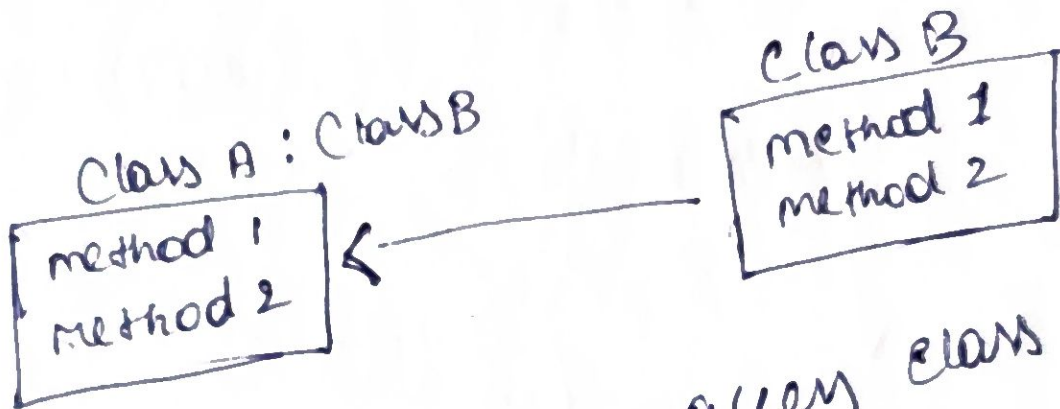


Day 47

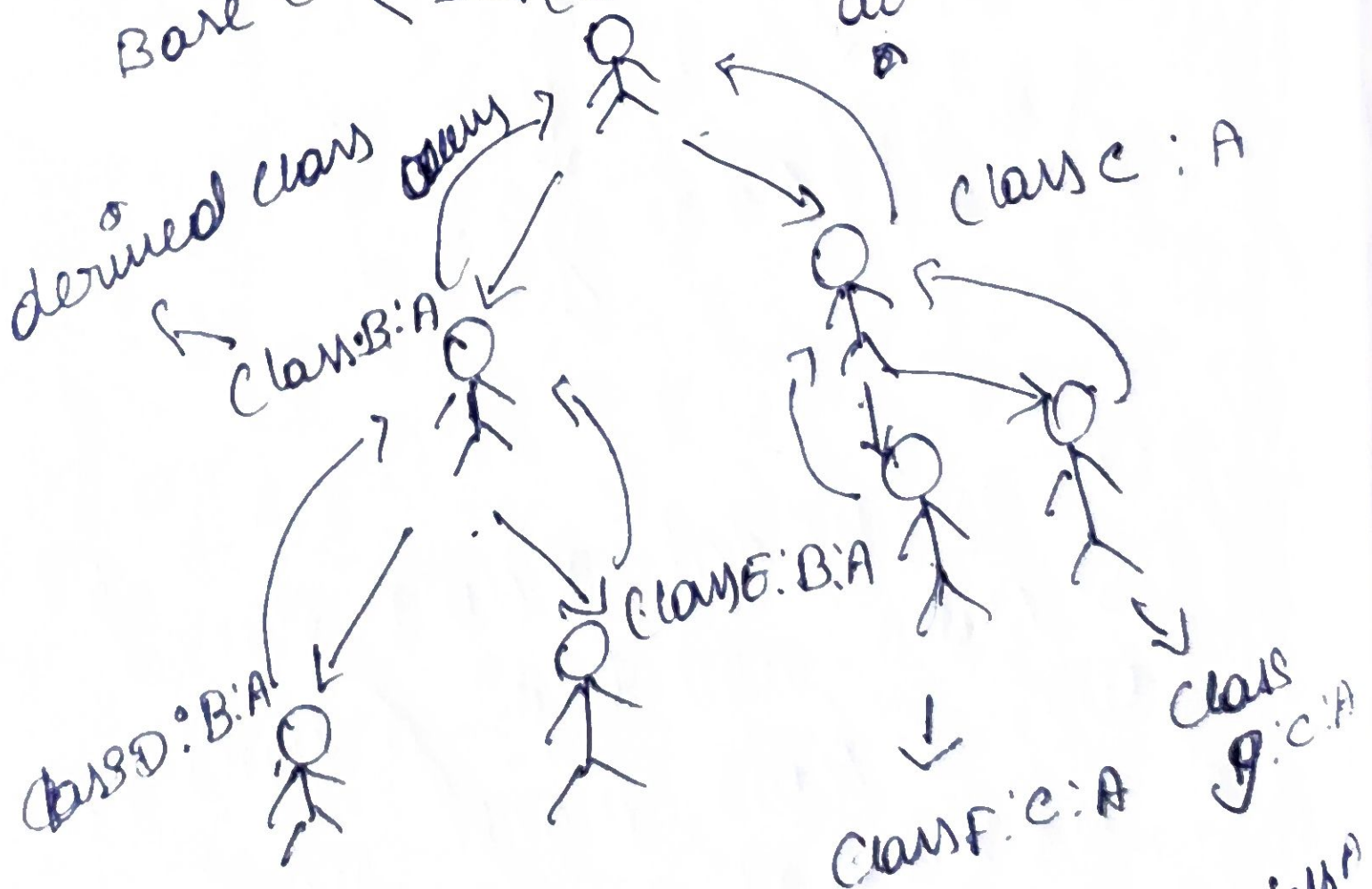
22/04/2025

## Inheritance



Class A can now access Class B methods.

Base class ← Class A → But A can not access other class



Inheritance is one way

eg: Class B:A → But A can not access class B in called

Class A:B

## type of inheritance :-

- i) single inheritance
- ii) multilevel inheritance
- iii) hierarchical inheritance
- iv) interface-based multiple inheritance

### i) single inheritance

\* A derived (child) class inherits from single Base (parent) class.

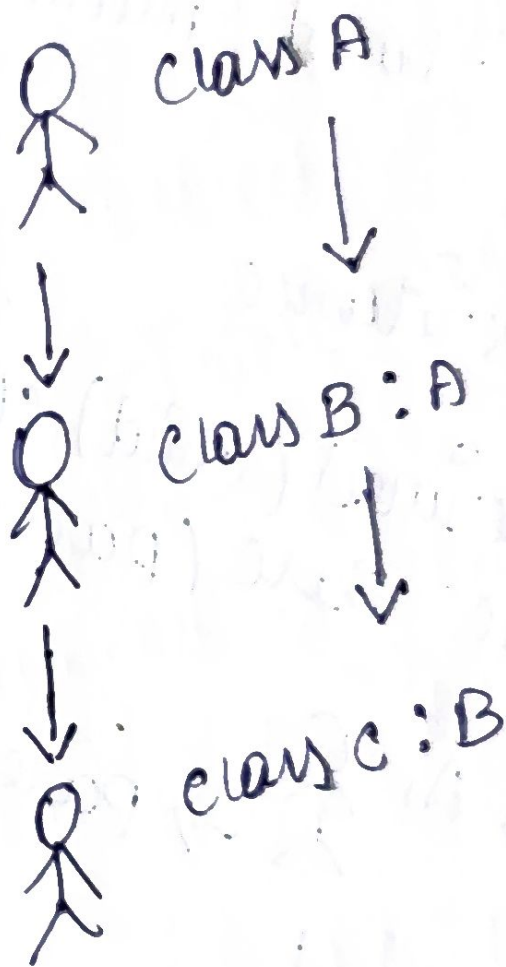
class A:  → parent class

class B: A:  → child class



## ii, multilevel inheritance;

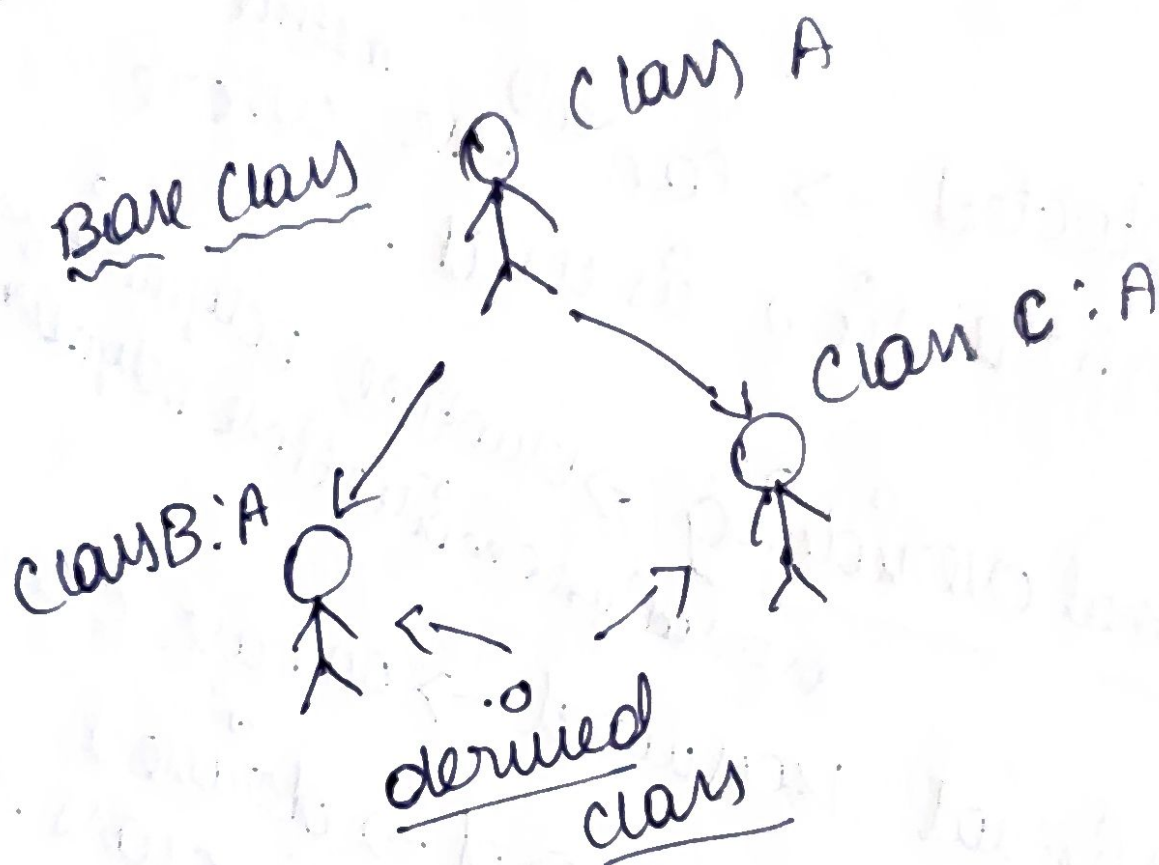
\* A derived class inherits from another derived class, creating a chain of inheritance.



Eg:- Here class B inheritance from base class A and then class C inheritance from class B now class C can access both method from class B and A.

### iii) Hierarchical Inheritance

\* multiple derived classes inherit from single base class



eg:

Dog and cat classes both inherit from Animal class.

- \* code Reusability
- \* maintainability
- \* code organization

protected -> can <sup>only</sup> use <sup>method</sup> where inheritance is used.

method overriding -> runtime polymorphism  
overriding compile time polymorphism

virtual keyword -> on base class

override keyword -> derived class.

eg public virtual int add (int a, int b)

{

}

public override int add (inta, intb)

{

}

After override it all way  
call the overriden method



base.add ( )

↓  
call the add method in same class

this.add ( )

↓  
call the method from current class

public new int output; → ~~find~~ from the other class

public int output;

↳ derived class.

↓  
base class

## Constructors

public Employee (string name): base (name)

{

}

using this we  
can pass the value  
to the student class.

public student (string name)

{

}