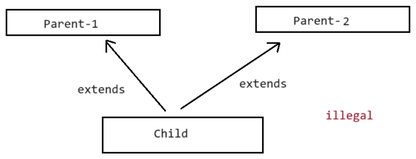
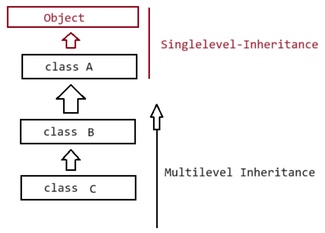
MultipleInheritance

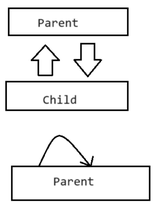


illegal



Singlelevel-Inheritance

Multilevel Inheritance



Cyclic-inheritance

```
class Plane
{
    String engine;
    float fuel;
    int wheel;

    public void takeOff()
    {
        System.out.println("Plane tookoff...");
    }
    public void fly()
    {
        System.out.println("Plane is flying...");
    }
    public void land()
    {
        System.out.println("Plane is landing...");
    }
}
```

instance variables

commonly used methods in child class

```
class Passenger extends Plane
{
    public void carryPassengers()
    {
        System.out.println("Carrying Passengers...");
    }
}

class Cargo extends Plane
{
    public void carryCargo()
    {
        System.out.println("Carrying Cargo...");
    }
}

class Fighter extends Plane
{
    public void carryWeapons()
    {
        System.out.println("Carrying Weapons...");
    }
}
```

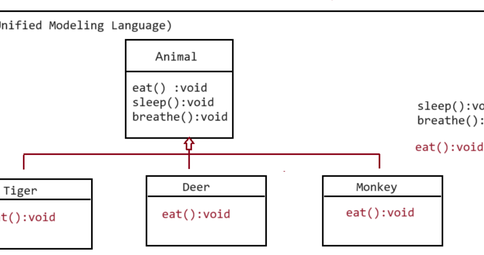
child specific methods

child specific methods

child specific methods

```
public class Test
{
    public static void main(String[] args)
    {
            //Creating 3 objects of Plane Type
            Cargo c = new Cargo();
            Passenger p =new Passenger();
            Fighter f = new Fighter();

           //Taking the actions for all the 3 planes
        c.takeOff();          p.takeOff();          f.takeOff();
        c.carryCargo();       p.carryPassengers();  f.carryWeapons();
        c.fly();              p.fly();              f.fly();
        c.land();             p.land();             f.land();

    }
}
```

```
Plane tookoff...
Carrying Cargo...
Plane is flying...
Plane is landing...

Plane tookoff...
Carrying Passengers...
Plane is flying...
Plane is landing...

Plane tookoff...
Carrying Weapons...
Plane is flying...
Plane is landing...
```



Specialized methods

UML(Unified Modeling Language)

sleep():void
breathe():void

inherited methods

eat():void ⇨ Overriden

Taking method from Parent,but child is not happy with the implementation so child will give the body for the method coming from parent, we say such methods as "Overriden Methods".