

Inheritance->

Its a pillar of oops which is used for acquire the property or behavior from the parent class.

inheritance is a relationship baneta hai.

inheritance me **minimum 2 classes** honi chahaye.

```
//name ek class parent hoti hai to dusri child hoti hai.
```

jis class ke function ko inherit krna jata hai use **base class** ya **parent class** kahte hai
or jo class base class ke function ko inherit karti hai use **child class** ya **derived class** bolte hai

inheritance ka meaning hota hai kisi lhi cheej ko acquire krna ya access krna, esme ek parent class hoti hai or ek child class hoti hai
parent class ke andar hae properties or functions ko child class inherit kar leti hai jis se child class ke pass uske khud ke function ya variable ke alawa apne parent ke function ya variable hote hai

Real Time example-> Parent child relationship.

Technical Example-> Vehicle and car relationship, Electronic and Laptop, Furniture and Sofa

Advantage-> Code reusability.

child class ke khud ke function hone krne ke sath. vo parent class ke function ko inherit krke use kar leti hai jis se uske pass khud function to hai lekin parent ke function lhi aa jate hai jis se hame extra code nhi likhna padta hai ese krte code reusability ho jati hai

Types of Inheritance ->

Single Inheritance (ek base class and ek child class hoti hai)

Multiple Inheritance (multiple base class ko 1 child class inherit karti hai)

Multi level inheritance (esme ek base class ko child class inherit karti h or us child class ko dusri child class inherit karti hai)

Hierarchical Inheritance (single base class ko multiple child class inherit karti hai)

Hybrid Inheritance (Combination of any 2 type of inheritance se milkar banta hai)



Parent class/Base class	child class/derived class
Electronic class	Laptop
electronic assets uske color	Silver color
electronic assets uski width/Height	15.6inch/ 9inch
electronic assets uski Functionality	Office work
electronic assets uske pass working principal	Home/Office/Custom

Coding Example of Inheritance

```
#include <iostream>
using namespace std;

//Single Inheritance-> ek parent class and ek child class
class Parent{
public:
    void smileLikeParents(){
        cout<<"PAPA AND MUMMY KEE SMILE"<<endl;
    }
};

// child class parent ke cheeze ko access krna like parent
function ya variable
class Child:public Parent{
public:
    void meriSmile(){
        cout<<"Dad namor rha hai"<<endl;
    }
};

int main()
{
    Parent p1;
    Child c1;
    p1.smileLikeParents();
    c1.merSmile();
    c1.smileLikeParents();

    return 0;
}
```

Single Inheritance

```
#include <iostream>
using namespace std;
//Single Inheritance
class RBIBank{
public:
    void withdrawAmountLimit(){
        cout<<"Customer is allowed to withdraw only 1 lack in a Day"<<endl;
    }
    void FDRATE(){
        cout<<"Customer above 18 is available for FD will get the intrust of 7.5%"<<endl;
    }
};

class ICICIBank:public RBIBank{
public:
    void PrimimumCustomerWithdrawnAmountLimit(){
        cout<<"Customer is allowed to withdraw only 5 lack in a Day due to special account holder in ICICI Bank"<<endl;
    }
};

int main()
{
    RBIBank ROB;
    ICICIBank IOB;
    ROB.withdrawAmountLimit();
    ROB.FDRATE();

    IOB.PrimimumCustomerWithdrawnAmountLimit();
    IOB.withdrawAmountLimit();

    return 0;
}
```

Multiple Inheritance->

Multiple base classes inherit via single child class that is multiple inheritance

```
#include <iostream>
using namespace std;
//Multiple Inheritance

class IndianGovt{
public:
    void narnignMoreThanSixLacks(){
        cout<<"You must pay the Income TAX"<<endl;
    }
};

class RBIBank{
public:
    void withdrawAmountLimit(){
        cout<<"Customer is allowed to withdraw only 1 lack in a Day"<<endl;
    }
    void FDRATE(){
        cout<<"Customer above 18 is available for FD will get the intrust of 7.5%"<<endl;
    }
};

class ICICIBank:public IndianGovt,public RBIBank{
public:
    void PrimimumCustomerWithdrawnAmountLimit(){
        cout<<"Customer is allowed to withdraw only 5 lack in a Day due to special account holder in ICICI Bank"<<endl;
    }
};

int main()
{
    RBIBank ROB;
    ICICIBank IOB;
    ROB.withdrawAmountLimit();
    ROB.FDRATE();

    IOB.PrimimumCustomerWithdrawnAmountLimit();
    IOB.withdrawAmountLimit();
    IOB.narnignMoreThanSixLacks();

    return 0;
}
```