**Multilevel Inheritance in C++ Programming**

[Inheritance](http://www.programtopia.net/cplusplus/docs/inheritance) is the process of inheriting properties of objects of one class by objects of another class. The class which inherits the properties of another class is called Derived or Child or Sub class and the class whose properties are inherited is called Base or Parent or Super class. When a class is derived from a class which is also derived from another class, i.e. a class having more than one parent classes, such inheritance is called **Multilevel Inheritance**. The level of inheritance can be extended to any number of level depending upon the relation. Multilevel inheritance is similar to relation between grandfather, father and child.

**For example**,

* Student is derived from person and person is derived from class living things.
* Car is derived from vehicle and vehicle is derived from machine.

## Syntax of Multilevel Inheritance

class base\_classname

{

    properties;

    methods;

};

class intermediate\_classname : visibility\_mode base\_classname

{

    properties;

    methods;

};

class child\_classname : visibility\_mode intermediate\_classname

{

    properties;

    methods;

};

## Example of Multilevel Inheritance in C++

**C++ program to create a programmer derived from employee which is himself derived from person using Multilevel Inheritance**

#include <iostream>

#include <conio.h>

using namespace std;

class person

{

char name[100],gender[10];

int age;

public:

void getdata()

{

cout<<"Name: ";

fflush(stdin); /\*clears input stream\*/

gets(name);

cout<<"Age: ";

cin>>age;

cout<<"Gender: ";

cin>>gender;

}

void display()

{

cout<<"Name: "<<name<<endl;

cout<<"Age: "<<age<<endl;

cout<<"Gender: "<<gender<<endl;

}

};

class employee: public person

{

char company[100];

float salary;

public:

void getdata()

{

person::getdata();

cout<<"Name of Company: ";

fflush(stdin);

gets(company);

cout<<"Salary: Rs.";

cin>>salary;

}

void display()

{

person::display();

cout<<"Name of Company: "<<company<<endl;

cout<<"Salary: Rs."<<salary<<endl;

}

};

class programmer: public employee

{

int number;

public:

void getdata()

{

employee::getdata();

cout<<"Number of programming language known: ";

cin>>number;

}

void display()

{

employee::display();

cout<<"Number of programming language known: "<<number;

}

};

int main()

{

programmer p;

cout<<"Enter data"<<endl;

p.getdata();

cout<<endl<<"Displaying data"<<endl;

p.display();

getch();

return 0;

}

**Output**

Enter data

Name: Karl Lens

Age: 31

Gender: Male

Name of Company: Dynamic Info

Salary: $21000

Number of programming language known: 4

Displaying data

Name: Karl Lens

Age: 31

Gender: Male

Name of Company: Dynamic Info

Salary: $21000

Number of programming language known: 4

This program is an example of multiple inheritance. Here, programmer class is derived from employee which is derived from person. Each class has required attributes and methods. The public features of person is inherited by employee and the public features of employee is inherited by programmer. The method getdata() asks user to input data, while display() displays the data.