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**EXAM ROLL NO: 111308009**

**CLASS ROLL NO: HX-05**

**DEPARTMENT: I.T.**

**SEMESTER: 5**

**DATE OF ASSIGNMENT: 26/09/2015 & 24/10/2015**

**ASSIGNMENT 4**

1. **Class student contains roll number, name and course as data member and Input\_student and display\_student as member function. A derived class exam is created from the class student with publicly inherited. The derived class contains mark1, mark2, mark3 as marks of three subjects and input\_marks and display\_result as member function. Create an array of object of the exam class and display the result of 5 students.**

**Source Code:**

#include <iostream>

#include <cstring>

using namespace std;

class student

{

int roll;

char name[20];

char course[20];

public:

void input\_student()

{

cout<<"\n enter name,roll and course";

cin>>name>>roll>>course;

}

void display\_student()

{

cout<<"\n"<<name<<" from course "<<course<<" has a roll no "<<roll;

}

string get\_name()

{

return name;

}

int get\_roll()

{

return roll;

}

string get\_course()

{

return course;

}

};

class exam: public student

{

int marks1;

int marks2;

int marks3;

public:

void input\_marks()

{

cout<<"\n Enter marks of sub 1,2, & 3";

cin>>marks1>>marks2>>marks3;

}

void display\_result()

{

cout<<"\n"<<get\_name()<<" from course "<<get\_course()<<" has a roll no "<<get\_roll()<<" and have got marks"<<marks1<<","<<marks2<<" and "<<marks3;

}

};

int main()

{

exam stud[5];

int n;

for(n=0;n<5;n++)

{

stud[n].input\_student();

stud[n].display\_student();

stud[n].input\_marks();

}

for(n=0;n<5;n++)

stud[n].display\_result();

}

**Output:**

1. **Try the same program with privately inheritance.**

**Source code:**

#include <iostream>

#include <cstring>

using namespace std;

class student

{

int roll;

char name[20];

char course[20];

public:

void input\_student()

{

cout<<"\n enter name,roll and course";

cin>>name>>roll>>course;

}

void display\_student()

{

cout<<"\n"<<name<<" from course "<<course<<" has a roll no "<<roll;

}

string get\_name()

{

return name;

}

int get\_roll()

{

return roll;

}

string get\_course()

{

return course;

}

};

class exam: private student

{

int marks1;

int marks2;

int marks3;

public:

void input\_marks()

{

input\_student();

cout<<"\n Enter marks of sub 1,2, & 3";

cin>>marks1>>marks2>>marks3;

}

void display\_result()

{

display\_student();

cout<<"\n"<<get\_name()<<" from course "<<get\_course()<<" has a roll no "<<get\_roll()<<" and have got marks"<<marks1<<","<<marks2<<" and "<<marks3;

}

};

int main()

{

exam stud[5];

int n;

for(n=0;n<5;n++)

{

stud[n].input\_marks();

}

for(n=0;n<5;n++)

stud[n].display\_result();

}

**Output:**

1. **Write a program where derived class is a friend of base class.**

**Source Code:**

#include <iostream>

using namespace std;

class A

{

private:

int x;

void show()

{

cout<<"\n This is the base class";

}

public:

A()

{

x = 0;

}

friend class derived;

};

class derived: public A

{

int y;

public:

void disp()

{

show();

}

};

int main()

{

A a;

derived b;

b.disp();

}

**Output:**

**4.** **Test whether the Base class be a friend of Derived class**