

Assignment 4

B.Tech II Sem, 2022 IIIT Pune

OOPL-LAB

Date: 9 June 2022

Time: 3 PM

Team Members:

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Q. Consider a class network as shown below. The class Marksheet derives information from both Department and Exam Cell which in turn derive information from the class Student. Define all the four classes and write a program to create, update and display the information contained in Marksheet object.

Report link: <https://github.com/SomSingh23/object-oriented-lab4>

CODE:

```
#include <bits/stdc++.h>

#define ull unsigned long long

using namespace std ; // grp19 9th june 2022
```

```

class Student{
private:
    ull roll_no;
    string name ;
    int semester;
public:
    // constructor
    Student(ull x , string y , int z){
        roll_no = x ; name = y ;
        semester = z ;
    }
    void display_student(){
        cout<<"Roll No :      "<<roll_no<<endl;
        cout<<"Name :      "<<name<<endl;
        cout<<"Semester :      "<<semester<<endl;
    }
    void change_roll_no(ull x){
        roll_no = x;
    }
    void change_name(string x){
        name = x;
    }
    void change_semester(int x){
        semester = x;
    }
};

class Department:public Student{
private:
    string programme;

```

```

public:
//constructor
Department(ull x , string y , int z,string grp19):
Student(x,y,z){
    programme = grp19 ;
}
void show_department(){
    cout<<"Department :    "<<programme<<endl;
}
void change_department(string x){
    programme = x ;
}
};

class Exam_Cell:public Student{
private:
int marks;
public:
//constructor
Exam_Cell(ull x , string y , int z,int salmon):
Student(x,y,z){
    marks = salmon ;
}
void show_Marks(){
    cout<<"Marks :    "<<marks<<endl;
}
void change_Marks(int x){
    marks = x ;
}
};

class Marksheet:public virtual Department , public virtual Exam_Cell{

```

```

public:
// Marksheet constructor //

Marksheet(ull x , string y , int z , string s , int m):
Department(x,y,z,s),Exam_Cell(x,y,x,m){/*null*/}
void Display_student_information(){
    Department::display_student();
    show_department();
    show_Marks();
    cout<<endl;
    cout<<"*****"<<endl;
    cout<<endl;
}
};

int main(){
    /*      create, update and display the information contained in
                Marksheet object                                */

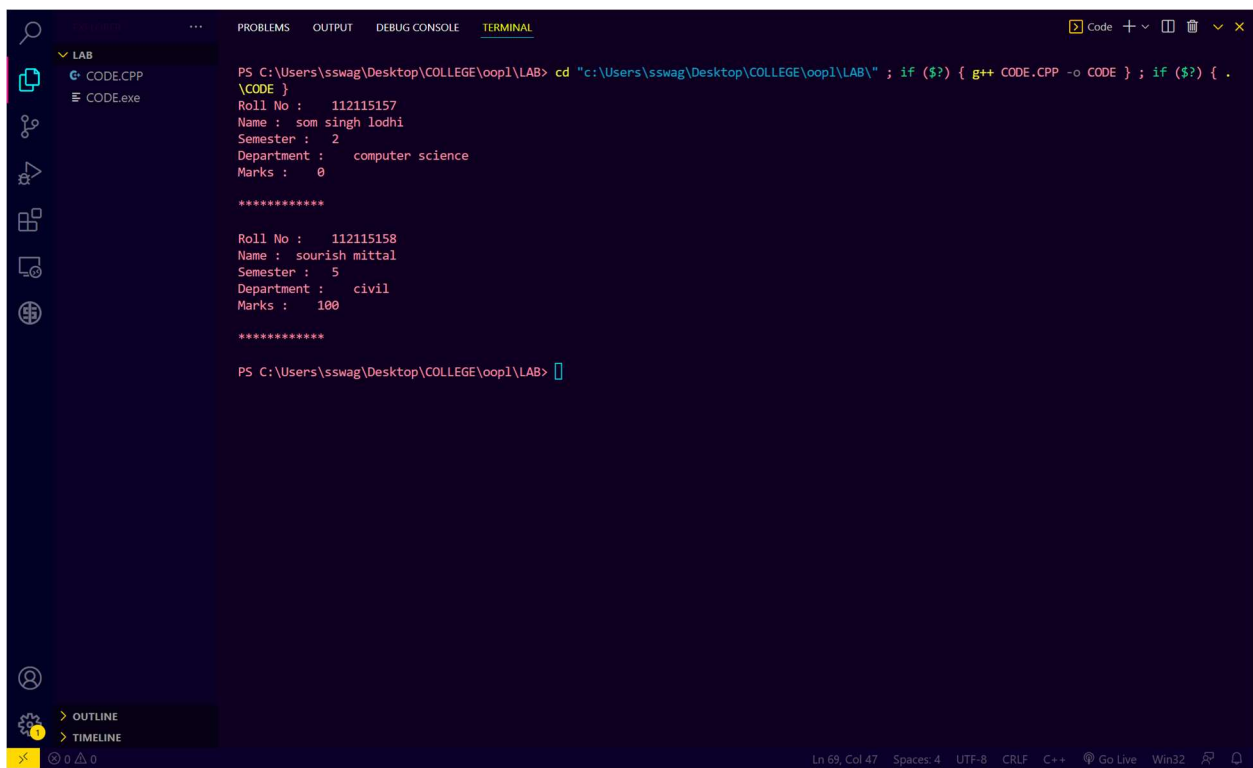
    Marksheet obj1(112115157 , "som singh lodhi" , 2 , "computer
science" , 0);

    obj1.Display_student_information();
    obj1.change_department("civil");
    obj1.change_Marks(100);
    obj1.Department::change_name("sourish mittal");
    obj1.Department::change_roll_no(112115158);
    obj1.Department::change_semester(5);
    obj1.Display_student_information();

}

```

OUTPUT:



```
PS C:\Users\sswag\Desktop\COLLEGE\oop1\LAB> cd "c:\Users\sswag\Desktop\COLLEGE\oop1\LAB\" ; if ($?) { g++ CODE.CPP -o CODE } ; if ($?) { . \CODE }
Roll No : 112115157
Name : som singh lodhi
Semester : 2
Department : computer science
Marks : 0

*****

Roll No : 112115158
Name : sourish mittal
Semester : 5
Department : civil
Marks : 100

*****

PS C:\Users\sswag\Desktop\COLLEGE\oop1\LAB>
```