

Academic Task No. 1

Course Code : CAP445

Course Title : Object oriented programming
using C++ (Lab)

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① Create a class <Student>. Take data members: Student name, Registration Number and Total Marks. Create a function that will perform task student is Pass or Not in exam. If the Student is Pass then it should display grade according to following conditions:

* If Student's marks 95% or more then awarded O (Outstanding) grade.

* If student's marks 85% or more but less than 95% then awarded E (Excellent) grade.

* If student's marks 75% or more but less than 85% then awarded A (Good) grade.

* If student's marks 60% or more but less than 75% then awarded S (Satisfactory) grade.

* If student's marks 50% or more but less than 60% then awarded B (Average) grade.

* If student's marks below 50% then awarded F (Fail) grade.

Ans:- / * Demo program to illustrate the above concept * /

#include <iostream>

using namespace std;

class Student

{

String name, grade;

int regNumber;

float totalMarks;

public:

void setData ()

{

cout << "Enter your Name:" << endl;

cin >> name;

cout << "Enter your Registration
Number:" << endl;

cin >> regNumber;

cout << "Enter your Total Marks:" << endl;

cin >> totalMarks;

}

void getData ()

{

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

cout << "your Registration Number:" << endl;
<< regNumber << endl;

if (totalMarks < 50)

cout << "F (Fail) grade." << endl;

else

{

cout << "You have to pass the exam with";

if (totalMarks >= 95)

grade = "O (Outstanding)";

else if (totalMarks >= 85)

grade = "E (Excellent)";

else if (totalMarks >= 75)

grade = "A (Good)";

else if (totalMarks >= 60)

grade = "S (Satisfactory)";

else

grade = "B (Average)";

cout << grade << " grade" << endl;

}

}

};

int main ()

{

Student s;

s.setData ();

s.getData ();

return 0;

}

Output :-

Enter Your Name : Jaykumar
Enter Your Registration Number : 12111670
Enter Your Total Marks : 95
Your Name : Jaykumar
Your Registration Number : 12111670
You have to Pass the exam with
O (Outstanding) grade

2. Create a class Product, take appropriate data members and functions which calculate net profit for a product after selling the product.

Ans:- 1. Demo Program to calculate net profit for a product after selling the product #1

```
#include <iostream>
```

```
using namespace std;
```

```
class Product
```

```
{  
    double Netprofit, TotalRevenue, TotalExpences;  
public:
```



```
void setdata ()
```

```
{
```

```
    cout << "Enter Total Revenue : ";
```

```
    cin >> TotalRevenue;
```

```
    cout << "Enter Total Expenses : ";
```

```
    cin >> TotalExpences;
```

```
}
```

```
void calculate ()
```

```
{
```

```
    NetProfit = TotalRevenue - TotalExpences;
```

```
}
```

```
void getdata ()
```

```
{
```

```
    cout << "Net Profit is after selling the  
    product is : " << NetProfit << endl;
```

```
}
```

```
};
```

```
int main ()
```

```
{
```

```
    Product P;
```

```
    P.setdata ();
```

```
    P.calculate ();
```

```
    P.getdata ();
```

```
    return 0;
```

```
}
```


Output :-

Enter Total Revenue : 512.25

Enter Total Expenses : 312.25

Net Profit After Selling the product is : 200

③ Suppose there is university and there are different departments like SCA, ~~SCS~~, FEE etc. Dean of the university want to know about the detail of the students who get highest marks in each of the department. Write a program using the concept of inheritance.

Ans:- * Demo program illustrate the above concept using inheritance

```
#include <iostream>
```

```
using namespace std;
```

```
class University  
{
```

```
public:
```

```
int RollNumber, RegistrationNumber;
```

```
string Name, section, branch;
```


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float masks ;

void setdata ()

{