

# Experiment 5

## ALGORITHM

Step 1: Start

Step 2: create the class of student type with private variable name, grade, usn, and marks of different subjects.

Step 3: initialize the student using constructor.

Step 4: Declare and define functions “getdata”, “calculate”, “showstudent” and “findgrade”.

Step 5: define the destructor.

Step 6: declare the variable and read the input from user.

Step 7: call the constructor student of type of class.

Step 8: call the functions to get data and calculate the grade and print the data.

Step 9: stop

### Code:-

```
#include<iostream>
#include<iomanip>
using namespace std;
class student                                //declare the class of type student
{
    private:char name[30],grade;              //declare the variables
    int usn;
    float mcmos,mcplus,mapp,total,percentage;
    public:
```

```

student()                //initialize the student using constructor
{
    cout<<"\nIn student Constructor";
    name[0]='\0';
    usn=0;
    grade='\0';
    mcmos=mcplus=mapp=total=percentage=0.0;
}

void getdata()           //define function to read the data
{
    cout<<endl<<"enter Name:";
    cin>>name;
    cout<<endl<<"enter usn:";
    cin>>usn;
    cout<<endl<<"enter marks in cmos:";
    cin>>mcmos;
    cout<<endl<<"enter marks in c++:";
    cin>>mcplus;
    cout<<endl<<"enter marks in app:";
    cin>>mapp;

}

void calculate()          //define function calculate to
                           compute percentge
{
    total=mcmos+mcplus+mapp;

```

```

        percentage=total/300*100;
    }

    void showstudent()                //function to display the information
    {

cout<<endl<<setprecision(5)<<name<<"\t"<<usn<<"\t"<<mcmos<<"\t"<<mcplus<
<"\t"<<mapp<<"\t";

        cout<<setprecision(5)<<total<<"\t"<<percentage<<"\t\t"<<grade;
    }


    void findgrade()                  //grade conditions
    {
        if(percentag>=80)
            grade='A';
        else if(percentag>=70 && percentag<80)
            grade='B';
        else if(percentag>=60 && percentag<70)
            grade='C';
        else
            grade='F';
    }

    ~student()                        //destructor
    {
        cout<<"\n\nIn the student destructor\t";
        cout<<"Year 2019-20"<<endl;
    }

```

```

};//student class

int main()
{
    int i,n;                                //declare variables and read input
    cout<<"Enter the number of students:";
    cin>>n;
    student a[n];                            //call the constructor

    for(i=0;i<n;i++)
    {
        a[i].getdata();                      // function call
        a[i].calculate();
        a[i].findgrade();
    }
    cout<<"\nNmae\tusn\tcmos\tcpp\tadv proc total\tpercentage\tgrade"<<endl;
    for(i=0;i<n;i++)
    {
        a[i].showstudent();                  //display the total information of student
    }
    return 0;
}

```

## Output:-

"C:\Users\SWAPNIL\Desktop\C PROGRAM\C-LAB\student\_info.exe"

```
Enter the number of students:3

enter Name:swap
enter usn:149
enter marks in cmos:99
enter marks in c++:100
enter marks in app:98
enter Name:chilli
enter usn:148
enter marks in cmos:35
enter marks in c++:40
enter marks in app:25
enter Name:kanade
enter usn:132
enter marks in cmos:65
enter marks in c++:76
enter marks in app:80
```

Nmae	usn	cmos	cpp	adv	proc	total	percentage	grade
swap	149	99	100	98		297	99	A
chilli	148	35	40	25		100	33.333	F
kanade	132	65	76	80		221	73.667	B

```
In the student destructor      Year 2019-20

In the student destructor      Year 2019-20

In the student destructor      Year 2019-20

Process returned 0 (0x0)   execution time : 81.370 s
Press any key to continue.
```