**Experiment 5**

**C++ program to implement marks card of student**

**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(percentage>=80)

grade='A';

else if(percentage>=70 && percentage<80)

grade='B';

else if(percentage>=60 && percentage<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:-**

