1. Write a C++ program to create a class called STUDENT with data members USN,Name and Age. Using inheritance, create the classes UGSTUDENT and PGSTUDENT having fields as Semester,Fees and Stipend. Enter the data for at least 5 students. Find the semester wise average age for all UG and PG students separately.

```
#include<iostream>
using namespace std;
class student
{
public: int reg,age;
char name[20];
        void read_data();
};

class ugstudent:public student
{
public: int stipend,sem;
float fees;
void read_data();
};


class pgstudent:public student
{
public: int stipend,sem;
float fees;
void read_data();
};

/* function to read student details*/
void student::read_data()
{
cout<<"\n Enter name:";
cin>>name;
```

```
cout<<"\n Enter Reg.no.";
cin>>reg;
cout<<"\n Enter age:";
cin>>age;
}
void ugstudent::read_data()
{
student::read_data();
cout<<"\nEnter the sem:";
cin>>sem;
cout<<"\nEnter the fees:";
cin>>fees;
cout<<"\nEnter the stipend:";
cin>>stipend;
}

/* function to read additional details for pgstudents*/
void pgstudent::read_data()
{
student::read_data();
cout<<"\nEnter the sem:";
cin>>sem;
cout<<"\nEnter the fees:";
cin>>fees;
cout<<"\nEnter the stipend:";
cin>>stipend;
}

/* main function */
int main()
{
ugstudent  ug[20];
pgstudent  pg[20];
int i,n,m;
float average;
```

```
cout<<"\nEnter the no. of entries in the ugstudent class:";
cin>>n;
for(i=1;i<=n;i++)
ug[i].read_data();
for(int sem=1;sem<=8;sem++)
{
float sum=0;
int found=0,count=0;
for(i=1;i<=n;i++)
{
if(ug[i].sem==sem)
{
sum=sum+ug[i].age;
found=1;
count++;
}
}
if(found==1)
{
average=sum/count;
cout<<"\nAverage of age of sem "<<sem<<" is "<<average;


}
}
cout<<"\nEnter the no. of entries of pgstudent class:";
cin>>n;
for(i=1;i<=n;i++)
pg[i].read_data();
for(sem=1;sem<=8;sem++)
{
float sum=0;
int found=0,count=0;
for(i=1;i<=n;i++)
{
if(pg[i].sem==sem)
```

```
{
sum=sum+pg[
i].age;found=1;
count++;
}
}
if(found==1)
{
average=sum/count;
cout<<"\nAverage of age of sem "<<sem<<" is "<<average;
}
}

}
```