PRN: 2020BTEIT00041

NAME: Om Vivek Gharge

Q. : Create base class "student" :--name, roll.no, class Derive class "result"- marks, average. Perform operation to input data and calculate results as pass or fail with average.

CODE:

```cpp
#include <bits/stdc++.h>
using namespace std;

class student {
public:
string name;
int roll;
student()
{
    string n;
    cout<<"Enter the name of the student: "<<endl;
    cin>>n;
  name =n;
    cout<<"Enter roll no. of the student: "<<endl;
    int r;
    cin>>r;
    roll =r;

}
};

class result: public student {
public:
int phy;
int chem;
int math;

float average;

result()
{
    int n1;
    cout<<"Enter the marks obtained in physics: ";
    cin>>n1;
    phy=n1;
```

```cpp
        cout<<"Enter the marks obtained in chemistry: ";
        int n2;
        cin>>n2;
        chem = n2;
        int n3;
        cout<<"Enter the marks obtained in maths: ";
        cin>>n3;
        math=n3;

        cout<<"The Average Marks obtained are : "<<(float)(n1+n2+n3)/3<<endl<<endl;
        average = (float)(n1+n2+n3)/3;


}

    void display(int i)
    {

    cout<<"--------------------------"<<name<<"'s Result------------------------------"<<endl;
        cout<<"Roll No. "<<roll<<endl;
        cout<<"The marks obtained in physics are : "<<phy<<endl;
        cout<<"The marks obtained in chemistry are : "<<chem<<endl;
        cout<<"The marks obtained in maths are : "<<math<<endl;

        cout<<"The average marks obtained by "<<name<<" are "<<average<<endl;
        if(average>=35)
        cout<<name<<" has passed the examination\n\n";
        else
        cout<<name<<" has failed the examination\n\n";

    cout<<"--------------------------------------------------------------"<<endl;
    }
};

int main()
{
    int size;
    cout<<"Enter the no. of students: "<<endl;
    cin>>size;
    result r[size];

    for (int i = 0; i < size; i++)
    {
        r[i].display(i);
    }

return 0;
}
```

OUTPUT:

```
Enter the no. of students:
3
Enter the name of the student:
Om
Enter roll no. of the student:
1
Enter the marks obtained in physics: 99
Enter the marks obtained in chemistry: 95
Enter the marks obtained in maths: 98
The Average Marks obtained are : 97.3333

Enter the name of the student:
Omkar
Enter roll no. of the student:
2
Enter the marks obtained in physics: 35
Enter the marks obtained in chemistry: 25
Enter the marks obtained in maths: 20
The Average Marks obtained are : 26.6667

Enter the name of the student:
Jaya
Enter roll no. of the student:
3
Enter the marks obtained in physics: 55
Enter the marks obtained in chemistry: 65
Enter the marks obtained in maths: 55
The Average Marks obtained are : 58.3333

-------------------------------Om's Result-------------------------------
Roll No. 1
The marks obtained in physics are : 99
The marks obtained in chemistry are : 95
The marks obtained in maths are : 98
The average marks obtained by Om are 97.3333
Om has passed the examination

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-------------------------------Omkar's Result-------------------------------
Roll No. 2
The marks obtained in physics are : 35
The marks obtained in chemistry are : 25
The marks obtained in maths are : 20
The average marks obtained by Omkar are 26.6667
Omkar has failed the examination

-------------------------------------------------------------------------
-------------------------------Jaya's Result-------------------------------
Roll No. 3
The marks obtained in physics are : 55
The marks obtained in chemistry are : 65
The marks obtained in maths are : 55
The average marks obtained by Jaya are 58.3333
Jaya has passed the examination

-------------------------------------------------------------------------
```