VIT - Vellore

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BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

VIT V_Structured and OOP_Lab 6_COD_Medium_Multiple inheritance

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement

Patrick, a student at ABC College, needs a program to track his academic performance.

Design a program with multiple inheritance featuring a Student class inheriting attributes from the classes: GPA, CreditHours.

class GPA - stores GPA value (double)class CreditHours - stores credit hours value (int)

Calculate Patrick's total grade points by multiplying GPA by credit hours. If his attendance is above 80%, add 5 to his grade points.

Answer

```
// You are using GCC
#include <iostream>
#include <iomanip>
using namespace std;

class GPA {
protected:
    double gpa;
public:
    GPA(double g) : gpa(g) {}
};

class CreditHours {
protected:
    int creditHours;
public:
    CreditHours(int ch) : creditHours(ch) {}
};

class Student : public GPA, public CreditHours {
public:
    Student(double g, int ch) : GPA(g), CreditHours(ch) {}

    double calculateGradePoints(double attendance) {
        double totalGradePoints = gpa * creditHours;
        if (attendance > 80.0) {
            totalGradePoints += 5;
        }
        return totalGradePoints;
    }
};

int main() {
    double gpa, attendance;
    int creditHours;

    cin >> gpa >> creditHours >> attendance;

    Student patrick(gpa, creditHours);
    double result = patrick.calculateGradePoints(attendance);

    cout << fixed << setprecision(1) << result << endl;
```

```
    return 0;
}
```

Status : Correct **Marks : 10/10**