# VIT - Vellore

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## BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

## VIT V_Structured and OOP_Lab 6_COD_Medium_Hierachical Inheritance

Attempt : 1
Total Mark : 10
Marks Obtained : 10

## Section 1 : Coding

1.   Problem Statement

You are given the cost and discount values for an electronic gadget and a mechanical device.

Write a program using hierarchical inheritance to calculate their total costs after applying the discounts and print these costs.

The program should contain three classes:

class Product - Contains cost and discount attributes.class ElectronicGadget - Derived from Product class for electronic gadgets with a method calcTotalE() to calculate the total cost specific to electronic gadgets.class MechanicalDevice - Derived from Product class for

mechanical devices with a method calcTotalM() to calculate the total cost specific to mechanical devices.

Formula: Total Cost = Cost - (Cost * Discount)

Refer to the below class diagram:

*Answer*

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

class Product {
protected:
    double cost, discount;

public:
    Product(double c, double d) : cost(c), discount(d) {}
    double calculateTotal() {
        return cost - (cost * discount);
    }
};

class ElectronicGadget : public Product {
public:
    ElectronicGadget(double c, double d) : Product(c, d) {}
    void calcTotalE() {
        cout << fixed << setprecision(2) << "Electronic Cost: Rs. " << calculateTotal() << endl;
    }
};

class MechanicalDevice : public Product {
public:
    MechanicalDevice(double c, double d) : Product(c, d) {}
    void calcTotalM() {
        cout << fixed << setprecision(2) << "Mechanical Cost: Rs. " << calculateTotal() << endl;
    }
```

```cpp
    };

int main() {
    double e_cost, e_discount, m_cost, m_discount;
    cin >> e_cost >> e_discount;
    cin >> m_cost >> m_discount;

    ElectronicGadget eg(e_cost, e_discount);
    MechanicalDevice md(m_cost, m_discount);

    eg.calcTotalE();
    md.calcTotalM();

    return 0;
}
```

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