VIT - Vellore

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BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502365

VIT V_Structured and OOP_Lab 6_COD_Hard_Multiple inheritance

Attempt : 1
Total Mark : 10
Marks Obtained : 10

Section 1 : Coding

1. Problem Statement:

Ajay is assigned with designing a program with an ElectricityBill class that utilizes multiple inheritance, inheriting attributes from Consumption, Rate, and ConnectionType classes. This program calculates the total cost of electricity consumption based on consumed units and connection type, which can be either residential or commercial, each with its respective rate.

Note: Total Electricity Consumption Cost = Units * rate where units can be residential or commercial.

Answer

```
// You are using GCC
#include<iostream>
```

```
#include<iomanip>
using namespace std;

class Consumption
{
   public:
   double units;
   Consumption(double u)
   {
      units = u;
   }
};

class Rate
{
   public:
   double residential_rate,commercial_rate;
   void setRates(double rRate, double cRate)
   {
      residential_rate = rRate;
      commercial_rate  = cRate;
   }
};

class ConnectionType
{
   public:
      string type_of_connection;
      void SetconnectionType(string type)
      {
         type_of_connection = type;
      }
};

class Electricity_Bill : public Consumption , public Rate , public ConnectionType
{
   public:
   Electricity_Bill(double u) : Consumption(u) {}

   double calculate_Electricity_bill()
   {
      if(type_of_connection == "commercial")
```

```
        {
            return units*commercial_rate;
        }
        else
        {
            return units * residential_rate;
        }
    }
};

int main(){
    double units_consumed,rate,rate_per_unit;
    string connection_type;

    cin >> units_consumed;
    cin >> rate;
    cin >> rate_per_unit;
    cin >> connection_type;

    Electricity_Bill bill(units_consumed);

    bill.setRates(rate,rate_per_unit);

    bill.SetconnectionType(connection_type);
    cout<< fixed << setprecision(2);
    cout<<bill.calculate_Electricity_bill();
    return 0;
}
```

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