VIT - Vellore

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BCSE102P_Structured and Object Oriented Programming Lab_VL2024250502354

VIT V_Structured and OOP_Lab 5_COD_Easy_Friend Functions and Friend Classes

Attempt : 1
Total Mark : 20
Marks Obtained : 20

Section 1 : Coding

1. Problem Statement

Riya is designing a room layout for her new apartment. She needs to calculate the area of various rooms, which are rectangular. To simplify her work, she decides to create a Rectangle class with the following features:

Private attributes length and breadth to store the dimensions of the rectangle.A constructor to initialize these attributes.A friend function void calcArea(Rectangle s) to calculate and display the area of the rectangle.

Help Riya by writing a program that takes the length and breadth of a rectangle as input, calculates its area using the calcArea function, and displays the result.

Answer

```
#include<iostream>
using namespace std;
class Rectangle{
   public:
   void calcArea(int n,int m){
      cout<<n*m;
   }
};
int main(){
   int n,m;
   cin>>n>>m;
   Rectangle j;
   j.calcArea(n,m);
   return 0;
}
```

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

2. Problem Statement

You are building a shipping application for an online store and need to calculate the volume of a box. Implement a Box class with a private attribute length. The class should include:

A constructor initializes length to 0.A member function get() to input the length.A friend function printVolume(Box) calculates and returns the volume as length^3.

Answer

```
#include <iostream>

class Box {
   private:
   int length;

   public:
   Box() : length(0) {}
```

```
    void get() {
        std::cin >> length;
    }

    friend int printVolume(Box b);
};

int printVolume(Box b) {
    return b.length * b.length * b.length;
}

int main() {
    Box myBox;
    myBox.get();
    std::cout << printVolume(myBox) << std::endl;
    return 0;
}
```

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