

## Answer on Question#37669- Programming, C++

You are given a task to write a computer program for a Coffee Shop. Following is the table containing the list of product that you sell. Please be informed that all sales must include Sales Tax of 5%. For example if the customer orders one coffee with ice and creamer the total price is

Total Price =  $(1 * \$1.50 + \$0.30 + \$0.50) * 1.05 = \$2.42$ .

Your program must get the order from the customer and calculate the Total Price of his/her order. Customer can order multiple products at one time and your program must calculate the Total Price for all his/her order.

| Product                       |
|-------------------------------|
| Base Price                    |
| Add Ice                       |
| Add Creamer                   |
| Ice Blended (ice is included) |

|         |
|---------|
| coffee  |
| \$1.50  |
| +\$0.30 |
| +\$0.50 |
| +\$1.20 |
| tea     |
| \$1.20  |
| +\$0.20 |
| +\$0.30 |
| +\$1.00 |

For all sales, there is a sales tax of 5%

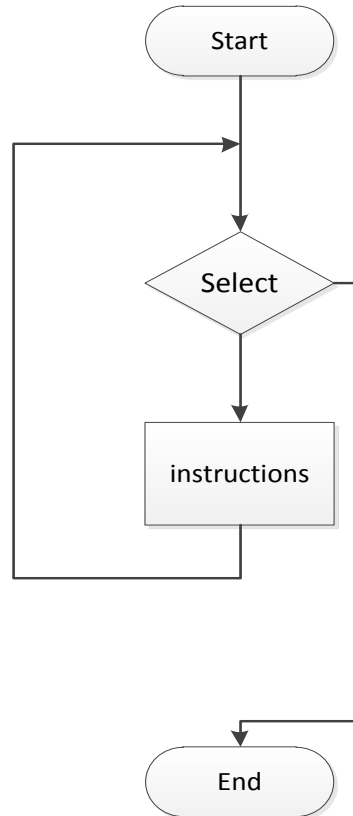
For this project you have to do the following two tasks.

1. Draw Flowchart diagram (40 marks)
2. Write a console program using C++ programming language. (60 marks)

## Solution.

1. Draw Flowchart diagram (40 marks)

**Solution:**



2. Write a console program using C++ programming language. (60 marks)

**Solution:**

```
#include <iostream>

using namespace std;

class Shopping
{
public:
    virtual double AddIce(){return 0;}
    virtual double AddCreamer(){return 0;}
    virtual double IceBlended(){return 0;}
    virtual double Cost(){return 0;}
};

class Caffee : Shopping
{
public:
    Caffee(){dBasePrice=1.50;}

private:

    double dBasePrice;
    double Cost(){return dBasePrice;}
```

```

    double AddIce(){return dBasePrice+0.30;}
    double AddCreamer(){return dBasePrice+0.50;}
    double IceBlended(){return dBasePrice+1.20;}
};

class Tea : Shopping
{
public:
    Tea(){dBasePrice=1.20;}

private:

    double dBasePrice;
    double Cost(){return dBasePrice;}
    double AddIce(){return dBasePrice+0.20;}
    double AddCreamer(){return dBasePrice+0.30;}
    double IceBlended(){return dBasePrice+1.00;}
};

int main()
{
    Caffee caffee;
    Tea tea;

    Shopping *poly_shop=nullptr;

    double Sum=0; char chMenu=0;

    while(1)
    {
        cout<<"Select: "<<endl<<" 1. Caffee"<<endl<<" 2. Tea"<<endl<<
            " 0. Show the total price!"<<endl;
        cin>>chMenu;

        if(chMenu=='1'){poly_shop=(Shopping*)&caffee;}if(chMenu=='2'){poly_shop=(Shopping*)&t
ea;}
        if(chMenu=='0'){cout<<"Result:
"<<Sum*1.05<<endl<<"_____ "<<endl<<endl; break;}
        while(1)
        {
            cout<<" 1. Add Ice"<<endl<<" 2. Add Creamer"<<endl<<" 3. Ice
Blended"<<endl<<
                "\n="<<endl<<
                " 0. Return to the previous menu item!"<<endl;

            cin>>chMenu;
            switch(chMenu)
            {
                case '1':{ Sum+=poly_shop->AddIce(); break;}
                case '2':{ Sum+=poly_shop->AddCreamer(); break;}
                case '3':{ Sum+=poly_shop->IceBlended(); break;}
                case '=':{ Sum+=poly_shop->Cost(); break;}
                default:break;
            }

            cout<<"Result:
"<<Sum*1.05<<endl<<"_____ "<<endl<<endl;
            if(chMenu=='0'){break;}
        }
    }
    cin>>chMenu;
    return 0;
}

```

```
D:\Project\qqq\Debug\qqq.exe
0. Return to the previous menu item?
0
Result: 1.575
-----
Select:
1. Caffee
2. Tea
0. Return to the previous menu item and show the result?
2
1. Add Ice
2. Add Creamer
3. Ice Blended
"=". Result?
0. Return to the previous menu item?
=
Result: 2.835
-----
1. Add Ice
2. Add Creamer
3. Ice Blended
"=". Result?
0. Return to the previous menu item?
```