

ICA#3: PrefCustomer Class

Github: <https://github.com/excisionhd/CS256/blob/master/PrefCustomer.cpp>

Source Code:

```
#include "stdafx.h"
#include <cstdio>
#include <string>
#include <iostream>

using namespace std;

// Base class
class PersonData {
private:
    string lastName;
    string firstName;
    string address;
    string city;
    string state;
    string zip;
    string phone;

public:
    PersonData() {};
    PersonData(string l, string f, string a, string c, string
s, string z, string p) {
        lastName = l;
        firstName = f;
        address = a;
        city = c;
        state = s;
        zip = z;
        phone = p;
    }
    string getLastName() {
        return lastName;
    }
    string getFirstName() {
```

```

        return firstName;
    }
    string getAddress() {
        return address;
    }
    string getCity() {
        return city;
    }
    string getState() {
        return state;
    }
    string getZip() {
        return zip;
    }
    string getPhone() {
        return phone;
    }
    void setLastName(string s) {
        lastName = s;
    }
    void setFirstName(string s) {
        firstName = s;
    }
    void setAddress(string s) {
        address = s;
    }
    void setCity(string s) {
        city = s;
    }
    void setState(string s) {
        state = s;
    }
    void setZip(string s) {
        zip = s;
    }
    void setPhone(string s) {
        phone = s;
    }
};

```

```

class CustomerData : public PersonData {
    private:
        int customerNumber;
        bool mailingList;
    public:
        CustomerData() {};
        CustomerData(int i, bool b) {
            customerNumber = i;
            mailingList = b;
        };
        void printMailing() {
            if (mailingList == true)
                cout << this->getFirstName() << " " <<
this->getLastName() << " is subscribed to the mailing
list!"<<endl;
            else
                cout << this->getFirstName() << " " <<
this->getLastName() << " is not subscribed to the mailing
list."<<endl;
        }
        int getCustomerNumber() {
            return customerNumber;
        }
        bool getMailingList() {
            return mailingList;
        }
        void setCustomerNumber(int i) {
            customerNumber = i;
        }
        void setMailingList(bool b) {
            mailingList = b;
        }
};

class PreferredCustomer : public CustomerData {
    private:
        double purchasesAmount;
        double discountLevel;
    public:
        PreferredCustomer() {};

```

```

PreferredCustomer(double p, double d) {
    purchasesAmount = p;
    discountLevel = d;
}
PreferredCustomer(double p) {
    purchasesAmount = p;
    if (p < 0) {
        cout << "Invalid input for sales number." <<
endl;

        exit(0);
    }
    if (p >= 500 && p < 1000) {
        discountLevel = 0.05;
    }
    else if (p >= 1000 && p < 1500) {
        discountLevel = 0.06;
    }
    else if (p >= 1500 && p < 2000) {
        discountLevel = 0.07;
    }
    else if (p >= 2000) {
        discountLevel = 0.1;
    }
    else {
        discountLevel = 0;
    }
}
void updateDiscount() {
    if (purchasesAmount >= 500 && purchasesAmount <
1000) {
        discountLevel = 0.05;
    }
    else if (purchasesAmount >= 1000 &&
purchasesAmount < 1500) {
        discountLevel = 0.06;
    }
    else if (purchasesAmount >= 1500 &&
purchasesAmount < 2000) {
        discountLevel = 0.07;
    }
    else if (purchasesAmount >= 2000) {

```

```

        discountLevel = 0.1;
    }
    else {
        discountLevel = 0;
    }
}

void print() {
    cout << this->getFirstName() << " " <<
this->getLastName() << " bought " << purchasesAmount << " items
and receives a " << discountLevel * 100 << "% discount!" <<
endl;
}

void setPurchasesAmount(double p) {
    purchasesAmount = p;
    updateDiscount();
}

void setDiscount(double d) {
    discountLevel = d;
}

double getPurchasesAmount() {
    return purchasesAmount;
}

double getDiscountLevel() {
    return discountLevel;
}

};

```

```

int main() {
    cout << "Classes and Inheritance Demonstration" << endl;
    cout << "-----" << endl;
    CustomerData c1(10212, true);
    c1.setFirstName("Robert");
    c1.setLastName("Lee");
    c1.printMailing();
    CustomerData c2(10213, false);
    c2.setFirstName("Joe");
    c2.setLastName("Lee");
    c2.printMailing();
    PreferredCustomer p1(500);
}

```

```

    p1.setFirstName("Bob");
    p1.setLastName("Smith");
    p1.print();
    PreferredCustomer p2(1500);
    p2.setFirstName("James");
    p2.setLastName("Smith");
    p2.print();
    PreferredCustomer p3(2000);
    p3.setFirstName("Jane");
    p3.setLastName("Smith");
    p3.print();
    PreferredCustomer p4(2);
    p4.setFirstName("Tony");
    p4.setLastName("Diaz");
    p4.print();
    PreferredCustomer p5(230);
    p5.setFirstName("Seth");
    p5.setLastName("Rogan");
    p5.print();
    cout << "After buying more items..." << endl;
    p5.setPurchasesAmount(600);
    p5.print();

    return 0;
}

```

Output

Classes and Inheritance Demonstration

```

Robert Lee is subscribed to the mailing list!
Joe Lee is not subscribed to the mailing list.
Bob Smith bought 500 items and receives a 5% discount!
James Smith bought 1500 items and receives a 7% discount!
Jane Smith bought 2000 items and receives a 10% discount!
Tony Diaz bought 2 items and receives a 0% discount!
Seth Rogan bought 230 items and receives a 0% discount!
After buying more items...
Seth Rogan bought 600 items and receives a 5% discount!
Press any key to continue . . .

```