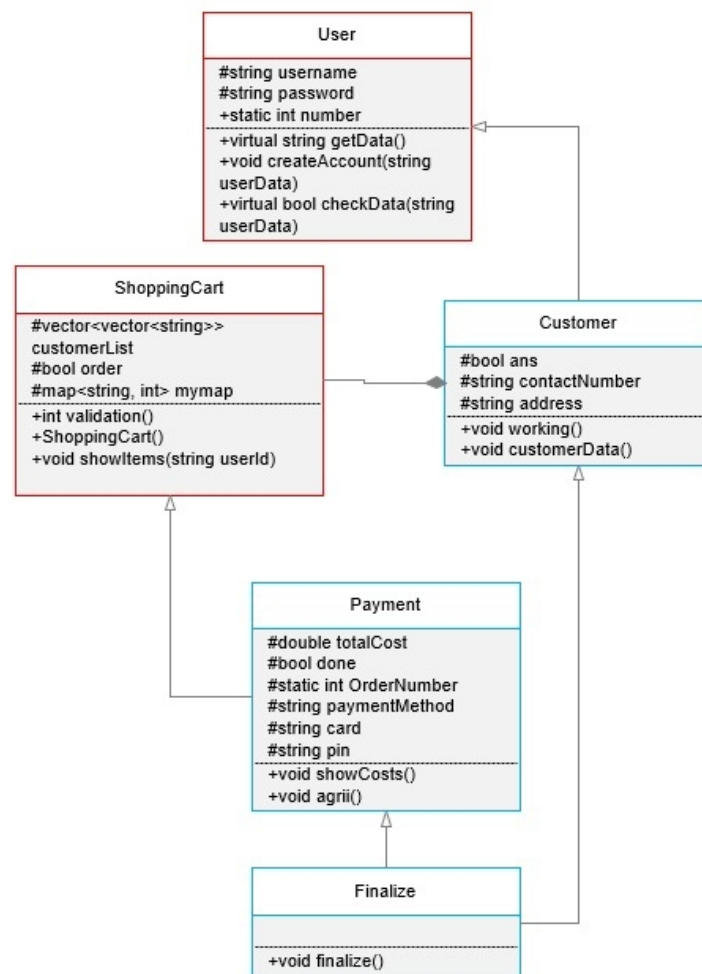


MINI PROJECT ASSIGNMENTProject Name:**ONLINE SHOPPING AND DATABASE MANAGEMENT SYSTEM**Features/Objective of Project:

This project is pure based on the user experience, The items are shown to the user according to availability and then user selects the items he wants. After that the total amount/bill is generated accordingly. The important feature to be noted in this program is the FILING of the data. Every time you need to use the program, you need to login into the system. If your account doesn't exist in our database(i.e: Files), then user is asked to create an account. Another feature of program is that it encrypts the username and password so no human can understand the data inside the file. For authorization the username and password is encrypted and then checked to end of the user record. Another important feature of this program is if user inputs wrong value in the input field, I have applied validation function also, So the program doesn't crash. The last and important feature of this program is, It creates an payment/bill receipt and then save it inside the file named "Record.txt", in which all of the order details of particular user are being saved accordingly.

Class Diagram:

MINI PROJECT ASSIGNMENT**Coding:**

```
#include <iostream>
#include <fstream>
#include <vector>
#include <map>
#include <string>
#include <sstream>
#include <ctime>

using namespace std;
string encrypt(string, string);

string encrypt(string user, string pass)
{
    string letters = "abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ";
    string us = "UserName=", ps = "Password=";
    for (char x : user)
    {
        if (isalpha(x))
        {
            int y;
            y = letters.find(x);
            us += to_string(y * 2);
            us += "\\ ";
        }
        else
        {
            us += to_string(x);
            us += "\\ ";
        }
    }
    for (char x : pass)
    {
        if (isalpha(x))
        {
            int y;
            y = letters.find(x);
            ps += to_string(y * 2);
            ps += "/ ";
        }
        else
        {
            ps += to_string(x);
            ps += "/ ";
        }
    }
    return us + ps;
}

class User
{
protected:
    string username, password;
    string formattedString;

public:
```

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```
static int number;
virtual string getData()
{
    cout << "Enter Username: ";
    cin >> username;
    cout << "Enter Password: ";
    cin >> password;
    formattedString = encrypt(username, password);
    // cout << formattedString << endl;
    return formattedString;
}

void createAccount(string userData)
{
    ofstream fout; // object for writing into the file

    fout.open("Users.txt", ios::app); // opening the file in append mode

    fout << userData << "\n";

    cout << "Your Account has been Created" << endl;
    // number += 1;

    fout.close();
}

virtual bool checkData(string userData)
{
    int offset;
    string line;
    ifstream Myfile;
    Myfile.open("Users.txt");

    if (Myfile.is_open())
    {
        while (!Myfile.eof())
        {
            getline(Myfile, line);
            if ((offset = line.find(userData, 0)) != string::npos)
            {
                cout << "ACCOUNT FOUND" << endl;
                return true;
            }
            else if (Myfile.eof())
            {
                cout << "ACCOUNT NOT FOUND, PLEASE CREATE ACCOUNT!!" << endl;
            }
        }
        Myfile.close();
    }
    else
        cout << "Unable to open this file." << endl;

    return false;
}
};
```

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```

int User::number = rand() % 100 + 10000;

class Customer : public User
{
protected:
    bool ans = false;
    string contactNumber, address;

public:
    void working()
    {
        while (!ans)
        {
            string addedString; // this contains username+password

            addedString = User::getData();

            if (checkData(addedString))
            {
                ans = true;
            }

            else
            {
                cout << "Your Account doesn't exist in our records,\nDo you want to CREATE
ACCOUNT? Y/N: ";
                char select;
                cin >> select;
                if (select == 'y' || select == 'Y')
                {
                    User::createAccount(addedString);
                }
                else
                {
                    cout << "Thank for using our service!!" << endl;
                    ans = false;
                    break;
                }
                ans = true;
            }
        }
    }

    bool returnAuthorized()
    {
        return ans;
    }

    void customerData()
    {
        if (ans == true)
        {
            number += 1;
            cout << "Dear " << username << " , Please enter your Billing address: ";
            cin.ignore();
            getline(cin, this->address);
            cout << endl;
            cout << "Thank You for the moment!!" << endl

```

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```

        << "Your id is: " << number << endl;
        cout << endl;
    }
}
};

// map<string, int> ShoppingCart::mymap;

class ShoppingCart
{
protected:
    vector<vector<string>> customerList;
    bool order = false;
    map<string, int> mymap;

public:
    int validation()
    {
        int x;
        while (!(cin >> x))
        {
            cout << "Enter valid number!!" << endl;
            cin.clear();
            cin.ignore(123, '\n');
        }
        return x;
    }
    ShoppingCart()
    {
        mymap["Grocery"] = 7;
        mymap["Fast food"] = 5;
        mymap["Electronic"] = 15;
        mymap["HouseHolds"] = 20;
    }

    void showItems(string userId)
    {
        cout << "Dear Customer " << userId << ", Select your items from below: " << endl;

        for (auto const &pair : mymap)
        {
            vector<string> userls;
            int x;
            cout << "Package " << pair.first << " of Price " << pair.second << "$ EACH!"
<< endl;
            cout << "Enter Quantity for " << pair.first << ": ";
            x = validation();
            cout << endl;
            if (x != 0)
            {
                userls.push_back(pair.first);
                userls.push_back(to_string(pair.second));
                userls.push_back(to_string(pair.second * x));
                // customerList.push_back()
            }
            if (!userls.empty())
            {

```

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```

        customerList.push_back(userls);
    }
}
};

class Payment : public ShoppingCart
{
protected:
    double totalCost = 0;
    bool done = false;
    static int OrderNumber;
    string paymentMethod;
    string card;
    string pin;

public:
    void showCosts()
    {
        cout << "Your Order Number is: " << OrderNumber << endl;
        cout << "Item\t\t"
             << "Price/Each\t\t"
             << "Total" << endl;

        for (int i = 0; i < customerList.size(); i++)
        {
            for (int j = 0; j < 3; j++)
            {
                cout << customerList[i][j] << "\t\t";
                if (j == 2)
                {
                    stringstream ss(customerList[i][j]);
                    int x = 0;
                    ss >> x;
                    totalCost += x;
                }
            }
            cout << endl;
        }
        cout << endl;
        cout << "YOUR TOTAL COST IS: " << totalCost << "$" << endl;
        cout << endl;
    }

    void agrii()
    {
        cout << "Do you want to continue to Payment step? Y/N: ";
        char y;
        cin >> y;
        if (y == 'Y' || y == 'y')
        {
            done = true;
            OrderNumber += 1;
            cout << "Please Enter your Payment Method 1 or 2" << endl;
            cout << "1: Cash On delivery" << endl;
            cout << "2: Credit Card" << endl;
        }
    }
}

```

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```

        cout << endl;
        cout << "Your Method: ";
        int y;
        cin >> y;
        if (y == 1)
        {
            paymentMethod = "Cash On Delivery!";
        }
        else if (y == 2)
        {
            paymentMethod = "Credit Card";
            cout << "Enter Credit Card number: ";
            cin >> card;
            cout << "Enter Your PIN: ";
            cin >> pin;
        }
    }
    else
    {
        done = false;
        cout << "Thank you for using our Service!!" << endl;
    }
}
};

int Payment::OrderNumber = rand() % 100 + 1000;

class Finalize : virtual public Customer, virtual public Payment
{
public:
    void finalize()
    {
        time_t now = time(0);
        char *dt = ctime(&now);
        Customer::working();
        Customer::customerData();
        if (returnAuthorized())
        {
            Payment::showItems(username);
            Payment::showCosts();
            Payment::agrii();
        }
        if (done)
        {
            cout << endl;
            cout << "Your Order Number is: " << OrderNumber << endl;
            cout << endl;
            cout << "Your Total Cost is: " << totalCost << "$" << endl;

            cout << "Your Order will be delivered soon to you at address: " << address <<
endl;

            cout << endl;
            cout << "For any compliance call us on +923223132233." << endl;

            cout << "Your Order Placed on local date and time: " << dt << endl;
            cout << endl;
            // writing the whole data into the file for record;

```

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```
ofstream fout;
fout.open("RECORDS.txt", ios::app);

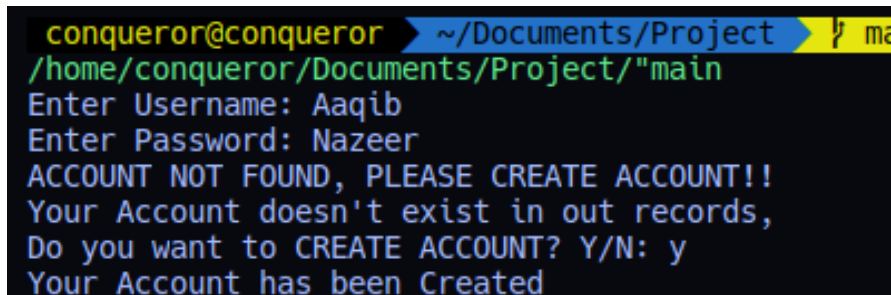
fout << "=====\n";
fout << "User: " << username << "\n";
fout << "User Record ID: " << number << "\n";
fout << "Order Number: " << OrderNumber << "\n";
fout << "\n";
fout << "Item\t\t"
    << "Price/Each\t\t"
    << "Total" << endl;
for (int i = 0; i < customerList.size(); i++)
{
    for (int j = 0; j < 3; j++)
    {
        fout << customerList[i][j] << "\t\t";
    }
    fout << endl;
}
fout << endl;

fout << "Address: " << address << "\n";
fout << "Payment Method: " << paymentMethod << "\n";

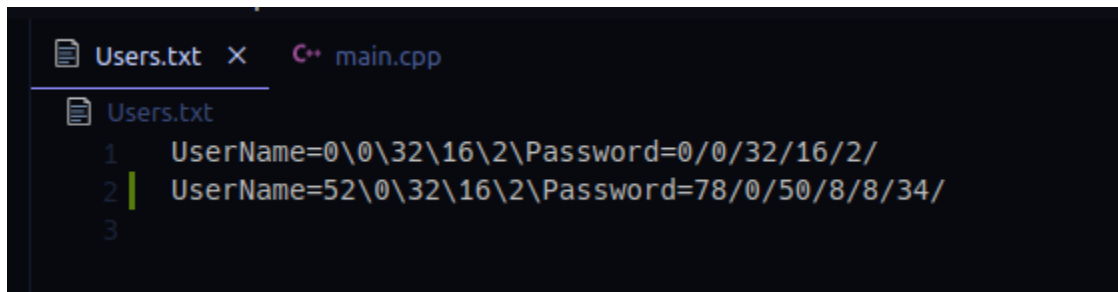
fout << "The local date and time: " << dt << endl;
fout << "\n";

fout.close();
}
};

int main()
{
    Finalize o1;
    o1.finalize();
}
```

OUTPUT:

```
conqueror@conqueror ~/Documents/Project
/home/conqueror/Documents/Project/"main
Enter Username: Aaqib
Enter Password: Nazeer
ACCOUNT NOT FOUND, PLEASE CREATE ACCOUNT!!
Your Account doesn't exist in our records,
Do you want to CREATE ACCOUNT? Y/N: y
Your Account has been Created
```


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```
Users.txt x main.cpp
Users.txt
1  UserName=0\0\32\16\2\Password=0/0/32/16/2/
2  UserName=52\0\32\16\2\Password=78/0/50/8/8/34/
3
```

```
Your Account has been Created
Dear Aaqib , Please enter your Billing address: House no. xyz, abc road, Karachi

Thank You for the moment!!
Your id is: 10084

Dear Customer Aaqib, Select your items from below:
Package Electronic of Price 15$ EACH!
Enter Quantity for Electronic: 1

Package Fast food of Price 5$ EACH!
Enter Quantity for Fast food: f
Enter valid number!!
2

Package Grocery    of Price 7$ EACH!
Enter Quantity for Grocery    : 2

Package HouseHolds of Price 20$ EACH!
Enter Quantity for HouseHolds: 1

Your Order Number is: 1086
Item          Price/Each      Total
Electronic      15          15
Fast food        5          10
Grocery          7          14
HouseHolds      20          20

YOUR TOTAL COST IS: 59$

Do you want to continue to Payment step? Y/N: y
Please Enter your Payment Method 1 or 2
1: Cash On delivery
2: Credit Card

Your Method: 2
Enter Credit Card number: 1234525311
Enter Your PIN: 1234
```

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```
Do you want to continue to Payment step? Y/N: y
Please Enter your Payment Method 1 or 2
1: Cash On delivery
2: Credit Card

Your Method: 2
Enter Credit Card number: 1234525311
Enter Your PIN: 1234

Your Order Number is: 1087

Your Total Cost is: 59$
Your Order will be delivered soon to you at address: House no. xyz, abc road, Karachi

For any compliance call us on +923223132233.
Your Order Placed on local date and time: Sun Sep  6 15:55:49 2020
```

```
Terminal Help
Users.txt  RECORDS.txt X  main.cpp
RECORDS.txt
112  =====
113  User: Aaqib
114  User Record ID: 10084
115  Order Number: 1087
116
117  Item          Price/Each    Total
118  Electronic      15         15
119  Fast food       5          10
120  Grocery         7          14
121  HouseHolds     20         20
122
123  Address: House no. xyz, abc road, Karachi
124  Payment Method: Credit Card
125  The local date and time: Sun Sep  6 15:55:49 2020
126
127
```

Limitations of the project:

The one and only limitation of the system is items are in very less quantity. All of the items could have been saved inside the file and then shown to user to select from those items, But here I used a simple multi-dimensional vector to store the items and then they are shown to user. After some modifications this project will be complete Online shopping system.