

Payment Sub-System

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1. System Introduction

This system is a small online payment sub-system. In traditional shopping system, users always use a third-party system to pay for their bills. They add money into their accounts and pay for the ordered items. It's more convenient and useful for the customers who always make shopping online.

2. Development Environment

Operating System: Windows 7

Development Software: MyEclipse 10

Server: Apache Tomcat 7.0

Database: MySQL 6.0

Technologies: JSP + JavaBean

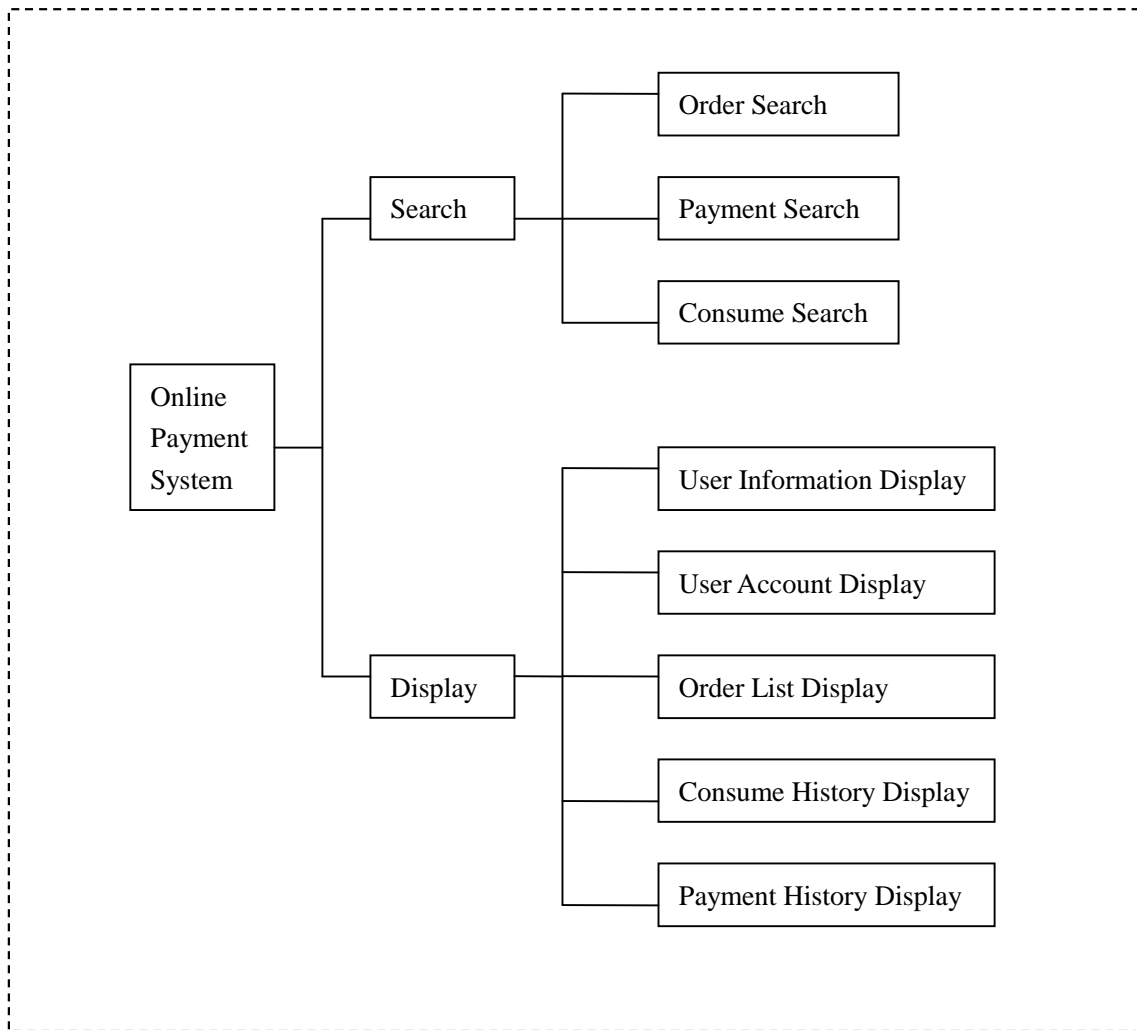
3. Functional Analysis

The whole payment system is based on the communications with database. Users make operations on the data in the database. If a user wants to buy an item and he/she is also a member of the payment system, he can use this payment system account to pay for his/her bills. After finishing payment, a record will be added into his/her account. But before paying, he/she also needs to add enough money or E-coin into his/her account.

This small system realize search and display functions. Users can view the information of orders, payment and consume records. And they can search the information they want by ID, Type and Time.

3.1 Function Module

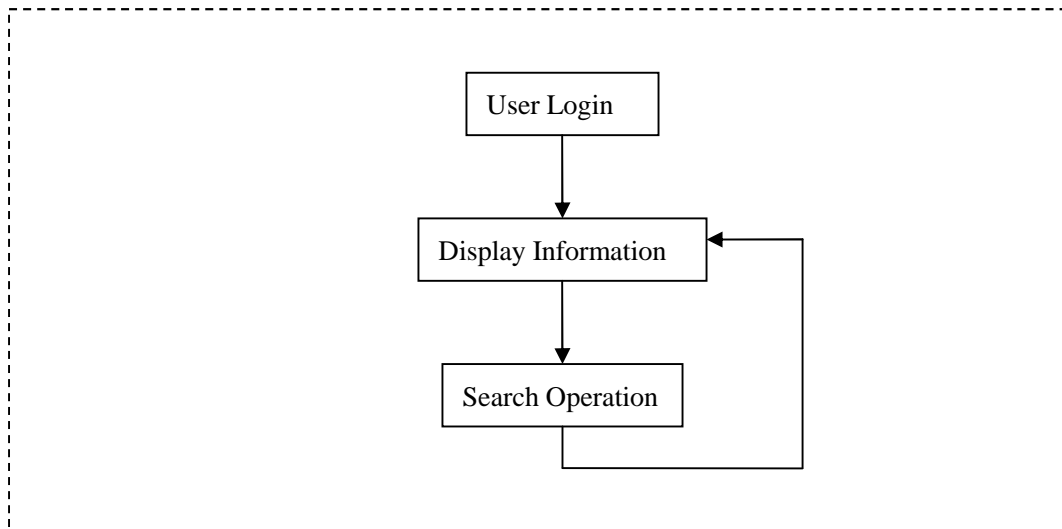
This online payment system can roughly divided into two modules: Search and Display.



Each of the two module contains their sub modules. Search module contains order search, payment search and consume search and Display contains user information display, user account display, order list display, consume history display and payment history display.

3.2 System Flow Diagram:

Only members can use this system, so that the flow of this system is only based on members.



Users login the payment system and the system displays the user information and user account information. Then users can search by ID, Type or Time and the system will display the results

4. Database Design







4.1 Tables:

The database of this system contains four tables: USER, ADD, CONSUME, ORDER.







USER:

| Name | Type | NULL | Default | Extras |
|-----------------------|-------------|------|---------|--------|
| Keys (1) | | | | |
| Primary Key ID | | | | unique |
| Fields (6) | | | | |
| ID | int(11) | No | | |
| NAME | varchar(20) | Yes | <NULL> | |
| PASSWORD | varchar(10) | Yes | <NULL> | |
| COIN | int(11) | Yes | <NULL> | |
| CONSUME | int(11) | Yes | <NULL> | |
| TYPE | varchar(20) | Yes | <NULL> | |








ADD:

| Name | Type | NULL | Default | Extras | C.. |
|--|-------------|------|---------|--------|-----|
| Keys (1) | | | | | |
|  Primary Key | ADDID | | | unique | |
| Fields (5) | | | | | |
|  ADDID | int(11) | No | | | |
|  TYPE | varchar(20) | Yes | <NULL> | | |
|  COIN | int(11) | Yes | <NULL> | | |
|  DATETIME | datetime | Yes | <NULL> | | |
|  USERID | int(11) | Yes | <NULL> | | |

CONSUME:

| Name | Type | NULL | Default | Extras | C.. |
|--|-------------|------|---------|--------|-----|
| Keys (1) | | | | | |
|  Primary Key | CONSUMEID | | | unique | |
| Fields (5) | | | | | |
|  CONSUMEID | int(11) | No | | | |
|  PRICE | int(11) | Yes | <NULL> | | |
|  DATETIME | datetime | Yes | <NULL> | | |
|  USERID | int(11) | Yes | <NULL> | | |
|  PRODUCTNAME | varchar(50) | Yes | <NULL> | | |

ORDER:

| Name | Type | NULL | Default | Extras | C.. |
|--|-------------|------|---------|--------|-----|
| Keys (1) | | | | | |
|  Primary Key | ORDERID | | | unique | |
| Fields (6) | | | | | |
|  ORDERID | int(11) | No | | | |
|  TYPE | varchar(20) | Yes | <NULL> | | |
|  PRICE | int(11) | Yes | <NULL> | | |
|  DATETIME | datetime | Yes | <NULL> | | |
|  USERID | int(11) | Yes | <NULL> | | |
|  PRODUCTNAME | varchar(20) | Yes | <NULL> | | |

4.2 Data:

Add data into the four tables so that the system can display that.

USER:

| ID | NAME | PASSWO... | COIN | CONSUME | TYPE |
|----|------|-----------|------|---------|------|
| 1 | ABC | 111111 | 100 | 250 | VIP |
| 2 | bcd | 111111 | 20 | 120 | COM |

ADD:

| ADDID | TYPE | COIN | DATETIME | USERID |
|-------|--------|------|---------------------|--------|
| 1 | Bank | 15 | 2006-01-01 00:00:00 | 1 |
| 2 | Check | 30 | 2006-02-01 00:00:00 | 1 |
| 3 | Online | 15 | 2006-03-01 00:00:00 | 1 |
| 4 | Online | 100 | 2006-04-01 00:00:00 | 1 |
| 5 | Agent | 50 | 2006-05-01 00:00:00 | 1 |

CONSUME:

| CONSUME... | PRICE | DATETIME | USERID | PRODUCTNA... |
|------------|-------|---------------------|--------|--------------|
| 1 | 2 | 2005-01-01 12:00:00 | 1 | Apple |
| 2 | 25 | 2006-02-03 00:00:00 | 1 | Pink Skirt |
| 3 | 34 | 2006-03-05 00:00:00 | 1 | T-Shirt |
| 4 | 2 | 2006-03-10 13:05:00 | 1 | Apple |
| 5 | 221 | 2006-03-13 00:00:00 | 1 | Bed |

ORDER:

| ORDERID | TYPE | PRICE | DATETIME | USERID | PRODUCTNA... |
|---------|--------------|-------|---------------------|--------|--------------|
| 1 | Processing | 15 | 2006-04-04 00:00:00 | 1 | |
| 2 | Successfully | 24 | 2006-03-05 00:00:00 | 1 | |
| 3 | Failed | 55 | 2006-02-01 00:00:00 | 1 | |
| 4 | Successfully | 5 | 2006-03-01 00:00:00 | 1 | |
| 5 | Successfully | 54 | 2006-01-01 00:00:00 | 1 | |

4.3 Database Connection:

(1) Config.properties:

```
conn_type=  
conn_url=jdbc:mysql://localhost:3306/buy?useUnicode=true&characterEn  
coding=UTF-8  
conn_user=root  
conn_pwd=yuyouji  
conn_driver=com.mysql.jdbc.Driver
```

(2) Config.java:

```
public class Config {  
    private static Properties prop = new Properties();  
    static {  
        try {  
            prop.load(Config.class  
                .getResourceAsStream("config.properties"));
```

```

    } catch (IOException e) {
        System.out.println("File:config.properties no find,PLS check
out!");
        e.printStackTrace();
    }
}
public static String CONNECTION_TYPE = prop.getProperty("conn_type");
public static String CONNECTION_URL = prop.getProperty("conn_url");
public static String CONNECTION_USER = prop.getProperty("conn_user");
public static String CONNECTION_PWD = prop.getProperty("conn_pwd");
public static String CONNECTION_DRIVER = prop.getProperty("conn_driver");

}

```

(3) DBConnect.java:

```

public class DBConnect {

    public static Connection getConnection() {
        Connection conn = null;
        try {

            Class.forName(Config.CONNECTION_DRIVER).newInstance();

            conn = DriverManager.getConnection(Config.CONNECTION_URL,
                Config.CONNECTION_USER, Config.CONNECTION_PWD);
        } catch (Exception e) {
            e.printStackTrace();
        }
        if (conn == null) {
            System.out.println("no get connection!throws Exception");
        }
        return conn;
    }
}

```

5. Result

(1) Home Website:

After Login, the system display the user information and user's account information.

Navigation

localhost:8888/Buy/COIN/usercoin.jsp

EPayment

- Home
- Order List
- Payment History
- Consume History

ABC Hello, Your current status: VIP

Total payment amount 350 ECoin

Total Consume: 250 ECoin

Account remain amount: 100 ECoin

You Consume history:

Your total consume is: 250 ECoin Record::

Quantity: 2 , Name: Apple , Amount: 4

Quantity: 1 , Name: Bed , Amount: 221

Quantity: 1 , Name: Pink Skirt , Amount: 25

Quantity: 1 , Name: T-Shirt , Amount: 34

(2) Order List:

Firefox

Navigation

localhost:8888/Buy/COIN/order.jsp

EPayment

- Home
- Order List
- Payment History
- Consume History

| Order ID | Order Status | Amount | Order Create Time | Ordered Item Name |
|----------|--------------|--------|---------------------|-------------------|
| 1 | Processing | 15 | 2005-04-04 00:00:00 | |
| 2 | Successfully | 24 | 2005-03-05 00:00:00 | |
| 3 | Failed | 55 | 2005-02-01 00:00:00 | |
| 4 | Successfully | 5 | 2005-03-01 00:00:00 | |
| 5 | Successfully | 51 | 2005-01-01 00:00:00 | |

Order ID:

Select Status:

Payment Time:

Start Date: Year Month Day

End Date: Year Month Day

Search by Order ID:

Firefox

Navigation

localhost:8888/Buy/COIN/order.jsp

EPayment

- Home
- Order List
- Payment History
- Consume History

| Order ID | Order Status | Amount | Order Create Time | Ordered Item Name |
|----------|--------------|--------|---------------------|-------------------|
| 3 | Failed | 55 | 2005-02-01 00:00:00 | |

Order ID:

Select Status:

Payment Time:

Start Date: Year Month Day

End Date: Year Month Day

Search by Order Status:

| Order ID | Order Status | Amount | Order Create Time | Ordered Item Name |
|----------|--------------|--------|-----------------------|-------------------|
| 2 | Successfully | 24 | 2000-03-05 00:00:00.0 | |
| 4 | Successfully | 5 | 2000-03-01 00:00:00.0 | |
| 5 | Successfully | 54 | 2000-01-01 00:00:00.0 | |

Order ID:

Select Status:

Payment Time:

Start Date: Year Month Day

End Date: Year Month Day

Search by Order Creation Time:

| Order ID | Order Status | Amount | Order Create Time | Ordered Item Name |
|----------|--------------|--------|-----------------------|-------------------|
| 3 | Failed | 55 | 2000-02-01 00:00:00.0 | |
| 4 | Successfully | 5 | 2000-03-01 00:00:00.0 | |
| 5 | Successfully | 54 | 2000-01-01 00:00:00.0 | |

Order ID:

Select Status:

Payment Time:

Start Date: Year Month Day

End Date: Year Month Day

(3) Payment History:

Your Payment History:

| Payment ID | Payment Type | Payment Amount | Payment Time |
|------------|--------------|----------------|-----------------------|
| 1 | Bank | 15 | 2003-01-01 00:00:00.0 |
| 2 | Check | 30 | 2003-02-01 00:00:00.0 |
| 3 | Online | 15 | 2003-03-01 00:00:00.0 |
| 4 | Online | 100 | 2003-04-01 00:00:00.0 |
| 5 | Agent | 50 | 2003-05-01 00:00:00.0 |

Search

Payment ID:

Payment Type:

Payment Time

Start Date: Year Month Day

End Date: Year Month Day

Search by Payment ID

The screenshot shows a web browser window with the address bar displaying `localhost:8888/Buy/COIN/addcoinrecord.jsp`. The page has a sidebar menu with options: Home, Under List, Payment History, and Consumer History. The main content area is titled "Your Payment History.:" and contains a table with the following data:

| Payment ID | Payment Type | Payment Amount | Payment Time |
|------------|--------------|----------------|-----------------------|
| 5 | Agent | 50 | 2003-05-01 00:00:00.0 |

Below the table is a search section with the following fields:

- Payment ID:
- Payment Type:
- Payment Time: Start Date: Year Month Day End Date: Year Month Day

A "Search" button is located at the bottom of the search section.

Search by Payment Types:

The screenshot shows the same web browser window as the previous one, but the search results table now displays two rows of data:

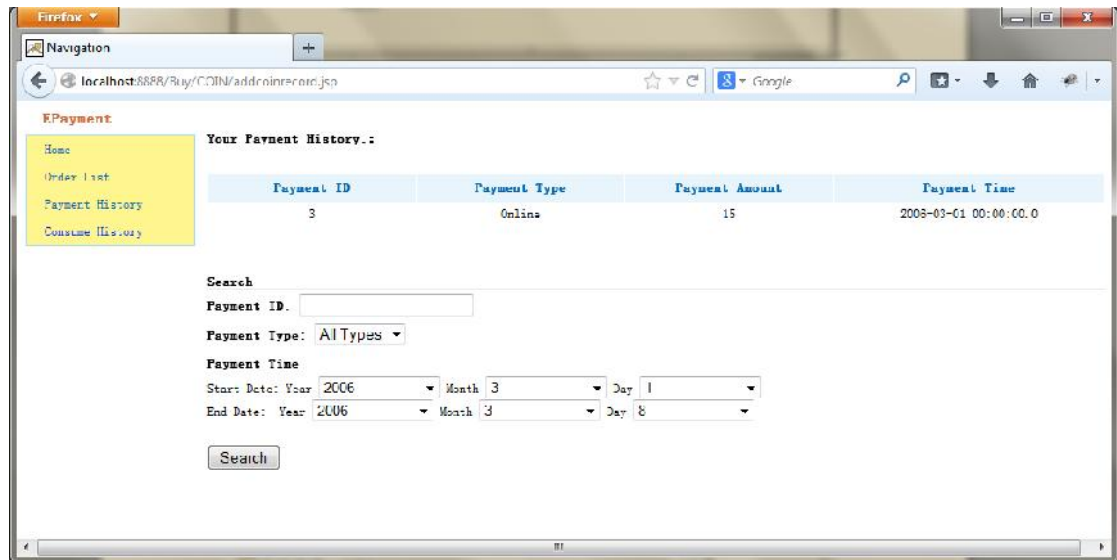
| Payment ID | Payment Type | Payment Amount | Payment Time |
|------------|--------------|----------------|-----------------------|
| 3 | Online | 15 | 2003-03-01 00:00:00.0 |
| 4 | Online | 100 | 2003-04-01 00:00:00.0 |

The search section below the table shows the following fields:

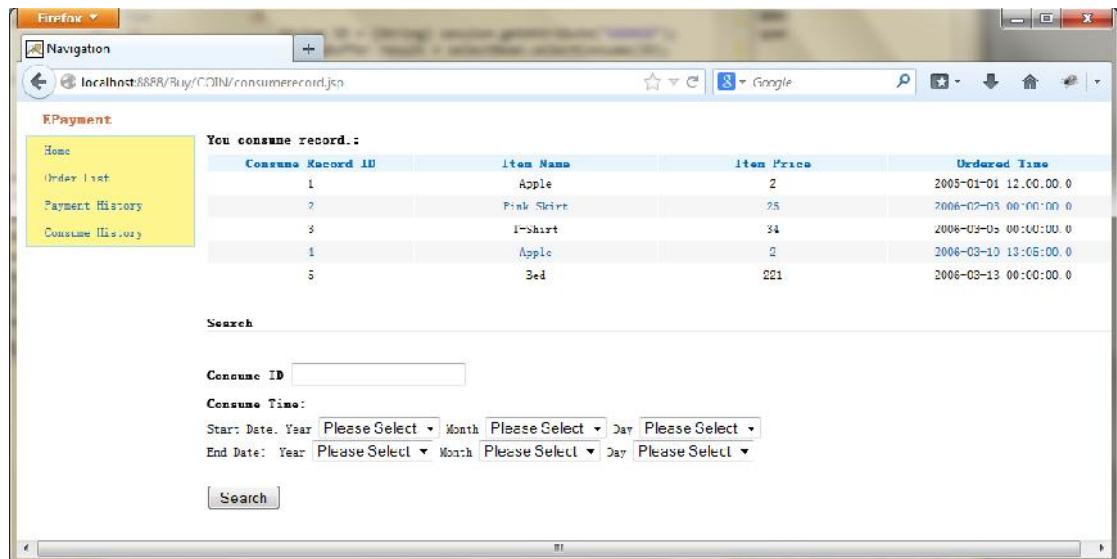
- Payment ID:
- Payment Type:
- Payment Time: Start Date: Year Month Day End Date: Year Month Day

A "Search" button is located at the bottom of the search section.

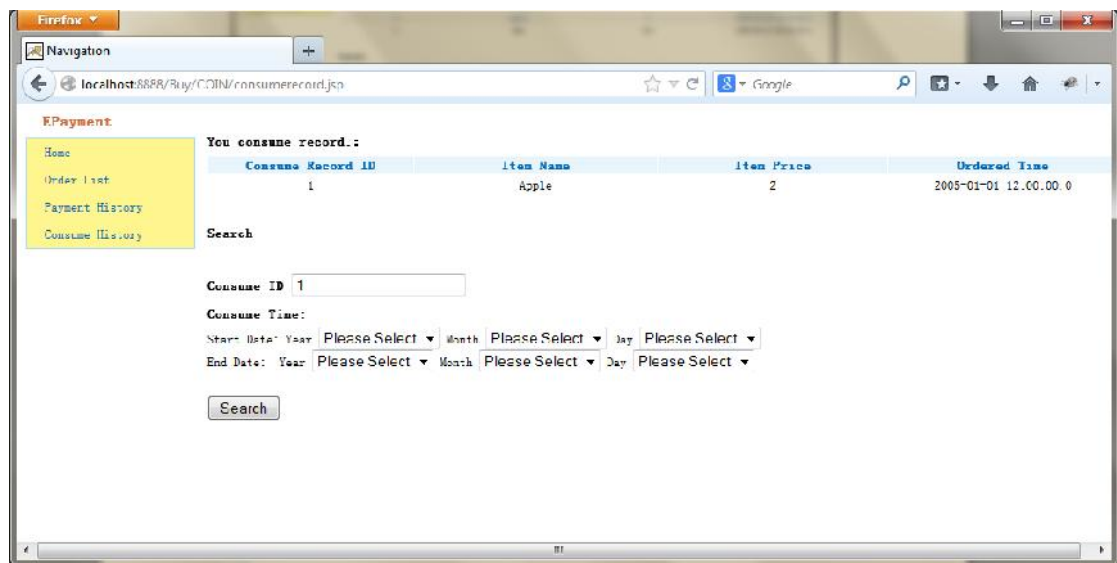
Search by Payment Time:



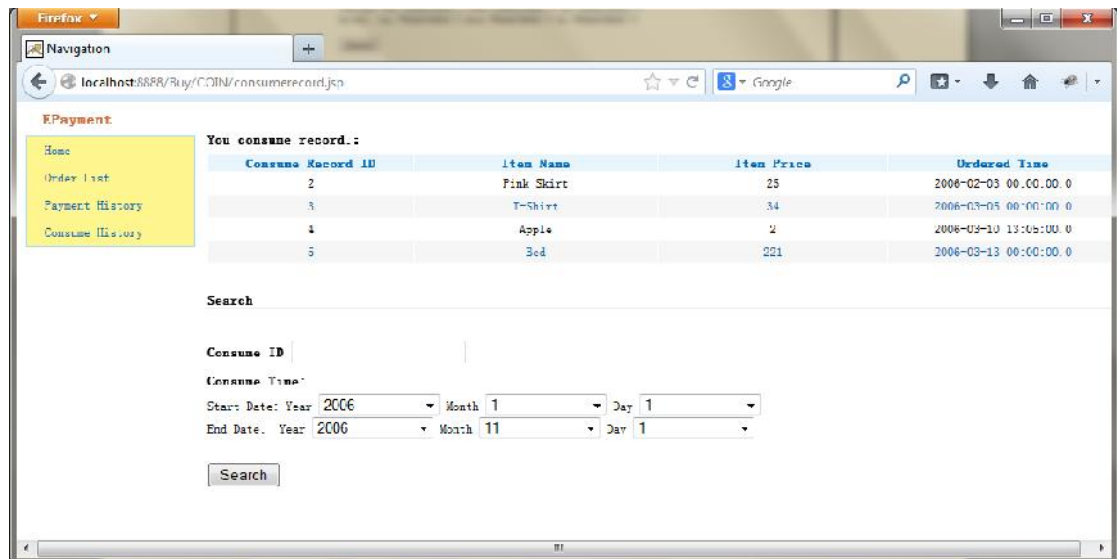
(4) Consume History:



Search by Consume ID:



Search by Consume Time:



(5) Error - Not Found:

