

HOMEWORK 5	Online Book Store Database System
Due Wed, Nov 4 at 11:30 pm	Objectives: Create a DB application

Consider the following relational database schema written in Oracle SQL for an online book store application:

```
drop table books cascade constraints;
```

```
create table books (
    isbn char(10),
    author varchar2(100) not null,
    title varchar2(128) not null,
    price number(7,2) not null,
    subject varchar2(30) not null,
    primary key (isbn)
);
```

```
drop table members cascade constraints;
```

```
create table members (
    fname varchar2(20) not null,
    lname varchar2(20) not null,
    address varchar2(50) not null,
    city varchar2(30) not null,
    state varchar2(20) not null,
    zip number(5) not null,
    phone varchar2(12),
    email varchar2(40),
    userid varchar2(20),
    password varchar2(20),
    creditcardtype varchar2(10)
    check(creditcardtype in ('amex','discover','mc','visa')),
    creditcardnumber char(16),
    primary key (userid)
);
```

```
drop table orders cascade constraints;
```

```
create table orders (
    userid varchar2(20) not null,
    ono number(5),
    received date not null,
    shipped date,
    shipAddress varchar2(50),
    shipCity varchar2(30),
    shipState varchar2(20),
    shipZip number(5),
    primary key (ono),
    foreign key (userid) references members
);
```

```

drop table odetails cascade constraints;
create table odetails (
    ono number(5),
    isbn char(10),
    qty number(5) not null,
    price number(7,2) not null,
    primary key (ono,isbn),
    foreign key (ono) references orders,
    foreign key (isbn) references books
);

drop table cart cascade constraints;
create table cart (
    userid varchar2(20),
    isbn char(10),
    qty number(5) not null,
    primary key (userid,isbn),
    foreign key (userid) references members,
    foreign key (isbn) references books
);

```

The database consists of five tables:

1. **Books:** This table records information about the books on sale in the book store. Each book is classified under a “subject” to enable subject searches.
2. **Members:** This table records information about members of the application. Each member chooses their own user id and password at the time of registration.
3. **Orders:** This table records information about orders placed by members place orders. The orders may contain one or more books and the details of the order are kept in a separate table. A unique order number is generated by the system.
4. **OrderDetails:** This table records information about each order including the isbn and quantity of books in the order.
5. **Cart:** This table contains isbn and quantity of each book placed in the shopping cart of a member. Once a member checks out, the shopping cart is emptied and an order is created.

The book store application should be developed as a terminal application in Java and should be implemented in three phases:

Project requires:

- a) Each student to create data for approximately 10 books for two different subjects (the subjects may be assigned by the instructor of the class to each student). The instructor may then consolidate the data into a large data set and give it out to the entire class. This is an easy way to create a large data set of books.
- b) Each student to build program the following interface implementing only the member registration and member login functions:

```
$ java OnlineBookStore
*****
***                                     ***
***           Welcome to the Online Book Store           ***
***                                     ***
*****

        1. Member Login
        2. New Member Registration
        q. Quit
```

Type in your option: 2

```
Welcome to the Online Book Store
      New Member Registration
Enter first name: Raj
Enter last name: Sunderraman
Enter street address: 123 Main Street
Enter city: Atlanta
Enter state: GA
Enter zip: 30303
Enter phone: 555-1212
Enter email address: raj@cs.gsu.edu
Enter userID: raj
Enter password: raj

Do you wish to store credit card information(y/n): y
Enter type of Credit Card(amex/visa): amex
Enter Credit Card Number: 121212121212121
Invalid Entry
Enter Credit Card Number: 1212121212121212
Invalid Entry
Enter Credit Card Number: 1212121212121212
```

You have registered successfully.

Name: Raj Sunderraman
Address: 123 Main Street
City: Atlanta GA 30303
Phone: 555-1212
Email: raj@cs.gsu.edu
UserID: raj
Password: raj
CreditCard Type: amex
CreditCard Number: 12121212121212
Press Enter to go back to Menu

```
*****
***                                     ***
***           Welcome to the Online Book Store           ***
***                                     ***
*****
```

1. Member Login
2. New Member Registration
- q. Quit

Type in your option: 1

Enter userID: raj

Enter password: raj

```
*****
***                                     ***
***           Welcome to the Online Book Store           ***
***           Member Menu                                ***
***                                     ***
*****
```

1. Browse by Subject
2. Search by Author/Title/Subject
3. View/Edit Shopping Cart
4. Check Order Status
5. Check Out
6. One Click Check Out
7. View/Edit Personal Information
8. Logout

Type in your option: 8

You have successfully logged out.

Project requires the student to implement the following member functions:

1. **Browse by Subject:** This option should first list all subjects alphabetically; It then allows user to choose one subject; Upon choosing a subject, the program displays book details (2 books at a time on a screen); The option allows user to
 - (a) enter isbn to put in cart;
 - (b) press ENTER to return to main menu
 - (c) press n ENTER to continue browsing

User Interface follows:

Type in your option: 1

1. Cooking
2. Jokes
3. Sports

Enter your choice: 3

5 books available on this Subject

Author: Dom Parker
Title: 1,001 Baseball Questions Your Friends Can't Answer
ISBN: 0451191323
Price: 22.46
Subject Sports

Author: Timothy Jacobs
Title: 100 Athletes Who Shaped Sports History
ISBN: 0912517131
Price: 32.56
Subject Sports

Enter ISBN to add to Cart or
n Enter to continue to browse or
ENTER to go back to menu: 0451191323
Enter quantity: 2

Author: Michael Dregni
Title: 100 Years of Fishing
ISBN: 0896584305
Price: 15.95
Subject Sports

Author: David Claerbaut
Title: The 1999 NBA Analyst: The Science of Hoops Magic
ISBN: 0878332103
Price: 20.95
Subject Sports

Enter ISBN to add to Cart or
n Enter to continue to browse or
ENTER to go back to menu: n

Author: Sports Collectors Digest
Title: 1999 Sports Collectors Almanac (Serial)
ISBN: 0987654234
Price: 17.56
Subject Sports

Enter ISBN to add to Cart or
n Enter to continue to browse or
ENTER to go back to menu: 0987654234
Enter quantity: 1

2. Search by Author/Title: This option should provide 3 sub-options:

1. Author Search
2. Title Search
3. Go Back to Member Menu

In the Author or Title search sub-option, the user may enter a substring and the system should respond with all books which contain the substring in the title/author. The display should be done 2 books at a time on a screen. The system should also allow user to enter isbn to put in cart;

to press ENTER to return to main menu
to press n ENTER to continue browsing

User Interface follows:

1. Author Search
2. Title Search
3. Go Back to Member Menu

Type in your option: 2

Enter title or part of the title: cook
2 books found

Author: Irma S. Rambauer
Title: Joy of Cooking
ISBN: 0452279232
Price: 15.25
Subject Cooking

Author: Jennifer E. Darling
Title: Better Homes and Gardens New Cook Book
ISBN: 0696201887
Price: 21.96
Subject Cooking

Enter ISBN to add to Cart or
n Enter to continue to browse or
ENTER to go back to menu: 0696201887
Enter quantity: 1

1. Author Search
2. Title Search
3. Go Back to Member Menu

Type in your option: 2

Enter title or part of the title: Computer
0 books found

Enter ISBN to add to Cart or
n Enter to continue to browse or
ENTER to go back to menu: n

1. Author Search
2. Title Search
3. Go Back to Member Menu

Type in your option: 1

Enter name or part of the name: am
1 books found

Author: Irma S. Rambauer
Title: Joy of Cooking
ISBN: 0452279232
Price: 15.25
Subject Cooking

Enter ISBN to add to Cart or
n Enter to continue to browse or
ENTER to go back to menu: 0452279232
Enter quantity: 2

1. Author Search
2. Title Search
3. Go Back to Member Menu

Type in your option: 3

3. View/Edit Shopping Cart: This option should show the contents of the cart; It should then provide options to delete items or edit (change quantity) items. User Interface (for delete and update cart) follows:

Current Cart Contents:

ISBN	Title	\$	Qty	Total

--				
0696201887	Better Homes and Gardens New Cook Book	21.95	1	21.95
0452279232	Joy of Cooking	15.25	2	30.50

Total =				\$52.45

Enter d to delete item
e to edit cart or
q to go back to Menu: d

Enter isbn of item: 0452279232
Delete Item Completed
Press enter to go back to Menu

Type in your option: 3

Current Cart Contents:

ISBN	Title	\$	Qty	Total

--				
0696201887	Better Homes and Gardens New Cook Book	21.95	1	21.95

Total =				\$21.95

Enter d to delete item
e to edit cart or
q to go back to Menu: e
Enter isbn of item: 0696201887
Enter new Quantity: 2
Edit Item Completed

Press enter to go back to Menu

4. Check Order Status: This option should list all orders for member and should allow user to choose one order to see details. User Interface follows:

Orders placed by Raj Sunderraman

ORDER NO	RECEIVED DATE	SHIPPED DATE
117	3-1-2001	3-3-2001

Enter the Order No to display its details or (q) to quit: 117

Details for Order no.117

Shipping Address

Name: Raj Sunderraman
Address: 123 Main Street
Atlanta
GA 33333

Billing address

Name: Raj Sunderraman
Address: 123 Main Street
Atlanta
GA 33333

ISBN	Title	\$	Qty	Total
--				
0451191323	1,001 Baseball Questions Your Friends Can't Answer	22.45	1	22.45
0987654234	1999 Sports Collectors Almanac(Serial)	17.55	1	17.55

Total = \$40.01

Press Enter to go back to Menu

5. Check Out

This option should display invoice; request user if they want to provide shipping address (if no use current address in file for shipping); Also this option should ask if a new credit card should be used. Finally, an invoice should be printed. User Interface follows:

Current Cart Contents:

ISBN	Title	\$	Qty	Total
0696201887	Better Homes and Gardens New Cook Book	21.95	2	43.91
Total				\$43.91

Proceed to check out(Y/N): y

Do you want to enter new shipping address(y/n): y

Enter first name: John

Enter last name: Smith

Enter street: 123 Elm Street

Enter city: Atlanta

Enter state: GA

Enter zip: 11111

Do you want to enter new CreditCard Number(y/n): n

Invoice for Order no.118

Shipping Address

Name: John Smith

Address: 123 Elm Street

Atlanta

GA 11111

Billing address

Name: Raj Sunderraman

Address: 123 Main Street

Atlanta

GA 33333

ISBN	Title	\$	Qty	Total
0696201887	Better Homes and Gardens New Cook Book	21.95	2	43.91
Total =				\$43.91

Press enter to go back to Menu

6. One Click Check Out

This option should move items in the cart to the `order` and `odetails` tables. Cart is emptied in the process and an invoice is printed. Shipping address is same as member address in this option.

User Interface follows:

```

                                Invoice for Order no.117
Shipping Address                Billing address
Name: Raj Sunderraman          Name: Raj Sunderraman
Address: 123 Main Street        Address: 123 Main Street
Atlanta                        Atlanta
GA 33333                      GA 33333
-----
ISBN          Title                                $      Qty    Total
-----
--
0451191323    1,001 Baseball Questions Your Friends Can't Answer 22.45 1 22.45
0987654234    1999 Sports Collectors Almanac(Serial)      17.55 1      17.55
-----
--
Total =                                              $40.01
-----
--
Press enter to go back to Menu
```