1DV503 Assignment 3. Database programming using Python and MySQL

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Description
This is an individual assignment where you will write a Python (version 3.6 or above) program in Visual Studio Code IDE, which interacts with a MySQL database Server.

Prerequisites: Installed MySQL Server, and MySQL Connector/Python.

Study Materials: Lecture 6

Task 1 Use MySQL Workbench to create and configure the Book Store database (20 points)

1.1 Open MySQL Workbench and connect to MySQL Server

1.2 Create schema with name (**book_store**) for the Book Store database following the Relation Diagram shown in Figure 1.

The database consists of five tables:

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.

Members: This table records information about members of the application. Each member chooses their own email address (unique) and password at the time of registration.UserId is auto-incremented and automatically created by the database. Th email address is unique in the member's table.

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.

OrderDetails: This table records information about each order, including the *isbn* and quantity of books in the order.

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 MySQLWorkbench symbols notations will be useful for this task:

1.3 Use the provided *books.sql* script to populate the book table.

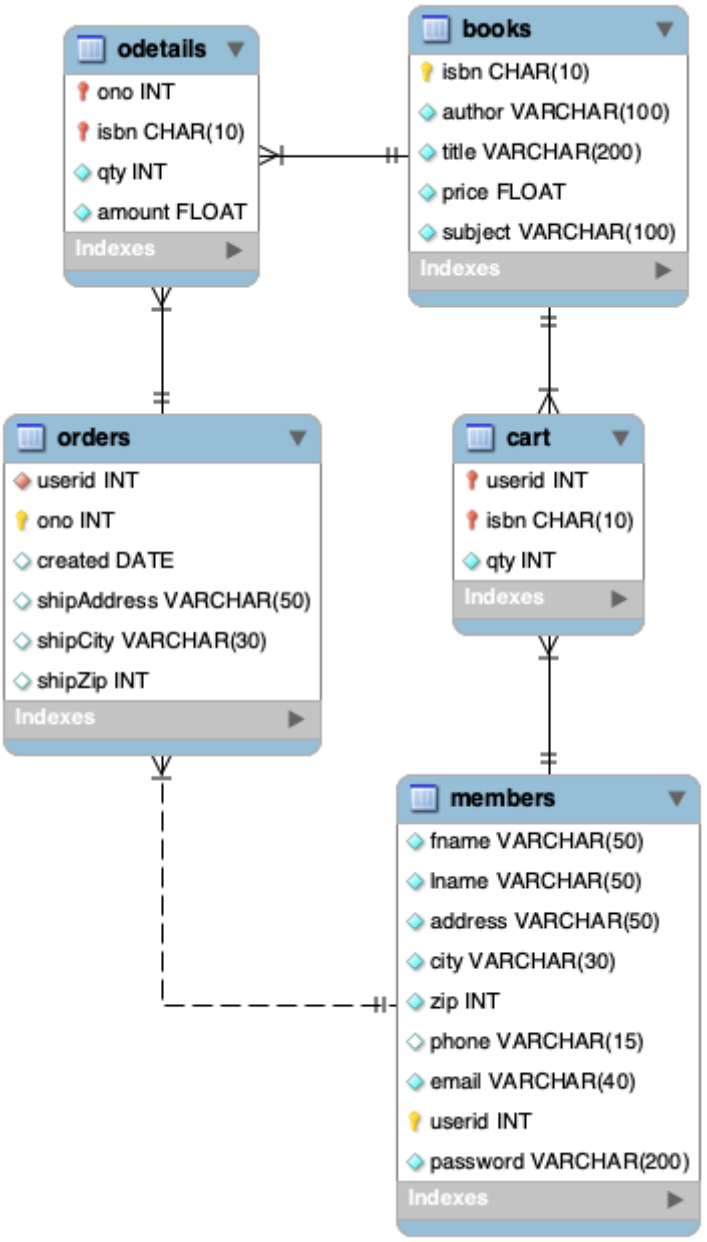

Figure 1. Relation Model Diagram for Book Store Database

Task 2 The BookStore application should be developed as a terminal application in Python language (80 points):

(a) implement the member registration and member login functions, which look like in the image below (**20 points**)

```
**********************************************************************
***                                                                ***
***             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

Password:
```

After this, the user should see the message about successfully creating a member. The new member is stored in the database in the member table.

```
You have registered successfully!
Press Enter to go back to Menu
```

The user goes back to the main Menu and selects option 1.

```
**************************************************************************
***                                                                    ***
***              Welcome to the Online Book Store                      ***
***                                                                    ***
**************************************************************************
                            1. Member Login

                            2. New Member Registration

                            q. Quit
Type in your option: 1

Enter email: raj@cs.gsu.edu
Enter password: raj
```

The user enters the email and password and sees the following options:

```
Enter password: raj
**************************************************************************
***                                                                    ***
***                         Welcome to Online Book Store               ***
***                              Member Menu                           ***
***                                                                    ***
**************************************************************************

                    1 Browse by Subject

                    2 Search by Author/Title

                    3 Check Out

                    4  Logout
```

1. Browse by Subject (20 points): This option should first list all subjects alphabetically; It then allows the 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 the user to:

(a) enter isbn to put in the cart;
(b) press ENTER to return to the main menu
(c) press n ENTER to continue browsing

Example:

```
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 Atheletes Who Shaped Sports History
ISBN:   0912517131
Price:   32.56
Subject Sports


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

The information about books added to the cart should be saved in ‘cart’ table.

2 Search by Author/Title (20 points)

This option should provide three sub-options:

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

In the Author or Title search sub-option, the user may enter a substring and the program should respond with all books which contain the substring in the title/author. The display should show 3 books at a time on a screen.

The system should also allow the 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 example:

```
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


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
      Enter to browse or
      n ENTER to return to menu: n
```

3 Check Out (20 points)

This option should display an invoice (book information, quantity, and total price); use user's current address for shipping. Finally, an invoice should be printed.

User Interface example:

```
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
```

The order is saved to the Order table with a received date (current date), shipment date (is generated date one week in a head), with shipment address corresponding the member's address provided at registration. And to 'odetails' table save the books (isbn), their quantity, and amount (quantity * book price).

The following order is displayed to the user:

```
                    Invoice for Order no.118

     Shipping 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
```

Add also information about **estimated delivery date.**

4 Logout
Back to the first menu (Login and registration menu)
5 Quit
Exit the program

Note. Upon receiving incorrect input, the program should provide the user with an appropriate message to correct the input. The code should be well-structured and clean, with appropriate comments. Please **do not make any changes** to the provided database schema. The program interface does not need to be exactly as it is shown in the assignment, it can have a different look but contain the same information.

Submission

Your submission should include solutions to all the tasks above.
Submit your **python file/files** in moodle.