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.

Prerequisites: Installed MySQL, and MySQL Connector/Python

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 user id and password at the time of registration.

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.

1.3 Use provided books.sql script to populate the book table. You should have 212 books in the Book Store database.

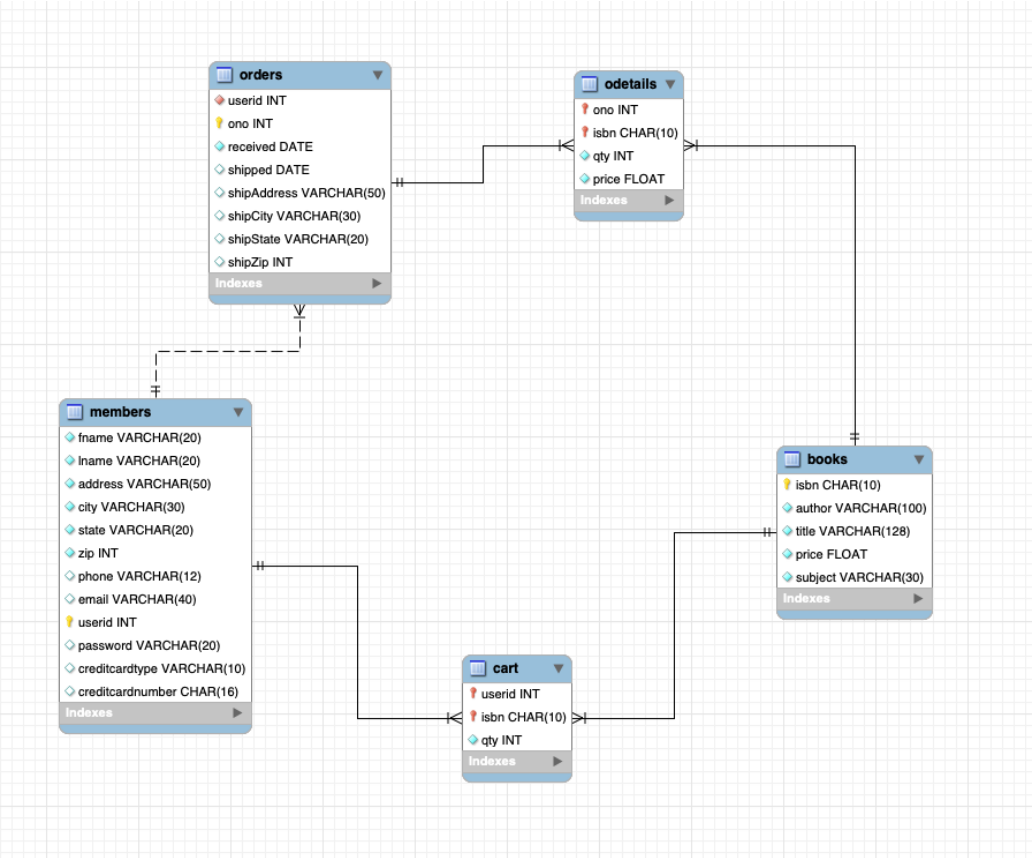

Figure 1. Relation Model Diagram for Book Store Database

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
Enter userID: raj
Enter password: raj
```

After this, the user should see the message about successfully creating a member. And 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 is 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 userID: raj
Enter password: raj
```

The user enters the userId 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 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 generated estimated date for delivery (one week ahead) and shipment date (is NULL). And to 'odetails' table save the quantity and total price of the order.

The following order is displayed to the user:

```
                    Invoice for Order no.118

     Shipping Address                    Billing address
     Name:     John Smith                Name:     Raj Sunderraman
     Address:  123 Elm Street            Address:  123 Main Street
               Atlanta                             Atlanta
               GA 11111                            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
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 tasks above.
Submit your **python file/files** in moodle.