

1DV503 Assignment 3. Database programming using Python and MySQL

Contact persons: Alisa Lincke (alisa.lincke@lnu.se) and TAs. For questions, please use the forum on moodle course page or Slack.

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.

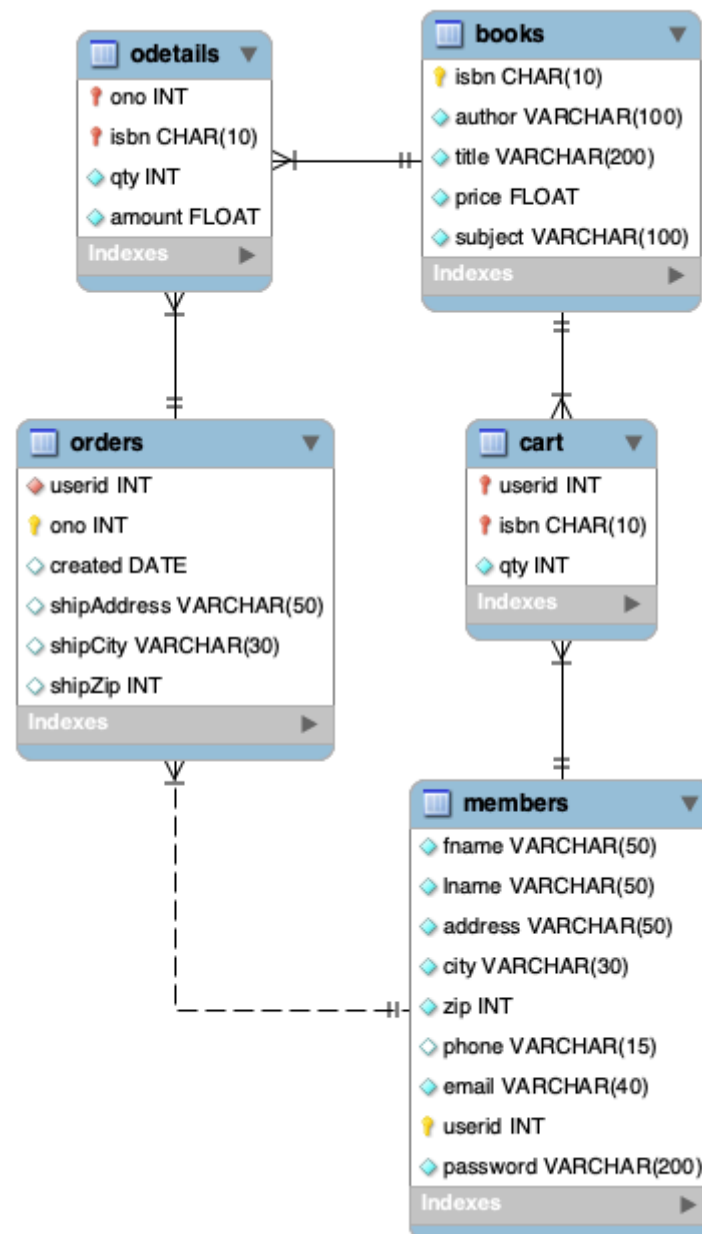


Figure 1. Relation Model Diagram for Book Store Database

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 Athletes 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.