Fall 2013

SOFE 3700U: Data Management Systems

Lab # 2: Database Fundamentals (cont'd)

Submission Type: **INDIVIDUAL WORK**

Objectives:
- Get to know the SQLite environment
- How to create database relations using SQL command CREATE TABLE
- Use selection queries to retrieve information from a database

Important Notes:
- Save all your lab-related files as you may need them for future labs.
- Create a folder (where you would like to save your files). Name your folder **Lab2**

Part I: Getting to know SQLite Database Browser

For the purpose of this lab, we will use the **SQLite Manager**, an add-on software tool used to create, manage, and edit database files compatible with Microsoft SQL and SQLite: an open source software tool library that implements self-contained, serverless, SQL database engine.

You will need to use Mozilla Firefox to complete this section. If you do not have Firefox installed, download and install Firefox. You can download Firefox from www.mozilla.org/en-US/firefox. Then, install the SQLite Manager addon from the following URL:
https://addons.mozilla.org/en-US/firefox/addon/sqlite-manager/

1. Install the SQLite Manager add-on.
2. Launch SQLite Manager: point the cursor to the upper menu and select: Tools → SQLite Manager
3. Explore SQLite Manager!

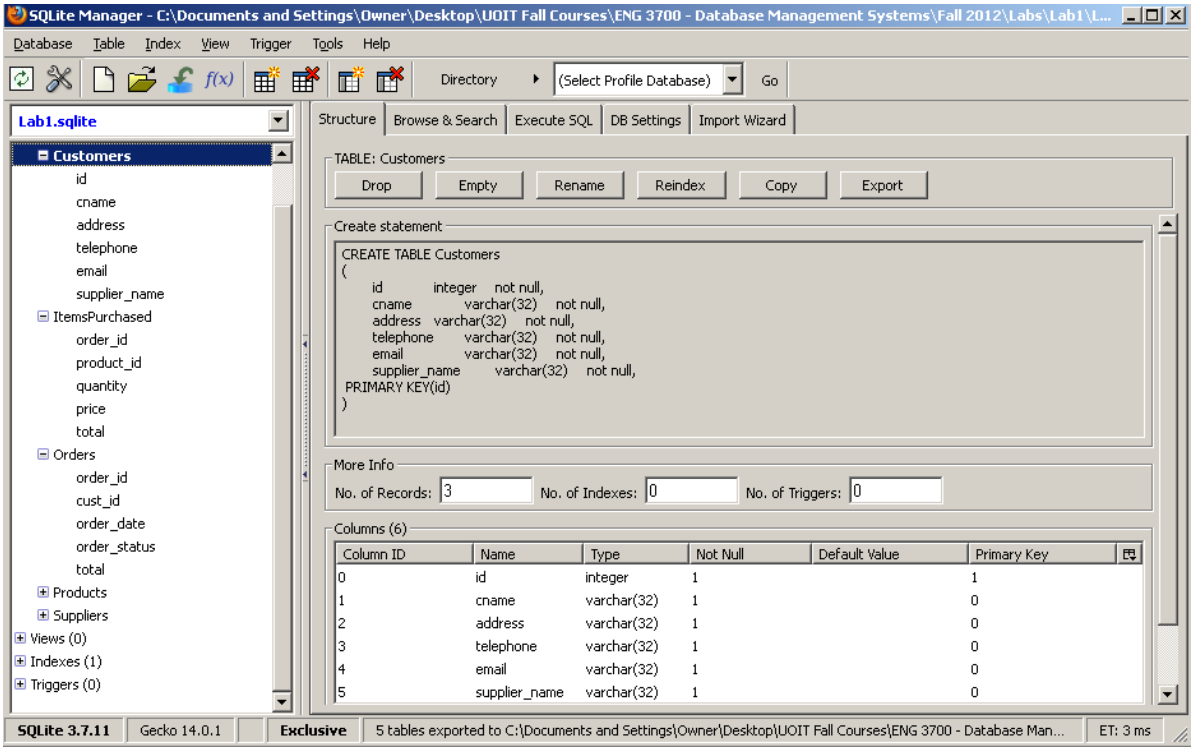
Part II: Running SQL Commands

1. Create a new database: name it Lab2 (save it in your Lab2 folder)
2. A Create Table dialog will appear prompting for a Table Name and adding Columns. Click the Cancel button to skip this step
3. Point the cursor to Enter SQL section in the main window (make sure the Execute SQL tab is selected)
4. Use the CREATE TABLE command to create the relations from **Lab1**
    a. Define Primary Key(s) for each relation.
    b. Define Foreign Key(s) for any relation where applicable.

    For list of supported domains (or attribute data types), visit:
    http://msdn.microsoft.com/en-us/library/aa214359(v=sql.80).aspx

    You can use any of these data types to match the data types in the schema defined in **Lab1**

5. Click on "Run SQL" button. If your CREATE TABLE statement executes properly, you will receive a message No Error. If you do not have a valid CREATE TABLE statement, then SQLite Manager will generate an error. In this case, check the CREATE TABLE statement and verify the syntax. Click on the tab Database Structure, you should see the following:

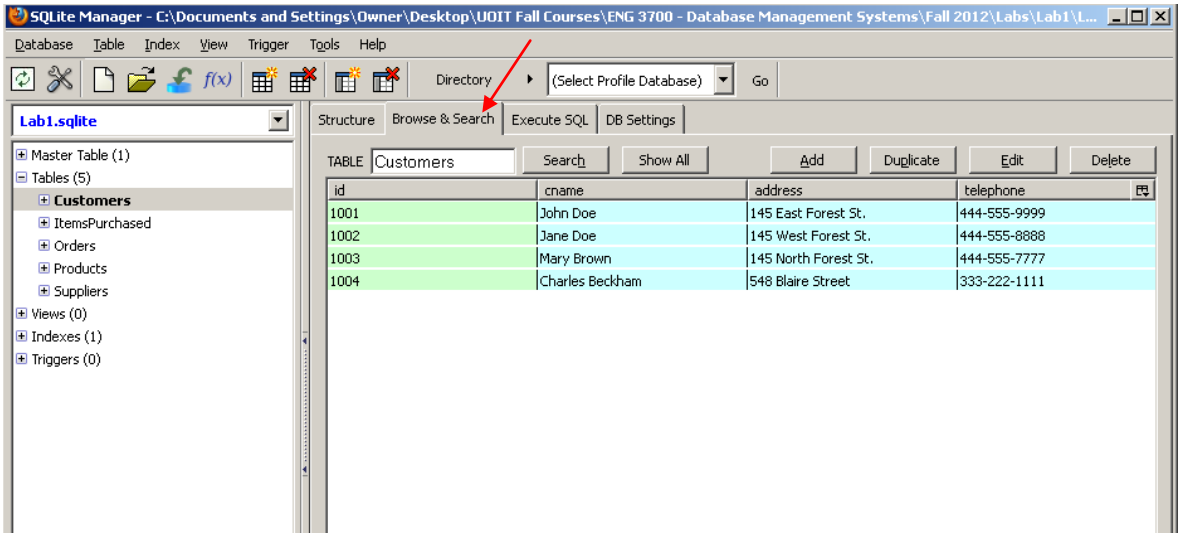


Exercise 2: Writing all CREATE TABLE Commands

Write all CREATE TABLE commands used for Part II.

Part III: Selection Queries

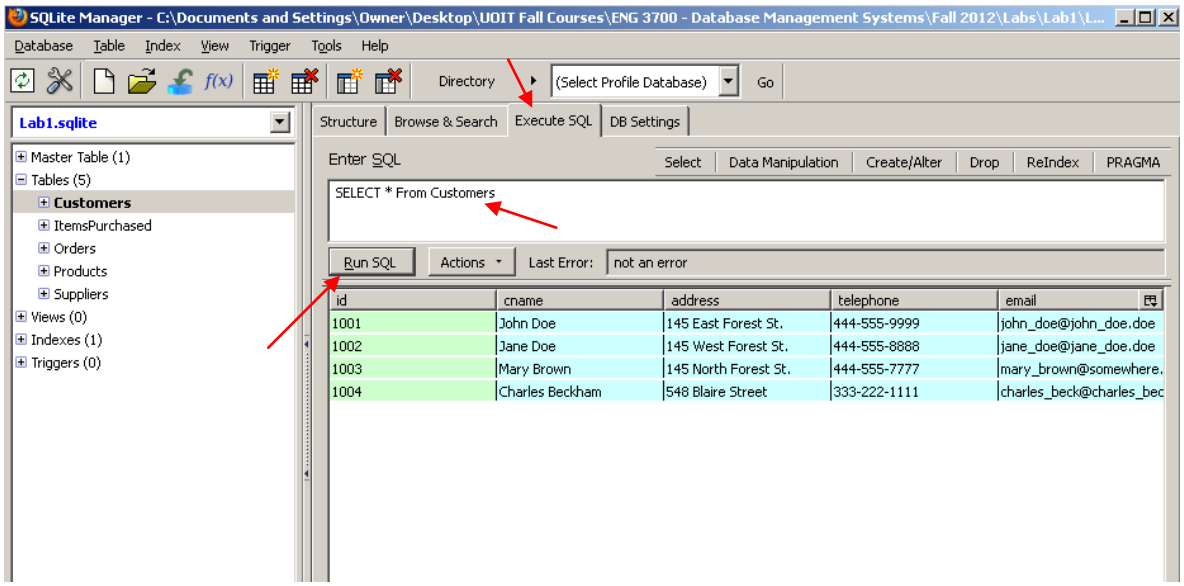
- Close the database (upper menu: go to Database → Close Database).
- Download a populated database from Blackboard (Course Content → Labs → Lab2 → Lab2.sqlite)
- Open Lab2.sqlite (upper menu: go to Database → Attach Database) or click on the icon 
- Navigate through the database tables and view the values



Exercise 3: Write the following selection queries:

a. Write a query to list the names of all products available and their quantities
b. Write a query to list all products that are categorized as 'Hard Drives' with quantities > 4
c. Write a query to list customers who have made any purchase (HINT: Use aliasing to retrieve from multiple tables)
d. Write a query to retrieve the number of products stored as 'Motherboards'
e. Write a query to retrieve the number of products stored as 'Motherboards' and supplied by 'Asus'
f. Write a query to list the items purchased by customer 'Mary Brown' (HINT: Use aliasing to select from Customers, Orders, and ItemsPurchased tables).

You may use the Execute SQL section to test your selection queries with the populated database.



What to submit:

Submit a Word or PDF document that includes:

- Exercise 1: All CREATE TABLE commands used for Part II.
- Exercise 2: All selection queries for Part III.

Submit via Blackboard: Course Content → Labs → Lab2

- Name your file as follows: **StudentID.[doc or docx or PDF]**