CIS12
Lab 6

Part 1 - Creating, normalizing, and populating the forum database

Normalizing this database is covered in Written Assignment 6. I recommend that you do that first to prepare you for this lab. This lab will make more sense this way. You can complete the lab first, but I think you will learn more if you do the written assignment first.

1. Turn on XAMPP server and MYSQL server
2. Launch whichever SQL solution you desire. I recommend using PHPMyAdmin GUI. I will be using that GUI for this lab. (http://localhost/phpmyadmin/)
3. Click on SQL tab next to database tab. The gray bar above the tabs should only refer to the localhost sever. You will create and populate the database only using SQL. Everything will be typed into this box.
4. Create and use the forum database using the SQL code in Step 2 on page 188.
5. Create the forums table using the SQL code in Step 3 on page 188.
6. Create the messages table using the SQL code in Step 4 on page 189.
7. Create the users table using the SQL code in Step 5 on page 189.
8. The tables now must be connected. Connect the primary key of the database to each foreign key using the respective primary keys. Check the grey bar above the tabs and make sure it says Server: localhost >> Database: forum. If it doesn't. Click on the structure tab and select the forum database. Next, click on the Designer tab on the far right of the screen. That will launch a wonderful GUI feature that will show you a graphical representation of the 3 tables we just created. We are going to connect the tables. Drag the tables so that it's easy for you to see everything on each table.
9. Hover the mouse over the collapsable menu on the left hand side. Move the mouse to the center icon that looks like a step. That's the create relation menu. Click it. Next, click on a Primary Key, then click on the corresponding foreign key for that primary key. Rinse and repeat for the remaining primary keys and foreign keys. (see table below)

Primary Key	Foreign Key
user_id in users table	user_id in messages table
forum_id in forums table	forum_id in messages table
message_id in messages table	parent_id in messages table

10. Next, we are going to start populating the database. Type in the SQL code in steps 3 and 4 on page 193.
11. Next we will populate the messages table step 5 on page 194. This version of the software sometimes errors on the foreign key on this part of the implementation. The code in the book is correct, but it still errors. So what you will have to do is add come code to the queries in this step. We will need to set foreign key checks to 0, run the queries in this step, then set the foreign key checks to 1, and uncheck the box that says Enable Foreign Key Checks before running the queries in phpMyAdmin. If it still errors, then you did something wrong. Repeat it until it works.
12. This is the procedure from step 11
    A. SET foreign_key_checks = 0;
    B. Then type the queries from step 5 on page 194.

C. SET foreign_key_checks = 1;
D. If you are using phpMyAdmin, uncheck the box that says **Enable Foreign Key Checks** before you click on **GO**.

13. Now, we are going to query the database. Type in the query from step 7 on page 195. **Screenshot the results of that query.**
14. Check the grey bar above the tabs and make sure it says Server: localhost >> Database: forum >>Table: messages. If it doesn't. Click the Database: Forum link in the grey bar. Click on the structure tab and click on the messages table. That will run the ***select * from messages;*** query. **Screenshot the results of the messages table.**
15. Turn off XAMPP and MYSQL Server

Part 2 - Using foreign key constraints in a normalized database: the banking database.

For more information, read pages 197 - 199 in the text.

1. Turn on XAMPP server and MYSQL server
2. Launch whichever SQL solution you desire. I recommend using PHPMyAdmin GUI. I will be using that GUI for this lab. (http://localhost/phpmyadmin/)
3. Click on SQL tab next to database tab. The gray bar above the tabs should only refer to the localhost sever. You will create and populate the database only using SQL. Everything will be typed into this box.
4. Create the banking database by using the SQL code that is in step 2 on page 199.
5. Create the customers table in the banking database by using the SQL code that is in step 4 on page 199.
6. Create the accounts table in the banking database by using the SQL code that is in step 5 on page 200.
7. Create the transactions table in the banking database by using the SQL code that is in step 6 on page 201.
8. Populate the database by by using the SQL code that is in steps 7 and 8 on page 202.
9. Click on the Designer tab, like you did before. It will show you a normalized database with the relationships already connected. **Screenshot the ERD diagram of the database.**
10. Attempt to delete a record by using the query in step 9 on page 203. It will error on you. That's intended. The system will not delete a customer account because of the constraints added to the database system. If it allows the deletion, then you didn't type in the SQL properly in the above steps.
11. **Screenshot the contents in the accounts table and the customers table.**
12. Turn off XAMPP and MYSQL Server