CST2335 – Graphical Interface Programming

Lab 5

Introduction:

The goal of this lab is become familiar with SQLite databases in Android. You will learn how to create, open, upgrade a database, as well as insert and query data.

References:

1. http://www.vogella.com/tutorials/AndroidSQLite/article.html

Steps:

1. Create a branch of your software from Lab 4. Select the VCS menu in Android Studio and click “Git” -> “branches”. From the dialog box, select “New Branch” and call it “Lab 5”.
2. In this lab, you have to write code to save the messages input from lab 4. When the user navigates to the ChatRoomActivity, you should query all of the messages that are currently saved in the database and load them into the list view.
3. Whenever the user clicks on the Send or Receive button, you should insert the message into the database, as well as add it to an ArrayList of messages as you did in Lab 4.
4. You should modify your Message class to also store the database id of the message. This should be a long instead of int. In the end, the Message class should have variables: String message, boolean isSent or isRecieved, and a long id. Your constructor should look like the Contact class constructor in the example code.
5. Modify the onItemLongClick() handler of the listview so that it also deletes a message from the database. You will have to change the getItemId(int position) function in the MyAdapter class so that it returns the id of the of the Message object at row: position. Also, look at the showContact() function on line 208 of DatabaseExample.java.

1. Write a function called printCursor( Cursor c, int version). This function will be used for debug purposes for your final project. The function should print the following information to the Log window after you run your query:

* The database version number, use db.getVersion() for the version number.
* The number of columns in the cursor.
* The name of the columns in the cursor.
* The number of rows in the cursor
* Print out each row of results in the cursor.

You have to look at the Cursor class’ documentation to see what function to call for this information: <https://developer.android.com/reference/android/database/Cursor>

1. Commit your work with Git, using the commit message “Finished lab 5”, and push the code to the repository (either local directory on your computer or Github account).
2. Demonstrate your work to the lab professor showing the following parts of your lab work:
   1. The ChatRoomActivity still launches and shows messages. (1 mark)
   2. Show that the printCursor function shows the cursor information in the LogCat window. (5 marks)
   3. New messages that are typed in are stored to the database. Go back to the previous activity and then back into the ChatRoomActivity and the new messages appear (1 mark)
   4. Your table name, column names, and version number are all static variables (1 mark)
   5. The deletion of messages also works from the ListView (1 mark)

Note: This lab uses the following patterns:

* 1. Memento pattern for saving the state of the application in a database and rebuilding the state later.