CSI 3130 Databases II (Fall 2016)

Project (part D) : Pass 1 -- (Detailed hands on instructions)

In order to test how efficiently Postgresql resolves scheduling and lock conflicts of concurrent transactions by following several different protocols, you must be run two transactions on the same database (on the same server) at the same time, or as close to 'the same time' as you are able to do. To do this, you must have separate connections to one database open on separate physical computers, which can be done as follows :

One of the group members must

1. Create a **project** schema on the school server in **their database**

2. Build the **branch**, **account**, **client**, and **owns** tables exactly as built on the localhost server in Part A

3. Import the data from the tables on your localhost server

    - Right click on the new table, go **Import**... and choose the *.csv file

4. Use the **same credentials** to log in on another computer to have two physical computers accessing the newly created database on the school server.

Note : The owner of the credentials is NOT obligated to share them with the other group members. To avoid this, he or she can log in, for example, on a personal computer and also the lab computer. However, there is no way to access the same database on the school server with distinct sets of credentials.

Note : If pgAdmin crashes or disconnects, do not worry - reconnect and try what you were doing again.

Note : you are NOT expected to configure your localhost server to accept connections from another computer or make scripts to time the simultaneous execution of your transactions. If you choose to go this route (instead of using the school server and pressing buttons at the same time), we will not be able to help you implement this.

Now you can begin trying to run the transactions from part B concurrently. On each of the computers connected to the project database, open one SQL query window. In each window, input the following (do not execute yet) :

Window 1	**Window 2**
BEGIN;	BEGIN;
T1; T2; T4; T7; T10;	T3; T5; T6; T8; T9;
ROLLBACK;	ROLLBACK;

Note : There should be **no additional** BEGIN, END or COMMIT statements in either window (unless you wish to do some additional testing).

For this part of the project, you will use :

Isolation Level : Read Committed (Default)

Lock mode : Default

Since these are default, you do not need to indicate them explicitly.

Gathering the statistics (instructions)

1. highlight BEGIN; T1; T2; T4; T7; T10; in Window 1

2. highlight BEGIN; T3; T5; T6; T8; T9; in Window 2.

3. Count down... 3..2...1 and press the run button on both computers at the same.

4. You now have 2 open transactions on your database. This is the time to **gather all your statistics** into your log file (before the transactions are rolled back!). See the "Submission Format" document for details about the "**transaction statistics log"** submission.

5. ROLLBACK both of your transactions.

6. Repeat this whole process (steps 1-5) 20 times.

Note : If you accidentally COMMIT (or END) a transaction, or run a query outside of a transaction, you can always restore the original table data by importing it from the *.csv file again.