CS 457 Database Management Systems

Programming Assignment 4

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5/8/2018

We implemented the atomicity of transactions through the use of a database information file within each DB folder. Whenever a database is created, a file with the same name as the database is added to that directory. That file contains the names of all the tables within the database, as well as whether each table is locked or not. So when a user, P1, calls “being transaction” on a table, we modify that database information file and mark that table as locked. So if another user, P2, where to try to commit a transaction on a the table P1 already locked, P2 will be notified of the error and their changes will be discarded. The table will remain locked until P1 calls “commit” on that table.

Compile instructions for this project can be found below as well as in the README in the project directory.

This program can be run in one of 2 ways:

1) The program can be passed a SQL file via standard input and it will perform all the operations in the file. (This won’t work properly for this assignment since we are doing transactions)

ex: python main.py < PA4_test.sql will run the PA4_test SQL file.

2) The program can also be run similarly to SQL lite.

ex: python main.py will print a ":>" to the screen. From here you can enter any of the supported SQL commands with the correct syntax and it will execute them.

Supported Commands (Commands are case insensitive):

- create database DB_NAME;
- use DB_NAME;
- create table (name, type,..., nameX, typeX);
- insert into table values(val,...,valX);
- select * from table;
- select * from table inner join on table2;
-select * from table left outer join on table2;
- update table
  set col = 'val'
  where col2= 'val2';
- delete from table
  where col = 'val';
- select col1, col2
  from table
  where col3 = 'val';
- begin transaction;
- commit;