CSE 111 – DATABASE SYSTEMS
Lab 10, Nov 29, 2012

In this lab you will learn how to operate with SQL indexes.

1. Run the following query on your TPCH database in SQLite studio.
   `SELECT l_quantity FROM lineitem WHERE l_quantity > 5 ORDER BY l_quantity ASC`
   Report the time that it takes for the query to run.

2. Create an index for the `l_quantity` attribute and re-run the query. Note the time difference and report it.

3. Remove the `ORDER BY` clause and run the query once more. Did anything change in the running time?

4. Now, drop the index and create 2 new statements - one to insert values into `lineitem` table and one to update the table. Run these statements separately for a non-indexed table first and note the time they take. Call the statements several times and then average the results for a more precise answer. Now, re-create the index and run these statements again. Which ones are faster? Why?

5. Run query #7 from Lab 3 several times and take the average of the running times. Now, create an index on the `s_acctbal` column of `supplier` table. Re-run the query several times and report the difference in execution time.

6. Create an index (one or many) to speed up query #3 in Lab 5. Think about which columns you need to index on. Report the average time to get the result before and after indexing.

You are required to submit a file containing the list of created indexes together with the timing results you got.