CSE 111 – DATABASE SYSTEMS
Lab 3

In this lab session you have to write 15 SQL queries for the TPCH database created and populated in the previous labs. The queries are the following (1 point per query):

1. What is the address, phone number, and account balance of Customer#000000127?

2. What is the largest account balance of a supplier?

3. Find all the items with the return flag set to R on the receipt date of May 30, 1992.

4. What is the average completion time in number of days (from commit date to ship date) for an order for which ship date is larger than or equal to commit date? Check the julianday function from SQLite.

5. What is the minimum, maximum, average, and total account balance among the customers in each market segment? Sort the results in decreasing order of the total account balance.

6. What are the countries of customers who ordered items between March 10-12, 1995?

7. What is the receipt date and the total number of ordered items per receipt date by Customer#000000106?

8. Find the name of the suppliers from ASIA who have less than $1000 on account balance.

9. Find the minimum account balance of the suppliers from countries with less than 3 suppliers. Print the country and the minimum account balance.

10. Find the total price of orders made by customers from EUROPE in 1996.

11. Find the customers that received at least a 5% discount for at least 70 items. Print the custkey and the number of discounted items.

12. Find the number of orders having status F for each customer region and display them in descending order. Print the region name and the number of status F orders.

13. Find the average account balance of all the customers from AFRICA in the MACHINERY market segment.

14. Find how many 1-URGENT priority orders have been posted by customers from France between 1994 and 1996, combined.

15. Find the total number of 1-URGENT priority orders supplied by suppliers in each region each year (from o_orderdate). Print the year, region name, and the count sorted by the year then the region in increasing order. Check the substr function in SQLite.

In order to complete the lab you have to perform the following tasks:

1. Log in to your GitLab account.

2. Explore the folders and files in the Lab 3 repo.

3. Create a merge request for the Instructions issue. This is done from the Issues tab. The result of the merge request is a new branch that copies the files from master.

4. Clone the repo to your local machine or the remote lab machine. You can choose to directly clone the branch for the merge request, or the master and then checkout the merge request branch.

5. Write the SQL statement corresponding to each query in the file test/x.sql, where x is the number of the query above. Each query goes into its separate file. These are the only files you have to modify and commit in this assignment.

6. You can check the correctness of your queries by executing the command `make run` in the terminal. You have to be in the main lab folder. The expected output is available in `results/x.res`, where `x` is the number of the query. The output produced by your code is available in `output/x.out`. They have to match for every query, e.g., `1.res` has to match with `1.out`.

7. Commit the changes to the query files and then push to the GitLab server.

8. Check the output of the pipeline under the `CI / CD` tab to see if your push has passed all the tests.

9. In case there are any errors, repeat the process from step 5.

The score for the lab is assigned based on passing the test cases and the commit/push history. The instructor and the TAs have access to the GitLab repos.