

## CSE 111 – DATABASE SYSTEMS

### Lab 6: SQL Queries

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

1. Find the supplier-customer pair(s) with the most expensive (`o_totalprice`) order(s) completed (i.e., value of `o_orderstatus` is F). Print the supplier name, the customer name, and the total price.
2. Find how many distinct customers have at least one order supplied exclusively by suppliers from `AFRICA`.
3. Find the distinct parts (`p_name`) ordered by customers from `ASIA` that are supplied by exactly 3 suppliers from `AFRICA`.
4. Find the nation(s) with the least developed industry, i.e., selling items totaling the smallest amount of money (`l_extendedprice`) in 1994 (`l_shipdate`).
5. Find the number of customers who had at most three orders in November 1995 (`o_orderdate`).
6. Find how many suppliers from `PERU` supply more than 40 different parts.
7. Find the total quantity (`l_quantity`) of line items shipped per month (`l_shipdate`) in 1997. Hint: check function `strftime` to extract the month/year from a date.
8. Find how many suppliers have less than 50 distinct orders from customers in `EGYPT` and `JORDAN` together.
9. Find how many suppliers supply the least expensive part (`p_retailprice`).
10. Find the nation(s) having customers that spend the largest amount of money (`o_totalprice`).
11. Find the region where customers spend the largest amount of money (`l_extendedprice`) buying items from suppliers in the same region.
12. Find how many parts are supplied by exactly one supplier from `UNITED STATES`.
13. Find the nation(s) with the largest number of customers.
14. Compute, for every country, the value of economic exchange, i.e., the difference between the number of items from suppliers in that country sold to customers in other countries and the number of items bought by local customers from foreign suppliers in 1997 (`l_shipdate`).
15. Compute the change in the economic exchange for every country between 1996 and 1998. There should be two columns in the output for every country: 1997 and 1998. Hint: use `CASE` to select the values in the result.

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

1. Write the SQL statement corresponding to every query in the file `test/x.sql`, where `x` is the number of the query above. Every query goes into its separate file. These are the only files you have to modify and submit in this assignment.
2. The format of the expected output for every query is available in `output/x.out`. The included results are only samples. They are not the correct results. So, make sure you match the format, not the exact results.
3. The submission consists of a compressed `zip` file that contains the files in the `test` folder. The name of the file has to be `lab-6.zip`. When you create the file, include the folder `test` into the compression, not every file `test/x.sql` separately.