

CSE 111 – DATABASE SYSTEMS

Lab 10 (15 points)

In this lab you will learn how to operate with triggers in SQL:

1. Create a trigger that for each new `orders` entry automatically fills the `o_orderdate` attribute with tomorrow's date (`DATETIME('NOW')`). Insert into `orders` all the orders from August 1996, without specifying a value for `o_orderdate`. Write a query that returns all the orders from tomorrow. Put all the three SQL statements in file `1.sql`. **(3 points)**
2. Create a trigger that sets a warning “Negative balance!!! Add money now!” in the comment attribute of the `customer` table each time `c_acctbal` is updated to a negative value. Also, create a trigger that removes the warning if the balance goes back positive. Write a SQL statement that sets the balance to -100 for all the customers in `ASIA`. Write a query that returns the number of customers with negative balance from `CHINA`. Write a SQL statement that sets the balance to 100 for all the customers in `JAPAN`. Write a query that returns the number of customers with negative balance from `ASIA`. Put all the SQL statements in file `2.sql`. **(6 points)**
3. Create a trigger that updates the attribute `o_orderpriority` to `HIGH` each time a new `lineitem` tuple is added to or deleted from that order. Delete all the line items corresponding to orders from August 1995. Write a query that returns the number of `HIGH` priority orders for August 1995. Put all the SQL statements in file `3.sql`. **(3 points)**
4. Create a trigger that removes all the entries corresponding to a part being deleted from `partsupp` and `lineitem`. Delete all the parts supplied by suppliers from `FRANCE` or `GERMANY`. Write a SQL query that returns the average `ps_supplycost` of the parts supplied by each supplier in `EUROPE` grouped by their country. Put all the SQL statements in file `4.sql`. **(3 points)**

Instructions. You are required to create the triggers and execute the modification operations and queries on the TPCCH database you populated in Lab 2. Pay attention that the modification operations change the content of the database and your query results will be modified. Folder `Lab10` under `Lab` contains an archive `lab10-results.zip` with the correct answers. There is a file for each query, e.g., `1.out` for query 1, `2.out` for query 2, etc. You are required to turn in an archive containing a file with the SQL statements for every question, e.g., `1.sql` for query 1, `2.sql` for query 2, and so on. The file has to contain all the required SQL statements. There should be exactly 4 files in the archive file. The name of the archive file has to be `firstname-lastname-lab10.zip` where `firstname` and `lastname` are your first and last names, respectively. The type of the archive file has to be `zip`.