

University of Ottawa
Faculty of Engineering
School of Electrical Engineering and Computer Science
CSI2132 2014

Assignment 2: SQL programming out of 40 marks

Guidelines:

- a) Upload your completed assignment via the Virtual Campus before the due date. You should upload **one single file**, containing all SQL script to complete these questions, ***in order***.
- b) This is **an individual assignment** and you are required to use PostgreSQL.
- c) Use the *SQLschema V2.sql* script provided to create the initial tables and insert the data into the database; as well as to drop the tables if need be. Note that the data types may not necessarily be supported by your DBMS of choice; so you will need to change that.

CanProducts is a distributor of appliances, houseware and sporting goods, which they supply to stores throughout Ontario. They maintain a database in order to manage their customers, ordering information, sales representatives and inventory data.

The database contains the following tables (as contained in the *SQLschema.sql* script file):

- i. The *Rep* table, which contains the name, the address and city where they are based, total commission and commission rate of all sales representatives.
- ii. The *Customer* table, containing customers' names and addresses, their outstanding balance, credit limit and the sales representative they order from. (Note that these customers are actually stores.)
- iii. The information about *Orders*, i.e. the order number, data placed and the customer who placed the order.
- iv. For each *OrderLine*, the order number, the part number, the number of parts ordered and the quoted price.
- v. Finally, we store information about each *Part*, such as the description, price, warehouse and class.

Answer all the following questions.

1. Modify the SQL code to enforce the following integrity constraints (**7 marks**):

- a) The province of a representative has to be either ONT or QC; no other provinces are allowed.
- b) The balance owed by a customer may not exceed the credit limit.
- c) The default city that a customer lives in is Ottawa.
- d) The commission that a representative may earn cannot be Null. Also, a representative cannot have a commission that exceeds 0.15.

Write the following queries in SQL (**3 marks** each).

2. List the totals of the balances for sales representatives with at least two customers.
3. List the order totals and order numbers, for all the orders with totals that are higher than \$1000. Order your results by the numbers of the orders.
4. List the numbers, names, balances and sales representative numbers of those customers with a balance that is smaller than the average balance of at least one customer of Ann Hull.
5. List the numbers, names, balances and sales representative numbers of those customers whose balance is smaller than the average balance of all customers of Ann Hull.
6. List the numbers and names of all customers who are represented by Ann Hull but who do not currently have orders on file.
7. List the order numbers and dates of all orders placed by customer Brookings Direct that do not contain an order line for a treadmill.
8. List the names, cities and credit limits of all customers who purchased a fireplace and a home gym in the same order. You should also list the total quoted price per order.
9. Find the names and balances of all customers who never purchased any parts.
10. Find the average balances of customers for all the parts with at least two orders.