CSCC43 Introduction to Databases (Summer 2009)

Assignment 2 - SQL

Due (Electronic Copy): Sunday, June 21, at 11:59pm

Due (Hard Copy): Monday, June 22, at 1:20pm

Total Marks: 100

Weight: 10% of your final grade

Student 1

NAME (LAST, FIRST)   : _____

STUDENT NUMBER   : _____

Student 2

NAME (LAST, FIRST)   : _____

STUDENT NUMBER   : _____

UTSC login name:: _____

Schema and Sample Data

For this assignment, you are given a database schema and some sample data to create a database. Your job is to write queries in SQL to be run against the database. You are also welcomed to invent your own data to test your queries.

The database schema and sample data for this assignment can be downloaded here (store.ddl).

To create the database and import the sample data, run the following command

<div align="center">

psql -U [psql-username] < store.ddl

</div>

The output of each query must be stored in a separate table. For you convenience, the tables to store the results have already been created. The statement to populate your query results tables has the syntax:

<div align="center">

insert into queryX ([your query]);

</div>

For instance, insert into query1 (select * from blah); will populate the table query1.

Queries

Write the following queries in SQL. You may create temporary tables if you need to.

Q1 (10 points)

Find the customers (their names and phone numbers) who have purchased product P60045393.

Sample Solution

See file q1.sql

Q2 (10 points)

Find total spending of each customer, which is calculated as the sum of all the purchases made by the customer. Sort customers in a descending order of their total spending. Note that your result should include an etnry for every customer even if he/she has not purchased any product.

Sample Solution

See file q2.sql

Q3 (10 points)

Find the product with a total revenue more than 1000 after 2003-01-01. The total revenue of a product is calculated by the unit price times the total quantity it has been purchased by some customer during a period of time.

Sample Solution

See file q3.sql

Q4 (10 points)

Find all the customers (their ids and names) who made some purchase before registered with the company. The registration date is recorded in the attribute *since*.

Sample Solution

See file q4.xq

Q5 (15 points)

Find all the customers (their ids and names) who have purchased at least two categories of products.

Sample Solution

See file q5.sql

Q6 (15 points)

Find the customers (their ids and names) who purchased the greatest number of products. Note that you need to take into consideration both the total number of purchases made by a customer and the quantity of the product in each purchase.

Sample Solution

See file q6.sql

Q7 (15 points)

Find the codes of products which have been purchased by every customer who have purchased some product.

Sample Solution

See file q7.sql

Q8 (15 points)

Find customers (their ids and names) who have not made any purchase. Write this query in *three* different ways. Output their answers to query8a, query8b and query8c.

Sample Solution

See file q8a.sql, q8b.sql and q8c.sql

Submission instructions

You can work in groups of 2 people, with only one submission per group. Your submission must be typed. Handwritten assignments will not be accepted. The electronic submission must contain the following files (with these exact names):

1. **group.txt** - text file, with information about all members of the group (you can find a template of this file at http://www.cs.toronto.edu/ leijiang/teaching/cscc43-s09/content/assignment/group.txt)

2. **a4.<extension>** - your solution to this assignment
   - you can use one of the acceptable formats (**.ps, .pdf or plain ASCII file**); we prefer Postscript or PDF submissions (you may lost points for clarity and readability reasons). Submissions in other format will not be marked.
   - It is very important that you include in this file the information from group.txt as well (suggestion: include it in the first page of your file).

3. Check the assignments section on the course website for using *submit* command.

Suggestions

You can use any editor you like, or you are familiar with. If you want to edit your assignment in LaTeX, you can find some useful information on the course website. You can use the example file provided there as a reference. If you choose to copy some examples from there, please acknowledge this in your assignment.