Lab 1: SQL Practice

Due date: Tuesday, January 8, 4:00pm.

Note: Technically, the assignment is due by the end of the first lab period. This deadline is extended by one hour to allow for assignment preparation time, especially for the students who have not seen before the data used in the lab.

Lab Assignment

Assignment Preparation

This is an individual lab. Each student has to complete all work required in the lab, and submit all required materials **exactly as specified** in this assignment.

The assignment uses one of the datasets used in CPE 365-03 in Fall 2007 quarter. The dataset, BAKERY, records information about one month of sales from a small bakery to a list of its dedicated customers. The datset captures the notions of an on-line transaction (a single purchase) and market baskets (each purchase may contain more than one item). The dataset (individual files or the entire archive) can be downloaded from the the course web page:

http://www.csc.calpoly.edu/~dekhtyar/366-Winter2008/

Please make sure you read the README file for the BAKERY dataset carefully before you start your work. You will actually not need to peruse the raw data files from the dataset: to speed up your work, you are provided with a `BAKERY-insert.sql` file, which contains all `INSERT INTO` SQL statements for this dataset.

http://www.csc.calpoly.edu/~dekhtyar/366-Winter2008/BAKERY-insert.sql

Oracle and Oracle accounts

You will be issued individual Oracle accounts at the end of the first class, or at the beginning of the lab period. Please, use these accounts for all individual coursework.

This assignment is best completed using sql*plus, Oracle's command-line environment for communicating with the database back-end. Instructions on the use of sql*plus can be found here:

http://www.csc.calpoly.edu/~dekhtyar/365-Fall2007/lectures/lec05.365.pdf

The Task

Your task consists of two parts.

Part 1: Create the database

You have to create an SQL script `BAKERY-setup.sql`, which contains appropriate `CREATE TABLE` statements for all tables of the BAKERY dataset. Because you will be using the `BAKERY-insert.sql` file provided to you to populate the database, please make sure that you give your tables the same names as in the `BAKERY-insert.sql` file:

- `goods`;
- `customers`;
- `reciepts`; [1]
- `items`;

Please, make sure that your CREATE TABLE statements adequately reflect the constraints present in the database (primary key and foreign key constraints, in particular).

In addition, please create another SQL script, `BAKERY-cleanup.sql`, which contains SQL commands that remove each of the BAKERY dataset tables from the database.

Note: If you took CPE 365-03 last quarter, you may have kept copies of these (or similar) files. You are allowed to use them in this lab.

SQL queries

Write an SQL script containing SQL statements answering the following information requests.

[1] Yes, I am aware of the typo.

1. Find all customers who made purchases on the 8th of October of 2007. Report first and last name of each customer. Each name must be reported no more than once.

2. Find all dates on which `DAVID CALLENDAR` made purchases. Report the dates only, sorted in chronological order. Each data must be reported no more than once.

3. For each purchase made by `DAVID CALLENDAR` report the date, the receipt number and the total amount. Output the results in chronological order.

4. Find the largest daily cash flow amount during the month of October 2007. Report just the number.

5. Find the day of the largest daily cash flow. Report the date, the number of sales (individual receipts) and the total amount of money received on that day.

6. Find all dates on which the store sold at least one chocolate croissant. Report just the dates.

7. Find all dates on which store sold **no** apricot tarts.

8. Find the most commonly purchased item on the bakery's menu. Output the full name of the item (flavor, food), its price and the number of items sold.

9. Find all customers who made more than 15 trips to the bakery during the month of October. Output the full name of each customer (first, last) and the number of purchases they made.

10. Find the most expensive purchase from the bakery. Output all items purchased (food, flavor), and the prices for each item.

Submission Instructions

You must submit all your files in a single archive. Accepted formats are `gzipped tar` (`.tar.gz`) or `zip` (`.zip`). The file you are submitting must be named `lab1-ilastname.ext`, where *i* stands for the initial of your first name, and *lastname* is your last name. E.g., if I were submitting this file, the name would be `lab1-adekhtyar.zip` or `lab1-adekhtyar.tar.gz`.

The archive shall contain the following three files:

Each directory shall contain the following SQL scripts:

- Database creation script, `BAKERY-setup.sql`.
- Database cleanup script, `BAKERY-cleanup.sql`.
- Script with SQL queries, `BAKERY-queries.sql`.