Lab 1: SQL Practice

Due date: Wednsday, January 7, end of lab period.

Lab Assignment

You will be given an Oracle account, access to the sql*plus tool, two `.sql` files defining a dataset and populating it and a description of the dataset.

Your assignment is to write and debug a number of SQL queries for this dataset.

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.

Dataset

The assignment uses a dataset called `BAKERY`. This dataset consists of four relational tables describing an operation of a small bakery shop.

The bakery shop makes various pastry items (goods). The list of goods is stored in table `Goods`. Each pastry item/good has a unique id. In addition, it can be identified by Flavor and Food combination: e.g., a chocolate cake is stored as `Flavor='Chocolate'` and `Food='Cake'`.

The bakery shop has a list of frequent customers stored in the `Customers` table. The `Customers` table stores just the name of the customer and the unique id, which is used as a foreign key elsewhere in the database.

The BAKERY dataset has information about one month (October 2007) worth of purchases made by the frequent customers. This information is stored in two tables: `Receipts` and `Items`. Each purchase tracked in the

`Receipts` table, which specifies the date of the purchase, the customer who made the purchase and the unique receipt id. Each purchase can include up to five different goods (items). These are stored in the `Items` table, which contains receipt number, item number on the receipt (first item purchased, second item purchased, etc...) and the type of the item bought (foreign key referencing `Goods` table).

Complete specification of the BAKERY dataset can be found in its README file, a copy of which is part of the lab handout. The on-line version of the README file is here:

http://www.csc.calpoly.edu/∼dekhtyar/365-Fall2007/data/BAKERY/README.BAKERY.TXT

To speed up your setup, I am providing three .sql files:

- `BAKERY-create.sql` contains `CREATE TABLE` statements for the BAKERY dataset. A printout of the file is part of the lab handout — make sure you study attribute names carefully.
- `BAKERY-insert.sql` contains `INSERT` statements populating the database.
- `BAKERY-drop.sql` contains `DROP TABLE` statements removing the BAKERY database. This is provided for your convenience.

The files can be downloaded from the course web page:

http://www.csc.calpoly.edu/∼dekhtyar/468-Winter2009/

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

Lab preparation

1. Download `BAKERY-setup.sql` and `BAKERY-insert.sql` into your work directory.
2. Start sql*plus. Make sure you can successfully log in using your account and password.
3. Run `start BAKERY-setup.sql` command in sql*plus.

4. Run `start BAKERY-insert.sql` command in sql*plus.
5. If both commands finished successfully, you are ready to work on the lab.

The lab will take place during Wednsday's lab period. **Please, come to the lab with the BAKERY database already set up on your Oracle account**. During Wednsday's lab period, you will need to write and debug several SQL queries, and time will be short.

Submission Instructions

You will use the handin tool to submit your queries. All queries must be submitted in a single file names `lab1.sql`. The file must contain a header comment with your name and short comments identifying each SQL statement (comments like `rem Query 1` are acceptable). All queries must be submitted in the order in which they are specified in the assignment. If you have not attempted a query, include a `rem Query X: not attempted` comment in your submission.

To submit use the following command:

```
$ handin dekhtyar lab01 lab1.sql
```

Lab 1: SQL Practice

SQL queries

Your task is to write an SQL script `lab1.sql` containing SQL statements answering the following information requests. Please note, each information request has to be represented as a single SQL query.

1. Report all purchases made by `RUPERT HELING` between October 5, 2007 and October 13, 2007. For each purchase, report the receipt number and the purchase date. Return the results sorted by the receipt number.

2. Find all cookies purchased on October 20, 2007. Output receipt number, customer name (first, last), receipt number and the full name of the cookie (flavor+food). Sort the output by the last name of the customer.

3. Report the total number of sales (receipts, NOT items), and the total cost of all sold items on October 3, 2007.

4. Find the least expensive items on the menu. Return the full name of each pastry (flavor+food) and the price.

5. For each type of food (cookie, cake, tart, pie, etc) report the total number of sold items. Report the results in the ascending order on the number of purchased items.

6. [**Extra Credit**] Find the day with the largest number of purchased tarts and report the date and the total amount (in dollars) of sales (for ALL items sold) that day.