CS 325 - Week 14 Lab Exercise

Deadline

Due by the end of lab on 2021-12-03.

Purpose

To practice with some SQL time- and date- and string-related functions that can be useful when creating reports (as well as for answering certain questions!).

How to submit

JUST this "driver" for each pair should use `~st10/325submit` to submit the pair's copy of this lab exercise's files, with a lab number of **94**

Important notes

- **I have included an example `325lab14-out.txt` along with this lab exercise handout, for comparison purposes.**
  - This is both to let you know if you are on the right track, AND to hopefully encourage DEBUGGING of your SQL `select` statements if you see significant differences.
- You may find the following useful for this lab exercise:
  - NOTE that on the course Canvas site, under Modules, in the "Class Recordings" section, the FIRST link in that section leads to the public course web site's "In-class Examples" section.
  - SQL Reading Packet 8 - Simple reports, parts 1 and 2
  - `325lect14-2.sql` - the SQL script "built" during the Week 14 Asynchronous Material - part 2
- You are required to work in **pairs** for this lab exercise. If you are not pair-programming, then you may not receive full credit for your lab exercise.
  - If there are an odd number of students attending lab, or too many students with connectivity issues, some teams may have 3 students.
- **RECOMMENDATION:** RUN your script-in-progress FREQUENTLY as you are developing it -- do not create the entire script before running it for the first time.

Lab Exercise set-up

- On nrs-projects, **CREATE** a directory `325lab14`, protect it, and go to it:

```
mkdir 325lab14
chmod 700 325lab14
cd 325lab14
```

- **IF** you do not already have tables `empl`, `dept`, and `customer`, or if you have made any changes to their contents, COPY the following script to your directory:

```
cp ~st10/set-up-ex-tbls.sql .  # remember the space and period
```

...and **run** it in `sqlplus` to get restored versions of these tables.

Lab Exercise tasks

- Then, begin a SQL script **`325lab14.sql`** with comment(s) including at least **BOTH (all)** of your **names** and **today's date**. Add commands for the following into this SQL script.
- Start spooling to a file **`325lab14-out.txt`**.
- Write a `prompt` command to print a message to the screen containing **both** of your names.
- Write a `prompt` command outputting **`lab problem 1`**, then write a query using `to_char` that will project two columns:
  - the employee last name,
  - then the fully-spelled out day of the week for the date that they were hired
  - (for example, `Thursday` would be projected for someone hired 2021-12-02; `Friday` would be projected for someone hired 2021-12-03).
- Write a `prompt` command outputting **`lab problem 2`**, then write a query using `upper` and `substr` that will project *just* the first 4 characters of each employee's last name in all-uppercase.
- Write a `prompt` command outputting **`lab problem 3`**, then consider: What if an employee is eligible for life insurance benefits after working at the company for 6 months?

  Write a query using `add_months` that will project 3 columns:
  - the employee last name,
  - when that employee was hired, and
  - when that employee became eligible for the company life insurance (using a column alias of `ELIG_DATE` for this third column).
- Write a `prompt` command outputting **`lab problem 4`**, then write **one**, **two**, **three**, or **four** queries of your choice, using the tables from `set-up-ex-tbls.sql`, that:
  - make use of your choice of **at least two** of the functions from the list:

    `to_char` (using a DIFFERENT format string than you used in lab problem 1)
    `to_date  next_day  add_months  months_between`
  - AND ALSO make use of **at least two** of the functions from the list:

    `init_cap  lower  upper  ltrim  rtrim  lpad  rpad  length  substr`
  - ...such that your chosen functions make a **visible**, **noticeable** difference in the query results.
  - (It is completely your choice whether you do additional formatting to these queries.)
- Turn off spooling.
- IF you happened to modify any SQL*Plus settings (especially for lab problem 4), be polite and reset them to their default values at the end of your script.
- When you believe your SQL script is working properly, submit your `325lab14.sql` and `325lab14-out.txt` files using `~st10/325submit` with a homework number of **94**.
  - (Once you have submitted your lab exercise files, you may leave lab if you wish. Or, you can ask

questions, (noting that lab-exercise-related questions need to receive 1st priority), work on Homework 10, on the CS 325 Project Population milestone, etc.)