

COMP2714 - RELATIONAL DATABASE SYSTEMS

Assignment 03 – SQL DML Subqueries, Aggregates, Views - Read also the FAQ [Total: 50 marks]

Due NEXT DAY of your Lab in week Feb 01 (Thu) - Feb 06 (Tue), 2018

Due time to Assignment Box & D2L Dropbox:

Fri: 2A: 12:20 2D: 11:20

Tue: 2E: 10:20 2C: 11:20 2B: 12:20

- You are to work in **groups of two**.
- Assignments must be done using Oracle SQL*Plus.
- Make sure you save all your work in **.sql script files**, and keep backup copies of these scripts!!
[Refer to Lab01_sample.sql as illustrative example / template.]

Coding guideline for ALL assignments:

Otherwise up to 10% of the total marks will be deducted for each violation. (READ Lab01_sample.sql)

- **UPPER CASE** for all SQL reserved words, and **Mixed** or **Lower Cases** for names you defined.
- **Start each SQL clause on a new line; indent subsequent additional lines** of the same SQL clause; avoid use of long lines but appropriately break into multiple lines with proper indentation; **DO NOT** align code from the middle.
- **Use comments** to label your questions before code; **add explanation comments** before your code only if necessary. Do not interleave comment lines inside your SQL statement lines.
- Keep your answers in the same order as the questions. Do not mix nor combine.
- Use **single quotes** for character strings and date values, **no quotes** for numeric values, and **NULL** keyword instead of "".
- Avoid using **DISTINCT** if not needed. Put **WHERE** conditions in **WHERE** clause and **NOT** in the **JOIN ... ON** clause.
- Do not include redundant tables in **JOINS**. Use **OUTER JOINS** only when necessary, and avoid **USING** clause with it.

Some useful tips:

- Remember to **SET ECHO ON & SET TAB OFF** in your SQL*Plus environment, so that your script file content will be included in your spool output file without added tabs. Make sure **SPOOL OFF** is included at the end of your script so you will not lose output.
- Include **ALTER SESSION** to set DATE format to 'YYYY-MM-DD'.
- Check out (on the Internet) some Oracle built-in functions such as **TO_DATE**, **TO_CHAR**, **TO_NUMBER**, and **String Concatenation**, etc. as these may come in handy.

Assignment submissions:

- You have to submit (1) to Paper Dropbox a **printed copy** printed from Word .docx formatted SPOOL output file, and (2) to D2L **both electronic copies** of the SPOOL file: **.docx** and **.txt**. It is **NOT** considered submitted without the printed copy!
- For **ALL** copies, label each answer clearly with the proper question number as comment, and in the same order; otherwise, 10% of the total marks will be deducted. For queries, include each query result output immediately after each query answer code.
- For the printed copy, **NO cover page** required; include Lastname(s), Firstname(s), student number(s), course number, assignment number and set letter at the beginning as comments (See Lab01_sample).

- The printed pages should be **STAPLED upper-left corner**, printed only with **black ink/toner** on **white** paper [no grey or other colors please]. Print with **FIXED-size font type** like **Courier New**, with **font size 12** or greater, and in **Bold**. Otherwise, 10% of total marks will be deducted.
- If a result output is too long, you can just keep the first 2 rows and delete the rest of that result set output before printing.
- For the soft copy spool file **.docx** and **.txt**, submit it to D2L dropbox for one of the partners in the pair. Do not zip. Make sure you submit to the proper dropbox; otherwise, it will be treated as NOT SUBMITTED. Only **one copy set is to be submitted** for both partners, and your **.docx** and **.txt** spool file should be named **Asn2_<LastName1><Initial1>_<Lastname2><Initial2>.txt** or **.docx** with **both partners' names**.

Given the following database relations schema, use a **single SQL** statement to provide the information required by each query question 1 to 11:

(Note: you can run the script Asn3SetupHotels.sql to create the database tables with some sample data; **NO need to print this!!**)

Hotel (hotelNo, hotelName, hotelAddress)
 Room (roomNo, hotelNo, type, price)
 Guest (guestNo, guestName, guestAddress)
 Booking (hotelNo, guestNo, dateFrom, dateTo, roomNo)

Queries from Connolly & Begg textbook 6/e, p.182 & p.220:

(If you have questions, ask your instructor early. Do not over-spend your time per question. Practice a systematic problem solving approach as demonstrated in the lectures.)

NOTE: Expression to determine if a Booking row contains the current date:

```
dateFrom <= DATE'2018-02-05' AND
(dateTo IS NULL OR dateTo >= Date'2018-02-05')
```

Expression to determine if a Booking row contains one or more days of a particular month (e.g. 2018-02):

```
(dateTo IS NULL OR dateTo >= DATE'2018-02-01') AND
dateFrom < DATE'2018-03-01'
```

For each question, start with the question statement in the textbook, then combine it with the additional requirements stated below to form one final question. Read also the FAQ for clarifications!!

1. (6.13 - 4 mks) What is the average price of a room in London? .
 (a) Do this using JOIN, (b) Do this using IN subquery.
2. (6.15 - 5 mks) Use the month of 2018-02 instead of August, and do the query for each hotel, listing in hotelName order:
 i.e. How many different guests have made bookings for 2018-02 for each hotel?
3. (6.18 - 5 mks) Use 2018-02-05 as today's date. Include all 'Grosvenor' hotels. List in hotelNo, roomNo order.
4. (6.20 - 4 mks) Use 2018-02-05 as today's date. Include all 'Grosvenor' hotels. List in hotelNo, roomNo order. Use NOT IN to perform the difference operation.
5. (6.20 - 4 mks) Use 2018-02-05 as today's date. Include all 'Grosvenor' hotels. List in hotelNo, roomNo order. Use NOT EXISTS to perform the difference operation.

6. (6.20 - 4 mks) Use 2018-02-05 as today's date. Include all 'Grosvenor' hotels. List in hotelNo, roomNo order. Use LEFT JOIN to perform the difference operation.
7. (6.20 - 4 mks) Use 2018-02-05 as today's date. Include all 'Grosvenor' hotels. List in hotelNo, roomNo order. Use MINUS to perform the difference operation.
8. (6.24 - 5 mks) Use the month of 2018-02 instead of August.
9. (6.26 - 5 mks) Use 2018-02-05 as today's date. List hotelNo, hotelName and LostIncome, in hotelNo order.
10. (7.14 - 5 mks, p.220) Use 2018-02-05 as today, and guestAccount as view name.
[The account info for each guest means: Room (roomNo), Name (guestName), Check-in (dateFrom), Check-out (dateTo=today), Rate (price), #Days (calculate from dateTo and dateFrom), and Total (calculate from dateTo, dateFrom and price).]
Add a query to test the view.
11. (5 mks) Find the guests (name & address) who booked previously at one of the 'Grosvenor' hotels, and also at the Part Royal Hotel, but never booked at the Meridian Hotel.