# Assignment 2 5%

## Due Date: November 2, 2017 midnight

This assignment covers the material from Chapters 8 DS book and SQL DDL and DML statements.

**Part 1** **PL/SQL Procedure 3 %**

The following relations (based on chapter 4, DS textbook) form part of a relational database schema:

Hotel (hotelNo, hotelName, hotel\_address, city, province, country)

Room (roomID, roomNo, hotelNo, type, price)

Booking (BookingID, guestNo, dateFrom, dateTo, roomID)

Guest (guestNo, guestName, guestAddress, comments)

where Hotel contains hotel details and hotelNo is the primary key; Room contains room details for each hotel and roomID is the primary key; Room type specifies “single”, “double” or “family.” Booking contains details of the bookings and BookingID is the primary key; and the Guest table contains guest details and guestNo is the primary key. Comments are a string of characters and digits stored a variable character type with maximum 128 characters.

**Preliminary task:**

Create required tables (use **prefix A2\_ for their names**) and add data. You can use CASE tool or SQLDeveloper.

1. **Problem:** Our reservation center gets a lot of “last minute” requests for a one night reservation starting the same day. The staff would like to have a quick method of finding an available room (any type any hotel) in a specific city. For example:a guest arrives to Kamloops in the late afternoon and needs to stay for one night in Kamloops. The system should find all hotels in Kamloops with at least one available room for tonight.

**Hints for solution**:

Create a stored procedure LIST\_AVAILABLE with one input parameter: p\_city. This procedure should list all hotels in the specified city with at least one room available for today’s (SYSDATE) night. The room is available if there are no reservations for today’s night. List the “title”: Hotels available in city ….for 2016-10-26 and a line for each hotel name and address.

1. **Problem:** The database designer has forgotten to create an attribute for the phone numbers. The hotel staff was using the comments (attribute) to enter textual comments and also phone numbers. Ooops.. The hotel manager is very upset and your task is to provide a temporarily solution. The manager wants to have a list of the guests (guestName, and possible phone number extracted from the comments. This has to be done within one hour (before the manager gets back from lunch).

**Hints for solution:**

Create an SQL statement to list the guests (guest names) and the parts of the comments matching phone patterns. The examples of phone numbers: (250) 333 9999, 250-371-5592, 371-5592 250.333.4444. Good news: Oracle supports Regular Expressions (!). Idea: Use the regular expressions to find potential phone numbers in comments.

Oracle starting from 10g uses regular expressions. Read Chapter 10 (Oracle 11g SQL book) pp. 357-359 (on reserve).Chapter 10 (Oracle 12c SQL book) pp. 374-377. There are five regexp functions in Oracle SQL and PL/SQL: REGEXP\_LIKE, REGEXP\_INSTR, REGEXP\_REPLACE, REGEXP\_SUBSTR, REGEXP\_COUNT.

**Submit**

* Listing of the Stored Procedure
* Test of the procedure showing the available rooms
* SQL query to find the phone numbers in comments.
* Test running the SQL query
* **Listing of the Stored Procedure**

-- Answer is one of the possible answers

CREATE OR REPLACE PROCEDURE LIST\_AVAILABLE

(P\_CITY IN A2\_HOTEL.CITY%TYPE)

AS

CURSOR C\_HOTEL

IS

SELECT DISTINCT

HT.HOTEL\_NAME,HT.HOTEL\_ADDRESS

FROM A2\_ROOM RM

INNER JOIN A2\_HOTEL HT ON RM.HOTEL\_NO = HT.HOTEL\_NO

WHERE CITY = P\_CITY

AND RM.ROOM\_ID NOT IN (SELECT ROOM\_ID FROM A2\_BOOKING

WHERE SYSDATE BETWEEN DATE\_FROM AND DATE\_TO - 1);

-- the booking date\_to is the checkout date;

-- the room is available on the checkout date for the next reservation

BEGIN

**DBMS\_OUTPUT.PUT\_LINE('Hotels available in '||P\_CITY||' FOR '||SYSDATE);**

FOR HOTEL\_REC IN C\_HOTEL

LOOP

**DBMS\_OUTPUT.PUT\_LINE(HOTEL\_REC.HOTEL\_NAME || ' ' || HOTEL\_REC.HOTEL\_ADDRESS);**

END LOOP;

END;

* **Test of the procedure showing the available rooms**

EXECUTE LIST\_AVAILABLE('Edmonton');

Hotels available in Edmonton FOR 2017-11-14

Value Inn 123 Centre Street

**Part 2** **Archiving** 2 **%**

**Bookings should be archived after 2 years. Create the** ARCHIVED\_BOOKING table which will have the same columns as the BOOKING table and additionally a column called ARCHIVED\_DATE. Create a stored procedure to archive bookings older than 2 years (based on DATE\_TO and SYSDATE). Add the old bookings to the ARCHIVED\_BOOKING table and remove the old bookings from the BOOKING table.

**Submit**

1. Create statement for the ARCHIVED\_BOOKING table
2. Listing of the Stored Procedure
3. Test demonstrating the execution of the archived procedure

CREATE OR REPLACE PROCEDURE archive\_bookings

AS

BEGIN

INSERT

INTO a2\_archived\_booking

(

bookingid,

guestno,

datefrom,

dateto,

roomid,

archived\_date

)

SELECT bookingid,

guestno,

datefrom,

dateto,

roomid,

SYSDATE

FROM a2\_booking

WHERE months\_between (SYSDATE, dateto) > 24);

DELETE FROM a2\_booking WHERE MONTHS\_BETWEEN (SYSDATE, dateto) > 24;

COMMIT;

END;

**Hand-ins:**

Please hand in this assignment as a pdf document uploaded to the Blackboard. Indicate the Part and Problem number for your answers. Your document should have a title page with your name, student number, course title, and date.