Laboratory 7
Implementing PL/SQL program, stored PL/SQL procedures and functions

It is expected that you do Homework 7 before implementation of the tasks included in Laboratory 7.
This laboratory consists of 2 tasks.

Download and unzip a file scripts7.zip. Connect to your database account on any of the available Oracle database servers.
Executes a script dbcreate.sql to create a sample database and later execute a script dbdrop.sql to drop all relational tables.

Task 1 Implementing and testing a stored PL/SQL procedure

Create SQL script file `task1.sql` that implements a stored PL/SQL procedure LISTSKILL and it stored in a data dictionary.
The stored procedure `LISTSKILL` lists the applicant numbers and full names of applicants together with the names of skills possessed and the total number of skills for each applicant.
The names of skills must be listed in the descending order of skill level. You are allowed to ignore the skills do not possessed by an applicant. The names of applicants and the names of skills must be listed in uppercase. A fragment of a sample printout is given below.

```
HARRY POTTER: JAVA PROGRAMMING:9, COOKING:9, C PROGRAMMING:4
MARY POPPINS: C++ PROGRAMMING:10, JAVA PROGRAMMING:9, PAINTING:5
...
```

To set the correct values of SQL*Plus options the following sequence of SQL*Plus statement must be included at the very beginning of a script file task2.sql.

```
SPOOL task2
SET ECHO ON
SET FEEDBACK ON
SET LINESIZE 100
SET PAGESIZE 100
SET SERVEROUTPUT ON
```

No SQL*Plus options must be changed within the script. The following SQL*Plus statement must be included at the very end of task2.sql file.

```
SPOOL OFF
```

Execute a script `task2.sql` with SQL*Plus options ECHO and FEEDBACK set to ON and save a report from the execution in a file `task2.lst`. A file `task2.lst` will be submitted at the end of laboratory class.
It is allowed to use SQL Developer to create the script. However, you MUST use SQL*Plus client to execute a script task2.sql and to save the report from the execution in a file task2.lst. A listing copied from SQL Developer

will score no marks at all! The final report in `task2.lst` must be generated by SQL*Plus client.

A solution with the syntax errors scores no marks.

Task 2 Implementing and testing a stored PL/SQL function

Create SQL script task2.sql that implements a stored PL/SQL function FINDAPPS and it stored in a data dictionary.
A stored PL/SQL function `FINDAPPS` supposed to find the numbers of all applicants that possess all skills required for a given position at the levels equal or higher from the levels required by each skill. The function must return a string of characters that starts from a position number followed by a character : (colon) and followed by the applicant numbers separated with blanks. A position number must be passed through a parameter to the function.
Next, the script task2.sql must implement at least two different SELECT statements that test the function.
To set the correct values of SQL*Plus options the following sequence of SQL*Plus statement must be included at the very beginning of a script file task2.sql.

```
SPOOL task2
SET ECHO ON
SET FEEDBACK ON
SET LINESIZE 100
SET PAGESIZE 100
SET SERVEROUTPUT ON
```

No SQL*Plus options must be changed within the script. The following SQL*Plus statement must be included at the very end of `task2.sql` file.

```
SPOOL OFF
```

Execute a script task2.sql with SQL*Plus options ECHO and FEEDBACK set to ON and save a report from the execution in a file `task2.lst`. A file `task2.lst` will be submitted at the end of laboratory class.
It is allowed to use SQL Developer to create the script. However, you MUST use SQL*Plus client to execute a script task2.sql and to save the report from the execution in a file task2.lst. A listing copied from SQL Developer will score no marks at all! The final report in task2.lst must be generated by SQL*Plus client.
A solution with the syntax errors scores no marks.

Submission

Zip the files `task1.lst`, `task2.lst` obtained as the solutions of tasks 1 and 2 into a file `solutions7.zip`. Submit the file through Moodle. A submission procedure is the following.

(1) Connect to Moodle.
(2) Navigate to a folder `SUBMISSIONS`→`LABORATORY SUBMISSIONS`.
(3) Click at `LABORATORY 7, Submit your solutions here` link.
(4) Click at `Add Attachments` button.
(5) Navigate to a location where a file `solutions7.zip` has been saved.
(6) Select the file and click at `Open` button.
(7) Click at `Submit` button.
(8) Click at `OK` button to return to `Home Page`.

End of laboratory 7