

PL/SQL Introduction Hello World Lab 1

PL/SQL is a database orientated programming language that extends Oracle SQL with procedural capabilities.

PL/SQL

PL/SQL programs are organised in functions, procedures and packages (somewhat similar to Java packages). There is a limited support for object oriented programming. PL/SQL is based on the Ada (yes, language Ada named in honour of Ada Byron, Lady Lovelace (<http://www.agnesscott.edu/lriddle/women/love.htm>) programming language, and as such it shares many elements of its syntax with Pascal (yet , another famous name).

Example 1 Test DBMS_OUTPUT.PUT_LINE

PL/SQL code as an anonymous block —that is a short program that is ran once, but that is neither named nor stored persistently in the database.

- In SQL*PLUS, we have to set the server output to the screen SQL> SET SERVEROUTPUT ON
- In, SQLDeveloper, we use DBMS Output panel with dbms_output.enable; You have to open the DBMSOutput pane from the window menu View option. Next, you have to use + to add a connection to display the dbms output. (dbms_output.enable should run automatically when you add the connection in the DBMS output panel).

```
BEGIN
  dbms_output.put_line('Welcome to PL/SQL');
END;
```

- the keywords BEGIN...END define a scope and are equivalent to the curly braces in Java.
- the put_line function (in the built-in package dbms_output) displays a string in the SQL*Plus/SQL developer console.

Example 2

Write a stored procedure to display 'Welcome to PL/SQL *username*'. Not USER is an Oracle function returning the current session user name (STUDENT99).

*****if you copy make sure that you check single quotes*****

```
CREATE OR REPLACE PROCEDURE welcome
IS
  user_name VARCHAR2(16) := user;
BEGIN
  dbms_output.put_line(' Welcome to PL/SQL, ' || user_name || '!');
END;
```

Once you have created the procedure, execute it using the EXEC command.

```
SQL> EXEC welcome
```

Example 3

YOUR TASK:

Study/review the lab material for date/time in Oracle and create the following stored procedures:

1. Display welcome with the user name and current date/time on the server using format: YYYY-DD-MM HH24:MI:SS. Hint: check the date formatting in Oracle.
2. Display welcome with the user name and current date/time on the server using YYYY-DD-MM HH24:MI:SS and **timezone offset to UTC**. Hint: **SYSTIMESTAMP** has the ZONE included. The zone formatting in Oracle TZH:TZM.
3. Display welcome with the user name and current date/time in ISO standard. (a) use the system time zone with the offset (see question 2) (b) system time zone converted to UTC. Hint: **SYS_EXTRACT_UTC** converts the timestamp datatype.