311-Lab05W7-stored procedures 1 RT

Lab 5 – Week 7 Stored Procedures/Conditional Statements)

## Due Friday November 13 before midnight. You should do it earlier

## Submission

***Your submission will be a single text-based SQL file with appropriate header and commenting. Please ensure your file runs when the entire file is executed in SQL Developer.***

Create a new Worksheet in SQL Developer. Save the file as L05\_ID#\_LASTNAME.sql

**IMPORTANT**: The subject line of the email must be the same as your filename 🡺 L05\_ID#\_LASTNAME.sql

## Your submission needs to be commented and include the question, the solutions. SEE EXAMPLE ON LAST PAGE

In this Lab, you create PL/SQL stored procedures to perform the following tasks. As you know, a stored procedure does not return any value. To send values back to the caller, you can use OUT parameters.

A parameter can be

* IN parameter
* OUT parameter
* IN OUT parameter

See the following template:

|  |
| --- |
| **CREATE** **OR REPLACE** *procedure\_name*(**arg1** **IN**/**OUT/IN OUT** data\_type, ...) AS  **BEGIN**  ....  **EXCEPTION**  **WHEN OTHERS**  **THEN**  DBMS\_OUTPUT.PUT\_LINE (Error!');  **END** procedure\_name; |

For all the stored procedures make sure you handle all exceptions such as

* TOO\_MANY\_ROWS
* NO\_DATA\_FOUND
* OTHERS
* . . .

Besides checking all required exceptions, have the OTHER exception checked just in case any error occurs that has not been anticipated at the time you write the code.

## Tasks

NOTE: Remember SET SERVEROUTPUT ON or you will not see anything working. Place it the beginning.

**Remember ROLLBACK; to make sure the changes in question 3, 4 and 5**

**ABSOLUTELY ESSENTIAL TO AVOID MESSING UP MY PRODUCT TABLE**

1. Write a stored procedure that get an integer number and prints

*The number is even.*

If a number is divisible by 2.

Otherwise, it prints

*The number is odd.*

1. Create a stored procedure named *find\_employee*. This procedure gets an employee number and prints the following employee information:

First name

Last name

Email

Phone

Hire date

Job title

The procedure gets a value as the employee ID of type NUMBER.

See the following example for employee ID 107:

First name: Summer

Last name: Payn

Email: summer.payne@example.com

Phone: 515.123.8181

Hire date: 07-JUN-16

Job title: Public Accountant

The procedure displays a proper error message if any error occurs.

1. Every year, the company increases the price of all products in one product type.

For example, the company wants to increase the selling price of products in type Tents by $5.

Write a procedure named *update\_price\_tents* to update the price of all products in a given type and the given amount to be added to the current selling price if the price is greater than 0.

The procedure shows the number of updated rows if the update is successful.

The procedure gets two parameters:

* Prod\_type IN VARCHAR2
* amount NUMBER(9,2)

To define the type of variables that store values of a table’ column, you can also write:

variable\_name table\_name.column\_name%type;

The above statement defines a variable of the same type as the type of the table column.

Example: category\_id products.category\_id%type;

Or you need to see the table definition to find the type of the prod\_type update column. Make sure the type of your variable is compatible with the value that is stored in your variable.

To show the number of affected rows the update query, declare a variable named rows\_updated of type NUMBER and use the SQL variable sql%rowcount to set your variable. Then, print its value in your stored procedure. (Something like this is in the notes supplied to you)

Rows\_updated := sql%rowcount;

SQL%*ROWCOUNT* stores the number of rows affected by an INSERT, UPDATE, or DELETE.

NOTE: Do not forget ROLLBACK;

1. Every year, the company increases the price of products by 1 or 2% (Example of 2% -- prod\_sell \* 1.02) based on if the selling price (prod\_sell) is less than the average price of all products.

Write a stored procedure named *update\_low\_prices\_123456789 where 123456789 is replace by your student number.*

This procedure does not have any parameters. You need to find the average sell price of all products and store it into a variable of the same data type. If the average price is less than or equal to $1000, then update the products selling price by 2% if that products sell price is less than the calculated average.

If the average price is greater than $1000, then update products selling price by 1% if the price of the products selling price is less than the calculated average.

The query displays an error message if any error occurs. Otherwise, it displays the number of updated rows.

An example of an output produced by your code might be the following or perhaps nicer

**\*\*\* OUTPUT update\_low\_prices\_123456789 STARTED \*\*\***

**Number of updates: 27**

**----ENDED --------**

NOTE: Do not forget ROLLBACK;

1. The company needs a report that shows three categories of products based their prices. The company needs to know if the product price is cheap, fair, or expensive. Let us assume that

- If the list price is less than the (average sell price – minimum sell price) divided by 2

The product’s price is LOW.

- If the list price is greater than the maximum less the average divided by 2

The product’ price is HIGH.

- If the list price is between

* + (average price – minimum price) / 2 AND (maximum price – average price) / 2 INCLUSIVE

The product’s price is fair.

Write a procedure named *price\_report\_123456789* to show the number of products in each price category:

The following is a sample output of the procedure if no error occurs:

Low: 10

Fair: 50

High: 18

The values in the above examples are just random values and may not match the real numbers in your result.

The procedure has no parameter. First, you need to find the average, minimum, and maximum prices (list\_price) in your database and store them into variables avg\_price, min\_price, and max\_price.

You need three more variables to store the number of products in each price category:

low\_count  
fair\_count  
high\_count

Make sure you choose a proper type for each variable. You may need to define more variables based on your solution.

NOTE: Do not forget ROLLBACK;

Example Submission

-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
-- Name: Your Name  
-- Student ID: #########  
-- Date: The current date  
-- Purpose: Lab 5 DBS311  
-- \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
  
-- Question 1 – write a brief note about what the question is asking  
-- Q1 SOLUTION –

CREATE OR REPLACE procedure\_name(arg1 data\_type, ...) AS

BEGIN

....

EXCEPTION

WHEN OTHERS

THEN

DBMS\_OUTPUT.PUT\_LINE (Error!');

END procedure\_name;

-- Question 2 – the question goes here

……

-- Q2 Solution – your code goes here

……