DBS311 Lab 7

Clear screenshots of successful run of PL/SQL statements and output(for each question regardless of solution supplied) is required in a single file. Also, take screenshots of the procedure code.

Zero will be assigned otherwise. You may use SQL developer or SQL plus. If you want to be independent of mySeneca apps or Seneca Oracle instance, install Oracle XE in your laptop and use SQL plus.

# 

1. Write a store procedure called *Get\_Fact* that gets an integer number *n* and calculates and displays its factorial.

Example:

0! = 1  
2! = fact(2) = 2 \* 1 = 1  
3! = fact(3) = 3 \* 2 \* 1 = 6  
. . .  
n! = fact(n) = n \* (n-1) \* (n-2) \* . . . \* 1

**Show your testing with 2 different integers.**

CREATE OR REPLACE PROCEDURE Get\_Fact(n INTEGER) AS

factorial INTEGER := 1;

BEGIN

FOR i IN REVERSE 1..n LOOP

factorial := factorial \* i;

END LOOP;

DBMS\_OUTPUT.PUT\_LINE(n || '! = ' || factorial);

END;

/

**TESTING:**

**execute Get\_Fact(4);**

4! = 24

**execute Get\_Fact(0);**

0! = 1

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*Question 2 next page*

1. The company wants to calculate the employees’ annual salary:

The first year of employment, the amount of salary is his/her base salary (shown under column Salary).

Every year after that, the salary increases by 5%.

Write a stored procedure named *Calculate\_Salary* which gets an Employee ID and for that employee calculates the salary based on the number of years the employee has been working in the company. (Use a loop construct to calculate the salary).

The procedure calculates and prints the Name and Annual Salary.

Sample output:

First Name: first\_name

Last Name: last\_name

Annual Salary: $99,999

If the employee does not exist, the procedure displays a proper message.

**Show your testing with an invalid ID and the other one with valid ID.**

CREATE OR REPLACE PROCEDURE Calculate\_Salary (empID employees.employee\_id%type) AS

emp employees%rowtype;

newSalary employees.salary%type;

yearsWorked INTEGER;

BEGIN

SELECT \* INTO emp

FROM employees

WHERE employee\_id = empID;

newSalary := emp.salary; --starting salary

yearsWorked := trunc(MONTHS\_BETWEEN(SYSDATE, emp.hire\_date) / 12); --trunc so we dont round up an extra year

FOR year IN 1..yearsWorked LOOP

newSalary := newSalary \* 1.05;

END LOOP;

DBMS\_OUTPUT.PUT\_LINE('First Name: ' || emp.first\_name);

DBMS\_OUTPUT.PUT\_LINE('Last Name: ' || emp.last\_name);

DBMS\_OUTPUT.PUT\_LINE('Annual Salary: $' || to\_char(newSalary, '$99,999'));

EXCEPTION WHEN NO\_DATA\_FOUND THEN

DBMS\_OUTPUT.PUT\_LINE('Employee (ID: ' || empID || ') does not exist.');

END;

/

**TESTING:**

**execute Calculate\_Salary(0);**

Employee (ID: 0) does not exist.

**execute Calculate\_Salary(124);**

First Name: Kevin

Last Name: Mourgos

Annual Salary: $15,389

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*Question 3 next page*

1. Write the code for the procedure called *Find\_Prod\_price*, that will search table Products and for a given Product ID will find its Description and display a message (note) regarding its List Price. This note will show *Cheap* for price below $200, *Not Expensive* for price between $200 and $500, otherwise will be *Expensive* (for price higher than $500). You need to take care of the wrong input (Product ID is invalid) as well.

Use one IN parameter and two OUT parameters, then use PL/SQL block to show your output like (for a given ID of 31):

CPU:LGA2011-3 x 2,Form Factor:EATX,RAM Slots:16,Max RAM: is Not Expensive

**Show your testing with a Cheap, Expensive and Invalid product.**

CREATE OR REPLACE PROCEDURE Find\_Prod\_Price (prodID IN products.product\_id%type, d OUT VARCHAR2, note OUT VARCHAR2) IS

prodPrice products.list\_price%type;

BEGIN

SELECT description, list\_price INTO d, prodPrice

FROM products

WHERE product\_id = prodID;

IF prodPrice < 200 THEN

note := 'Cheap';

ELSIF prodPrice BETWEEN 200 AND 500 THEN

note := 'Not Expensive';

ELSE

note := 'Expensive';

END IF;

DBMS\_OUTPUT.PUT\_LINE(d || ' is ' || note);

EXCEPTION WHEN NO\_DATA\_FOUND THEN

DBMS\_OUTPUT.PUT\_LINE('Invalid Product ID: ' || prodID);

END;

/

**TESTING:**

**var p\_desc VARCHAR2;**

**var p\_note VARCHAR2;**

**execute Find\_Prod\_Price(94, :p\_desc, :p\_note);**

Series:AV-GP,Type:5400RPM,Capacity:250GB,Cache:8MB is Cheap

**execute Find\_Prod\_Price(64, :p\_desc, :p\_note);**

CPU:G34 x 2,Form Factor:EATX,RAM Slots:16,Max RAM:512GB is Expensive

**execute Find\_Prod\_Price(0, :p\_desc, :p\_note);**  
Invalid Product ID: 0

A screenshot of a computer

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*Question 4 next page*

4. Write a stored procedure named *Warehouses\_Report* to print the warehouse ID, warehouse name, and the city where the warehouse is located in the following format for ALL warehouses:

Warehouse ID:

Warehouse name:

City:

State:

If the value of state does not exist (null), display “no state”.

The value of warehouse ID ranges from 1 to 9.

You can use a loop to find and display the information of each warehouse inside the loop.

(Use a loop construct to answer this question. **Do not use cursors**.)

**Note: Some of the above output displayed may not match exactly with your produced output. This is because the script file supplied to you was modified after creation of this lab requirements.**

A screenshot of a computer

Description automatically generated