**TERM – WINTER 2023 **

| **Course & Section Code:** | **DBS501S1A** |
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| **Course Name:** | **Procedure Using Oracles PL/SQL** |
| **Course Start & End Dates:** |  |
| **Q&A / Virtual Office Hour:** | **6:30 PM – 9:30 PM** |
| **Instructor Name & Email:** | **Ersan Cam: ersan.cam@senecacollege.ca** |

Lab#5 (Variables, Loops , IF THEN ELSE)

**Due Feb 20th Midnight**

**Tasks (All the tasks marks are equal)**

**Below Exercise 1 and 2 are paper base exercise meaning you answer on the paper first without executing the code.. Then you can write and test the code**

Text, letter

Description automatically generated

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| 1. a) 2   b) Western Europe  c) 601  d) Product 11012 is in stock  e) global variable doesn’t exist |

Text

Description automatically generated

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| 1. a) 201   b) Unisports  c) GOOD  d) Womansport  e) variable is not declared  f) GOOD |

**Preparation for Task 3**

Run this Create Table as SELECT command to create replica version of employees table

**CREATE TABLE emp**

**AS**

**SELECT \* FROM employees;**

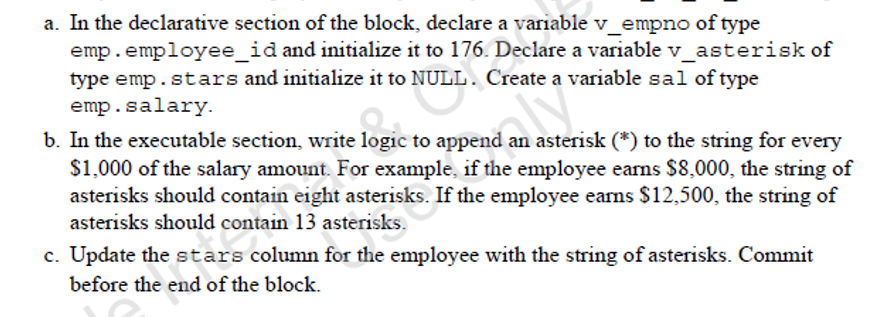
Then add one more column to this new table. New column name is stars (VARCHAR2 - 50 digit) . Run below command

**ALTER TABLE emp ADD stars VARCHAR2(50);**

SELECT emp table to see stars columns as empty.

**Task #3:**

Write PL/SQL anonyms block to fill newly added columns for each employee\_id entered by end user from screen (use &emp\_id to test one particular employee\_id)



**Hint :** Use round(salary /1000) formula to find how many starts will be added to stars column.

For example, let’s say you will test 107

*SELECT round(salary/1000)*

*FROM EMPLOYEES*

*WHERE employee\_id =* ***&empid*** *;*

107 employee id’s salary is 4830 so round will find 5 stars.

Now your job is to use one type of LOOPS and loop thru 5 times in this case and each loop iteration

UPDATE emp

SET stars = stars + ‘\*’

WHERE employee\_id= v\_\_empid ; ( or WHERE employee\_id=107)

Each time LOOP thru it will add one extra stars (\*) eventually it will be 5 star

Once your PL/SQL complete executing, run SELECT statement to show the screen shot

***SELECT \* FROM EMP WHERE employee\_id=107;***

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| DECLARE  v\_empno emp.employee\_id%TYPE := 176;  v\_asterisk emp.stars%TYPE := NULL;  sal emp.salary%TYPE;  BEGIN  SELECT  round(salary / 1000)  INTO sal  FROM  emp  WHERE  employee\_id = v\_empno;  FOR i IN 1..sal LOOP  v\_asterisk := v\_asterisk || '\*';  UPDATE emp  SET  stars = v\_asterisk  WHERE  employee\_id = v\_empno;  END LOOP;  END; |

**Task #4:**

Develop a PL/SQL block that would go through all the employees from EMPLOYEES table who work in department\_id= 90 (there is suppose to be 3 employee who work in Department 90)

IN BEGIN END END SECTION;

Execute 3 separate of SELECT statement one after the other. Each SELECT will pull first\_name , salary of each employee and store them in local variables.

SELECT LOAD INTO v\_firstname1, v\_salary1 WHERE employee\_id=100

Then second

SELECT first\_name, salary INTO v\_firstname2, v\_salary2 ….. WHERE employee\_id=101

Then third

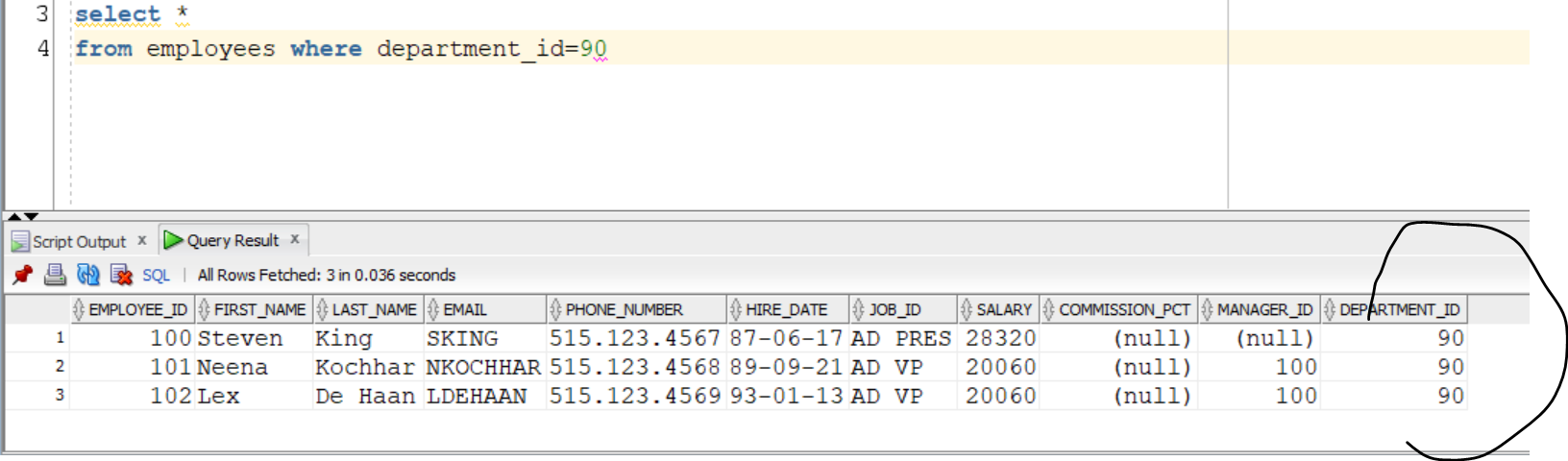
SELECT, SELECT first\_name, salary INTO v\_firstname3, v\_salary3 ….. WHERE employee\_id=102

You must now have 6 local variables. DECLARE all of them accordingly in DECLARE section and use them in BEGIN and END.

Then add another SELECT statement in BEGIN-END to find company average salary

SELECT avg(salary) INTO v\_avgsal FROM EMPLOYEES;

!!! Do not forget to create v\_avgsal local variable in DECLARE section.



Now after loading all those info to local variables,

Use IF THEN ELSE to PRINT these messages on the screen based on compare results

**Hint: You can have one big IF ELSIF ELSIF END or you can have 3 separate IF THEN ELSE END IF statetement . Up to you**

**IF v\_salary1 > v\_avgsal THEN --( note** Employee\_id = 100 salary 24000 )

‘Employee ‘ || v\_firstname1 || ‘salary ‘ || v\_salary1 || ‘ is more than average salary ‘

Or Else print (Display)

‘Employee ‘ || v\_firstname1 || ‘salary ‘ || ‘is less average salary ‘

**IF v\_salary2 > v\_avgsal THEN --( note** Employee\_id = 101 salary 17000 )

‘Employee ‘ || v\_firstname2 || ‘salary ‘ || v\_Salary2|| ‘is more than average salary ‘

Or Else print (Display)

‘Employee ‘ || v\_firstname2 || ‘salary ‘ || ‘is less than average salary ‘

**IF v\_salary3 > v\_avgsal THEN --( note** Employee\_id = 101 salary 17000 )

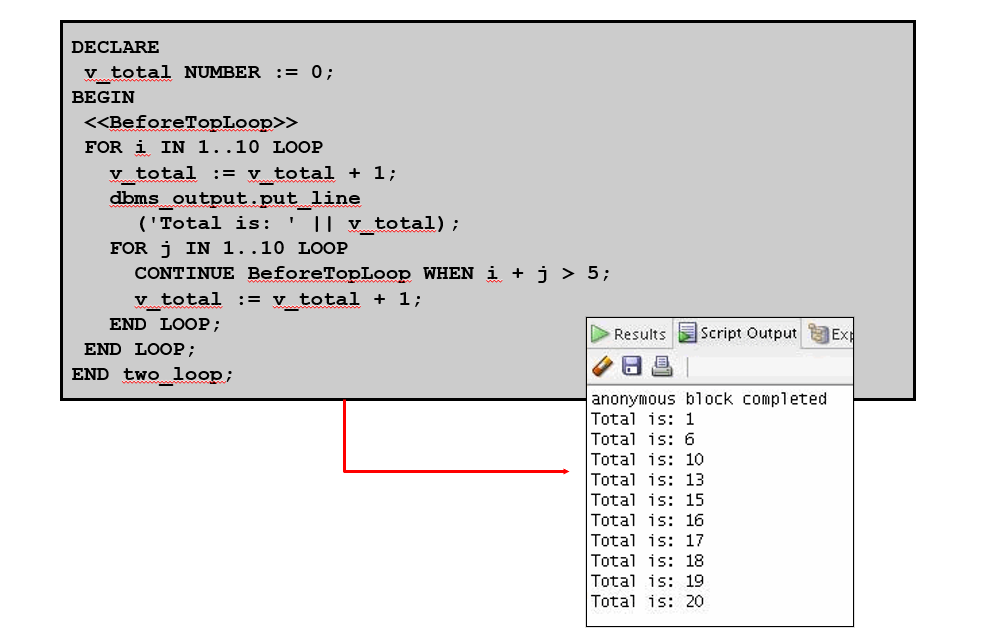
DBMS\_OUTPUT ‘Employee ‘ || v\_firstname3 || ‘salary ‘ || v\_salary3 || ‘is more than average salary ‘

Or Else print (Display)

DBMS\_OUTPUT ‘Employee ‘ || v\_firstname3 || ‘salary ‘ || || v\_salary3 || ‘is less than average salary ‘

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| DECLARE  v\_firstname1 hr\_employees.first\_name%TYPE;  v\_firstname2 hr\_employees.first\_name%TYPE;  v\_firstname3 hr\_employees.first\_name%TYPE;  v\_salary1 hr\_employees.salary%TYPE;  v\_salary2 hr\_employees.salary%TYPE;  v\_salary3 hr\_employees.salary%TYPE;  v\_avgsal hr\_employees.salary%TYPE;  BEGIN  SELECT  first\_name,  salary  INTO  v\_firstname1,  v\_salary1  FROM  hr\_employees  WHERE  employee\_id = 100;  SELECT  first\_name,  salary  INTO  v\_firstname2,  v\_salary2  FROM  hr\_employees  WHERE  employee\_id = 101;  SELECT  first\_name,  salary  INTO  v\_firstname3,  v\_salary3  FROM  hr\_employees  WHERE  employee\_id = 102;  SELECT  AVG(salary)  INTO v\_avgsal  FROM  hr\_employees;  IF v\_salary1 > v\_avgsal THEN  dbms\_output.put\_line('Employee '  || v\_firstname1  || ' salary '  || v\_salary1  || ' is more than average salary');  ELSE  dbms\_output.put\_line('Employee '  || v\_firstname1  || ' salary '  || 'is less than average salary');  END IF;  IF v\_salary2 > v\_avgsal THEN  dbms\_output.put\_line('Employee '  || v\_firstname2  || ' salary '  || v\_salary2  || ' is more than average salary');  ELSE  dbms\_output.put\_line('Employee '  || v\_firstname2  || ' salary '  || 'is less than average salary');  END IF;  IF v\_salary3 > v\_avgsal THEN  dbms\_output.put\_line('Employee '  || v\_firstname3  || ' salary '  || v\_salary3  || ' is more than average salary');  ELSE  dbms\_output.put\_line('Employee '  || v\_firstname3  || ' salary '  || 'is less than average salary');  END IF;  END; |

5) Investigate below code and explain how CONTINUE would impact the DBMS OUTPUT printing options. Go with each i iterations from 1 to 10 and also go with internal child FOR LOOP j from 1 to 10



DECLARE

v\_total NUMBER := 0;

BEGIN

<<BeforeTopLoop>>

FOR i IN 1..10 LOOP

v\_total := v\_total + 1;

dbms\_output.put\_line

('Total is: ' || v\_total);

FOR j IN 1..10 LOOP

CONTINUE BeforeTopLoop WHEN i + j > 5;

v\_total := v\_total + 1;

END LOOP;

END LOOP;

END two\_loop;

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| Based on the above code, the impact the CONTINUE statement would have on DBMS\_OUTPUT printing would cause the inner loop to skip certain values of ‘i’ and ‘j’ but the outer loop will still execute DBMS\_OUTPUT printing for each iteration. |