Lab Assignment 3: Write a Valid Code Solution with Control Flows and Looping Structures

Equipment and Materials

For this lab assignment, you will need:

- A Windows computer with a minimum of 16 GB RAM and 250 GB of free disk space, capable of nested virtualization
- Access to ORACLE SQL*PLUS or Oracle Academy APEX
- EMP database, located in the *Course Resources* section of Brightspace.

Instructions

Part A: Complete the Pre-Lab Tasks

1. Attend the lectures related to the lab activities.
2. Complete the out-of-class learning activities, as indicated by your instructor.
3. Review the EMP table structure by performing a describe on this table. There is no ERD for this database table set, but we will only be using the EMP table for our lab assignment.
4. See Brightspace for the lab due date.

Part B: Create a Coded Solution that Includes the Rules Below

1. Create and *thoroughly test* a PL/SQL coded solution for the following scenario:

   The president of your company wants to ensure that everyone is receiving a fair wage. They have asked you to modify employee salaries according to the following three business rules:

   - **Rule 1:** If an employee's salary is higher than the president's salary, the employee's salary should either be reduced by 50% or be reduced to 25% less than the president's salary, whichever is less. For example, if the president's salary is $5,000, 25% less than that is $3,750. If the employee's salary is $6,000, a reduction of 50% would bring their salary down to $3,000. The employee's new salary should be $3,000 because it is the lower of the two values.
   - **Rule 2:** If an employee makes less than $100, their salary should be increased by 10%, but only if the **original** average salary for the **entire** company (including the president's) is still more than their new raised salary.

     Note: The company has decided that they will use the average salary **before** the changes from Rule 1 are applied, rather than after.

- **Rule 3:** If an employee's commission is more than 22% of their original salary (i.e., before the salary adjustments in the previous rules), the commission should be changed to the lowest commission in their department (excluding anyone who has a commission with a 0 or NULL value). If an employee does not have a commission (i.e., NULL or 0 value), no changes should be made to their commission.

2. Your solution must follow these restrictions:
    - You must use one looping structure with an explicit cursor.
    - You can only use a SELECT…INTO to get: 1) the average salary of the company, 2) the president's salary and 3) the lowest commission in a department.
        - The first two queries must be performed outside of the looping structure. The average salary and president's salary should display on the screen.
        - The third query must be inside the loop and use the explicit cursor data. The lowest commission in a department and the department number should display on the screen.
    - You can use only one DML command in the coded solution and it must be inside the loop and use the explicit cursor data.
    - Only hard code the following list of values provided in the problem.
        - 'PRESIDENT'
        - 50%
        - 25%
        - $100
        - 10%
        - 22%
    - Ensure that the hard-coded values are defined as constants in the declaration section, and then these constants are used in the body of the code.
    - Assume the company has only one president.
3. Testing:
    - You may find the existing data in the tables does not provide the ability to test your logic. Remember this is a development environment, so make the data work for you when testing. For example, if there is no employee that makes more than the president, add a new employee that does, or change an existing employee's salary.
4. Submit your completed code to the forum and topic in the Brightspace Discussion board indicated by your instructor by the due date.

    Note: Submit your code in the body of the discussion board post rather than as an attachment.

Part C: Complete the Post-Lab Tasks

1. Compare your posted solution to the solution posted by your instructor.
2. Talk with your instructor if you are unsure why there are differences between the solutions.