**Student Name: Weight: 1.25%**

**Student ID:** **Marks:** **/10**

# Lab: Write a Valid Code Solution with Different Data Types

## Equipment and Materials

For this lab, 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
* 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 labs.
4. See Brightspace for the lab due date.

#### Part B: Complete the Lab Tasks

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 the salaries of everyone at the company except themselves, using the following two business rules:

* **Rule 1:** If an employee’s salary is higher than the president’s, that employee’s salary should be reduced to 25% **less than the president’s salary**. For example, if the president’s salary is $5,000 and the employee’s salary is $6,000, the employee’s new salary will be $3,750. (5 marks)
* **Rule 2:** If an employee’s salary is less than $100, their salary should be increased by 10%, but only if the average salary for the **entire** company (including the president) is still more than their newly raised salary. (5 marks)

**Note:** When calculating the company’s average salary, do this **after** the salary changes are made from Rule 1.

1. Your solution must follow these **restrictions**:

* You must use SELECT to retrieve data.
* You must use UPDATE to modify data.
* You can choose what variable types to use.
* The president’s salary and average salary should display on screen.
* Don’t use any decision structures (IF and CASE) or looping structures (FOR, LOOP, WHILE) from the next unit (this lab is strictly Unit 4 code).
* Don’t use subqueries with DML statements.
* Only hard code information that was provided in the problem:
* ‘PRESIDENT’
* 25%
* $100
* 10%
* **Note:** Values like counters are not considered hard coding because we are using them internally in the program simply for logistics whereas hard coding is specifically data that is available in the database.
* Hard coded values should be defined as constants, and then the constants used in the body of the code.
* Assume the company has only one president.

1. Testing:

* You may find the existing data in the tables does not provide the ability to test your logic. Remember, 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.

1. Submit your completed script 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.