

## **PROG3200 – Fall 2018**

### **Assignment 02 – Due Day of Class, Week of October 15, 2018**

To be completed **individually**. There are more than one way to answer the following questions, so each student will most likely have different command sequences, variable names, etc. Please answer every question on a single .doc. Be sure to format your output correctly so it is easily viewable.

In this assignment, you will be interacting with the schema you created in Assignment 1. Please fix any mistakes in your assignment 1 before working on Assignment 2.

**Please submit both an electronic soft copy to eConestoga as well as a hard paper copy to me. You may submit the paper copy to the mail slot on my office of 2A605 or hand it in to me in class the week of October 15. Please include the IT coversheet, which is available on eConestoga.**

Familiarize yourself with the CP/A assignment standards. You should, at a minimum, capitalize SQL language keywords (SELECT, FROM, JOIN, etc.). Identifiers may be in lower case or mixed case – strive for consistency. Be neat.

#### **Question 1 – Working with Variables and Displaying Output [10 Marks]:**

Write a program using PL/SQL to do some basic string manipulation. Store in variable 1 the string "question" and store in variable 2 the string "one". Concatenate variable 1 to variable 2 and store this in a third variable. Finally, find the location of the substring "ne" in variable 3 and print this location to the screen.

#### **Question 2 – Conditions [10 Marks]:**

Write a program using PL/SQL to determine the current status of an employee. The program will search using an employee's name and determine how many projects the employee is currently working on. If an employee is enrolled in any projects, create a message telling the user what projects the employee is working on and what the employee's average hourly rate is. If the employee is not working on any project, inform the user that employee is not assigned to any projects. Run the program once hardcoding in a search for Alice. Run the program a second time hardcoding in a search for Allan. You only need to submit one version of your code, but include both outputs.

#### **Question 3 – Iterations [10 Marks]:**

Write a program using PL/SQL to print each single character from the string "questionthree" on its own line using a WHILE loop.

Create a second program that outputs the same as above, this time using a FOR loop.

**Question 4 – Exceptions [10 Marks]:**

Write a program using PL/SQL to determine how many employees are assigned to any project based on a search for a project number. If the number of employees assigned to a project is found to be more than 4, raise the user-defined exception `e_project_too_many_emp` and display an error message. If the project is not over-staffed, display the number of employees working on the project. Run the program once hardcoding in a search for project number 4. Run the program a second time hardcoding in a search for project number 6. You only need to submit one version of your code, but include both outputs.

**Question 5 – Cursors [10 Marks]:**

Write a program using PL/SQL to output the project status of each employee in each department. To do this, please use two cursors. The first cursor should use a `SELECT` statement to gather the required information. The second cursor will be required to count the projects. Output each department, each employee in that department, and the number of projects each employee is assigned to.