**ORACLE PL/SQL – Chapter 4: Writing Control Structures**

***PL/SQL queries should return one row only otherwise exception handling must be used (to be discussed later in the course)!!!***

***Use the SUMMIT Sport Goods for the rest of the semester!***

**ASSIGNMENT 4**

***Ignore the questions of practice 4 of your PL/SQL Manual. Instead, use the SUMMIT database to answer these questions.***

## Question 1

Study the IF statement listed below:

SET SERVEROUTPUT ON

DECLARE

v\_input CHAR := &p\_size;

v\_output VARCHAR2(12);

BEGIN

IF v\_input = ’S’ THEN

v\_output := ’Small’;

ELSIF v\_input = ’M’ THEN

v\_output := ’Medium’;

ELSIF v\_input = ’L’ THEN

v\_output := ’Large’;

ELSE

v\_output := ’UNKNOWN SIZE’;

END IF;

DBMS\_OUTPUT.PUT\_LINE(v\_output);

END;

1. Rewrite the IF statement above using a CASE expression ***that uses a selector***.
2. Rewrite the IF statement above using a searched CASE expression that ***does not use a selector***.

## Question 2

1. Create the table called **messages** by typing the following SQL statement and pressing <ENTER>

**DROP TABLE messages;**

**CREATE TABLE messages (results VARCHAR2 (60));**

1. Next create an anonymous PL/SQL block and run the block THREE times to insert the numbers 1 to 5, excluding 3 and 4. Thus the block should accept every one of these numbers except 3 and 4. Commit before the end of the block. Verify that your inserts were correct. DO NOT use a FOR loop at this stage. **Thereafter, delete all records from the table!**
2. Repeat the previous question but use a FOR loop this time. Verify that the inserts were correct.

## Question 3

1. Create a PL/SQL block and use the IF statement to compute the income for a given employee based on the salary and commission percentage of the employee together with a bonus.

Where the employee does not have a commission percentage assigned (in the table), use 5% as his/her commission percentage. Define a substitution variable **p\_staffid** in the iSQL\*Plus environment and assign 11 to this variable to indicate the employee id. (Hint: use DEFINE).

1. The bonus is calculated as follows:

* If the employee’s salary is less than 1000, set the bonus amount to 10% of the salary.
* If the employee’s salary is between 1000 and 1500, set the bonus amount to 15% of the salary.
* If the salary exceeds 1500, set the bonus amount to 20% of the salary.
* If the employee’s salary is NULL, set the bonus amount for the employee to 0.

1. Make the changes permanent.
2. Run your block for employees17, 11 and 1. Verify your calculations.
3. Remember to change your employee id definitions every time before you run the block!

***Expected outputs:***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **StaffId** | **Salary** | **Commission** | **Bonus** | **Income** |
| 17 | 940 | 0 | 94 | 1034 |
| 11 | 1400 | 140 | 210 | 1750 |
| 1 | 2500 | 0 | 500 | 3000 |

## Question 4

1. Create a PL/SQL block that displays for every order that a customer has placed the text:

’You have placed an order’.

**Use the FOR loop**. Save your PL/SQL block to a file called F:\As4q4a.sql and run your block from the file..

Accept the customer id as user input with a SQL\*Plus substitution variable.

1. Replace the FOR loop of question 4a) with a WHILE loop.

What else do you have to do that is different to the FOR loop now?

Save your block as F:\as4q4b and then run your block from the file

## Question 5

1. Create a new table called EMPSTAR and copy all the rows of the S\_EMP table to this new table.
2. Add a new column, called STARS of datatype VARCHAR2 and length 50 to the EMPSTAR table for storing a number of asterisks (\*).

## Question 6

1. Create a PL/SQL block that rewards an employee by appending an asterisk in the STARS column for every R100 of the employee’s salary. Save your PL/SQL block to a file called As4q6.sql.
2. Accept the employee id as user input with a SQL\*Plus substitution variable DEFINE p\_empid=3..
3. Initialize a variable v\_asterisk that has to contain a string of asterisks.
4. Append an asterisk to the string for every R100 of the salary amount. For example, if the employee has a salary amount of R795, the string of asterisks should contain eight asterisks. If the employee has a salary of R1525, the string of asterisks should contain 15 asterisks. (HINT: Use ROUND)
5. Update the STARS column for the employee with the string of asterisks.
6. Commit.
7. Test the block for employees 20 and 14