ITE 5220 Oracle Database Programming using PL/SQL

Lab Exercise 4[Chapter 6]

4 POINTS

Agenda:

To do this lab you will have to use your laptops.

You have to capture the output and write your findings about the output.

Practice 1: [Q1-1 point, Q2 and 3 - 2 points each]

Working with Composite Data Types

1) Write a PL/SQL block to print information about a given country.
   a) Declare a PL/SQL record based on the structure of the `countries` table.
   b) Declare a variable `v_countryid`. Assign `CA` to `v_countryid`.
   c) In the declarative section, use the `%ROWTYPE` attribute and declare the `v_country_record` variable of type `countries`.
   d) In the executable section, get all the information from the `countries` table by using `v_countryid`. Display selected information about the country. The sample output is as follows:

```
anonymous block completed
Country Id: CA Country Name: Canada Region: 2
```

   e) You may want to execute and test the PL/SQL block for countries with the IDs DE, UK, and US.

2) Create a PL/SQL block to retrieve the names of some departments from the `departments` table and print each department name on the screen, incorporating an associative array. Save the script as `lab_06_02_soln.sql`.

   a) Declare an `INDEX BY` table `dept_table_type` of type `departments.department_name`. Declare a variable `my_dept_table` of type `dept_table_type` to temporarily store the names of the departments.
   b) Declare two variables: `f_loop_count` and `v_deptno` of type `NUMBER`. Assign 10 to `f_loop_count` and 0 to `v_deptno`.
   c) Using a loop, retrieve the names of 10 departments and store the names in the associative array. Start with `department_id` 10. Increase `v_deptno` by 10 for every loop iteration. The following table shows the `department_id` for which you should retrieve the `department_name`.

DEPARTMENT_ID	DEPARTMENT_NAME
10	Administration
20	Marketing
30	Purchasing
40	Human Resources
50	Shipping
60	IT
70	Public Relations
80	Sales
90	Executive
100	Finance

   d) Using another loop, retrieve the department names from the associative array and display them.
   e) Execute and save your script as `lab_06_02_soln.sql`. The output is as follows:

```
anonymous block completed
Administration
Marketing
Purchasing
Human Resources
Shipping
IT
Public Relations
Sales
Executive
Finance
```

3) Modify the block that you created in Practice 2 to retrieve all information about each department from the `departments` table and display the information. Use an associative array with the `INDEX BY` table of records method.

   a) Load the `lab_06_02_soln.sql` script.
   b) You have declared the associative array to be of type `departments.department_name`. Modify the declaration of the associative array to temporarily store the number, name, and location of all the departments. Use the `%ROWTYPE` attribute.
   c) Modify the `SELECT` statement to retrieve all department information currently in the `departments` table and store it in the associative array.
   d) Using another loop, retrieve the department information from the associative array and display the information.

   The sample output is as follows:

```
anonymous block completed
Department Number: 10 Department Name: Administration Manager Id: 200 Location Id: 1700
Department Number: 20 Department Name: Marketing Manager Id: 201 Location Id: 1800
Department Number: 30 Department Name: Purchasing Manager Id: 114 Location Id: 1700
Department Number: 40 Department Name: Human Resources Manager Id: 203 Location Id: 2400
Department Number: 50 Department Name: Shipping Manager Id: 121 Location Id: 1500
Department Number: 60 Department Name: IT Manager Id: 103 Location Id: 1400
Department Number: 70 Department Name: Public Relations Manager Id: 204 Location Id: 2700
Department Number: 80 Department Name: Sales Manager Id: 145 Location Id: 2500
Department Number: 90 Department Name: Executive Manager Id: 100 Location Id: 1700
Department Number: 100 Department Name: Finance Manager Id: 108 Location Id: 1700
```