1. Write a PL/SQL block to print information about a given country.

* 1. Declare a PL/SQL record based on the structure of the countries table.
  2. Declare a variable v\_countryid. Assign CA to v\_countryid.
  3. In the declarative section, use the %ROWTYPE attribute and declare the v\_country\_record variable of type countries.
  4. In the executable section, get all the information from the countries table by using countryid. Display selected information about the country. Sample output is as follows.



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

SET SERVEROUTPUT ON;

DECLARE

v\_countryid TBLCOUNTRIES.COUNTRY\_ID%TYPE := 'CA';

v\_country\_record TBLCOUNTRIES%ROWTYPE;

BEGIN

SELECT \*

INTO v\_country\_record

FROM TBLCOUNTRIES

WHERE COUNTRY\_ID = v\_countryid;

DBMS\_OUTPUT.PUT\_LINE('Country Id: '||v\_country\_record.COUNTRY\_ID||' Country Name: '||v\_country\_record.COUNTRY\_NAME||' Region : '||v\_country\_record.REGION\_ID);

END;

2. Create a PL/SQL block to retrieve the name of some departments from the departments table and print each department name on the screen, incorporating an INDEX BY table. Save the script as lab\_06\_02\_soln.sql.

* 1. 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 name of the departments.
  2. Declare two variables: loop\_count and deptno of type NUMBER. Assign 10 to loop\_count and 0 to deptno.
  3. Using a loop, retrieve the name of 10 departments and store the names in the INDEX BY table. Start with department\_id 10. Increase deptno by 10 for every iteration of the loop. The following table shows the department\_id for which you should retrieve the department\_name and store in the INDEX BY table.



* 1. Using another loop, retrieve the department names from the INDEX BY table and display them.
  2. Execute and save your script as lab\_06\_02\_soln.sql. The output is as follows:



SET SERVEROUTPUT ON;

DECLARE

TYPE dept\_table\_type IS TABLE OF TBLDEPARTMENTS.DEPARTMENT\_NAME%TYPE

INDEX BY PLS\_INTEGER;

my\_dept\_table dept\_table\_type;

loop\_count NUMBER := 10;

deptno NUMBER :=0;

BEGIN

FOR i IN 1..loop\_count

LOOP

deptno := deptno + 10;

SELECT DEPARTMENT\_NAME

INTO my\_dept\_table(i)

FROM TBLDEPARTMENTS

WHERE DEPARTMENT\_ID = deptno;

END LOOP;

FOR i IN 1..loop\_count

LOOP

DBMS\_OUTPUT.PUT\_LINE(my\_dept\_table(i));

END LOOP;

END;

3. Modify the block that you created in question 2 to retrieve all information about each department from the departments table and display the information. Use an INDEX BY table of records.

a. Load the lab\_06\_02\_soln.sql script.

b. You have declared the INDEX BY table to be of type departments.department\_name. Modify the declaration of the INDEX BY table, to temporarily store the number, name, and location of 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 INDEX BY table.

d. Using another loop, retrieve the department information from the INDEX BY table and display the information. 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

SET SERVEROUTPUT ON;

DECLARE

TYPE dept\_table\_type IS TABLE OF TBLDEPARTMENTS%ROWTYPE

INDEX BY PLS\_INTEGER;

my\_dept\_table dept\_table\_type;

loop\_count NUMBER := 10;

deptno NUMBER :=0;

BEGIN

FOR i IN 1..loop\_count

LOOP

deptno := deptno + 10;

SELECT \*

INTO my\_dept\_table(i)

FROM TBLDEPARTMENTS

WHERE DEPARTMENT\_ID = deptno;

END LOOP;

FOR i IN 1..loop\_count

LOOP

DBMS\_OUTPUT.PUT\_LINE('Department Number: ' || my\_dept\_table(i).DEPARTMENT\_ID ||' Department Name: '||my\_dept\_table(i).DEPARTMENT\_NAME||' Manager Id: '||my\_dept\_table(i).MANAGER\_ID||' Location Id: '||my\_dept\_table(i).LOCATION\_ID);

END LOOP;

END;