

Database Programming with PL/SQL

6-6: Using Multiple Cursors Practice

Activities

Vocabulary

No new vocabulary for this lesson

Try It / Solve It

1. Write and run a PL/SQL block which produces a listing of departments and their employees. Use the DEPARTMENTS and EMPLOYEES tables. In a cursor FOR loop, retrieve and display the department_id and department_name for each department, and display a second line containing '-
-----' as a separator. In a nested cursor FOR loop, retrieve and display the first_name, last_name, and salary of each employee in that department, followed by a blank line at the end of each department. Order the departments by department_id, and the employees in each department by last_name.

You will need to declare two cursors, one to fetch and display the departments, the second to fetch and display the employees in that department, passing the department_id as a parameter.

Your output should look something like this (only the first few departments are shown):

10 Administration

Jennifer Whalen 4400

20 Marketing

Pat Fay 6000

Michael Hartstein 13000

50 Shipping

Curtis Davies 3400

Randall Matos 2600

Kevin Mourgós 5800

Trenna Rajs 3500

Peter Vargas 2500

DECLARE

CURSOR cur_dep IS SELECT DEPARTMENT_ID, DEPARTMENT_NAME FROM DEPARTMENTS order by department_id;

CURSOR CUR_EMP(p_dptoid departments.department_id%TYPE) IS SELECT first_name, last_name, salary, employee_id FROM EMPLOYEES WHERE department_id=P_dptoid order by last_name ;

BEGIN

FOR v_reg_dep IN cur_dep LOOP

dbms_output.put_line('Departamento: '||v_reg_dep.department_name);

FOR v_reg_emp IN cur_emp(v_reg_dep.department_id) LOOP

dbms_output.put_line('Empleado '||': '||v_reg_emp.first_name||' '||v_reg_emp.last_name ||'"||' Salario: '||v_reg_emp.salary);

END LOOP;

END LOOP;

END;

2. Write and run a PL/SQL block which produces a report listing world regions, countries in those regions, and the land area and population for each country.

You will need two cursors: an outer loop cursor which fetches and displays rows from the REGIONS table, and an inner loop cursor which fetches and displays rows from the COUNTRIES table for countries in that region, passing the region_id as a parameter.

Restrict your regions to those in the Americas (region_name like '%America%'). Order your output by region_name, and by country_name within each region.

Your output should look something like this (only the first two regions are shown):

13 Central America

Belize 22966 287730
 Republic of Costa Rica 51100 4075261
 Republic of El Salvador 21040 6822378
 Republic of Guatemala 108890 12293545
 Republic of Honduras 112090 7326496
 Republic of Nicaragua 129494 5570129
 Republic of Panama 78200 3191319
 United Mexican States 1972550 107449525

21 North America

Bermuda 53 65773
 Canada 9984670 33098932
 Greenland 2166086 56361
 Territorial Collectivity of Saint Pierre and Miquelon 242 7026
 United States of America 9631420 298444215

DECLARE

CURSOR cur_reg IS SELECT REGION_ID, region_NAME FROM REGIONS WHERE region_name LIKE '%America%';

CURSOR CUR_count(p_reg_id regions.region_id%TYPE) IS SELECT country_name, area,population FROM countries WHERE region_id=p_reg_id ;

BEGIN

FOR v_reg IN cur_reg LOOP

dbms_output.put_line(v_reg.region_id ||' '||v_reg.region_name);

FOR v_reg_count IN cur_count(v_reg.region_id) LOOP

dbms_output.put_line(v_reg_count.country_name||' '||v_reg_count.area ||' '||v_reg_count.population);

END LOOP;

END LOOP;

END;

3. Modify your block from question 2 to display the names of official spoken languages in each country. You will need three cursors and three loops. The first two cursors should fetch and display regions and countries, as in question 2. The innermost loop should accept a country_id as a parameter, and fetch and display the name of each official language, using a join of the SPOKEN_LANGUAGES table and the LANGUAGES table.

Within each country, the languages should be ordered by language_name. Test your block, restricting regions to those in the Americas.

DECLARE

CURSOR cur_reg IS SELECT REGION_ID, region_NAME FROM REGIONS WHERE region_name LIKE '%America%';

CURSOR CUR_count(p_reg_id regions.region_id%TYPE) IS SELECT country_id, country_name, area,population FROM countries WHERE region_id=p_reg_id ;

CURSOR CUR_lang(p_country_id countries.country_id%type) IS SELECT sl.country_id,l.language_name FROM SPOKEN_LANGUAGES sl INNER JOIN languages l ON (l.language_id=sl.language_id) WHERE sl.country_id=p_country_id order by l.language_name;

BEGIN

FOR v_reg IN cur_reg LOOP

dbms_output.put_line(v_reg.region_id ||' '||v_reg.region_name);

FOR v_reg_count IN cur_count(v_reg.region_id) LOOP

dbms_output.put_line(v_reg_count.country_name||' '||v_reg_count.area ||' '||v_reg_count.population);

FOR v_reg_lang IN cur_lang(v_reg_count.country_id) LOOP

```
        dbms_output.put_line('--'||v_reg_lang.language_name);  
    END LOOP;  
END LOOP;  
END LOOP;  
END;
```

Your output should look something like this (only the first two regions are shown):

13 Central America

Belize 22966 287730

--- English

Republic of Costa Rica 51100 4075261 ---

Spanish

Republic of El Salvador 21040 6822378

Republic of Guatemala 108890 12293545

Republic of Honduras 112090 7326496

Republic of Nicaragua 129494 5570129

--- Spanish

Republic of Panama 78200 3191319

--- Spanish

United Mexican States 1972550 107449525

21 North America

Bermuda 53 65773

--- English

Canada 9984670 33098932

--- English

--- French

Greenland 2166086 56361

Territorial Collectivity of Saint Pierre and Miquelon 242 7026

--- French

United States of America 9631420 298444215

--- English