

Practice PL/SQL 5-2

Agustín Alejandro Mota Hinojosa

November 26, 2023

Contents

1	Vocabulary	1
2	Try/Solve It	1

1 Vocabulary

1. Collection
2. INDEX BY TABLE
3. INDEX BY table of records

2 Try/Solve It

1. PL/SQL Collections

- (a) is a named set of many occurrences of the same kind of data stored as a variable.
- (b) Collections
 - i. A list of all employees.
 - ii. The population of all countries in Europe.
 - iii. All the data stored in the employees table about specific employees.
- (c) An INDEX BY table is based on a single field or a column of a table.
- (d) A INDEX BY table uses a TYPE to populate and an INDEX BY table of records uses a composite TYPE.
- (e) The difference between t_{pops} and $v_{popstab}$ is that t_{pops} is a TYPE and $v_{popstab}$ is a variable from that type. And $v_{popstab}$ is a INDEX BY table because it's only a column based field and not a composite TYPE.

2. INDEX BY tables of countries in South America

- (a) INDEX BY table of countries in South America

```
DECLARE
    TYPE t_country_rec IS TABLE OF WF_COUNTRIES.COUNTRY_NAME%TYPE
        INDEX BY BINARY_INTEGER;
    v_country_rec_tab t_country_rec;
    v_count_id BINARY_INTEGER := 0;
BEGIN
    FOR country_rec IN (
        SELECT country_id, country_name FROM WF_COUNTRIES
```

```

WHERE region_id = 5 ORDER BY country_id)
LOOP
v_count_id := v_count_id + 1;
    v_country_rec_tab(v_count_id) := country_rec.COUNTRY_NAME;
END LOOP;

```

END;

(b) Display de contents of de INDEX BY table

```

DECLARE
    TYPE t_country_rec IS TABLE OF WF_COUNTRIES.COUNTRY_NAME%TYPE
        INDEX BY BINARY_INTEGER;
    v_country_rec_tab t_country_rec;
    v_count_id BINARY_INTEGER := 0;
    v_count BINARY_INTEGER := 0;
BEGIN
    FOR country_rec IN (
        SELECT country_id,country_name FROM WF_COUNTRIES
        WHERE region_id = 5 ORDER BY country_id)
    LOOP
        v_count_id := v_count_id + 1;
            v_country_rec_tab(v_count_id) := country_rec.COUNTRY_NAME;
        END LOOP;

        v_count := v_country_rec_tab.FIRST;
    LOOP
        IF v_country_rec_tab.EXISTS(v_count) THEN
            DBMS_OUTPUT.PUT_LINE(v_country_rec_tab(v_count));
            v_count := v_count + 1;
            EXIT WHEN v_count = v_country_rec_tab.LAST;
        END IF;
    end loop;
END;

```

(c) Only display the first and last elements of the INDEX BY table

```

DECLARE
    TYPE t_country_rec IS TABLE OF WF_COUNTRIES.COUNTRY_NAME%TYPE
        INDEX BY BINARY_INTEGER;
    v_country_rec_tab t_country_rec;
    v_count_id BINARY_INTEGER := 0;
BEGIN
    FOR country_rec IN (
        SELECT country_id,country_name FROM WF_COUNTRIES
        WHERE region_id = 5 ORDER BY country_id)
    LOOP
        v_count_id := v_count_id + 1;
            v_country_rec_tab(v_count_id) := country_rec.COUNTRY_NAME;
        END LOOP;

        DBMS_OUTPUT.PUT_LINE('First element: ' || v_country_rec_tab(v_country_rec_tab.FIRST));
        DBMS_OUTPUT.PUT_LINE('Last element: ' || v_country_rec_tab(v_country_rec_tab.LAST));

```

3. INDEX BY table of records

- (a) Populate an INDEX BY table of records with EMPLOYEES data.

```
DECLARE
    TYPE t_emp_reg IS TABLE OF EMPLOYEES%ROWTYPE
        INDEX BY BINARY_INTEGER;
    v_emp_rec_tab t_emp_reg;
BEGIN
    FOR emp_reg IN (SELECT * FROM EMPLOYEES ORDER BY employee_id) LOOP
        v_emp_rec_tab(emp_reg.employee_id) := emp_reg;
    END LOOP;
END;
```

- (b) Display the contents of the INDEX BY table of records

```
DECLARE
    TYPE t_emp_reg IS TABLE OF EMPLOYEES%ROWTYPE
        INDEX BY BINARY_INTEGER;
    v_emp_rec_tab t_emp_reg;
    v_count BINARY_INTEGER := 0;
BEGIN
    FOR emp_reg IN (SELECT * FROM EMPLOYEES ORDER BY employee_id) LOOP
        v_emp_rec_tab(emp_reg.employee_id) := emp_reg;
    END LOOP;
    v_count := v_emp_rec_tab.FIRST;
    LOOP
        IF v_emp_rec_tab.EXISTS(v_count) THEN
            DBMS_OUTPUT.PUT_LINE(v_emp_rec_tab(v_count).LAST_NAME);
        END IF;
        v_count := v_count + 1;
        EXIT WHEN v_count = v_emp_rec_tab.LAST;
    END LOOP;
END;
```