

## Database Programming with PL/SQL

### 3-2: Retrieving Data in PL/SQL

#### Practice Activities

##### Vocabulary

*No new vocabulary for this lesson*

#### Try It / Solve It

1. State whether each of the following SQL statements can be included directly in a PL/SQL block.

Statement	Valid in PL/SQL	Not Valid in PL/SQL
ALTER USER SET password = 'oracle';		
CREATE TABLE test (a NUMBER);		
DROP TABLE test;		
SELECT emp_id INTO v_id FROM employees;		
GRANT SELECT ON employees TO PUBLIC;		
INSERT INTO grocery_items (product_id, brand, description) VALUES (199, 'Coke', 'Soda');		
REVOKE UPDATE ON employees FROM PUBLIC;		
ALTER TABLE employees RENAME COLUMN employee_id TO emp_id;		
DELETE FROM grocery_items WHERE description = 'Soap';		

2. Create a PL/SQL block that selects the maximum department\_id in the departments table and stores it in the v\_max\_deptno variable. Display the maximum department\_id. Declare v\_max\_deptno to be the same datatype as the department\_id column. Include a SELECT statement to retrieve the highest department\_id from the departments table. Display the variable v\_max\_deptno.

3. The following code is supposed to display the lowest and highest elevations for a country name entered by the user. However, the code does not work. Fix the code by following the guidelines for retrieving data that you learned in this lesson.

```
DECLARE
  v_country_name    countries.country_name%TYPE := Federative Republic of Brazil;
  v_lowest_elevation countries.lowest_elevation%TYPE;
  v_highest_elevation countries.highest_elevation%TYPE;
BEGIN
  SELECT lowest_elevation, highest_elevation
    FROM countries;
  DBMS_OUTPUT.PUT_LINE('The lowest elevation in '
    || v_country_name || ' is ' || v_lowest_elevation
    || ' and the highest elevation is ' || v_highest_elevation || '.');
END;
```

4. Run the following anonymous block. It should execute successfully.

```
DECLARE
  v_emp_lname    employees.last_name%TYPE;
  v_emp_salary   employees.salary%TYPE;
BEGIN
  SELECT last_name, salary INTO v_emp_lname, v_emp_salary
    FROM employees
   WHERE job_id = 'AD_PRES';
  DBMS_OUTPUT.PUT_LINE(v_emp_lname || ' ' || v_emp_salary);
END;
```

- A. Now modify the block to use 'IT\_PROG' instead of 'AD\_PRES' and re-run it. Why does it fail this time?
- B. Now modify the block to use 'IT\_PRAG' instead of 'IT\_PROG' and re-run it. Why does it still fail?

5. Use (but don't execute) the following code to answer this question:

```
DECLARE
  last_name VARCHAR2(25) := 'Fay';
BEGIN
  UPDATE emp_dup
    SET first_name = 'Jennifer'
   WHERE last_name = last_name;
END;
```

What do you think would happen if you ran the above code? Write your answer here and then follow the steps below to test your theory.

- A. Create a table called emp\_dup that is a duplicate of employees.
  - B. Select the first\_name and last\_name values for all rows in emp\_dup.
  - C. Run the anonymous PLSQL block shown at the beginning of this question.
  - D. Select the first\_name and last\_name columns from emp\_dup again to confirm your theory.
  - E. Now we are going to correct the code so that it changes only the first name for the employee whose last name is "Fay". Drop emp\_dup and re-create it.
  - F. Modify the code shown at the beginning of this question so that for the employee whose last\_name = "Fay", the first\_name is updated to Jennifer. Run your modified block.
  - G. Confirm that your update statement worked correctly.
6. Is it possible to name a column in a table the same name as the table? Create a table to test this question. Don't forget to populate the table with data.
7. Is it possible to have a column, table, and variable, all with the same name? Using the table you created in the question above, write a PL/SQL block to test your theory.