

Homework Week #3

PL/SQL Virtual Training

1. DELETE FROM students;

This SQL statement will:

- A. Not execute due to wrong syntax
- B. Delete the first row from STUDENTS
- C. Delete all rows from STUDENTS
- D. None of the above

2. 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');		

3. True or False: When you use DML in a PL/SQL block, Oracle uses explicit cursors to track the data changes.
4. _____ cursors are created by the programmer.
5. _____ cursors are created by the Oracle server.

6. 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    wf_countries.country_name%TYPE
                  := 'United States of America';
  v_lowest_elevation wf_countries.lowest_elevation%TYPE;
  v_highest_elevation wf_countries.highest_elevation%TYPE;
BEGIN
  SELECT lowest_elevation, highest_elevation
    FROM wf_countries;
  DBMS_OUTPUT.PUT_LINE('The lowest elevation in
    ||country_name|| is ||v_lowest_elevation
    ||' and the highest elevation is ||
    v_highest_elevation||'.');
END;
```

7. How many transactions are shown in the following code? Explain your reasoning.

```
BEGIN
  INSERT INTO my_savings (account_id, amount)
    VALUES (10377,200);
  INSERT INTO my_checking(account_id, amount)
    VALUES (10378,100);
END;
```

8. Create the endangered_species table by running the following statement in Application Express:

```
CREATE TABLE endangered_species
(species_id          NUMBER(4)
                      CONSTRAINT es_spec_pk PRIMARY KEY,
common_name         VARCHAR2(30)
                      CONSTRAINT es_com_name_nn NOT NULL,
scientific_name     VARCHAR2(30)
                      CONSTRAINT es_sci_name_nn NOT NULL);
```

9. Examine the following block. If you were to run this block, what data do you think would be saved in the database?

```
BEGIN
  INSERT INTO endangered_species
    VALUES (100, 'Polar Bear','Ursus maritimus');
  SAVEPOINT sp_100;
  INSERT INTO endangered_species
    VALUES (200, 'Spotted Owl','Strix occidentalis');
  SAVEPOINT sp_200;
  INSERT INTO endangered_species
    VALUES (300, 'Asiatic Black Bear','Ursus thibetanus');
  ROLLBACK TO sp_100;
  COMMIT;
END;
```

10. List the three categories of control structures in PL/SQL.
11. List the keywords that can be part of an IF statement.
12. List the keywords that are a required part of an IF statement.
13. Write a PL/SQL block to find the total monthly salary paid by the company for a given department number from the employees table. Display a message indicating whether the total salary is greater than or less than \$19,000. Test your block twice using the Administration department (department_id =10) and the IT department (department_id =60). The IT department should be greater than \$19,000, while the Administration department's total should be less than \$19,000.
14. What happens if we use the Marketing department (department_id=20) in the previous script?
15. Alter the PL/SQL code to include an ELSIF to handle this situation.
16. Use a CASE statement:
- A. Write a PL/SQL block to select the number of countries using a supplied currency name. If the number of countries is greater than 20, display "More than 20 countries". If the number of countries is between 10 and 20, display "Between 10 and 20 countries". If the number of countries is less than 10, display "Fewer than 10 countries". Use a CASE statement.

B. Test your code using the following data:

	Fewer than 10 countries	Between 10 and 20 countries	More than 20 countries
US Dollar		X	
Swiss Franc	X		
Euro			X

17. What purpose does a loop serve in PL/SQL?
18. List the types of loops in PL/SQL.
19. What statement is used to explicitly end a loop?
20. Write a PL/SQL block to display the country_id and country_name values from the WF_COUNTRIES table for country_id whose values range from 1 through 3. Use a basic loop. Increment a variable from 1 through 3. Use an IF statement to test your variable and EXIT the loop after you have displayed the first 3 countries.
21. Modify your solution to question 18 above, replacing the IF statement with an EXIT....WHEN statement.
22. Write a PL/SQL block to produce a list of available vehicle license plate numbers. These numbers must be in the following format: NN-MMM, where NN is between 60 and 65, and MMM is between 100 and 110. Use nested FOR loops. The outer loop should choose numbers between 60 and 65. The inner loop should choose numbers between 100 and 110, and concatenate the two numbers together.