Database Programming with PL/SQL

11-2: Using Oracle-Supplied Packages

Practice Activities

Vocabulary

Identify the vocabulary word for each definition below:

UTL_FILE package	A package that allows PL/SQL programs to read and write operating system text files.
DBMS_OUTPUT package	A package that sends text messages from any PL/SQL block into a private memory area, from which the message can be displayed on the screen.
UTL_MAIL package	A package that allows PL/SQL programs to manage components of an e-mail message.

Try It / Solve It

1. There are more than a hundred Oracle supplied PL/SQL packages. Where could you find a list of them and a brief explanation as to what each one of them does?

 Consultando el diccionario de datos.

2. Construct and execute a query on the data dictionary to display an alphabetical list of the names of all packages owned by the DBA account called SYS. (Hint: look at ALL_OBJECTS).

 SELECT * FROM ALL_OBJECTS WHERE OWNER='SYS' AND object_type ='PACKAGE' ;

3. Create the procedure display_proc by executing the following code:

```
CREATE OR REPLACE PROCEDURE display_proc
IS
BEGIN
  FOR i IN 1..10 LOOP
    DBMS_OUTPUT.PUT(i || ' ');
  END LOOP;
  DBMS_OUTPUT.PUT_LINE('done');
END;
```
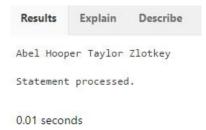
What output will be displayed when you execute the procedure? Run the procedure from an anonymous block to check your answer.

```
 1 2 3 4 5 6 7 8 9 10 done
```

Del 1 al 10

4. Create and execute a procedure called display_emp_names which displays the last names of all employees in department 80 on a single line of output, in ascending order by last_name. The procedure should declare a cursor to fetch the names from the table. Each fetched name should be added to the end of the DBMS_OUTPUT buffer, but the buffer should not be displayed until the final name has been fetched (PUT vs. PUT_LINE). Your output should look like this (the names may be different depending on any changes you may have made to the EMPLOYEES table earlier in the course):

Results	Explain	Describe

Abel Hooper Taylor Zlotkey

Statement processed.

0.01 seconds

5. Modify your procedure so that instead of displaying the list of names inside the procedure itself, it returns an OUT parameter containing the list of names. Then write and run an anonymous block which calls the procedure and displays the list of names.

6. What does the UTL_FILE package allow you to do?

Leer y escribir en archivos de texto plano como txt.

7. Imagine the Database Administrator has executed the following statement to create a directory object:

CREATE DIRECTORY emps_dir AS '/u01/employee_data';

You want to create a text report of all employees' last names and salaries. The report must have an operating system path and file name of '/u01/employee_data/salaries.txt', and must list the employees in ascending salary order.

A. The following procedure code contains several deliberate errors. Try to create the procedure using this code and note the error message(s). The error message(s) may vary in their usefulness. Focus your attention on the Oracle packages and procedures (UTL_FILE, FOPEN, PUT_LINE, etc.) to identify the errors. Check with your instructor for assistance.

```
CREATE OR REPLACE PROCEDURE list_sals IS
v_file  UTL_FILE.FILE_TYPE;   CURSOR empc IS
   SELECT last_name, salary
     FROM employees
```

```
        ORDER BY salary;
    BEGIN
      UTL_FILE.PUT_LINE(v_file, ' *** START OF REPORT ***');
    v_file := UTL_FILE.FOPEN ('EMPS_DIR', salaries.txt, 'w');
      FOR emp_rec IN empc LOOP
       UTL_FILE.PUT_LINE (v_file, emp_rec.last_name
            || ' earns: ' || emp_rec.salary);
      END LOOP;
      UTL_FILE.PUT_LINE('*** END OF REPORT ***');
      UTL_FILE.FCLOSE (v_file);
    EXCEPTION
      WHEN UTL_FILE.INVALID_FILE_HANDLE THEN
        RAISE_APPLICATION_ERROR(-20001, 'Invalid File.');
      WHEN UTL_FILE.WRITE_ERROR THEN
        RAISE_APPLICATION_ERROR (-20002, 'Unable to write to file'); END
    list_sals;
```

B. Modify the code to correct the errors and re-create the procedure. Continue until you receive the "Procedure created" message. Do NOT attempt to execute the procedure.

8. Name at least four exceptions that may be raised only when you are using the UTL_FILE package.