Practices for Lesson 5: Creating Packages

Chapter 5

Practices for Lesson 5: Overview

Overview

In this practice, you create a package specification and body called JOB_PKG, containing a copy of your ADD_JOB, UPD_JOB, and DEL_JOB procedures as well as your GET_JOB function. You also create and invoke a package that contains private and public constructs by using sample data.

Note:

1. Before starting this practice, execute /home/oracle/labs/plpu/code_ex/cleanup_scripts/cleanup_05.sql script.
2. If you missed a step in a practice, please run the appropriate solution script for that practice step before proceeding to the next step or the next practice.

Practice 5-1: Creating and Using Packages

Overview

In this practice, you create package specifications and package bodies. You then invoke the constructs in the packages by using sample data.

Note: Execute `cleanup_05.sql script` from `/home/oracle/labs/plpu/code_ex/cleanup_scripts/` before performing the following tasks.

Task

1. Create a package specification and body called `JOB_PKG`, containing a copy of your `ADD_JOB`, `UPD_JOB`, and `DEL_JOB` procedures as well as your `GET_JOB` function.

   Note: Use the code from your previously saved procedures and functions when creating the package. You can copy the code in a procedure or function, and then paste the code into the appropriate section of the package.

   a. Create the package specification including the procedures and function headings as public constructs.

   b. Create the package body with the implementations for each of the subprograms.

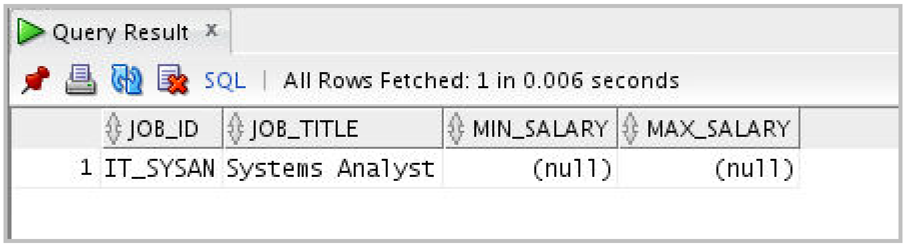
   c. Delete the following stand-alone procedures and function you just packaged using the Procedures and Functions nodes in the Object Navigation tree:

      1) The `ADD_JOB`, `UPD_JOB`, and `DEL_JOB` procedures

      2) The `GET_JOB` function

   d. Invoke your `ADD_JOB` package procedure by passing the values `IT_SYSAN` and `SYSTEMS ANALYST` as parameters.

   e. Query the `JOBS` table to see the result.



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	JOB_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY
1	IT_SYSAN	Systems Analyst	(null)	(null)

2. Create and invoke a package that contains private and public constructs.

   a. Create a package specification and a package body called `EMP_PKG` that contains the following procedures and function that you created earlier:

      1) `ADD_EMPLOYEE` procedure as a public construct

      2) `GET_EMPLOYEE` procedure as a public construct

      3) `VALID_DEPTID` function as a private construct

   b. Invoke the `EMP_PKG.ADD_EMPLOYEE` procedure, using department ID 15 for employee Jane Harris with the email ID `JAHARRIS`. Because department ID 15 does not exist, you should get an error message as specified in the exception handler of your procedure.

c. Invoke the ADD_EMPLOYEE package procedure by using department ID 80 for employee David Smith with the email ID DASMITH.

d. Query the EMPLOYEES table to verify that the new employee was added.

Solution 5-1: Creating and Using Packages

In this practice, you create package specifications and package bodies. You then invoke the constructs in the packages by using sample data.

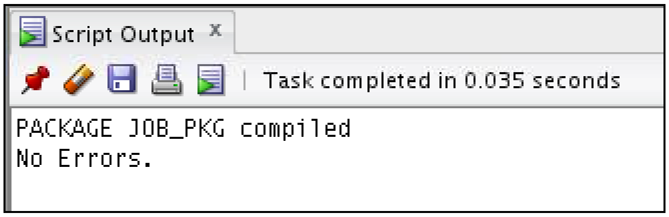
1. Create a package specification and body called `JOB_PKG`, containing a copy of your `ADD_JOB`, `UPD_JOB`, and `DEL_JOB` procedures as well as your `GET_JOB` function.

   Note: Use the code from your previously saved procedures and functions when creating the package. You can copy the code in a procedure or function, and then paste the code into the appropriate section of the package.

   a. Create the package specification including the procedures and function headings as public constructs.

      Open the `/home/oracle/labs/plpu/solns/sol_05.sql` script. Uncomment and select the code under Task 1_a. Click the Run Script icon (or press F5) on the SQL Worksheet toolbar to create and compile the package specification. The code and the result are displayed as follows:

```
CREATE OR REPLACE PACKAGE job_pkg IS
  PROCEDURE add_job (p_jobid jobs.job_id%TYPE, p_jobtitle
jobs.job_title%TYPE);
  PROCEDURE del_job (p_jobid jobs.job_id%TYPE);
  FUNCTION get_job (p_jobid IN jobs.job_id%type) RETURN
jobs.job_title%type;
  PROCEDURE upd_job(p_jobid IN jobs.job_id%TYPE, p_jobtitle IN
jobs.job_title%TYPE);
END job_pkg;
/
SHOW ERRORS
```



```
PACKAGE JOB_PKG compiled
No Errors.
```

   b. Create the package body with the implementations for each of the subprograms.

      Uncomment and select the code under Task 1_b. Click the Run Script icon (or press F5) on the SQL Worksheet toolbar to create and compile the package body. The code and the result are displayed as follows:

```
CREATE OR REPLACE PACKAGE BODY job_pkg IS
  PROCEDURE add_job (
    p_jobid jobs.job_id%TYPE,
    p_jobtitle jobs.job_title%TYPE) IS
  BEGIN
    INSERT INTO jobs (job_id, job_title)
    VALUES (p_jobid, p_jobtitle);
    COMMIT;
```