

Database Programming with PL/SQL

10-2: Managing Package Concepts

Practice Activities

Vocabulary

Identify the vocabulary word for each definition below:

	Describes if a component can be seen, that is, referenced and used by other components or objects.
	are declared only in the package body and can be referenced only by other (public or private) constructs within the same package body.
	are declared in the package specification and can be invoked from any calling environment, provided the user has been granted EXECUTE privilege on the package.

Try It / Solve It

1. Create a package called hellofrom that contains three public procedures named proc_1, proc_2 and proc_3. Each of these procedures should use DBMS_OUTPUT.PUT_LINE() to display the message "Hello from Proc x" where "x" is 1 or 2 or 3, as appropriate.

Also, proc_1 should call proc_2 and proc_2 should call proc_3, so you need to include a reference to proc_2 from proc_1, and a reference to proc_3 from proc_2.

You will be making changes to this package specification and body, so make sure you save both the specification and body in your Application Express session.

2. DESCRIBE the package to check that all three procedures are visible. Then, create and execute an anonymous block which displays all three messages with only one procedure call.

Modify the hellofrom package specification (not the body) so that only proc_1 is public and proc_2 and proc_3 are private. Recreate the package and then DESCRIBE it. What do you see?

3. What will happen if you try to run hellofrom.proc_1 now, before you make any changes to the body? Try it.
4. What changes can you make to the package body in order for proc_1 to run successfully? Make the changes and recreate the body.
5. Try to call each of the three procedures from anonymous blocks. What happens? Explain why some of these calls fail.
6. Look in USER_PROCEEDURES for the hellofrom package. What do you see?
7. Also have a look in USER_SOURCE. Unlike USER_PROCEEDURES, USER_SOURCE shows the entire body, including the private procedures.
8. Make sure you have saved the hellofrom package body code from question 1. Then try to drop just the body. What happens? What do you see when you DESCRIBE helloform?
9. Re-create the body from your saved code. Now try to drop just the specification. What happens?
10. Name at least two advantages of enclosing these three procedures in a package.