

Shahad

Database Programming with PL/SQL

1-3: Creating PL/SQL Blocks

Practice Activities

Vocabulary

Identify the vocabulary word for each definition below:

Anon/mus PL/SQL Block	Unnamed blocks of code not stored in the database and do not exist after they are executed
Function	A program that computes and returns a value
SubPrograms	Named PL/SQL blocks that are stored in the database and can be declared as procedures or functions
Compiler	Software that checks and translates programs written in high-level programming languages into binary code to execute
Procedures	A program that performs an action and does not have to return a value

Try It / Solve It

1. Complete the following chart defining the syntactical requirements for a PL/SQL block:

	Optional or Mandatory?	Describe what is included in this section
DECLARE	optional	Variables, cursors, user-defined exception
BEGIN	Mandatory	SQL statements PL/SQL statements
EXCEPTION	optional	Actions to perform when errors occur
END;	Mandatory	End; (With Semicolon)

2. Which of the following PL/SQL blocks executes successfully? For the blocks that fail, explain why they fail

- A. BEGIN
END; A. Fails because the executable there section must contain at least one statement
- B. DECLARE
amount INTEGER(10);
END; B. Fails because there is no executable section (BEGIN is missing)
- C. DECLARE
BEGIN
END; C. Fails because the executable there section must contain at least one statement

D. DECLARE
 amount NUMBER(10);
 BEGIN
 DBMS_OUTPUT.PUT_LINE(amount);
 END;

D. Succeeds

3. Fill in the blanks:

A. PL/SQL blocks that have no names are called anonymous blocks.

B. Procedures and Functions are named blocks and are stored in the database.

4. In Application Express, create and execute a simple anonymous block that outputs "Hello World."

BEGIN DBMS_OUTPUT.PUT_LINE('Hello World'); END;

Extension Exercise

- Create and execute a simple anonymous block that does the following:
 - Declares a variable of datatype DATE and populates it with the date that is six months from today
 - Outputs "In six months, the date will be: <insert date>."

The screenshot shows the Oracle Live SQL interface. On the left is a sidebar with navigation links: Home, SQL Worksheet (selected), My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled "SQL Worksheet" and contains the following PL/SQL code:

```
1 DECLARE v_timestamp DATE;
2 BEGIN
3 SELECT ADD_MONTHS(SYSDATE,6) INTO v_timestamp FROM DUAL;
4 DBMS_OUTPUT.PUT_LINE('In six months, the date will be: '||v_timestamp);
5 END;
```

Below the code editor, the output area shows the result of the execution:

```
Statement processed.
In six months, the date will be:13-MAR-24
```

At the bottom of the interface, there is a footer with version information and links to documentation and terms of use.