

2-1 Using Variables in PL/SQL

Agustín Alejandro Mota Hinojosa

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1 Vocabulary

1. Used for storage of data and manipulation of stored values.

Variables

2. Values passed to a program by a user or by another program to customize the program.

Parameters

2 Try It / Solve It

1. Fill in the blanks.

- (a) Variables can be assigned to the output of a **query**
- (b) Variables can be assigned values in the **DECLARE** section of a PL/SQL block.
- (c) Variables can be passed as **parameters** to subprograms.

2. Identify valid and invalid variable declaration and initialization:

```
number_of_copies PLS_INTEGER; -- valid
printer_name CONSTANT VARCHAR2(10); -- valid
by_when DATE := SYSDATE+1;
```

The statement:

```
deliver_to VARCHAR2(10) := Johnson; -- invalid
```

is invalid, the correct statement should look like this:

```
deliver_to VARCHAR2(10) := 'Johnson'; -- valid
```

3. Examine the following anonymous block and choose the appropriate statement.

```
DECLARE
    fname VARCHAR2(25);
    lname VARCHAR2(25) DEFAULT 'fernandez';
BEGIN
    DBMS_OUTPUT.PUT_LINE(fname || ' ' || lname);
END;
```

B. The block will give an error because the fname variable is used without initializing.

4. In Application Express:

(a) Create the following function:

```
CREATE FUNCTION num_characters (p_string IN VARCHAR2)
RETURN INTEGER AS
    v_num_characters INTEGER;
BEGIN
    SELECT LENGTH(p_string) INTO v_num_characters
    FROM dual;
    RETURN v_num_characters;
END;
```

(b) Create and execute the following anonymous block:

```
DECLARE
    v_length_of_string INTEGER;
BEGIN
    v_length_of_string := num_characters('Oracle Corporation');
    DBMS_OUTPUT.PUT_LINE(v_length_of_string);
END;
```

5. Write an anonymous block that uses a country name as input and prints the highest and lowest elevations for that country. Use the COUNTRIES table. Execute your block three times using United States of America, French Republic, and Japan.

```
DECLARE
    v_country_name VARCHAR2(100) := 'United States of America';
    v_highest_elevation NUMBER;
    v_lowest_elevation NUMBER;
BEGIN
    SELECT MAX(ELEVATION), MIN(ELEVATION)
    INTO v_highest_elevation, v_lowest_elevation
    FROM COUNTRIES
    WHERE COUNTRY_NAME = v_country_name;
    DBMS_OUTPUT.PUT_LINE('Highest Elevation: ' || v_highest_elevation);
    DBMS_OUTPUT.PUT_LINE('Lowest Elevation: ' || v_lowest_elevation);
END;
```