

Exercises for Chapter 2: PL/SQL Language Fundamentals

The Labs below provide you with exercises and suggested answers with discussion related to how those answers resulted. The most important thing to realize is whether your answer works. You should figure out the implications of the answers here and what the effects are from any different answers you may come up with.

- 1) Write a PL/SQL block
 - a) That includes declarations for the following variables:
 - i) A VARCHAR2 datatype that can contain the string 'Introduction to Oracle PL/SQL'
 - ii) A NUMBER that can be assigned 987654.55, but not 987654.567 or 9876543.55
 - iii) A CONSTANT (you choose the correct datatype) that is auto-initialized to the value '603D'
 - iv) A BOOLEAN
 - v) A DATE datatype auto-initialized to one week from today
 - b) In the body of the PL/SQL block, put a DBMS_OUTPUT.PUT_LINE message for each of the variables that received an auto initialization value.
 - c) In a comment at the bottom of the PL/SQL block, state the value of your number datatype.

Answer: The answer should look similar to the following:

```
SET SERVEROUTPUT ON
DECLARE
  -- A VARCHAR2 datatype that can contain the string
  -- 'Introduction to Oracle PL/SQL'
  v_descript VARCHAR2(35);

  -- A NUMBER that allows for the conditions: can be
  -- assigned 987654.55 but not 987654.567
  -- or 9876543.55
  v_number_test NUMBER(8,2);
```

```

-- [a variable] auto initialized to the value '603D'
v_location CONSTANT VARCHAR2(4) := '603D';

-- A BOOLEAN
v_boolean_test BOOLEAN;

-- A DATE datatype auto initialized to one week from
-- today
v_start_date DATE := TRUNC(SYSDATE) + 7;

BEGIN
    DBMS_OUTPUT.PUT_LINE
        ('The location is: '||v_location||'.');
    DBMS_OUTPUT.PUT_LINE
        ('The starting date is: '||v_start_date||'.');
END;
```

- 2) Alter the PL/SQL block you just created to conform to the following specs.
- a) Remove the `DBMS_OUTPUT.PUT_LINE` messages.
 - b) In the body of the PL/SQL block, write a selection test (`IF`) that does the following (use a nested if statement where appropriate):
 - i) Check if the `VARCHAR2` you created contains the course named 'Introduction to Underwater Basketweaving'.
 - ii) If it does, then put a `DBMS_OUTPUT.PUT_LINE` message on the screen that says so.
 - iii) If it does not, then test to see if the `CONSTANT` you created contains the room number 603D.
 - iv) If it does, then put a `DBMS_OUTPUT.PUT_LINE` message on the screen that states the course name and the room name that you've reached in this logic.
 - v) If it does not, then put a `DBMS_OUTPUT.PUT_LINE` message on the screen that states that the course and location could not be determined.
 - c) Add a `WHEN OTHERS EXCEPTION` that puts a `DBMS_OUTPUT.PUT_LINE` message on the screen that says that an error occurred.

Answer: The answer should look similar to the following:

```

SET SERVEROUT ON
DECLARE
    -- A VARCHAR2 datatype that can contain the string
    -- 'Introduction to Oracle PL/SQL'
    v_descript VARCHAR2(35);

    -- A NUMBER that allows for the conditions: can be
    -- assigned 987654.55 but not 987654.567 or
    -- 9876543.55
    v_number_test NUMBER(8,2);

    -- [a variable] auto initialized to the value '603D'
```

```

v_location CONSTANT VARCHAR2(4) := '603D';

-- A BOOLEAN
v_boolean_test BOOLEAN;

-- A DATE datatype auto initialized to one week from today
v_start_date DATE := TRUNC(SYSDATE) + 7;
BEGIN
  IF v_descript = 'Introduction to Underwater Basketweaving'
  THEN
    DBMS_OUTPUT.PUT_LINE ('This course is '||v_descript||'.');

  ELSIF v_location = '603D' THEN

    -- No value has been assigned to v_descript
    IF v_descript IS NOT NULL THEN
      DBMS_OUTPUT.PUT_LINE ('The course is '||v_descript
        ||'. '||' The location is '||v_location||'.');
    ELSE
      DBMS_OUTPUT.PUT_LINE ('The course is unknown.'||
        ' The location is '||v_location||'.');
    END IF;
  ELSE
    DBMS_OUTPUT.PUT_LINE ('The course and location '||
      'could not be determined.');
```

END IF;

```

EXCEPTION
  WHEN OTHERS THEN
    DBMS_OUTPUT.PUT_LINE ('An error occurred.');
```

END;