

Database Programming with PL/SQL

2-5: Writing PL/SQL Executable Statements

Practice Activities

Vocabulary

Identify the vocabulary word for each definition below:

Explicit conversion	Converts values from one data type to another by using built-in functions.
Implicit conversion	Converts data types dynamically if they are mixed in a statement.

Try It / Solve It

1. Examine the following code and then answer the questions.

```
DECLARE
  x VARCHAR2(20);
BEGIN
  x := '123' + '456' ;
  DBMS_OUTPUT.PUT_LINE(x);
END;
```

- A. What do you think the output will be when you run the above code?
 - B. Now, run the code. What is the output?
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 - C. In your own words, describe what happened when you ran the code. Did any implicit conversions take place? PL/SQL implicitly converted the VARCHAR2 values to the NUMBER format and added them.
2. Write an anonymous PL/SQL block that assigns the programmer's full name to a variable, and then displays the number of characters in the name.
 3. Write an anonymous PL/SQL block that uses today's date and outputs it in the format of 'Month dd, yyyy'. Store the date in a DATE variable called my_date. Create another variable of the DATE type called v_last_day. Assign the last day of this month to v_last_day. Display the value of v_last_day.
 4. Modify the program created in question 3 to add 45 days to today's date and then calculate and display the number of months between the two dates.

5. Examine the following code and then answer the questions.

```
DECLARE
  x NUMBER(6);
BEGIN
  x := 5 + 3 * 2 ;
  DBMS_OUTPUT.PUT_LINE(x);
END;
```

A. What do you think the output will be when you run the above code?

B. Now run the code. What is the output?

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The order of operations tells you that multiplication takes precedence over addition. Therefore, $3 * 2$ is executed before 5 is added.

C. In your own words, explain the results.

6. Examine the following code and then answer the question.

```
DECLARE
  v_number NUMBER;
  v_boolean BOOLEAN;
BEGIN
  v_number := 25;
  v_boolean := NOT(v_number > 30);
END;
```

What value is assigned to v_boolean?

TRUE. The condition (v_number > 30) is FALSE, and NOT FALSE = TRUE.

7. List two drawbacks to relying on implicit data type conversions.

2.
DECLARE
v_name VARCHAR2(50) := 'Barracuda';
v_length_name PLS_INTEGER;
BEGIN
v_length_name := LENGTH(v_name);
DBMS_OUTPUT.PUT_LINE(v_length_name);
END;

3.
DECLARE
my_date DATE := SYSDATE;
v_last_day DATE;
BEGIN
DBMS_OUTPUT.PUT_LINE(TO_CHAR(my_date, 'Month dd, yyyy'));
v_last_day := LAST_DAY(my_date);
DBMS_OUTPUT.PUT_LINE(v_last_day);
END;

4.
DECLARE
my_date DATE := SYSDATE;
new_date DATE;
v_months_between NUMBER;
BEGIN
new_date := my_date + 45;
v_months_between := MONTHS_BETWEEN(new_date, my_date);
DBMS_OUTPUT.PUT_LINE(v_months_between);
END;

7.
Implicit datatype conversion can have a negative impact on performance

Implicit conversion depends on the context in which it occurs and may not work the same way in every case