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DBMS LAB 10 - PL/SQL PROCEDURES

AIM :

To create PL SQL procedures and successfully execute them

REQUIREMENTS :

1. Knowledge of the concepts of PL/SQL
2. Knowledge of the concepts of procedures and its syntax
3. AWS and SQL plus insta client

THEORY:

PL SQL PROCEDURE :

The PL/SQL stored procedure or simply a procedure is a PL/SQL block which performs one or more specific tasks. It is just like procedures in other programming languages.
The procedure contains a header and a body.

- Header: The header contains the name of the procedure and the parameters or variables passed to the procedure.

- Body: The body contains a declaration section, execution section and exception section similar to a general PL/SQL block.

A procedure is created with the CREATE OR REPLACE PROCEDURE statement. The simplified syntax for the CREATE OR REPLACE PROCEDURE statement is as follows −

Syntax:

```
CREATE [OR REPLACE] PROCEDURE procedure_name
[(parameter_name [IN | OUT | IN OUT] type [, ...])]
{IS | AS}
BEGIN
  < procedure_body >
END procedure_name;
```

Where,

- procedure-name specifies the name of the procedure.
- [OR REPLACE] option allows the modification of an existing procedure.
- The optional parameter list contains name, mode and types of the parameters. IN represents the value that will be passed from outside and OUT represents the parameter that will be used to return a value outside of the procedure.
- procedure-body contains the executable part.
- The AS keyword is used instead of the IS keyword for creating a standalone procedure.

ALGORITHM :

1. Find the minimum of 2 values

- Declare 3 variables
- Create procedure with 2 input parameters x and y and one output parameter z
- Based on if else condition , minimum of x and y is found and it is stored in z
- Then call the procedure and also take dynamic inputs from the user
- After setting serveroutput on , the result is displayed and the procedure is successfully completed

2. **Find the cube of a number**
    - Declare a variable x and give “IN OUT number” (same variable is input , then some manipulation is done to it and it is shown in the output)
    - In the procedure , give x:=x*x*x . This will calculate the cube of x
    - Then take dynamic input from the user and call the function
    - The cube of the given input is calculated and the cube of it is displayed successfully

SOURCE CODE:

1. **Find minimum of 2 values**

```
DECLARE
a number;
b number;
c number;
PROCEDURE findMin(x IN number, y IN number , z
OUT number) IS
BEGIN
```

```
IF x>y THEN
  z:=y;
ELSIF x=y THEN
  z:=x;
  dbms_output.put_line('Both values are actually
same');
ELSE
  z:=x;
END IF;
END;
BEGIN
a:=&a;
b:=&b;
findMin(a,b,c);
dbms_output.put_line('Minimum of ' || a || ' and ' || b || '
is ' || c);
END;
```

2. **Find the cube of a number**

```
DECLARE
  a number;
 PROCEDURE cubeofNum(x IN OUT number) IS
 BEGIN
x:=x*x*x;
END;
BEGIN
a:=&a;
cubeofNum(a);
dbms_output.put_line('The cube of the given number is ' || '
is ' || a);
END;
```

SCREENSHOTS :

1. Find minimum of 2 values :

```
 5  PROCEDURE findMin(x IN number, y IN number , z OUT number) IS
 6  BEGIN
 7  IF x>y THEN
 8    z:=y;
 9  ELSIF x=y THEN
10    z:=x;
11    dbms_output.put_line('Both values are actually same');
12  ELSE
13    z:=x;
14  END IF;
15  END;
16  BEGIN
17  a:=&a;
18  b:=&b;
19  findMin(a,b,c);
20  dbms_output.put_line('Minimum of ' || a || ' and ' || b || ' is ' || c);
21* END;
SQL> /
Enter value for a: 35
old  17: a:=&a;
new  17: a:=35;
Enter value for b: 35
old  18: b:=&b;
new  18: b:=35;
Both values are actually same
Minimum of 35 and 35 is 35

PL/SQL procedure successfully completed.
```

```
 16  BEGIN
 17  a:=&a;
 18  b:=&b;
 19  findMin(a,b,c);
 20  dbms_output.put_line('Minimum of ' || a || ' and ' || b || ' is ' || c);
 21* END;
SQL> /
Enter value for a: 35
old  17: a:=&a;
new  17: a:=35;
Enter value for b: 35
old  18: b:=&b;
new  18: b:=35;
Both values are actually same
Minimum of 35 and 35 is 35

PL/SQL procedure successfully completed.

SQL> /
Enter value for a: 35
old  17: a:=&a;
new  17: a:=35;
Enter value for b: 65
old  18: b:=&b;
new  18: b:=65;
Minimum of 35 and 65 is 35

PL/SQL procedure successfully completed.
```

2. Find the cube of a number

```
Wrote file afiedt.buf

  1  DECLARE
  2  a number;
  3  PROCEDURE cubeofNum(x IN OUT number) IS
  4  BEGIN
  5  x:=x*x*x;
  6  END;
  7  BEGIN
  8  a:=&a;
  9  cubeofNum(a);
 10  dbms_output.put_line('The cube of the given number is ' || ' is ' || a);
 11* END;
SQL> /
Enter value for a: 3
old   8: a:=&a;
new   8: a:=3;

PL/SQL procedure successfully completed.

SQL> set serveroutput on
SQL> /
Enter value for a: 3
old   8: a:=&a;
new   8: a:=3;
The cube of the given number is  is 27

PL/SQL procedure successfully completed.
```

RESULT:

Thus we have successfully implemented and verified the output of PL/SQL procedures.