



**University of Petroleum
&
Energy Studies
SCHOOL OF COMPUTER SCIENCE**

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BATCH: 1

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Semester: 3

Experiment 14: To understand the concepts of function and procedure in PL/SQL.

Objective: Students will be able to implement the PL/SQL programs using function and procedure.

- Implement the above experiments of PL/SQL using functions and procedures.
- 1. Write a PL/SQL code to accept the value of A, B & C display which is greater.

INPUT:

```
1 CREATE OR REPLACE PROCEDURE Find_Greatest(A IN NUMBER, B IN NUMBER, C IN NUMBER) IS
2 BEGIN
3     IF A > B AND A > C THEN
4         DBMS_OUTPUT.PUT_LINE('A is the greatest: ' || A);
5     ELSIF B > C THEN
6         DBMS_OUTPUT.PUT_LINE('B is the greatest: ' || B);
7     ELSE
8         DBMS_OUTPUT.PUT_LINE('C is the greatest: ' || C);
9     END IF;
10 END;
11 /
```

Results Explain Describe Saved SQL History

Procedure created.

0.01 seconds

OUTPUT:

```
1 BEGIN
2     Find_Greatest(10, 20, 15);
3 END;
4 /
```

Results Explain Describe Saved SQL History

B is the greatest: 20

Statement processed.

0.01 seconds

2. Using PL/SQL Statements create a simple loop that display message “Welcome to PL/SQL Programming” 20 times.

INPUT:



```
1 CREATE OR REPLACE PROCEDURE Display_Message IS
2 BEGIN
3     FOR i IN 1..20 LOOP
4         DBMS_OUTPUT.PUT_LINE(i || ' : Welcome to PL/SQL Programming');
5     END LOOP;
6 END;
7 /
```

Results	Explain	Describe	Saved SQL	History
Procedure created.				
0.03 seconds				

OUTPUT:

```
1 BEGIN
2     Display_Message;
3 END;
4 /
```

Results	Explain	Describe	Saved SQL
1: Welcome to PL/SQL Programming 2: Welcome to PL/SQL Programming 3: Welcome to PL/SQL Programming 4: Welcome to PL/SQL Programming 5: Welcome to PL/SQL Programming 6: Welcome to PL/SQL Programming 7: Welcome to PL/SQL Programming 8: Welcome to PL/SQL Programming 9: Welcome to PL/SQL Programming 10: Welcome to PL/SQL Programming 11: Welcome to PL/SQL Programming 12: Welcome to PL/SQL Programming 13: Welcome to PL/SQL Programming 14: Welcome to PL/SQL Programming 15: Welcome to PL/SQL Programming 16: Welcome to PL/SQL Programming 17: Welcome to PL/SQL Programming 18: Welcome to PL/SQL Programming 19: Welcome to PL/SQL Programming 20: Welcome to PL/SQL Programming			

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3. Write a PL/SQL code block to find the factorial of a number.

INPUT:

Using Function:

```
1 CREATE OR REPLACE FUNCTION Factorial(N IN NUMBER) RETURN NUMBER IS
2   F NUMBER := 1;
3 BEGIN
4   FOR i IN 1..N LOOP
5     F := F * i;
6   END LOOP;
7   RETURN F;
8 END;
9 /
```

Results	Explain	Describe	Saved SQL	History
Function created.				
0.03 seconds				

Using Procedure:

```
1 CREATE OR REPLACE PROCEDURE Display_Factorial(N IN NUMBER) IS
2 BEGIN
3   DBMS_OUTPUT.PUT_LINE('Factorial of ' || N || ' is: ' || Factorial(N));
4 END;
5 /
```

Results	Explain	Describe	Saved SQL	History
Procedure created.				
0.02 seconds				

OUTPUT:

```
1 BEGIN
2   Display_Factorial(5);
3 END;
4 /
```

Results	Explain	Describe	Saved
Factorial of 5 is: 120			
Statement processed.			
0.02 seconds			

4. Write a PL/SQL program to generate Fibonacci series.

INPUT:

```
1  CREATE OR REPLACE PROCEDURE Fibonacci_Series(N IN NUMBER) IS
2      a NUMBER := 0;
3      b NUMBER := 1;
4      c NUMBER;
5  BEGIN
6      DBMS_OUTPUT.PUT_LINE('Fibonacci Series: ');
7      FOR i IN 1..N LOOP
8          DBMS_OUTPUT.PUT_LINE(a);
9          c := a + b;
10         a := b;
11         b := c;
12     END LOOP;
13 END;
14 /
```

Results	Explain	Describe	Saved SQL	History
Procedure created.				
0.04 seconds				

OUTPUT:

```
1  BEGIN
2      Fibonacci_Series(10);
3  END;
4  /
```

Results	Explain	Describe	Saved
Fibonacci Series: 0 1 1 2 3 5 8 13 21 34			
Statement processed.			
0.01 seconds			

5. Write a PL/SQL code to find the sum of first N numbers

INPUT:

Using Function:

```
1 CREATE OR REPLACE FUNCTION Sum_N(N IN NUMBER) RETURN NUMBER IS
2     SUM_RESULT NUMBER := 0;
3 BEGIN
4     FOR i IN 1..N LOOP
5         SUM_RESULT := SUM_RESULT + i;
6     END LOOP;
7     RETURN SUM_RESULT;
8 END;
9 /
```

Results	Explain	Describe	Saved SQL	History
Function created.				
0.05 seconds				

Using Procedure:

```
1 CREATE OR REPLACE PROCEDURE Display_Sum(N IN NUMBER) IS
2 BEGIN
3     DBMS_OUTPUT.PUT_LINE('Sum of first ' || N || ' numbers is: ' || Sum_N(N));
4 END;
5 /
```

Results	Explain	Describe	Saved SQL	History
Procedure created.				
0.04 seconds				

OUTPUT:

```
1 BEGIN
2     Display_Sum(10);
3 END;
4 /
```

Results	Explain	Describe	S
Sum of first 10 numbers is: 55			
Statement processed.			
0.01 seconds			

