1. **FACTORIAL**

SQL>DECLARE

    a NUMBER :

f number:=1;

n number:=&n;

begin

while n>0

loop

f:=n\*f;

n:=n-1;

end loop;

dbms\_output.put\_line('factorial is '||f);

end;

/

SQL> /

Enter value for n: 5

old 3: n number:=&n;

new 3: n number:=5;

Factorial equal to 120

PL/SQL procedure successfully completed.

SQL> /

Enter value for n: 6

old 3: n number:=&n;

new 3: n number:=6;

Factorial equal to720

PL/SQL procedure successfully completed.

1. **GREATEST OF NUMBERS**

DECLARE

    a NUMBER :=&a;

    b NUMBER :=&b;

    c NUMBER :=&c;

BEGIN

    IF a > b

       AND a > c THEN

      dbms\_output.Put\_line('Greatest number is '

                           ||a);

    ELSIF b > a

          AND b > c THEN

      dbms\_output.Put\_line('Greatest number is '

                           ||b);

    ELSE

      dbms\_output.Put\_line('Greatest number is '

                           ||c);

    END IF;

END;

/

Enter value for a: 10

old 2: a NUMBER :=&a;

new 2: a NUMBER :=10;

Enter value for b: 5

old 3: b NUMBER :=&b;

new 3: b NUMBER :=5;

Enter value for c: 20

old 4: c NUMBER :=&c;

new 4: c NUMBER :=20;

Greatest number is 20

PL/SQL procedure successfully completed.

1. **CALCULATOR**

DECLARE  
  num1 NUMBER := 0;  
  num2 NUMBER := 0;  
  OPERATOR CHAR(1);  
  result NUMBER;  
  
BEGIN  
  DBMS\_OUTPUT.PUT\_LINE('Simple Calculator');  
  DBMS\_OUTPUT.PUT\_LINE('-----------------');  
  num1 := &num1;  
  OPERATOR := '&operator';  
  num2 := &num2;  
  
CASE OPERATOR  
  WHEN '+' THEN  
    result := num1 + num2;  
  WHEN '-' THEN  
    result := num1 - num2;  
  WHEN '\*' THEN  
    result := num1 \* num2;  
  WHEN '/' THEN  
  
IF num2 = 0 THEN  
  DBMS\_OUTPUT.PUT\_LINE('Error: Division by zero is not allowed.');  
ELSE  
  result := num1 / num2;

END IF;  
ELSE  
  DBMS\_OUTPUT.PUT\_LINE('Error: Invalid operator');  
END CASE;  
  
IF OPERATOR IN ('+', '-', '\*', '/') THEN  
  DBMS\_OUTPUT.PUT\_LINE('Result: ' || num1 || ' ' || operator || ' ' || num2 || ' = ' || result);  
END IF;  
END;

**Output**

SQL> DECLARE

2 num1 NUMBER := 0;

3 num2 NUMBER := 0;

4 OPERATOR CHAR(1);

5 result NUMBER;

6

7 BEGIN

8 DBMS\_OUTPUT.PUT\_LINE('Simple Calculator');

9 DBMS\_OUTPUT.PUT\_LINE('-----------------');

10 num1 := &num1;

11 OPERATOR := '&operator';

12 num2 := &num2;

13

14 CASE OPERATOR

15 WHEN '+' THEN

16 result := num1 + num2;

17 WHEN '-' THEN

18 result := num1 - num2;

19 WHEN '\*' THEN

20 result := num1 \* num2;

21 WHEN '/' THEN

22

23 IF num2 = 0 THEN

24 DBMS\_OUTPUT.PUT\_LINE('Error: Division by zero is not allowed.');

25 ELSE

26 result := num1 / num2;

27 END IF;

28 ELSE

29 DBMS\_OUTPUT.PUT\_LINE('Error: Invalid operator');

30 END CASE;

31

32 IF OPERATOR IN ('+', '-', '\*', '/') THEN

33 DBMS\_OUTPUT.PUT\_LINE('Result: ' || num1 || ' ' || operator || ' ' || num2 || ' = ' || result);

34 END IF;

35 END;

36

37 /

Enter value for num1: 5

old 10: num1 := &num1;

new 10: num1 := 5;

Enter value for operator: +

old 11: OPERATOR := '&operator';

new 11: OPERATOR := '+';

Enter value for num2: 7

old 12: num2 := &num2;

new 12: num2 := 7;

Simple Calculator

-----------------

Result: 5 + 7 = 12

PL/SQL procedure successfully completed.

SQL> /

Enter value for num1: 7

old 10: num1 := &num1;

new 10: num1 := 7;

Enter value for operator: -

old 11: OPERATOR := '&operator';

new 11: OPERATOR := '-';

Enter value for num2: 4

old 12: num2 := &num2;

new 12: num2 := 4;

Simple Calculator

-----------------

Result: 7 - 4 = 3

PL/SQL procedure successfully completed.

SQL> /

Enter value for num1: 19

old 10: num1 := &num1;

new 10: num1 := 19;

Enter value for operator: \*

old 11: OPERATOR := '&operator';

new 11: OPERATOR := '\*';

Enter value for num2: 10

old 12: num2 := &num2;

new 12: num2 := 10;

Simple Calculator

-----------------

Result: 19 \* 10 = 190

PL/SQL procedure successfully completed.

SQL> /

Enter value for num1: 10

old 10: num1 := &num1;

new 10: num1 := 10;

Enter value for operator: /

old 11: OPERATOR := '&operator';

new 11: OPERATOR := '/';

Enter value for num2: 2

old 12: num2 := &num2;

new 12: num2 := 2;

Simple Calculator

-----------------

Result: 10 / 2 = 5

PL/SQL procedure successfully completed.

Enter value for num1: 10

old 10: num1 := &num1;

new 10: num1 := 10;

Enter value for operator: /

old 11: OPERATOR := '&operator';

new 11: OPERATOR := '/';

Enter value for num2: 0

old 12: num2 := &num2;

new 12: num2 := 0;

Simple Calculator

-----------------

Error: Division by zero is not allowed.

Result: 10 / 0 =

PL/SQL procedure successfully completed.

1. **FIBONACCI SERIES**

DECLARE

a NUMBER := &a;

fib1 NUMBER := 0;

fib2 NUMBER := 1;

next\_fib NUMBER;

BEGIN

DBMS\_OUTPUT.PUT\_LINE('Fibonacci Series:');

FOR i IN 1..a LOOP

DBMS\_OUTPUT.PUT(fib1 || ' ');

next\_fib := fib1 + fib2;

fib1 := fib2;

fib2 := next\_fib;

END LOOP;

DBMS\_OUTPUT.PUT\_LINE('');

END;

/

Enter value for a: 10

old 2: a NUMBER := &a;

new 2: a NUMBER := 10;

Fibonacci Series:

0 1 1 2 3 5 8 13 21 34

PL/SQL procedure successfully completed.