**IMPLEMENTATION OF VARIOUS CONTROL STRUCTURES USING PL/SQL**

SQL> SET SERVEROUTPUT ON

**FACTORIAL OF A GIVEN NUMBER:**

DECLARE

2 F NUMBER:= 1;

3 N NUMBER:= &N;

4 BEGIN

5 WHILE N > 0

6 LOOP

7 F := N\*F;

8 N := N - 1;

9 END LOOP;

10 DBMS\_OUTPUT.PUT\_LINE('FACTORIAL IS '||F);

11 END;

12 /

Enter value for n: 5

old 3: N NUMBER:= &N;

new 3: N NUMBER:= 5;

FACTORIAL IS 120

**GREATEST AMONG THREE NUMBERS:**

DECLARE

2 A NUMBER := &A;

3 B NUMBER := &B;

4 C NUMBER := &C;

5 BEGIN

6 IF A > B

7 AND A > C THEN

8 DBMS\_OUTPUT.PUT\_LINE('GREATEST NUMBER IS '

9 ||A);

10 ELSIF B > A

11 AND B > C THEN

12 DBMS\_OUTPUT.PUT\_LINE('GREATEST NUMBER IS '

13 ||B);

14 ELSE

15 DBMS\_OUTPUT.PUT\_LINE('GREATEST NUMBER IS '

16 ||C);

17 END IF;

18 END;

19 /

Enter value for a: 41

old 2: A NUMBER := &A;

new 2: A NUMBER := 41;

Enter value for b: 40

old 3: B NUMBER := &B;

new 3: B NUMBER := 40;

Enter value for c: 6

old 4: C NUMBER := &C;

new 4: C NUMBER := 6;

GREATEST NUMBER IS 41

**IMPLEMENTATION OF A CALCULATOR**

DECLARE

2 A NUMBER := 0;

3 B NUMBER := 0;

4 OPERATOR CHAR(1);

5 RESULT NUMBER;

6

7 BEGIN

8 DBMS\_OUTPUT.PUT\_LINE('SIMPLE CALCULATOR');

9 A := &A;

10 OPERATOR := '&OPERATOR';

11 B := &B;

12

13 CASE OPERATOR

14 WHEN '+' THEN

15 RESULT := A + B;

16 WHEN '-' THEN

17 RESULT := A - B;

18 WHEN '\*' THEN

19 RESULT := A \* B;

20 WHEN '/' THEN

21

22 IF B = 0 THEN

23 DBMS\_OUTPUT.PUT\_LINE('ERROR: DIVISION BY ZERO IS NOT ALLOWED.');

24 ELSE

25 RESULT := A / B;

26 END IF;

27 ELSE

28 DBMS\_OUTPUT.PUT\_LINE('ERROR: INVALID OPERATOR');

29 END CASE;

30

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

32 DBMS\_OUTPUT.PUT\_LINE('RESULT: ' || A || ' ' || OPERATOR || ' ' || B || ' = ' || RESULT);

33 END IF;

34 END;

35 /

Enter value for a: 40

old 9: A := &A;

new 9: A := 40;

Enter value for operator: +

old 10: OPERATOR := '&OPERATOR';

new 10: OPERATOR := '+';

Enter value for b: 41

old 11: B := &B;

new 11: B := 41;

SIMPLE CALCULATOR

RESULT: 40 + 41 = 81

**IMPLEMENTATION OF FIBONACCI SERIES:**

DECLARE

2 A NUMBER:= 0;

3 B NUMBER:= 1;

4 C NUMBER;

5 N NUMBER:= &N;

6 I NUMBER;

7

8 BEGIN

9 DBMS\_OUTPUT.PUT\_LINE('FIBONACCI SERIES IS: ');

10 DBMS\_OUTPUT.PUT\_LINE(A);

11 DBMS\_OUTPUT.PUT\_LINE(B);

12

13 FOR I IN 3..N

14 LOOP

15 C:= A + B;

16 A:= B;

17 B:= C;

18 DBMS\_OUTPUT.PUT\_LINE(C);

19 END LOOP;

20 END;

21 /

Enter value for n: 10

old 5: N NUMBER:=&N;

new 5: N NUMBER:=10;

FIBONACCI SERIES IS:

0

1

1

2

3

5

8

13

21

34