

4-9-25

Task-7: PL/SQL procedure for Loops

Aim:- To write PL/SQL programs using loops for printing prime number customer IDs and for demonstrating loop control in different scenarios.

Procedure:-

- ① Start a PL/SQL block or Procedure
- ② Use a cursor to fetch customer IDs from a table
- ③ For each ID, check whether it is a prime number using a loop
- ④ Use for loop/while loop to demonstrate prime number checking
- ⑤ Print the result using DBMS-output, Put-line
- ⑥ End the block

Ex:- Using WHILE loop with cursor / prime check using while loop

```
CREATE OR REPLACE print_prime_customers IS
CURSOR cust_cur IS
```

```
    Select customer_id From customers; -- Table with customer IDs
```

```
V_id number;
```

```
V_is_prime Boolean;
```

```
V_i number;
```

```
Begin
```

```
    Open cust_cur;
```

```
    Loop
```

```
        Fetch cust_cur into V_id;
```

```
        Exit when cust_cur % Not Found;
```

```
        -- Prime check using while loop --
```

```
        If V_id < 2 Then
```

```
            V_is_prime := false;
```

```
        Else
```

```
            V_is_prime := true;
```

```
            V_i := 2;
```

```
            While V_i <= Trunc(Sqrt(V_id)) Loop
```

```
                If Mod(V_id, V_i) = 0 Then
```

```
                    V_is_prime := false;
```

```
                    Exit;
```

```
                End if;
```

```
                V_i := V_i + 1;
```

```
            End loop
```

```
        End if;
```

SQL*Plus: Release 11.2.0.2.0 Production on Wed Oct 15 21:34:44 2025

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SQL> connect

Enter user-name: system

Enter password:

Connected.

SQL> CREATE OR REPLACE PROCEDURE print_prime_customers IS

2 CURSOR cust_cur IS

3 SELECT customer_id FROM customers;

4

5 v_id NUMBER;

6 v_is_prime BOOLEAN;

7 v_i NUMBER;

8 BEGIN

9 OPEN cust_cur;

10 LOOP

11 FETCH cust_cur INTO v_id;

12 EXIT WHEN cust_cur%NOTFOUND;

13

14 -- Prime check

15 IF v_id < 2 THEN

16 v_is_prime := FALSE;

17 ELSE

```

18  v_is_prime := TRUE;
19  v_i := 2;
20
21  WHILE v_i <= FLOOR(SQRT(v_id)) LOOP
22    IF MOD(v_id, v_i) = 0 THEN
23      v_is_prime := FALSE;
24      EXIT;
25    END IF;
26    v_i := v_i + 1;
27  END LOOP;
28  END IF;
29
30  IF v_is_prime THEN
31    DBMS_OUTPUT.PUT_LINE('Prime customer ID: ' || v_id);
32  END IF;
33
34  END LOOP;
35  CLOSE cust_cur;
36  END;
37 /

```

Warning: Procedure created with compilation errors.

SQL> CREATE OR REPLACE PROCEDURE print_first_n_primes(n NUMBER) IS

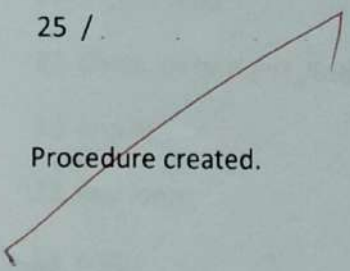
```

2  v_num    NUMBER := 2;
3  v_count  NUMBER := 0;

```

```
4  v_is_prime BOOLEAN;
5  BEGIN
6  WHILE v_count < n LOOP
7    v_is_prime := TRUE;
8
9    -- Prime check using FOR loop
10   FOR i IN 2 .. TRUNC(SQRT(v_num)) LOOP
11     IF MOD(v_num, i) = 0 THEN
12       v_is_prime := FALSE;
13       EXIT;
14     END IF;
15   END LOOP;
16
17   IF v_is_prime THEN
18     DBMS_OUTPUT.PUT_LINE('Prime: ' || v_num);
19     v_count := v_count + 1;
20   END IF;
21
22   v_num := v_num + 1;
23 END LOOP;
24 END;
25 /
```

Procedure created.




```
SQL> declare
2 lo number(3);
3 hi number(3);
4 n number(2);
5 m number(2);
6 c number(20);
7 begin
8 dbms_output.put_line('enter the customer id from to limit:');
9 lo:=&lo;
10 hi:=&hi;
11 for n in lo.. hi
12 loop
13 c:=0;
14 for m in 1..n
15 loop
16 if mod(n,m)=0 then
17 c:=c+1;
18 end if;
19 end loop;
20 if c<=2 then
21 dbms_output.put_line(n || '\n');
22 end if;
23 end loop;
24 end;
```

25 /

Enter value for lo: 101

old 9: lo:=&lo;

new 9: lo:=101;

Enter value for hi: 120

old 10: hi:=&hi;

new 10: hi:=120;

PL/SQL procedure successfully completed.

SQL> declare

2 bk number(5);

3 s number:=0;

4 r number;

5 len number;

6 m number;

7 begin

8 bk:=&bk;

9 m:=bk;

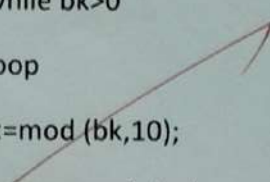
10 len:=length(to_char(bk));

11 while bk>0

12 loop

13 r:=mod (bk,10);

14 s:=s+power(r,len);



```

15 bk:=trunc(bk/10);
16 end loop;
17 if
18 m=s
19 then
20 dbms_output.put_line('given number is armstrong');
21 else
22 dbms_output.put_line('given number is not an armstrong');
23 end if;
24 end;
25 /

```


Enter value for bk: 234

old 8: bk:=&bk;

new 8: bk:=234;

PL/SQL procedure successfully completed.

SQL>



VEL TECH	
EX NO.	8
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	4
TOTAL (20)	19
SIGNATURE	8

```

IF v-is-prime Then
DBMS_output.put_line ("prime customer id: " || v-id);
End if;
End loop;
close cust-cus;
End;

```

This Procedure checks all cust id's in the table & prints the prime ones using a while loop.

using For Loop:

```

Create or replace procedure print_fist-n-Primes (n Number);
v-num number := 2; v-count number := 0; v-is-prime Boolean;
Begin

```

```

while v-count < n loop

```

```

v-is-prime := True;

```

```

For i in 2..Trunc(Sqrt(v-num)) Loop

```

```

if mod(v-num,i) = 0 Then

```

```

v-is-prime := False;

```

```

Exit;

```

```

End if;

```

```

End loop;

```

```

If v-is-prime Then

```

```

DBMS_output.put_line ('prime: ' || v-num);
v-count := v-count + 1;

```

```

End if;

```

```

v-num := v-num + 1;

```

```

End loop;

```

```

End;

```

This Procedure Prints the first N prime members using for loop

Ex: BEGIN

```

print_fist-n-Primes(10);

```

```

End;

```

Result: Thus the program using for loop has been executed Successfully.

VEL TECH	
EX NO.	7
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	20
SIGN WITH DATE	11/11/19