Task 7 : PL/SQL Procedure for loop

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

Procedure:

1. Start a PL/SQL block or procedure
2. use a cursor (if required) 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.

Example 1: using while loop with cursor

prime check using while loop.

```
Create or Replace procedure 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%. NOTFound.
```

.... prime check using with loop

```
If v_id <1 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;
If v_is_prime then.
DBMS_output.put_line
('prime customer ID:' || v_id);
END If;
END loop;
Close cust_cur;
END;
```

This procedure checks all customer IDs the Table and prints the prime ones using a WHILE LOOP.

Example 2: Using FOR LOOP for first N prime Numbers.

create or replace procedure print_first_n_prime_numbers
(n number) is

v_num number := 2;

v_count number := 0;

v_is_prime number BOOLEAN;

BEGIN

WHILE v_count < n loop

v_is_prime := TRUE;

..... prime check using for loop

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 numbers using a for loop

for example

BEGIN

print_first_n_prime(10);

END;

Result: Thus, the program has been executed successfully

11/9/25 Task 7:- PL/SQL Procedure for loop

```
SQL> connect
Enter user-name: system
Enter password:
Connected.
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(10):=&bk;
  3   s number(20):=0;
  4   r number(20);
  5   m number(20):=bk;
  6   len number(20);
  7  begin
  8   len:=trunc(log(10,bk))+1;
  9  while bk>0
 10   loop
 11    r:=mod(bk,10);
 12    s:=s+power(r,len);
 13    bk:=trunc(bk/10);
 14   end loop;
 15   if m=s
 16   then
 17    dbms_output.put_line('given number is armstrong');
 18   else
```

```
19    dbms_output.put_line('given number is not an armstrong');
20   end if;
21 end;
22 /
Enter value for bk: 1634
old   2:   bk number(10):=&bk;
new   2:   bk number(10):=1634;

PL/SQL procedure successfully completed.
```

```
SQL> CREATE OR REPLACE PROCEDURE print_prime_customers IS
 2   CURSOR cust_cur IS
 3    SELECT customer_id FROM customers;  -- Table with customer IDs
 4   v_id NUMBER;
 5   v_is_prime BOOLEAN;
 6   v_i NUMBER;
 7 BEGIN
 8   OPEN cust_cur;
 9   LOOP
10     FETCH cust_cur INTO v_id;
11     EXIT WHEN cust_cur%NOTFOUND;
12
13     -- Prime check using WHILE loop
14     IF v_id < 2 THEN
15       v_is_prime := FALSE;
16     ELSE
17       v_is_prime := TRUE;
18       v_i := 2;
19       WHILE v_i <= TRUNC(SQRT(v_id)) LOOP
20         IF MOD(v_id, v_i) = 0 THEN
21           v_is_prime := FALSE;
22           EXIT;
23         END IF;
24         v_i := v_i + 1;
25       END LOOP;
26     END IF;
27
28     IF v_is_prime THEN
29       DBMS_OUTPUT.PUT_LINE('Prime Customer ID: ' || v_id);
30     END IF;
31   END LOOP;
32   CLOSE cust_cur;
33 END;
34 /

Warning: Procedure created with compilation errors.
```

```
SQL> CREATE OR REPLACE PROCEDURE print_first_n_primes(n NUMBER) IS
 2    v_num    NUMBER := 2;     -- number to check for prime
 3    v_count  NUMBER := 0;     -- how many primes found so far
 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 /
```

Result: Thus, the program has been executed successfully

| VELTECH | |
|---|---|
| Ex No. | 7 |
| PERFORMANCE (5) | 5 |
| RESULT AND ANALYSIS (5) | 5 |
| VIVA VOCE (5) | 5 |
| RECORD (5) | 5 |
| TOTAL (20) | 20 |
| SIGN WITH DATE | 18/9/24 |