Task-7 23/9/25

PL/SQL procedures, functions, Loop

Aim:-
To implement PL/SQL procedure, functions and loops on Number theory and business scenarios.

Procedure:-
PL/SQL is a combination of SQL along with the procedural features of programming language. It was develop by oracle corporation int the early 90's to enchance the capabilities of SQL. PL/SQL is one of three key programming language embedded in the oracle Database, along with SQL itself and Java.

Declaration:-
start with the keyword DECLARE
It is an optional section and defines all Variable, where as, subprograms and other elements to be used in the program.

Executable Handling:-
Enclosed between the keywords BEGIN and END and it is a mandatory section.

Exception Handling:-
Starts with the keyword EXCEPTION this is optional section contains exception that handle errors in the program

Syntax:

```
Declare
  <declarations section>
BEGIN
```

< executable command(s) >
EXCEPTION
< exception handling >
END;

Query:-

```
DECLARE
message varchar2(20) := "Admission
                        open":
BEGIN
  dbms_output.put_line (message);
END;
```

O/p
Admission is open.

Query:-

```
Set serveroutput on;
declare
   x number(5);
   y number(5);
   z number(9);
begin
   x := 10;
   y := 12;
   z := x*y;
dbms_output.put_line ("multiplication of
                two num is "z);
end;
/
```

O/p
Multiplication of two num is 120.

```
declare
Var1 integer;
Var 2 integer;
Var 3 integer;
begin
 Var 1 : = &Var 1;
 Var 2 : = &Var 2;
 Var 3 : = Var1 + Var 2;
dbms_output.put_line < Var 3>;
end;
/
```

Input :-

```
Enter Value for Var 1: 60
 Old 6 : Var 1 := & Var 1;
 new 6 : Var 1 : = 20;
Enter Value for Var 2 : 30
 Old 7 : Var 2 : & Var 2;
 new 7 : Var 2 : = 30;
 90
```

Query :-

```
Declare
   hid number (3) : = 100;
BEGIN
 If (hid = 10) then
 dbms_output.put_line("Value of hid
                       is 10");
 elsif (hid = 20) then
 dbms_output.put_line("Value of hid is
                       20");
 elsif (hid = 30) then
 dbms_output.put_line ("Value of hid is
                       30");
 else
 dbms_output.put_line ("None of the values
                       is matching");
 end if;
 dbms_output.put_line ("Exact Value
```

```
hid is :" || hid);

END;
/
```

O/p

None of the value is matching exact value of hid is : 100.

```
loop
Declare
   hid number(1);
   hid oid number(1);
Begin
   <<outer_loop>>
for hid IN 1....3 loop
   for oid in 1.
      <<inner_loop>>
   for oid in 1....3 loop
dbms_output.put_line ("hid is :" || hid||
                      and" oid is:" || oid);

   END loop inner_loop;
   END loop outer_loop;

END;
/
```

O/p

```
hid is : 1  and  oid is : 1
hid is : 1  and  oid is : 2
hid is : 1  and  oid is : 3
hid is : 2  and  oid is : 1
hid is : 2  and  oid is : 2
hid is : 2  and  oid is : 3
hid is : 3  and  oid is : 1
hid is : 3  and  oid is : 2
hid is : 3  and  oid is : 3
```

19
23
29

While Loop

```
Create or Replace procedure print-
                prime - customer.IS
 Cursor cust - cur IS
    Select SID from student:
    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 - is i = 2;
   while V-i <= True(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
          Student ID:" || V - id);
```

While loop

```
set serveroutput on;
Create or replace procedure print_first
      -n- primes(n number) is
   v_num number := 20;
   v_    Number := 0;
   v_ is_prime Boolean;

Begin
 While v_count < n loop
   v_is_prime := True;
  -- prime check using for loop
 for i in 2...Trun(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;
```

O/p

```
Exec print_first_n_primes(10);
2
3
5
7
11
13
17
```

```
END IF;
END LOOP;
CLOSE cur1 - cur;
END;
/
```

O/P

```
prime student ID : 2
prime student ID : 3
prime student ID : 5
```

VEL TECH	
EX NO.	7
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	
TOTAL (20)	15
SIGN WITH DATE	

Result :-

Implementation of pl/sql procedures, functions and loop on number theory has been successfully executed.