Task 7:-

Date: 23/9/25

PL/SQL procedure, functions, loops.

Aim:-

To implement PL/SQL procedure, Functions and loops on number theory and business scenarios.

Declaration

Starts with the keyword DECLARE.

It is an optional section and defines all variables, whereas, sub programs and other elements to be used in the program.

Executable commands.

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.

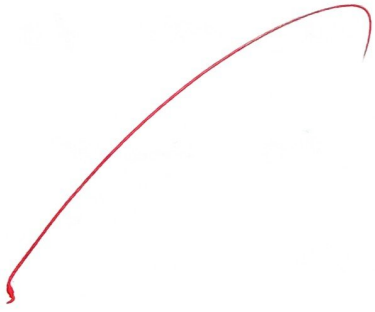
Query:-

```
declare
var 1 integer;
var 2 integer;
var 3 integer;
begin
  var 1 := &var 1;
  var 2 := &var 2;
  var 3 := var 1 + 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_outpud. 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 of hid
                        is:" || hid);
 END;
/
```

O/P

None of the value is matching.

Exact value of hid is :100.

Loop

```
Declare
    hid number (1);
    oid number (1);
Begin
    <<outer_loop>>
For hid IN 1...3 Loop
    <<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.
```

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
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%.NOTFOUND;
-- 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;
If v_is_prime then
   dbms_output.put_line('prime student
                        ID:' || v_id);
   End if;
End loop;
close cust_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	23/9/24

Result:-

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