7) Write a PL/SQL program to demonstrate cursors

```
DECLARE
  //Implicit Cursor (PL/SQL uses it automatically)//
  v_total_employees NUMBER;

  //Explicit Cursor Declaration//
  CURSOR emp_cursor IS
    SELECT emp_id, emp_name, salary FROM employees WHERE salary > 30000;
    v_emp_id employees.emp_id%TYPE;
  v_emp_name employees.emp_name%TYPE;
  v_salary employees.salary%TYPE;

BEGIN
  // Implicit Count employees with salaries above 30,000//
  SELECT COUNT(*) INTO v_total_employees FROM employees WHERE salary > 30000;
  DBMS_OUTPUT.PUT_LINE('Total employees with salary above 30,000: ' ||
v_total_employees);
  // explicit cursor and fetch data//
  OPEN emp_cursor;
  DBMS_OUTPUT.PUT_LINE('Details of Employees with salary above 30,000:');
  DBMS_OUTPUT.PUT_LINE('-----------------------------------------------');
  LOOP
    FETCH emp_cursor INTO v_emp_id, v_emp_name, v_salary;
    EXIT WHEN emp_cursor%NOTFOUND;
    DBMS_OUTPUT.PUT_LINE('Emp ID: ' || v_emp_id ||
                         ', Name: ' || v_emp_name ||
                         ', Salary: ' || v_salary);
  END LOOP;
  -- Close the cursor
  CLOSE emp_cursor;
```

```
END;
/
```

OUTPUT

```
Total employees with salary above 30,000: 3
Details of Employees with salary above 30,000:
----------------------------------------------
Emp ID: 101, Name: Alice, Salary: 50000
Emp ID: 102, Name: Bob, Salary: 35000
Emp ID: 103, Name: Carol, Salary: 45000
```

8. Write PL/SQL queries to create Procedures.

a. Create a Stored Procedure to calculate maximum and minimum of three numbers entered through users.

```
create or replace procedure maxmin(a in number,b in number,c in number)
is
max number(6);
min number(6);
begin
if (a>b and a>c) then
dbms_output.put_line('Maximum number is' || a);
elsif (b>a and b>c) then
dbms_output.put_line('Maximum number is' || b);
else
dbms_output.put_line('Maximum number is'||c);
end if;
if (a<b and a<c) then
dbms_output.put_line('Minimum number is'|| a);
elsif (b<a and b<c) then
dbms_output.put_line('Minimum number is'|| b);
else
```

```
dbms_output.put_line('Minimum number is'||c);
end if;
end;
/
```

OUTPUT:

```
SQL> exec maxmin(10,30,20)
Maximum number is30
Minimum number is10
PL/SQL procedure successfully completed.
```

9. Write a PL/SQL program to demonstrate Functions.

```
create or replace procedure sumnum is
i number;
s number:=0;
begin
for i in 1..10
loop
s:=s+i;
end loop;
dbms_output.put_line('sum of first 10 numbers are: '||s);
end;
/
```

OUTPUT:

SQL> exec sumnum

sum of first 10 numbers are: 55

PL/SQL procedure successfully completed.

10) Write a PL/SQL function that performs simple arithmetic like Addition, Subtraction, and Multiplication & Division of input numbers.

```
declare
x number;
y number;
function add(a in number,b in number) return number
is
d number;
begin
d:=a+b;
return d;
end;
function subtract(e in number,f in number) return number
is
g number;
begin
g:=e-f;
return g;
end;
function multiply (h in number,i in number) return number
is
j number;
begin
```

```
j:=h*i;
return j;
end;
function divide (k in number,l in number) return number
is
m number;
begin
m:=k/l;
return m;
end;
begin
x:=&x;
y:=&y;
dbms_output.put_line('addition of two numbers:'||add(x,y));
dbms_output.put_line('Subtraction of two numbers:'||subtract(x,y));
dbms_output.put_line('Multiplication of two numbers:'||multiply(x,y));
dbms_output.put_line('Division of two numbers:'||divide(x,y));
end;
/
```

OUTPUT:

```
 Enter value for x: 10
old 33: x:=&x;
new 33: x:=10;
Enter value for y: 3
old 34: y:=&y;
new 34: y:=3;
addition of two numbers13
Subtraction of two numbers7
Multiplication of two numbers30
```

Division of two numbers3.333333333333333333333333333333333333

PL/SQL procedure successfully