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LabCourse: Principles of DBMS

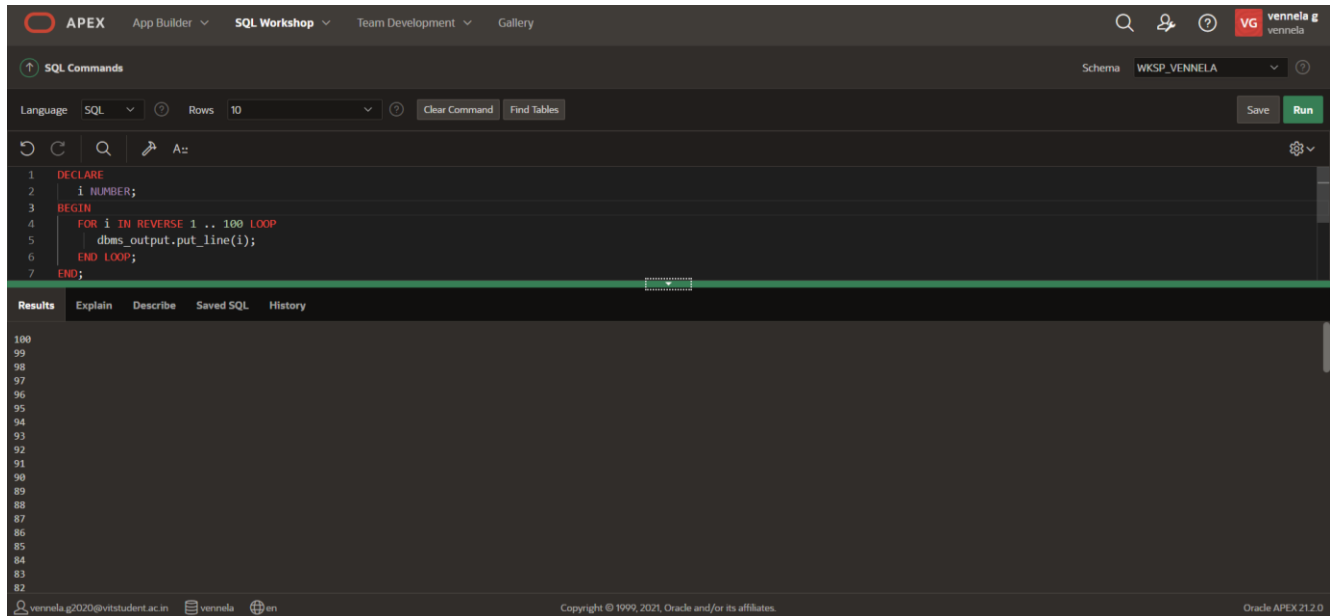
LabSlot: L29+30

Assignment : 6

## Ex:9

**Aim: To understand the concepts of Iterations and Subprogram (Procedures and Functions)**

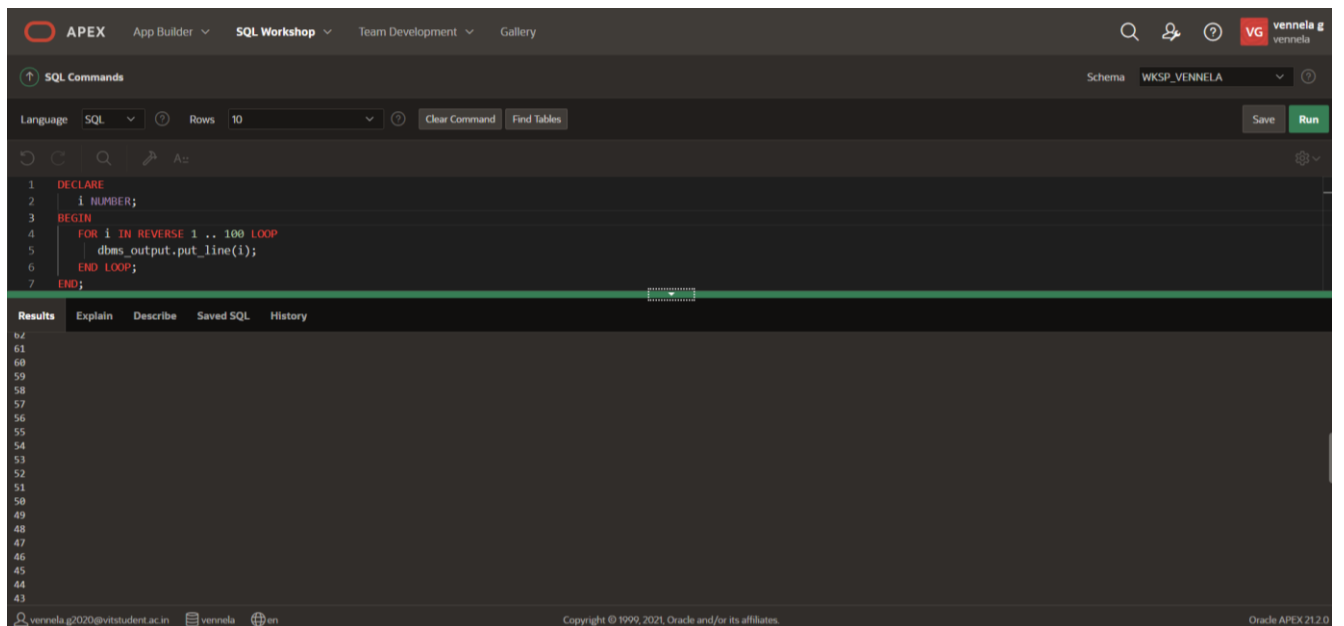
**1. Write a PL/SQL code to print the numbers in reverse order from 100 to 1.**



The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' tab is active, showing a schema of 'WKSP\_VENNELA'. The code editor contains the following PL/SQL code:

```
1 DECLARE
2   i NUMBER;
3 BEGIN
4   FOR i IN REVERSE 1 .. 100 LOOP
5     dbms_output.put_line(i);
6   END LOOP;
7 END;
```

The 'Results' tab is selected, displaying a list of numbers from 100 down to 82, representing the output of the PL/SQL code.



The screenshot shows the Oracle APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' tab is active, showing a schema of 'WKSP\_VENNELA'. The code editor contains the following PL/SQL code:

```
1 DECLARE
2   i NUMBER;
3 BEGIN
4   FOR i IN REVERSE 1 .. 100 LOOP
5     dbms_output.put_line(i);
6   END LOOP;
7 END;
```

The 'Results' tab is selected, displaying a list of numbers from 62 down to 43, representing the output of the PL/SQL code.

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The right side shows a search icon, a user icon, a help icon, and a 'vennela' logo. The 'SQL Commands' tab is active, showing a PL/SQL block with a FOR loop. The 'Schema' dropdown is set to 'WKSP\_VENNELA'. The 'Language' is 'SQL' and 'Rows' is '10'. The 'Run' button is highlighted. The code is as follows:

```
1 DECLARE
2   i NUMBER;
3 BEGIN
4   FOR i IN REVERSE 1 .. 100 LOOP
5     dbms_output.put_line(i);
6   END LOOP;
7 END;
```

The 'Results' tab is active, showing the output of the execution. The output is a list of numbers from 100 down to 1, with a line number on the left. The 'Statement processed.' message is visible at the bottom.

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2. Create a pl/sql block to find the sum of series 1+3+5+.....+n .

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The right side shows a search icon, a user icon, a help icon, and a 'vennela' logo. The 'SQL Commands' tab is active, showing a PL/SQL block with a WHILE loop. The 'Schema' dropdown is set to 'WKSP\_VENNELA'. The 'Language' is 'SQL' and 'Rows' is '10'. The 'Run' button is highlighted. The code is as follows:

```
1 DECLARE
2   odd_num NUMBER := 1;
3   totalsum NUMBER := 0;
4 BEGIN
5   dbms_output.Put_line('Odd numbers for sum are:');
6   WHILE odd_num <= 15 LOOP
7     dbms_output.Put_line(odd_num);
8     totalsum := totalsum + odd_num;
9     odd_num := odd_num + 2;
10  END LOOP;
11 dbms_output.Put_line('Sum of all odd numbers is ' || totalsum);
12 END;
```

The 'Results' tab is active, showing the output of the execution. The output is a list of odd numbers from 1 to 15, followed by the sum of all odd numbers, which is 64. The 'Statement processed.' message is visible at the bottom.

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### 3. Write a function to give the number of rows in the table.

The screenshot shows the APEX SQL Workshop interface. The top navigation bar includes 'APEX', 'App Builder', 'SQL Workshop', 'Team Development', and 'Gallery'. The 'SQL Commands' tab is active, showing a query: `select * from Suppliers;`. The 'Schema' dropdown is set to 'WKSP\_VENNELA'. The 'Language' is 'SQL' and 'Rows' is set to 10. The 'Run' button is highlighted in green. Below the query editor, the 'Results' tab is selected, displaying a table with 5 rows. The table has columns: SUPPNO, SUPPNAME, STATUS, and CITY. The data rows are: (2, New Bakers, 30, Mumbai), (3, Mother Dairy, 10, Delhi), (1, Britannia, 10, Delhi), (4, Cookz, 50, Bangalore), and (5, Haldiram, 40, Jaipur). A status message at the bottom of the results area says '5 rows returned in 0.01 seconds' with a 'Download' link.

SUPPNO	SUPPNAME	STATUS	CITY
2	New Bakers	30	Mumbai
3	Mother Dairy	10	Delhi
1	Britannia	10	Delhi
4	Cookz	50	Bangalore
5	Haldiram	40	Jaipur

The screenshot shows the APEX SQL Workshop interface with a PL/SQL function being executed. The query editor contains the following code:

```
1 DECLARE
2   c number(2);
3   FUNCTION Row_Count
4   RETURN number
5   IS total number(2) := 0;
6   BEGIN
7     SELECT count(*) into total FROM Suppliers;
8     RETURN total;
9   END;
10
11 BEGIN
12   c := Row_Count();
13   dbms_output.put_line('The number of rows are:' || c);
14 END;
```

The 'Run' button is highlighted in green. Below the query editor, the 'Results' tab is selected, displaying the output of the function. The output shows 'The number of rows are:5' followed by 'Statement processed.' and '0.02 seconds'.

#### 4. Write a PL/SQL to find the factorial of the given number using function.

The screenshot shows the Oracle APEX SQL Workshop interface. The 'SQL Commands' tab is active, displaying a PL/SQL block to calculate the factorial of 5. The code is as follows:

```
1
2 declare
3   i number :=1;
4   num number := 5;
5
6 begin
7   while num > 0 loop
8     i:=num*i;
9     num:=num-1;
10  end loop;
11  dbms_output.put_line(i);
12 end;
```

The 'Results' tab shows the execution output: 'Statement processed.' and '0.00 seconds'.

#### 5. Write a procedure to accept an employee name and display his Department names.

The screenshot shows the Oracle APEX SQL Workshop interface. The 'SQL Commands' tab is active, displaying a SQL query to select all columns from the 'Employee' table:

```
1 select * from Employee;
```

The 'Results' tab shows the execution output, displaying 5 rows of data in a table format:

EMPLOYEE_ID	EMPLOYEE_NAME	DESIGNATION	DEPARTMENT	SALARY(IN_LAKHS)
2	Riya	teacher	education	.3
4	Sita	clerk	bank	.4
5	Jaya	principal	education	.9
1	Ram	data entry operator	IT	.2
3	Raj	constable	police	.3

5 rows returned in 0.01 seconds

APEX

App Builder

SQL Workshop

Team Development

Gallery

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SQL Commands

Schema WKSP\_VENNELA

Language SQL

Rows 10

Clear Command

Find Tables

Save

Run

A::

```
1 DECLARE
2   v_name varchar2(50);
3   v_dept varchar2(50);
4   PROCEDURE get_department
5   AS
6   BEGIN
7     v_name:='Raj';
8     SELECT department
9     INTO v_dept
10    FROM Employee
11   WHERE employee_name = v_name;
12   END;
13 BEGIN
14   get_department();
15   DBMS_OUTPUT.put_line ('Employee Name: ' || v_name);
16   DBMS_OUTPUT.put_line ('Department: ' || v_dept);
17 END;
```

Results

Explain

Describe

Saved SQL

History

Employee Name: Raj  
Department: police  
  
Statement processed.

0.02 seconds

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# Ex:10

Aim: To understand implicit and explicit cursor in PL/SQL

## 1. Retrieve all the rows from the table using cursors.

The screenshot shows the Oracle APEX SQL Workshop interface. The 'SQL Commands' tab is active, displaying a simple SQL query: `select * from Employee;`. The 'Schema' dropdown is set to 'WKSP\_VENNELA'. The 'Language' is 'SQL' and 'Rows' are set to 10. The 'Run' button is highlighted in green. Below the query editor, the 'Results' tab is active, showing a table with 4 rows and 4 columns: **EMPLOYEE\_ID**, **EMPLOYEE\_NAME**, **DESIGNATION**, and **DEPARTMENT**. The data is as follows:

EMPLOYEE_ID	EMPLOYEE_NAME	DESIGNATION	DEPARTMENT
2	Riya	teacher	education
1	Sita	clerk	bank
4	Jaya	principal	education
3	Raj	constable	police

Below the table, it states '4 rows returned in 0.01 seconds' and provides a 'Download' link. The footer shows the user 'vennela.g2020@vitstudent.ac.in', the workspace 'vennela', and the version 'Oracle APEX 21.2.0'.

The screenshot shows the Oracle APEX SQL Workshop interface with a PL/SQL block using an explicit cursor. The 'SQL Commands' tab is active, displaying the following code:

```
1 DECLARE
2   employee_id      Employee.employee_id%TYPE; employee_name      Employee.employee_name%TYPE;
3   designation      Employee.designation%TYPE; department      Employee.department%TYPE;
4   rowcount         NUMBER;
5   CURSOR cursor1 IS SELECT employee_id,employee_name,designation,department FROM Employee ;
6 BEGIN
7   OPEN cursor1;
8   DBMS_OUTPUT.PUT_LINE('ID NAME DESIGNATION DEPARTMENT');
9   LOOP
10    FETCH cursor1 INTO employee_id,employee_name,designation,department;
11    EXIT WHEN cursor1%NOTFOUND;
12    DBMS_OUTPUT.PUT_LINE(employee_id||' '||employee_name ||' '||designation ||' '||department);
13  END LOOP;
14  rowcount := cursor1%ROWCOUNT;
15  CLOSE cursor1;
16 END;
```

The 'Results' tab is active, showing the output of the PL/SQL block. The output is a list of employee details, each on a new line, matching the data in the first screenshot:

```
ID NAME DESIGNATION DEPARTMENT
2 Riya teacher education
1 Sita clerk bank
4 Jaya principal education
3 Raj constable police
```

Below the output, it states 'Statement processed.' The footer shows the user 'vennela.g2020@vitstudent.ac.in', the workspace 'vennela', and the version 'Oracle APEX 21.2.0'.

## 2. Write a cursor program to display few records using joins

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying the following query:

```
1 select * from Suppliers;
2
```

The Results tab shows the output of the query, which is a table with 5 rows and 4 columns: SUPPNO, SUPPNAME, STATUS, and CITY.

SUPPNO	SUPPNAME	STATUS	CITY
2	New Bakers	50	Mumbai
3	Mother Dairy	10	Delhi
1	Britannia	10	Delhi
4	Cookz	50	Bangalore
5	Haldiram	40	Jaipur

5 rows returned in 0.01 seconds. Download

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying the following query:

```
1 select * from Items;
2
```

The Results tab shows the output of the query, which is a table with 5 rows and 4 columns: ITEMNO, ITEMNAME, SUPPNO, and PRICE.

ITEMNO	ITEMNAME	SUPPNO	PRICE
1	Milk	1	15
3	cake	2	5
2	Bread	3	9
5	milk bread	4	14
4	plain biscuit	5	6

5 rows returned in 0.00 seconds. Download

The screenshot shows the APEX SQL Workshop interface. The SQL Commands tab is active, displaying the following query:

```
1 select Suppno,suppname,itemname from Suppliers JOIN Items using (suppno);
2
```

The Results tab shows the output of the query, which is a table with 5 rows and 3 columns: SUPPNO, SUPPNAME, and ITEMNAME.

SUPPNO	SUPPNAME	ITEMNAME
1	Britannia	Milk
2	New Bakers	cake
3	Mother Dairy	Bread
4	Cookz	milk bread
5	Haldiram	plain biscuit

5 rows returned in 0.01 seconds. Download



APEX

App Builder

SQL Workshop

Team Development

Gallery

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SQL Commands

SchemaWKSP\_VENNELA

LanguageSQLRows10Clear CommandFind TablesSaveRun

A:

```
1 DECLARE
2   suppno Suppliers.suppno%type; suppname Suppliers.suppname%type; itemname Items.itemname%type;
3   CURSOR c_details is
4     SELECT suppno, suppname,itemname FROM Suppliers JOIN Items USING(suppno);
5 BEGIN
6   OPEN c_details;
7   LOOP
8     FETCH c_details into suppno,suppname,itemname;
9     EXIT WHEN c_details%notfound;
10    dbms_output.put_line(suppno || ' ' || suppname|| ' ' || itemname);
11  END LOOP;
12  CLOSE c_details;
13 END;
```

Results

Explain

Describe

Saved SQL

History

```
1 Britannia Milk
2 New Bakers cake
3 Mother Dairy Bread
4 Cookz milk bread
5 Haldiram plain biscuit

Statement processed.

0.00 seconds
```

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