

Experiment No: 3

Title: Implementation of different types of functions with suitable examples.

- Number Function
- Aggregate Function
- Character Function
- Conversion Function
- Date Function

Objective:

NUMBER FUNCTION:

Abs(n) :Select abs(-15) from dual;

Exp(n): Select exp(4) from dual;

Power(m,n): Select power(4,2) from dual;

Mod(m,n): Select mod(10,3) from dual;

Round(m,n): Select round(100.256,2) from dual;

Trunc(m,n): ;Select trunc(100.256,2) from dual;

Sqrt(m,n);Select sqrt(16) from dual;

Develop aggregate plan strategies to assist with summarization of several data entries.

Aggregative operators: In addition to simply retrieving data, we often want to perform some computation or summarization. SQL allows the use of arithmetic expressions. We now consider a powerful class of constructs for computing aggregate values such as MIN and SUM.

1. Count: COUNT following by a column name returns the count of tuple in that column. If DISTINCT keyword is used then it will return only the count of unique tuple in the column. Otherwise, it will return count of all the tuples (including duplicates) count (*) indicates all the tuples of the column.

Syntax: COUNT (Column name)

Example: SELECT COUNT (Sal) FROM emp;

2. SUM: SUM followed by a column name returns the sum of all the values in that column.

Syntax: SUM (Column name)

Example: SELECT SUM (Sal) From emp;

3. AVG: AVG followed by a column name returns the average value of that column values.

Syntax: AVG (n1, n2...)

Example: Select AVG (10, 15, 30) FROM DUAL;

4. MAX: MAX followed by a column name returns the maximum value of that column.

Syntax: MAX (Column name)

Example: SELECT MAX (Sal) FROM emp;

SQL> select deptno, max(sal) from emp group by deptno;

DEPTNO	MAX (SAL)
10	5000
20	3000
30	2850

SQL> select deptno, max (sal) from emp group by deptno having max(sal)<3000;

DEPTNO	MAX(SAL)
30	2850

5. MIN: MIN followed by column name returns the minimum value of that column.

Syntax: MIN (Column name)

Example: SELECT MIN (Sal) FROM emp;

SQL>select deptno,min(sal) from emp group by deptno having min(sal)>1000;

DEPTNO	MIN (SAL)
10	1300

CHARACTER FUNCTION:

initcap(char) : select initcap("hello") from dual;

lower (char): select lower ('HELLO') from dual;

upper (char) :select upper ('hello') from dual;

ltrim (char,[set]): select ltrim ('cseit', 'cse') from dual;

rtrim (char,[set]): select rtrim ('cseit', 'it') from dual;

replace (char,search): select replace('jack and jue','j','bl') from dual;

CONVERSION FUNCTIONS:

To_char: TO_CHAR (number) converts n to a value of VARCHAR2 data type, using the optional number format fmt. The value n can be of type NUMBER, BINARY_FLOAT, or BINARY_DOUBLE.

SQL>select to_char(65,'RN')from dual;

LXV

To_number : TO_NUMBER converts expr to a value of NUMBER data type.

SQL>Select to_number ('1234.64') from Dual;

1234.64

To_date:TO_DATE converts char of CHAR, VARCHAR2, NCHAR, or NVARCHAR2 data type to a value of DATE data type.

SQL>SELECT TO_DATE('January 15, 1989, 11:00 A.M.')FROM DUAL;

TO_DATE

15-JAN-89

STRING FUNCTIONS:

Concat: CONCAT returns char1 concatenated with char2. Both char1 and char2 can be any of the datatypes

```
SQL>SELECT CONCAT('ORACLE','CORPORATION')FROM DUAL;
      ORACLECORPORATION
```

Lpad: LPAD returns expr1, left-padded to length n characters with the sequence of characters in expr2.

```
SQL>SELECT LPAD('ORACLE',15,'*')FROM DUAL;
      *****ORACLE
```

Rpad: RPAD returns expr1, right-padded to length n characters with expr2, replicated as many times as necessary.

```
SQL>SELECT RPAD ('ORACLE',15,'*')FROM DUAL;
      ORACLE*****
```

Ltrim: Returns a character expression after removing leading blanks.

```
SQL>SELECT LTRIM('SSMITHSS','S')FROM DUAL;
      MITHSS
```

Rtrim: Returns a character string after truncating all trailing blanks

```
SQL>SELECT RTRIM('SSMITHSS','S')FROM DUAL;
      SSMITH
```

Lower: Returns a character expression after converting uppercase character data to lowercase.

```
SQL>SELECT LOWER('DBMS')FROM DUAL;
      dbms
```

Upper: Returns a character expression with lowercase character data converted to uppercase

```
SQL>SELECT UPPER('dbms')FROM DUAL;
      DBMS
```

Length: Returns the number of characters, rather than the number of bytes, of the given string expression, excluding trailing blanks.

```
SQL>SELECT LENGTH('DATABASE')FROM DUAL;
      8
```

Substr: Returns part of a character, binary, text, or image expression.

```
SQL>SELECT SUBSTR('ABCDEFGHIJ'3,4)FROM DUAL;
      CDEF
```

Instr: The INSTR functions search string for substring. The function returns an integer indicating the position of the character in string that is the first character of this occurrence.

```
SQL>SELECT INSTR('CORPORATE FLOOR','OR',3,2)FROM DUAL;  
14
```

DATE FUNCTIONS:

Sysdate:

```
SQL>SELECT SYSDATE FROM DUAL;  
29-DEC-08
```

next_day:

```
SQL>SELECT NEXT_DAY(SYSDATE,'WED')FROM DUAL;  
05-JAN-09
```

add_months:

```
SQL>SELECT ADD_MONTHS(SYSDATE,2)FROM DUAL;  
28-FEB-09
```

last_day:

```
SQL>SELECT LAST_DAY(SYSDATE)FROM DUAL;  
31-DEC-08
```

months_between:

```
SQL>SELECT MONTHS_BETWEEN(SYSDATE,HIREDATE)FROM EMP;  
4
```

Least:

```
SQL>SELECT LEAST('10-JAN-07','12-OCT-07')FROM DUAL;  
10-JAN-07
```

Greatest:

```
SQL>SELECT GREATEST('10-JAN-07','12-OCT-07')FROM DUAL;  
10-JAN-07
```

Trunc:

```
SQL>SELECT TRUNC(SYSDATE,'DAY')FROM DUAL;  
28-DEC-08
```

Round:

```
SQL>SELECT ROUND(SYSDATE,'DAY')FROM DUAL;  
28-DEC-08
```

to_char:

```
SQL> select to_char(sysdate, "dd\mm\yy") from dual;  
24-mar-05.
```

to_date:

```
SQL> select to date (sysdate, "dd\mm\yy") from dual;  
24-mar-o5.
```

LAB PRACTICE ASSIGNMENT:

Create a table EMPLOYEE with following schema:

(Emp_no, E_name, E_address, E_ph_no, Dept_no, Dept_name, Job_id, Designation , Salary)

Write SQL statements for the following query.

1. List the E_no, E_name, Salary of all employees working for MANAGER.
2. Display all the details of the employee whose salary is more than the Sal of any IT PROFF..
3. List the employees in the ascending order of Designations of those joined after 1981.
4. List the employees along with their Experience and Daily Salary.
5. List the employees who are either 'CLERK' or 'ANALYST' .
6. List the employees who joined on 1-MAY-81, 3-DEC-81, 17-DEC-81,19-JAN-80 .
7. List the employees who are working for the Deptno 10 or20.
8. List the Enames those are starting with 'S' .
9. Dislay the name as well as the first five characters of name(s) starting with 'H'
10. List all the emps except 'PRESIDENT' & 'MGR" in asc order of Salaries.