PRACTICAL: - 6

SQL FUNCTIONS

SQL Numeric Function:

SQL numeric functions are used primarily for numeric manipulation and/or mathematical calculations.

Absolute: Abs() Returns the absolute value of numeric expression.

```
Run SQL Command Line
SQL> select Abs(2) from dual;

    ABS(2)
----------
         2

SQL> select Abs(-2) from dual;

   ABS(-2)
----------
         2
```

Ceil: Ceil()n Returns the smallest integer value that is not less than passed numeric expression.

```
SQL> select Ceil(22.1) from dual;

CEIL(22.1)
----------
        23

SQL> select Ceil(0.0) from dual;

 CEIL(0.0)
----------
         0

SQL>  select Ceil(77) from dual;

  CEIL(77)
----------
        77
```

Floor: Floor() Returns the largest integer value that is not greater than passed numeric expression.

```
SQL>  select Floor(1.77) from dual;

FLOOR(1.77)
-----------
          1

SQL>  select Floor(7.7) from dual;

FLOOR(7.7)
----------
         7
```

Square Root: Sqrt() Returns the non-negative square root of numeric expression.

```
Run SQL Command Line
SQL> select sqrt(6) from dual;

   SQRT(6)
----------
2.44948974

SQL> select sqrt(36) from dual;

  SQRT(36)
----------
         6

SQL>
```

Module: Mod() Returns the remainder of one expression by diving by another expression.

```
Run SQL Command Line
SQL> select Mod(10,8) from dual;

 MOD(10,8)
----------
         2

SQL>
```

Round: Round() Returns numeric expression rounded to an integer. Can be used to round an expression to a number of decimal points

Run SQL Command Line

```
SQL>  select Round(99,8) from dual;

ROUND(99,8)
-----------
         99

SQL>   select Round(83,8) from dual;

ROUND(83,8)
-----------
         83

SQL>
```

Remainder: Remainder() Returns the remainder of *m* divided by *n*.

Run SQL Command Line

```
SQL>    select Remainder(66,8) from dual;

REMAINDER(66,8)
---------------
              2

SQL>  select Remainder(96,8) from dual;

REMAINDER(96,8)
---------------
              0

SQL>
```

Power: Power() Returns the value of one expression raised to the power of another expression.

Run SQL Command Line

```
SQL> select Power(6,8) from dual;

POWER(6,8)
----------
   1679616

SQL> select Power(6,2) from dual;

POWER(6,2)
----------
        36

SQL>
```

Truncate: Trunc() Returns numeric exp1 truncated to exp2 decimal places. If exp2 is 0, then the result will have no decimal point.

Run SQL Command Line

```
SQL>  select Trunc(999,2) from dual;

TRUNC(999,2)
------------
         999

SQL>  select Trunc(999.9999999,2) from dual;

TRUNC(999.9999999,2)
--------------------
              999.99

SQL>
```

Exponential: Exp() Returns the base of the natural logarithm (e) raised to the power of passed numeric expression.

Run SQL Command Line

```
SQL>  select Exp(82) from dual;

   EXP(82)
----------
4.0940E+35

SQL> select Exp(8) from dual;

    EXP(8)
----------
2980.95799

SQL>
```

Logarithm: Log() Returns the natural logarithm of the passed numeric expression.

Run SQL Command Line

```
SQL> select Log(8,66) from dual;

 LOG(8,66)
----------
2.01479804

SQL> select Log(6,66) from dual;

 LOG(6,66)
----------
2.33829083

SQL> select Log(10,1000) from dual;

LOG(10,1000)
------------
           3
```

SQL Character Function:

Lower: Lower() This function converts alpha character values to lowercase

Run SQL Command Line

```
SQL> select lower('DEEPAKKESHRI') FROM DUAL;

LOWER('DEEPA
------------
deepakkeshri

SQL>
```

Upper: Upper() This function converts alpha character values to uppercase.

Select Run SQL Command Line

```
SQL> select Upper('deepakkeshri') from dual;

UPPER('DEEPA
------------
DEEPAKKESHRI

SQL>
```

Initcap: Initcap() This function converts alpha character values to uppercase for the first letter of each word and all others in lowercase.

Run SQL Command Line

```
SQL> select Initcap('deepakkeshri') from dual;

INITCAP('DEE
------------
Deepakkeshri

SQL> select Initcap('my,name,is,deepak,keshri') from dual;

INITCAP('MY,NAME,IS,DEEP
------------------------
My,Name,Is,Deepak,Keshri

SQL>
```

Length: Length() This function returns the length of the input string. If the input string is NULL, then LENGTH function returns NULL and not Zero.

Run SQL Command Line

```
SQL> select Length('my name deepak keshri') from dual;

LENGTH('MYNAMEDEEPAKKESHRI')
----------------------------
                          21

SQL> select Length('football passion') from dual;

LENGTH('FOOTBALLPASSION')
-------------------------
                       16

SQL>
```

Substr: Substr() This function returns a portion of a string from a given start point to an end point. If a substring length is not given, then SUBSTR returns all the characters till the end of string (from the starting position specified).

Run SQL Command Line

```
SQL> select Substr('fooball passion',5,9) from dual;

SUBSTR('F
---------
all passi

SQL> select Substr('fooball passion',8,9) from dual;

SUBSTR('
--------
 passion

SQL>
```

Concat: Concat() This function always appends (concatenates) string2 to the end of string1. If either of the string is NULL, CONCAT function returns the non-NULL argument. If both strings are NULL, CONCAT returns NULL.

Select Run SQL Command Line

```
SQL> select Concat('my name', 'is deepak keshri.') from dual;

CONCAT('MYNAME','ISDEEPA
------------------------
my nameis deepak keshri.

SQL>
```

Instr: Instr() This function returns numeric position of a character or a string in a given string. Optionally, you can provide a position *m* to start searching, and the occurrence *n* of string. Also, if the starting position is not given, then it starts search from index 1, by default. If after searching in the string, no match is found then, INSTR function returns 0.

Run SQL Command Line

```
SQL> select Instr('my name is deepak keshri.','deepak') from dual;

INSTR('MYNAMEISDEEPAKKESHRI.','DEEPAK')
---------------------------------------
                                     12

SQL> select Instr('i love idian army.','army') from dual;

INSTR('ILOVEIDIANARMY.','ARMY')
-------------------------------
                             14

SQL>
```

Trim: Trim() This function trims the string input from the start or end (or both).

Run SQL Command Line

```
SQL> select Trim(leading '5' from '568379355') from dual;

TRIM(LEA
--------
68379355

SQL> select Trim(trailing '5' from '568379355') from dual;

TRIM(TR
-------
5683793
```

Rtrim: Rtrim() Removes trailing spaces from a string.

Run SQL Command Line

```
SQL> select Rtrim('568379355','5') from dual;

RTRIM('
-------
5683793

SQL>
```

Ltrim: Ltrim() Removes leading spaces from a string

```
Run SQL Command Line

SQL> select Ltrim('568379355','5') from dual;

LTRIM('5
--------
68379355
```

Translate: Translate() Returns the string from the first argument after the characters specified in the second argument are translated into the characters specified in the third argument.

```
Run SQL Command Line

SQL> select Translate('1234567890','56','$') from dual;

TRANSLATE
--------
1234$7890

SQL>
```

Replace: Replace() This function searches for a character string and, if found, replaces it with a given replacement string at all the occurrences of the string. REPLACE is useful for searching patterns of characters and then changing all instances of that pattern in a single function call.

```
Run SQL Command Line

SQL> select Replace('1234567890','1','%') from dual;

REPLACE('1
---------
%234567890

SQL>
```

Rpad: Rpad() These functions return the strings padded to the right.

```
Run SQL Command Line

SQL> select Rpad('welcome','8','$') from dual;

RPAD('WE
--------
welcome$

SQL> select Rpad('welcome','10','$') from dual;

RPAD('WELC
----------
welcome$$$

SQL>
```

Lpad: Lpad() These functions return the strings padded to the left.

```
Run SQL Command Line

SQL> select Lpad('welcome','10','$') from dual;

LPAD('WELC
----------
$$$welcome

SQL> select Lpad('welcome','8','$') from dual;

LPAD('WE
--------
$welcome

SQL>
```

SQL Date Function:

Sysdate: Sysdate() returns the current date of system.

```
Run SQL Command Line

SQL> select Sysdate from dual;

SYSDATE
---------
23-FEB-21

SQL>
```

Next_day: Next_day() returns the date of the first weekday specified by day name that is later than a date.

```
Run SQL Command Line
SQL> select Next_day(sysdate,'monday') from dual;

NEXT_DAY(
---------
01-MAR-21

SQL>
```

Last_day: Last_day() returns the last day of the month that contains a date.

```
Run SQL Command Line
01-MAR-21

SQL> select Last_day(sysdate) from dual;

LAST_DAY(
---------
28-FEB-21

SQL>
```

Add_months: Add_months() returns a date with a specified number of months added.

```
Run SQL Command Line

SQL> select Add_months(sysdate,+3) from dual;

ADD_MONTH
---------
23-MAY-21

SQL>
```

Months_between: Months_between() returns number of months between dates.

```
Run SQL Command Line

SQL>  select Months_between(sysdate,'23-june-2021') from dual;

MONTHS_BETWEEN(SYSDATE,'23-JUNE-2021')
---------------------------------------
                                    -4

SQL>  select Months_between('23-june-2021',sysdate) from dual;

MONTHS_BETWEEN('23-JUNE-2021',SYSDATE)
---------------------------------------
                                     4

SQL>
```

Systimestamp: Systimestamp() returns a timestamp with time zone value that represents the system date and time including fractional seconds and time zone.

```
Run SQL Command Line

SQL>  select Systimestamp from dual;

SYSTIMESTAMP
---------------------------------------------------------------------------
23-FEB-21 05.26.42.201000 PM +05:30

SQL>
```

Current_date: Current_date() returns the current date in the session time zone, in a value in the Gregorian calendar of datatype date.

```
Run SQL Command Line

SQL>  select Current_date from dual;

CURRENT_D
---------
23-FEB-21
```