



EXPERIMENT NO. 5

AIM:- Perform Simple queries, string manipulation operations and aggregate functions.

OBJECTIVES :- To understand string manipulation operations and aggregate functions.

THEORY:-

Aggregate Functions: The functions that work on a set of numeric values are termed an aggregate function. For example, COUNT is a function, which counts the number of occurrences of the values/field passed by the user.

An SQL aggregate function calculates on a set of values and returns a single value.

There are 5 aggregate functions as:

Count ()– to count number of rows in table

Sum ()– to sum up the values in the table column

Avg () – To calculate average of non-NULL values in a set.

Min () – To calculate minimum value

Max ()- To calculate maximum value

Single row functions

A function is a program written to optionally accept input parameters, perform an operation, and return a single value. A function returns only one value per execution. Some functions are explain as,

Operating on Character Data

1)LOWER() :- Convert a string to lowercase. syntax :- lower('SQL') = sql

2) UPPER, Convert a string to uppercase. syntax upper('sql') = SQL

3)LENGTH :- The LENGTH(*string*) function uses a character string as an input parameter and returns a numeric value representing the number of characters present in that string:
length('A long string') = 13

4)CONCAT :- The CONCAT(*string 1, string 2*) function takes two strings and concatenates or joins them in the same way that the concatenation operator || does:
concat('SQL is', ' easy to learn.')

5)SUBSTR:- The SUBSTR(*string, start position, number of characters*) function accepts three parameters and returns a string consisting of the number of characters extracted from the source string, beginning at the specified start position:
substr('http://www.apsit.com',12,5)

7)LPAD and RPAD:- The LPAD(*string, length after padding, padding string*) and RPAD(*string, length after padding, padding string*) functions add a padding string of characters to the left or right of a string until it reaches the specified length after padding.

```
select lpad('apsit',10,'*');  
select rpad('apsit',10,'*');
```

9)TRIM :- The TRIM function literally trims off leading or trailing (or both) character strings from a given source string:

```
SELECT TRIM(' apsit ');  
SELECT TRIM(LEADING 'x' FROM 'xxxapsitxxx');  
SELECT TRIM(TRAILING 'xxx' FROM 'apsitxxx');
```

10)REPLACE:- The REPLACE(*string, search item, replacement item*) function locates the search item in a given string and replaces it with the replacement item, returning a string with replaced values:

```
select replace('PASSWORD','WORD','PORT');
```

Operating on Numeric Data

Many numeric built-in functions are available. Some calculate square roots, perform exponentiation, and convert numbers into hexadecimal format.

1)ROUND: - ROUND(*number, decimal precision*) facilitates rounding off a number to the lowest or highest value given a decimal precision format:

`round(42.39,1) = 42.4`

2)TRUNC: - The TRUNC(*number, decimal precision*) function drops off or truncates the number given a decimal precision value:

`truncate(42.39,1) = 42.3`

3)MOD:- The MOD(*dividend, divisor*) returns the remainder of a division operation

`mod(42,10)`

Operating on Date Information

1)Timestampdiff: - The timestampdiff(*month,date1, date2*) function returns the number of months between two dates

`select timestampdiff(month,'2020-9-9', '2020-12-12');`

2)LAST_DAY: - The LAST_DAY(*date*) function returns the last day of the month

`select last_day('2020-9-9');`

3)SYSDATE: - The SYSDATE function takes no parameters and returns a date value that represents the current server date and time.

`select sysdate();`

CONCLUSION: - Hence, Simple queries, string manipulation operations and aggregate functions are studied.