

Name: Prashant Suresh Shirgave

Roll No: 3

Batch: T1

Class: TY(CSE-AIML)

Experiment No. 5

Title: SQL character functions, String functions & Pattern matching.

Objective: To understand the use of standard SQL functions for processing the text data.

Theory:

Character functions are of the following two types:

1. Case-Manipulative Functions (LOWER, UPPER and INITCAP)
2. Character-Manipulative Functions (CONCAT, LENGTH, SUBSTR, INSTR, LPAD, RPAD, TRIM and REPLACE)

Name	Description
CONCAT	Concatenate two or more strings into a single string
INSTR	Return the position of the first occurrence of a substring in a string
LENGTH	Get the length of a string in bytes and in characters
LEFT	Get a specified number of leftmost characters from a string
LOWER	Convert a string to lowercase
LTRIM	Remove all leading spaces from a string
REPLACE	Search and replace a substring in a string
RIGHT	Get a specified number of rightmost characters from a string
RTRIM	Remove all trailing spaces from a string
SUBSTRING	Extract a substring starting from a position with a specific length.
TRIM	Remove unwanted characters from a string.
FORMAT	Format a number with a specific locale, rounded to the number of decimals
UPPER	Convert a string to uppercase

Like operator:

LIKE operator is used in a WHERE clause to search for a specified pattern in a column. There are two wildcards often used in conjunction with the LIKE operator:

1. % - The percent sign represents zero, one, or multiple characters

2. _ - The underscore represents a single character

SELECT column1,

column2, ...

FROM table_name

WHERE columnN LIKE pattern;

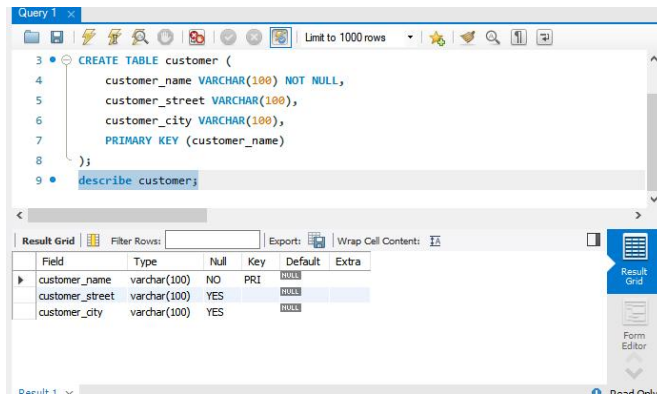
Some examples showing different LIKE operators with '%' and '_' wildcards:

LIKE Operator	Description
WHERE CustomerName LIKE 'a%'	Finds any values that start with "a"
WHERE CustomerName LIKE '%a'	Finds any values that end with "a"
WHERE CustomerName LIKE '%or%'	Finds any values that have "or" in any position
WHERE CustomerName LIKE '_r%'	Finds any values that have "r" in the second position
WHERE CustomerName LIKE 'a_%'	Finds any values that start with "a" and are at least 3 characters in length
WHERE ContactName LIKE 'a%o'	Finds any values that start with "a" and ends with "o"

- **Consider the following schema.**

customer (customer-name, customer-street, customer-city)

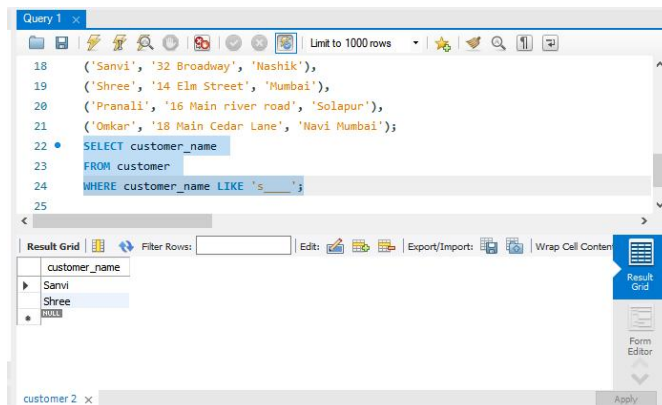
```
CREATE TABLE customer (  
    customer_name VARCHAR(100) NOT NULL,  
    customer_street VARCHAR(100),  
    customer_city VARCHAR(100),  
    PRIMARY KEY (customer_name)  
);
```



- **Execute the following queries:**

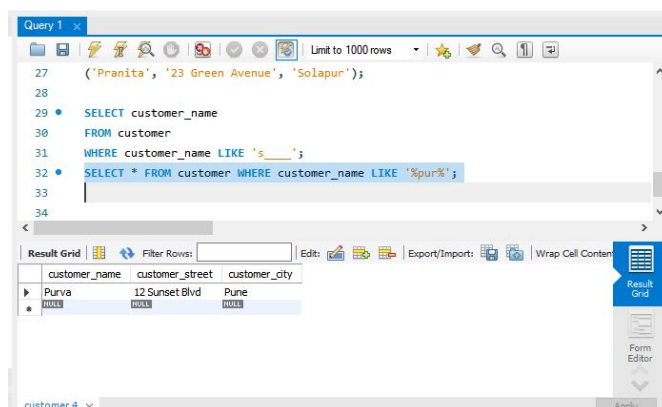
1. **Find the names of customers whose names starts with 's' letter and contain 5 letters.**

SELECT customer_name FROM customer WHERE customer_name LIKE 's_____';



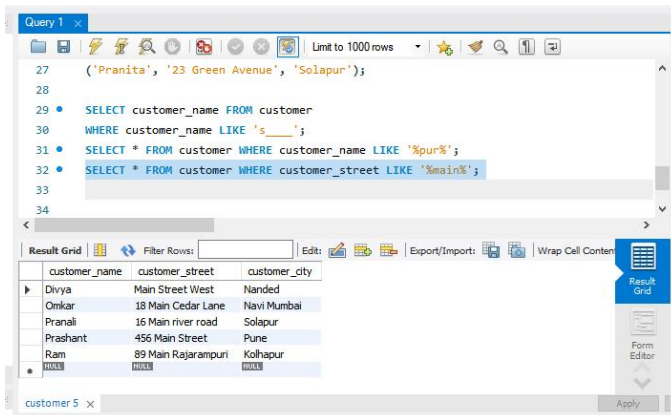
2. **Find the customers whose contains substring 'pur':**

SELECT * FROM customer WHERE customer_name LIKE '%pur%';



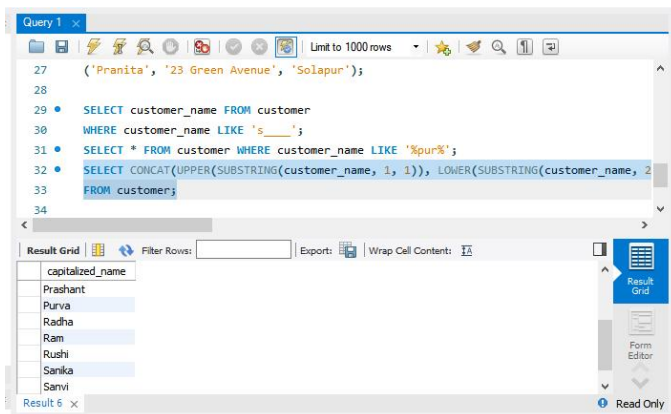
3. Find the customers whose street address contains substring 'main'.

```
SELECT * FROM customer WHERE customer_street LIKE '%main%';
```



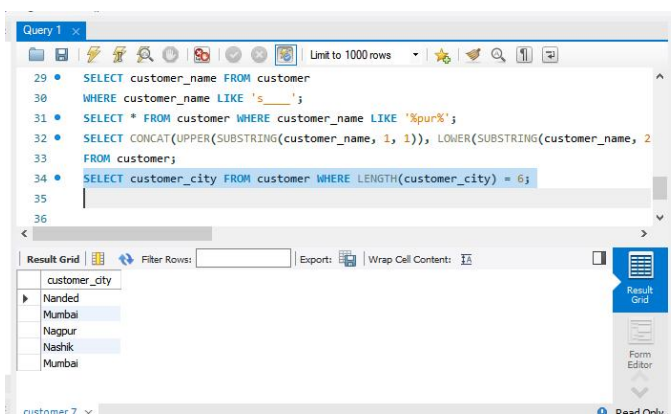
4. Display first character of customer-name as capital.

```
SELECT CONCAT(UPPER(SUBSTRING(customer_name, 1, 1)),  
LOWER(SUBSTRING(customer_name, 2))) AS capitalized_name  
FROM customer;
```



5. Display customer cities having 6 letters:

```
SELECT customer_city FROM customer WHERE LENGTH(customer_city) = 6;
```



Outcome: Students are able to use standard SQL character functions, String functions

