Extracting data using patterns

Note: In sample code, change the table name and attributes according to your code.
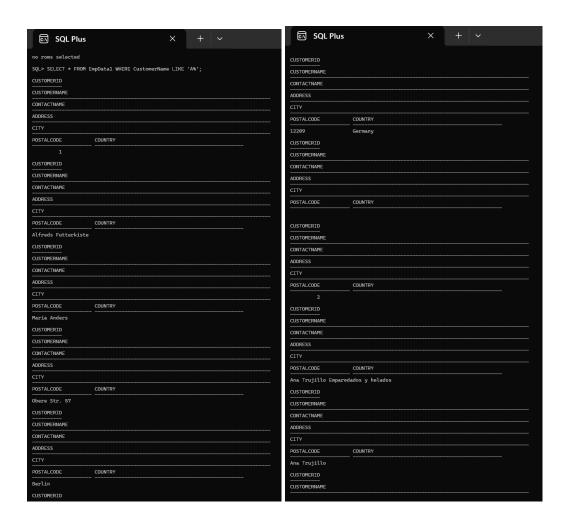
SQL LIKE Operator

The 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: • The percent sign % represents zero, one, or multiple characters • The underscore sign _ represents one, single character

Example

Select all customers that starts with the letter "a":

SELECT * FROM Customers
WHERE CustomerName LIKE 'a%';

CustomerID	CustomerName	ContactName	Address	City	PostalCode	Country
1	Alfreds Futterkiste	Maria Anders	Obere Str. 57	Berlin	12209	Germany
2	Ana Trujillo Emparedados y helados	Ana Trujillo	Avda. de la Constitución 2222	México D.F.	05021	Mexico
3	Antonio Moreno Taquería	Antonio Moreno	Mataderos 2312	México D.F.	05023	Mexico
4	Around the Horn	Thomas Hardy	120 Hanover Sq.	London	WA1 1DP	UK
5	Berglunds snabbköp	Christina Berglund	Berguvsvägen 8	Luleå	S-958 22	Sweden

```
                SQL Plus              ×    +   ∨

Version 21.3.0.0.0

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Enter user-name: system
Enter password:
Last Successful login time: Sun Jan 26 2025 11:38:55 +05:30

Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL> CREATE TABLE EmpData1 (
  2       CustomerID INT PRIMARY KEY,
  3       CustomerName VARCHAR(100),
  4       ContactName VARCHAR(100),
  5       Address VARCHAR(255),
  6       City VARCHAR(100),
  7       PostalCode VARCHAR(20),
  8       Country VARCHAR(50)
  9  );

Table created.

SQL> INSERT INTO EmpData1 (CustomerID, CustomerName, ContactName, Address, City, PostalCode, Country)
  2  VALUES (1, 'Alfreds Futterkiste', 'Maria Anders', 'Obere Str. 57', 'Berlin', '12209', 'Germany');

1 row created.

SQL>
SQL> INSERT INTO EmpData1 (CustomerID, CustomerName, ContactName, Address, City, PostalCode, Country)
  2  VALUES (2, 'Ana Trujillo Emparedados y helados', 'Ana Trujillo', 'Avda. de la Constitución 2222', 'México D.F.', '05021', 'Mexico');

1 row created.

SQL>
SQL> INSERT INTO EmpData1 (CustomerID, CustomerName, ContactName, Address, City, PostalCode, Country)
  2  VALUES (3, 'Antonio Moreno Taquería', 'Antonio Moreno', 'Mataderos 2312', 'México D.F.', '05023', 'Mexico');

1 row created.

SQL>
SQL> INSERT INTO EmpData1 (CustomerID, CustomerName, ContactName, Address, City, PostalCode, Country)
  2  VALUES (4, 'Around the Horn', 'Thomas Hardy', '120 Hanover Sq.', 'London', 'WA1 1DP', 'UK');

1 row created.

SQL>
SQL> INSERT INTO EmpData1 (CustomerID, CustomerName, ContactName, Address, City, PostalCode, Country)
  2  VALUES (5, 'Berglunds snabbköp', 'Christina Berglund', 'Berguvsvägen 8', 'Luleå', 'S-958 22', 'Sweden');

1 row created.
```

The _ Wildcard

The _ wildcard represents a single character.

It can be any character or number, but each _ represents one, and only one, character.

Example

Return all customers from a city that starts with 'L' followed by one wildcard character, then 'nd'
and then two wildcard characters:

SELECT * FROM Customers
WHERE city LIKE 'L_nd__';

```
SQL> SELECT * FROM EmpData1
  2  WHERE City LIKE 'L_nd__';

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------------
ADDRESS
------------------------------------------------------------------
CITY
------------------------------------------------------------------
POSTALCODE          COUNTRY
------------------- ------------------------------------------
         4

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------------
ADDRESS
------------------------------------------------------------------
CITY
------------------------------------------------------------------
POSTALCODE          COUNTRY
------------------- ------------------------------------------
Around the Horn

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------------
ADDRESS
------------------------------------------------------------------
CITY
------------------------------------------------------------------
POSTALCODE          COUNTRY
------------------- ------------------------------------------
Thomas Hardy

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------------
ADDRESS
------------------------------------------------------------------
CITY
------------------------------------------------------------------
POSTALCODE          COUNTRY
------------------- ------------------------------------------
120 Hanover Sq.

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------------
ADDRESS
------------------------------------------------------------------
CITY
------------------------------------------------------------------
POSTALCODE          COUNTRY
```
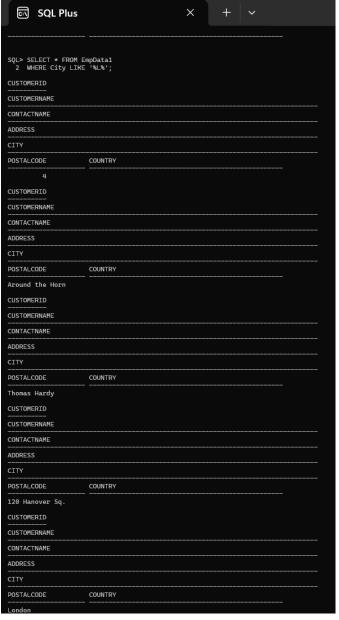
The % wildcard represents any number of characters, even zero characters.

Example

Return all customers from a city that *contains* the letter 'L':

SELECT * FROM Customers
WHERE city LIKE '%L%';

To return records that starts with a specific letter or phrase, add the % at the end of the letter or phrase.

Return all customers that starts with 'La':

SELECT * FROM Customers

WHERE CustomerName LIKE 'La%';

```
SQL> SELECT * FROM EmpData1
  2  WHERE CustomerName LIKE 'La%';

no rows selected

SQL> |
```

Tip: You can also combine any number of conditions using AND or OR operators.

Return all customers that starts with 'a' or starts with 'b':

SELECT * FROM Customers

WHERE CustomerName LIKE 'a%' OR CustomerName LIKE 'b%';

```
SQL> SELECT * FROM EmpData1
  2  WHERE CustomerName LIKE 'a%' OR CustomerName LIKE 'b%';

no rows selected

SQL> |
```

To return records that ends with a specific letter or phrase, add the % at the beginning of the letter or phrase.

Return all customers that ends with 'a':

SELECT * FROM Customers

WHERE CustomerName LIKE '%a';

Tip: You can also combine "starts with" and "ends with":

<mark>Example</mark>
Return all customers that starts with "b" and ends with "s":
SELECT * FROM Customers
WHERE CustomerName LIKE 'b%s';

To return records that contains a specific letter or phrase, add the % both before and after the letter or phrase.

Return all customers that contains the phrase 'or'

SELECT * FROM Customers

WHERE CustomerName LIKE '%or%';

Any wildcard, like % and _ , can be used in combination with other wildcards.

Return all customers that starts with "a" and are at least 3 characters in length:

SELECT * FROM Customers

WHERE CustomerName LIKE 'a__%';

```
QL> SELECT * FROM EmpData1
 2  WHERE CustomerName LIKE 'a__%';

o rows selected

QL> |
```

Return all customers that have "r" in the second position:

SELECT * FROM Customers

WHERE CustomerName LIKE '_r%';

```
SQL> SELECT * FROM EmpData1
  2  WHERE CustomerName LIKE '_r%';

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------
ADDRESS
------------------------------------------------------------
CITY
------------------------------------------------------------
POSTALCODE           COUNTRY
------------------- ------------------------------------------
          4

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------
ADDRESS
------------------------------------------------------------
CITY
------------------------------------------------------------
POSTALCODE           COUNTRY
------------------- ------------------------------------------
Around the Horn

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------
ADDRESS
------------------------------------------------------------
CITY
------------------------------------------------------------
POSTALCODE           COUNTRY
------------------- ------------------------------------------
Thomas Hardy

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------
ADDRESS
------------------------------------------------------------
CITY
------------------------------------------------------------
POSTALCODE           COUNTRY
------------------- ------------------------------------------
120 Hanover Sq.

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------
ADDRESS
------------------------------------------------------------
CITY
------------------------------------------------------------
POSTALCODE           COUNTRY
------------------- ------------------------------------------
London

CUSTOMERID
```
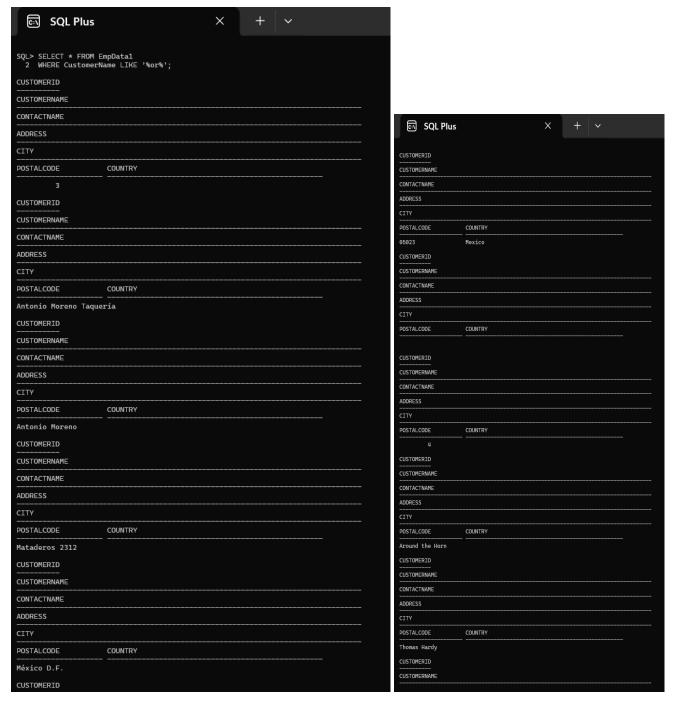
```
CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------
ADDRESS
------------------------------------------------------------
CITY
------------------------------------------------------------
POSTALCODE           COUNTRY
------------------- ------------------------------------------
London

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------
ADDRESS
------------------------------------------------------------
CITY
------------------------------------------------------------
POSTALCODE           COUNTRY
------------------- ------------------------------------------
WA1 1DP              UK

CUSTOMERID
----------
CUSTOMERNAME
------------------------------------------------------------
CONTACTNAME
------------------------------------------------------------
ADDRESS
------------------------------------------------------------
CITY
------------------------------------------------------------
POSTALCODE           COUNTRY
------------------- ------------------------------------------

SQL>
```

==Without Wildcard==

If no wildcard is specified, the phrase has to have an exact match to return a result.

==Example==

Return all customers from Spain:

SELECT * FROM Customers

WHERE Country LIKE 'Spain';

```
SQL> SELECT * FROM EmpData1
  2  WHERE Country LIKE 'Spain';

no rows selected

SQL>
```