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Class-Section B
Batch- B2

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 |
+------------+----------------+--------------+-----------------+--------+------------+---------+
|          4 | Around the Horn | Thomas Hardy | 120 Hanover Sq. | London | WA1 1DP    | UK      |
+------------+----------------+--------------+-----------------+--------+------------+---------+
```

Demo Database

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

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__';
```

```
+------------+---------------------+---------------------+-----------------+--------+------------+---------+
| CustomerID | CustomerName        | ContactName         | Address         | City   | PostalCode | Country |
+------------+---------------------+---------------------+-----------------+--------+------------+---------+
|          1 | Alfreds Futterkiste | Maria Anders        | Obere Str. 57   | Berlin | 12209      | Germany |
|          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  |
+------------+---------------------+---------------------+-----------------+--------+------------+---------+
```

The % wildcard represents any number of characters, even zero characters.

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

SELECT * FROM Customers

WHERE city LIKE '%L%';

```
+------------+-----------------------------------+-------------------+------------------------------+------------+------------+---------+
| 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  |
+------------+-----------------------------------+-------------------+------------------------------+------------+------------+---------+
```

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%';

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%';

```
+------------+-------------------------+----------------+----------------+-------------+------------+---------+
| CustomerID | CustomerName            | ContactName    | Address        | City        | PostalCode | Country |
+------------+-------------------------+----------------+----------------+-------------+------------+---------+
|          3 | Antonio Moreno Taquería | Antonio Moreno | Mataderos 2312 | México D.F. | 05023      | Mexico  |
+------------+-------------------------+----------------+----------------+-------------+------------+---------+
```

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":

Return all customers that starts with "b" and ends with "s":

SELECT * FROM Customers

WHERE CustomerName LIKE 'b%s';

```
+------------+------------------+--------------+-----------------+--------+------------+---------+
| CustomerID | CustomerName     | ContactName  | Address         | City   | PostalCode | Country |
+------------+------------------+--------------+-----------------+--------+------------+---------+
|          4 | Around the Horn  | Thomas Hardy | 120 Hanover Sq. | London | WA1 1DP    | UK      |
+------------+------------------+--------------+-----------------+--------+------------+---------+
```

```
+------------+--------------------+--------------------+-----------------+--------+------------+---------+
| CustomerID | CustomerName       | ContactName        | Address         | City   | PostalCode | Country |
+------------+--------------------+--------------------+-----------------+--------+------------+---------+
|          1 | Alfreds Futterkiste | Maria Anders      | Obere Str. 57   | Berlin | 12209      | Germany |
|          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  |
+------------+--------------------+--------------------+-----------------+--------+------------+---------+
```

```
+------------+----------------------------------+-------------------+------------------------------+------------+------------+---------+
| 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  |
+------------+----------------------------------+-------------------+------------------------------+------------+------------+---------+
```

```
+------------+-------------------------+---------------+--------------+-------------+------------+----------+
| CustomerID | CustomerName            | ContactName   | Address      | City        | PostalCode | Country  |
+------------+-------------------------+---------------+--------------+-------------+------------+----------+
|          3 | Antonio Moreno Taquería | Antonio Moreno| Mataderos 2312| México D.F. | 05023      | Mexico   |
+------------+-------------------------+---------------+--------------+-------------+------------+----------+
```

```
+------------+-----------------------------------+---------------+---------------------------+-------------+------------+----------+
| 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       |
+------------+-----------------------------------+---------------+---------------------------+-------------+------------+----------+
```

```
+------------+-----------------+--------------+-----------------+--------+------------+----------+
| CustomerID | CustomerName    | ContactName  | Address         | City   | PostalCode | Country  |
+------------+-----------------+--------------+-----------------+--------+------------+----------+
|          4 | Around the Horn | Thomas Hardy | 120 Hanover Sq. | London | WA1 1DP    | UK       |
+------------+-----------------+--------------+-----------------+--------+------------+----------+
```

Contains

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

Example

Return all customers that contains the phrase 'or'
SELECT * FROM Customers
WHERE CustomerName LIKE '%or%';

Combine Wildcards

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

Example

Return all customers that starts with "a" and are at least 3 characters in
length: SELECT * FROM Customers
WHERE CustomerName LIKE 'a__%';

Example

Return all customers that have "r" in the second position:
SELECT * FROM Customers
WHERE CustomerName LIKE '_r%';

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

Return all customers from Spain:

SELECT * FROM Customers

WHERE Country LIKE 'Spain';