

SESSIONS 1

Using String Patterns and Ranges

Data Science Program

Using String Patterns

String Patterns using 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 represents a single character
- The percent sign and the underscore can also be used in combinations!

```
SELECT column1, column2, ...  
FROM table_name  
WHERE columnN LIKE pattern;
```

LIKE Operator

LIKE Operator	Description
<i>WHERE SellerName LIKE 'a%'</i>	Finds any values that start with "a"
<i>WHERE SellerName LIKE '%a'</i>	Finds any values that end with "a"
<i>WHERE SellerName LIKE '%or%'</i>	Finds any values that have "or" in any position
<i>WHERE SellerName LIKE '_r%'</i>	Finds any values that have "r" in the second position
<i>WHERE SellerName LIKE 'a_%'</i>	Finds any values that start with "a" and are at least 2 characters in length
<i>WHERE SellerName LIKE 'a__%'</i>	Finds any values that start with "a" and are at least 3 characters in length
<i>WHERE SellerName LIKE 'a%o'</i>	Finds any values that start with "a" and ends with "o"

LIKE Operator

- Show all columns from City Table where District name is started 'Y'

```
SELECT * FROM CITY  
WHERE DISTRICT LIKE 'Y%';
```

ID	Name	CountryCode	District	Population
126	Yerevan	ARM	Yerevan	1248700
955	Yogyakarta	IDN	Yogyakarta	418944
1001	Depok	IDN	Yogyakarta	106800
1396	Yazd	IRN	Yazd	326776
1614	Shimonoseki	JPN	Yamaguchi	257263

LIKE Operator

- Show all columns from City Table where District name is ended with 'x'

```
SELECT * FROM CITY  
WHERE DISTRICT LIKE '%x';
```

ID	Name	CountryCode	District	Population
3350	Sfax	TUN	Sfax	257800

LIKE Operator

- Show all columns from City Table where City name is started with 'Y' and ended with 'a'

```
SELECT * FROM CITY  
WHERE NAME LIKE 'Y%a';
```

ID	Name	CountryCode	District	Population
955	Yogyakarta	IDN	Yogyakarta	418944
1568	Yokosuka	JPN	Kanagawa	430200
1615	Yamagata	JPN	Yamagata	255617
1765	Yonezawa	JPN	Yamagata	95592
1767	Yamatokoriyama	JPN	Nara	95165

Ranges

BETWEEN

- The BETWEEN operator selects values within a given range. The values can be numbers, text, or dates.
- The BETWEEN operator is inclusive: begin and end values are included.

```
SELECT column_name(s)
FROM table_name
WHERE column_name BETWEEN value1 AND value2;
```

BETWEEN

- Show **city name and population** from City table where population between 1 – 2 million.

Name	Population
Kabul	1780000
La Matanza	1266461
Córdoba	1157507
Yerevan	1248700
Brisbane	1291117

```
SELECT Name, Population
FROM City
WHERE Population BETWEEN
1000000 AND 2000000;
```

BETWEEN

- Show **country name, region, and life expectancy** from Country table where life expectancy between 80-90 years.

Name	Region	LifeExpectancy
Andorra	Southern Europe	83.5
Japan	Eastern Asia	80.7
Macao	Eastern Asia	81.6
Singapore	Southeast Asia	80.1
San Marino	Southern Europe	81.1

```
SELECT Name, Region,  
LifeExpectancy  
FROM Country  
WHERE LifeExpectancy BETWEEN  
80 AND 90;
```

NOT BETWEEN

- Show **country name, region, and life expectancy** from Country table where life expectancy not between 45-90 years.

Name	Region	LifeExpectancy
Angola	Central Africa	38.3
Botswana	Southern Africa	39.3
Central African Republic	Central Africa	44.0
Mozambique	Eastern Africa	37.5
Malawi	Eastern Africa	37.6
Namibia	Southern Africa	42.5
Niger	Western Africa	41.3
Rwanda	Eastern Africa	39.3
Swaziland	Southern Africa	40.4
Uganda	Eastern Africa	42.9
Zambia	Eastern Africa	37.2
Zimbabwe	Eastern Africa	37.8

```
SELECT Name, Region,  
LifeExpectancy  
FROM Country  
  
WHERE LifeExpectancy NOT  
BETWEEN 45 AND 90;
```

Reference

- https://www.w3schools.com/sql/sql_like.asp
- https://www.w3schools.com/sql/sql_between.asp