

SQL Lesson 3

- Finish with WHERE Clause
- Aliases
- Math operations
- CASE

30.12.2023

WHERE clause

Operator BETWEEN (may be used with dates and numbers)

Pattern

```
SELECT *  
FROM  
    table_name  
WHERE  
    column_name BETWEEN value_1  
    AND value_2
```

Example

```
SELECT *  
FROM  
    hosts  
WHERE  
    host_since BETWEEN '2018-01-01'  
    AND '2018-12-31'
```

Two conditions

1) column_name BETWEEN X AND Y

2) column_name >= X AND column_name < Y

Return exactly the same result

Switch to practice

Data Extraction

We may get data not only from table, we may also set constants

Pattern

```
SELECT  
  'text'
```

Example

```
SELECT  
  'Hello, SQL!'
```

Result

Hello, SQL!
Hello, SQL!

* column_name and column data receive the constant name we've inserted

Data Extraction

We may get data not only from table, we may also set constants

Pattern

SELECT

N

Example

SELECT

3

Result

3
3

* column_name and column data receive the constant name we've inserted

Data Extraction

We may get data not only from table, we may also set constants

Pattern

```
SELECT  
  NULL
```

Example

```
SELECT  
  NULL
```

Result

Null
Null

* column_name and column data receive the constant name we've inserted

Data Extraction

We may get data not only from table, we may also set constants

Pattern

```
SELECT *  
    , 'text'  
FROM  
    table_name
```

Example

```
SELECT *  
    , '1-3 min nights'  
FROM listings  
WHERE  
    minimum_nights  
    <= 3
```

Result

...	minimum_nights	...	'1-3 min nights'
...	1	...	1-3 min nights
...	3	...	1-3 min nights
...

* column_name and column data receive the constant name we've inserted

Data Extraction

We may get data not only from table, we may also set constants

Pattern

```
SELECT *  
    , NULL  
FROM  
    table_name
```

Example

```
SELECT *  
    , NULL  
FROM  
    listings
```

Result

id	...	Null
34423	...	Null
23523	...	Null
...

* column_name and column data receive the constant name we've inserted

Data Extraction

We may get data not only from table, we may also set constants

Pattern

```
SELECT *  
    , N  
FROM  
    table_name
```

Example

```
SELECT *  
    , 0  
FROM listings
```

Result

id	...	0
34423	...	0
23523	...	0
...

* column_name and column data receive the constant name we've inserted

Aliases

Operator AS

Pattern

```
SELECT *  
    , 'text'  
FROM  
    table_name
```

Example

```
SELECT *  
    , '1-3 min nights'  
FROM listings  
WHERE  
    minimum_nights  
    <= 3
```

Result

...	minimum_nights	...	'1-3 min nights'
...	1	...	1-3 min nights
...	3	...	1-3 min nights
...

Aliases

Operator AS

Pattern

```
SELECT
    column_name AS
    column_new_name
FROM
    table_name AS
    table_new_name
```

Example

```
SELECT
    name AS
    host_name
FROM
    hosts AS
    airbnb_hosts
```

Result

host_name
Mary
Teresa
...

Aliases

Operator AS

Pattern

```
SELECT
    column_name
    column_new_name
FROM
    table_name
    table_new_name
```

Example

```
SELECT
    name host_name
FROM
    hosts airbnb_hosts
```

Result

host_name
Mary
Teresa
...

Aliases

Operator AS

Pattern

```
SELECT
    column_name
    column_new_name
FROM
    table_name
WHERE
    condition(column_new_
name)
```

Example

```
SELECT
    name host_name
FROM
    hosts airbnb_hosts
WHERE
    host_name = 'Mary'
```

Result

host_name
Mary
Mary
...

Switch to practice

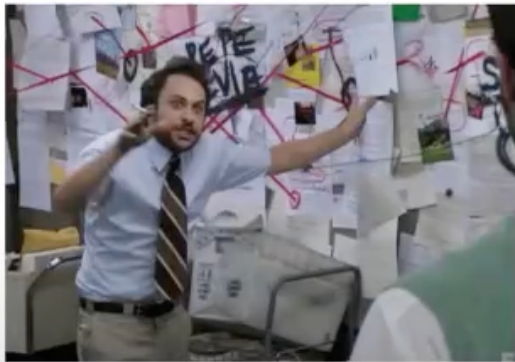
Aliases

Tips how to use them

1) Meaningful naming

city ✖

is_super_host ~~is_super~~



When you try to understand
what this column means



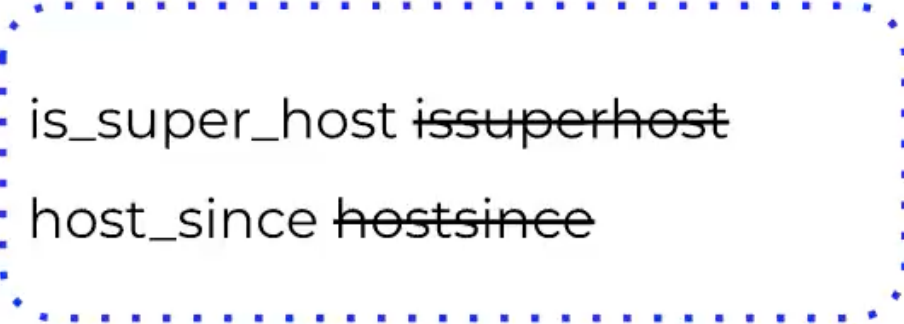
✖

Something more meaningful

Aliases

Tips how to use them

2) Use underscore _ to combine several words

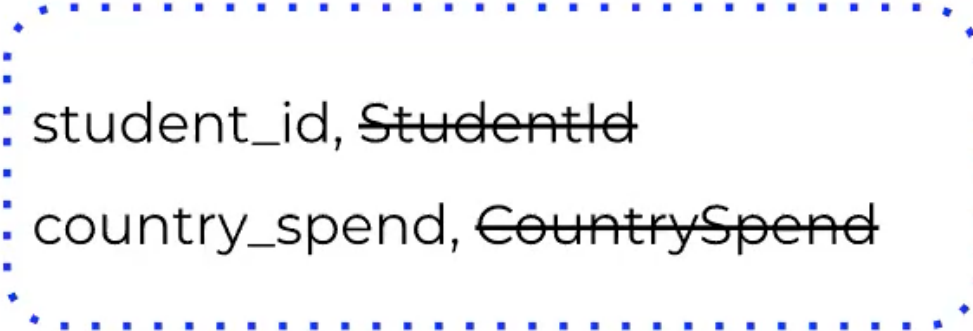


is_super_host is ~~super~~host
host_since ~~host~~since

Aliases

Tips how to use them

3) Lower case

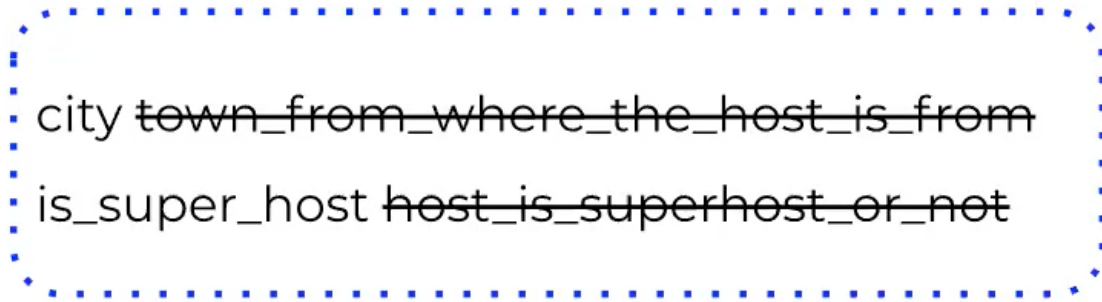


```
student_id, StudentId  
country_spend, CountrySpend
```

Aliases

Tips how to use them

4) Do not use long naming



```
city town_from_where_the_host_is_from  
is_super_host host_is_superuser_or_not
```

Aliases

Tips how to use them

5) Do not use **reserved** words (words that are compulsory to query)



```
SELECT host_since AS from  
FROM hosts AS select
```

Aliases

Tips how to use them

6) Do not use **existing column names**

```
SELECT id AS name, name  
FROM hosts AS listings
```

Math operations

- $+$ - addition
- $-$ - subtraction
- $/$ - division
- \times - multiplication
- $\%$ - remainder of the division.
- $7 / 2 = 3.5$
- $7 // 2 = 3$
- $7 \% 2 = 1$ (as $7 // 2 = 3$; $3 \times 2 = 6$, $7 - 6 = 1$)

Math operations

Pattern

Example

Result

```
SELECT
    column_name + N
FROM
    table_name
```

```
SELECT
    price
    , price + 10 AS
    new_price
FROM
    listings
```

price	new_price
10	20
50	60
...	...

price,

direction (SELL, BUY, null),

CASE

WHEN direction == 'SELL' **THEN** price * -1

WHEN direction == 'BUY' **THEN** price

END AS price_direction

Math operations

Pattern

```
SELECT
    column_name_1 *
    column_name_2
FROM
    table_name
```

Example

```
SELECT
    price
    , minimum_nights
    , price * minimum_nights AS min_price
FROM
    listings
```

Result

price	minimum_nights	min_price
10	3	30
50	2	100
...

Switch to practice