
Може с клавишна комбинация CTRL + SHIFT + K или Edit Button (писалката) -> Format SQL да се beautifier-нете заявката.
Като ако искате да имате и табулацията на новия ред отивате в File -> Preferences -> Query Tool -> SQL formatting -> Set True only: Re_ident, Space around operators

1. Functions in PostgreSQL:

- String functions - manipulating text
e.g.: concatenate column values
- Math functions - calculations working with aggregate data
e.g.: perform geometric and currency operations
- Date/Time functions
e.g.: compute the length of a time span
- Others

2. String Functions:

- Concatenating arguments
SELECT CONCAT(first_name, ' ', last_name) AS full_name
FROM authors;
- Concatenating with a specific separator
SELECT CONCAT_WS(' ', last_name, born)
AS summary
FROM authors;
- Exact part of a string(, start symbol, + how many symbols)
SELECT SUBSTRING('SoftUni', 5, 3) => Uni

e.g.:

```
SELECT title,  
       year_of_release,  
       SUBSTRING(description, 1, 50) || '...' AS summary  
FROM books;
```

```
SELECT  
    first_name,  
    last_name,  
    CONCAT(SUBSTRING(first_name, 1, 1), SUBSTRING(last_name, 1, 1)) AS
```

"initials"

```
FROM person;
```

```
SELECT title  
FROM books  
WHERE SUBSTRING(title, 1, 3) = 'The'  
ORDER BY id;
```

- Get characters from the beginning or the end of a string
LEFT(string, count)
RIGHT(string, count)

```
SELECT id, year_of_release,  
       LEFT(title, 10) AS short_title  
FROM books;
```

- Replacing all occurrences of a string with another

```
REPLAECE(string, pattern, replacement)
REPLACE('SoftUni', 'Soft', 'Hard') => HardUni
```

```
SELECT REPLACE(title, 'The', '****')
        AS "Title"
FROM books
WHERE SUBSTRING(title, 1, 3) = 'The'
ORDER BY id;
```

```
- Remove spaces/chars from both sides of a string
SELECT TRIM(string)
```

```
SELECT TRIM(BOTH ' ' FROM ' Uni ')
```

```
- Remove spaces/chars from the left side of a string
SELECT TRIM(LEADING FROM string)
```

```
- Remove spaces/chars from the right side of a string
SELECT TRIM(TRAILING FROM string)
```

```
- Change letter casing
LOWER(string)
UPPER(string)
```

```
- Reverse order of all characters in a string
REVERSE(string)
```

```
- Repeat string
REPEAT(string, count)
```

```
- Count the number of characters in a string
LENGTH(string)
```

```
- Count the number of bits in a string
BIT_LENGTH(string)
```

HOW TO MAKE full_name TO first_name AND last_name:

```
SELECT
    full_name,
    LEFT(full_name, POSITION(' ' in full_name)) AS first_name,
    RIGHT(full_name, LENGTH(full_name) - POSITION(' ' in full_name)) AS
last_name,
FROM
    new_friends;
***
```

3. Math Functions:

```
SELECT id,
        (side*height)/2 AS area
FROM triangles
ORDER BY id;
```

ARITHMETIC OPERATORS:

```
- - - subtraction
- + - addition
- * - multiplication
- / - division - целочислено деление(e.g.: 5 / 2 = 2 )
```

- с остатък (SELECT 5.0 / 2 = 2.5)
- SELECT 5::FLOAT / 2 = 2.5
- SELECT CAST(5 AS FLOAT) / 2 = 2.5
- % - modulo
- can use MOD function (e.g.: SELECT MOD(7, 4))
- ^ - exponentiation
- can use POW function (e.g.: SELECT POW(5, 3))
- |/ - square root - e.g.:SELECT |/9
- can use SELECT SQRT(9)
- @ - absolute value - important to add space(e.g.: SELECT @ -9)
- can use SELECT ABS(-9)

- Get the value of Pi
SELECT PI();

- Get the result from an integer division
SELECT DIV(11, 2); => 5

- FLOOR and CEILING return the nearest integer
SELECT FLOOR(33.68) => 33
SELECT CEILING(33.68) => 34

- ROUND - obtain desired precision
SELECT ROUND(33.68888) => 34
SELECT ROUND(33.68888, 2) => 33.69
SELECT ROUND(33.68888, -1) => 30

- TRUNC - truncate to n decimal places
SELECT TRUNC(12.58888) => 12
SELECT TRUNC(12.58888, 1) => 12.5

4. Date/Time Functions:

- EXTRACT - extracting a segment from a date as an integer
(part can be second, minute, hour, day, week, month, year)
EXTRACT(part FROM date)

- AGE - find the difference between two dates
AGE(first_date, second_date)

```
SELECT CONCAT(first_name, ' ', last_name) AS "Full Name",
       AGE(died, born) AS "Life Span"
FROM authors;
```

```
SELECT first_name, last_name,
       EXTRACT(year FROM born)
       AS year
FROM authors;
```

- NOW - obtains the current date and time, including TZ
SELECT NOW();

```
SELECT CURRENT_DATE;
SELECT CURRENT_TIME;
```

- TO_CHAR - formats the date value according to the format
SELECT TO_CHAR(NOW(), 'DD Month YYYY') AS "Date"; => 13 February 2023

5. Wildcards: Selecting results by partial match

- Used to substitute any other character(s) in a string
- '%' represents zero, one or multiple characters
- '_' represents a single character
- Used with LIKE operator in a WHERE clause

WHERE last_name LIKE 'S%'; => find any value that start with "S"

WHERE middle_name LIKE '_o%'; => find any values that have "o" in the second position

WHERE first_name LIKE 'A%a' => find any values that start with A and end with a

- ESCAPE - specify a prefix to treat special characters as normal

```
SELECT id, last_name
FROM authors
WHERE last_name LIKE '%!_%' ESCAPE '!';
```

```
SELECT title FROM books
WHERE title LIKE '%Harry Potter%'
ORDER BY id;
```