

Reformatting string and character data

FUNCTIONS FOR MANIPULATING DATA IN POSTGRESQL

SQL

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Topics

- Reformatting string and character data.
- Parsing string and character data.
- Determine string length and character position.
- Truncating and padding string data.

The string concatenation operator

SELECT

```
first_name,  
last_name,  
first_name || ' ' || last_name AS full_name
```

FROM customer

first_name	last_name	full_name
MARY	SMITH	MARY SMITH
LINDA	WILLIAMS	LINDA WILLIAMS

String concatenation with functions

SELECT

```
CONCAT(first_name, ' ', last_name) AS full_name  
FROM customer;
```

first_name	last_name	full_name
MARY	SMITH	MARY SMITH
LINDA	WILLIAMS	LINDA WILLIAMS

String concatenation with a non-string input

```
SELECT
```

```
customer_id || ': '  
|| first_name || ' '  
|| last_name AS full_name  
FROM customer;
```

full_name
1: MARY SMITH
2: LINDA WILLIAMS

Changing the case of string

```
SELECT
```

```
    UPPER(email)
```

```
FROM customer;
```

UPPER(email)
MARY.SMITH@SAKILACUSTOMER.ORG
PATRICIA.JOHNSON@SAKILACUSTOMER.ORG
LINDA.WILLIAMS@SAKILACUSTOMER.ORG

Changing the case of string

```
SELECT
```

```
    LOWER(title)
```

```
FROM film;
```

```
+-----+
| LOWER(title)      |
+-----+
| academy dinosaur |
| ace goldfinger   |
| adaptation holes |
+-----+
```

Changing the case of string

SELECT

```
INITCAP(title)
```

FROM film;

INITCAP(title)
Academy Dinosaur
Ace Goldfinger
Adaptation Holes

Replacing characters in a string

```
SELECT description FROM film;
```

```
+-----+  
| description |  
+-----+  
| A Epic Drama of a Feminist And a Mad Scientist... |  
| A Astounding Epistle of a Database Administrator... |  
| A Astounding Reflection of a Lumberjack And a Car... |  
| A Fanciful Documentary of a Frisbee And a Lumberjack... |  
| A Fast-Paced Documentary of a Pastry Chef And a... |  
+-----+
```

Replacing characters in a string

SELECT

```
REPLACE(description, 'A Astounding',  
        'An Astounding') as description
```

FROM film;

description
A Epic Drama of a Feminist And a Mad Scientist...
An Astounding Epistle of a Database Administrator...
An Astounding Reflection of a Lumberjack And a Car...

Manipulating string data with REVERSE

SELECT

```
title,  
REVERSE(title)
```

FROM

```
film AS f;
```

title	reverse(title)
ACADEMY DINOSAUR	RUASONID YMEDACA
ACE GOLDFINGER	REGNIFDLOG ECA

Let's practice!

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Parsing string and character data

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Determining the length of a string

```
SELECT
```

```
    title,  
    CHAR_LENGTH(title)  
FROM film;
```

title	CHAR_LENGTH(title)
ACADEMY DINOSAUR	16
ACE GOLDFINGER	14
ADAPTATION HOLES	16

Determining the length of a string

```
SELECT
```

```
    title,  
    LENGTH(title)  
FROM film;
```

title	LENGTH(title)
ACADEMY DINOSAUR	16
ACE GOLDFINGER	14
ADAPTATION HOLES	16

Finding the position of a character in a string

```
SELECT
```

```
    email,  
    POSITION('@' IN email)  
FROM customer;
```

email	POSITION('@' IN email)
MARY.SMITH@sakilacustomer.org	11
PATRICIA.JOHNSON@sakilacustomer.org	17
LINDA.WILLIAMS@sakilacustomer.org	15

Finding the position of a character in a string

```
SELECT
```

```
    email,  
    STRPOS(email, '@')  
FROM customer;
```

email	STRPOS(email, '@')
MARY.SMITH@sakilacustomer.org	11
PATRICIA.JOHNSON@sakilacustomer.org	17
LINDA.WILLIAMS@sakilacustomer.org	15

Parsing string data

```
SELECT
```

```
    LEFT(description, 50)
```

```
FROM film;
```

```
+-----+
| description
|-----|
| A Epic Drama of a Feminist And a Mad Scientist who |
| A Astounding Epistle of a Database Administrator A |
| A Astounding Reflection of a Lumberjack And a Car |
+-----+
```

Parsing string data

```
SELECT
```

```
    RIGHT(description, 50)
```

```
FROM film;
```

```
+-----+
| description
|-----|
| who must Battle a Teacher in The Canadian Rockies |
| nd a Explorer who must Find a Car in Ancient China |
| Car who must Sink a Lumberjack in A Baloon Factory |
+-----+
```

Extracting substrings of character data

SELECT

SUBSTRING(description, **10**, **50**)

FROM

 film **AS** f;

```
+-----+
| description
|-----|
| I am a Feminist And a Mad Scientist who must Bat |
| ing Epistle of a Database Administrator And a Expl |
| ing Reflection of a Lumberjack And a Car who must   |
+-----+
```

Extracting substrings of character data

```
SELECT  
    SUBSTRING(email FROM 0 FOR POSITION('@' IN email))  
FROM  
    customer;
```

```
+-----+  
| SUBSTRING(email FROM 0 FOR POSITION('@' IN email)) |  
+-----+  
| MARY.SMITH |  
| PATRICIA.JOHNSON |  
| LINDA.WILLIAMS |  
+-----+
```

Extracting substrings of character data

```
SELECT  
    SUBSTRING(email FROM POSITION('@' IN email)+1 FOR CHAR_LENGTH(email))  
FROM  
    customer;
```

```
+-----+  
| SUBSTRING(email FROM POSITION('@' IN email)+1 FOR CHAR_LENGTH(email)) |  
|-----|  
| sakilacustomer.org |  
| sakilacustomer.org |  
| sakilacustomer.org |  
+-----+
```

Extracting substrings of character data

SELECT

```
SUBSTR(description, 10, 50)
```

FROM

```
film AS f;
```

```
+-----+
| description
|-----|
| I am a Feminist And a Mad Scientist who must Bat |
| ing Epistle of a Database Administrator And a Expl |
| ing Reflection of a Lumberjack And a Car who must   |
+-----+
```

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FUNCTIONS FOR MANIPULATING DATA IN POSTGRESQL

Truncating and padding string data

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Removing whitespace from strings

```
TRIM([leading | trailing | both] [characters] from string)
```

- **First parameter:** [leading | trailing | both]
- **Second parameter:** [characters]
- **Third parameter:** from string

Removing whitespace from strings

```
SELECT TRIM(' padded '');
```

```
+-----+
| TRIM   |
+-----+
| padded |
+-----+
```

Removing whitespace from strings

```
SELECT LTRIM(' padded ') ;
```

LTRIM
padded

Removing whitespace from strings

```
SELECT RTRIM(' padded ') ;
```

RTRIM
padded

Padding strings with character data

```
SELECT LPAD('padded', 10, '#');
```

```
+-----+
| LPAD      |
+-----+
| #####padded |
+-----+
```

Padding strings with whitespace

```
SELECT LPAD('padded', 10);
```

```
+-----+  
| LPAD |  
+-----+  
| padded |  
+-----+
```

```
SELECT LPAD('padded', 5);
```

```
+-----+  
| LPAD |  
+-----+  
| padde |  
+-----+
```

Padding strings with whitespace

```
SELECT RPAD('padded', 10, '#');
```

```
+-----+
| RPAD      |
+-----+
| padded####|
+-----+
```

Let's practice!

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