

In PostgreSQL, there are several built-in functions that can be used for various purposes, including mathematical operations, string manipulations, date and time functions, aggregate functions, and more. Here are a few examples:

Basic sql built-in function

1. Mathematical Functions:

ABS()

Returns the absolute value of a number.

```
SELECT ABS(-10); -- Result: 10
```

ROUND()

Rounds a numeric value to a specified number of decimal places.

```
SELECT ROUND(3.14159, 2); -- Result: 3.14
```

2. String Functions:

UPPER()

Converts a string to uppercase.

```
SELECT UPPER('hello'); -- Result: HELLO
```

CONCAT()

Concatenates multiple strings together.

```
SELECT CONCAT('Hello ', 'World'); -- Result: Hello World
```

3. Date and Time Functions:

NOW()

Returns the current date and time.

```
SELECT NOW(); -- Result: Current date and time
```

DATE_PART()

Extracts a specific part (e.g., year, month, day) from a date or timestamp.

```
SELECT DATE_PART('year', '2023-11-09'); -- Result: 2023
```

4. Aggregate Functions:

SUM()

Calculates the sum of a set of values.

```
SELECT SUM(salary) FROM employees; -- Result: Total salary of all employees
```

AVG()

Calculates the average of a set of values.

```
SELECT AVG(age) FROM employees; -- Result: Average age of employees
```

Sql basic usage

1. Creating a Table:

To create a new table in a PostgreSQL database:

```
CREATE TABLE employees (  
    id SERIAL PRIMARY KEY,  
    first_name VARCHAR(50),  
    last_name VARCHAR(50),  
    email VARCHAR(100) UNIQUE,  
    age INT  
);
```

This SQL statement creates a table named "employees" with columns for ID, first name, last name, email, and age. It designates the "id" column as a primary key, using the SERIAL data type for auto-incrementing.

2. Inserting Data:

To insert data into the "employees" table:

```
INSERT INTO employees (first_name, last_name, email, age)
VALUES ('John', 'Doe', 'john@example.com', 30);
```

This SQL statement inserts a new record into the "employees" table with specific values for the columns specified.

3. Selecting Data:

To retrieve data from the "employees" table:

```
SELECT * FROM employees;
```

This SQL statement fetches all columns and rows from the "employees" table.

4. Filtering Data:

To retrieve specific data based on conditions:

```
SELECT * FROM employees WHERE age > 25;
```

This SQL statement retrieves all columns and rows from the "employees" table where the "age" is greater than 25.

5. Updating Data:

To update existing data in the "employees" table:

```
UPDATE employees SET age = 32 WHERE first_name = 'John' AND last_name = 'Doe';
```

This SQL statement updates the "age" column for the employee named 'John Doe'.

6. Deleting Data:

To delete data from the "employees" table:

```
DELETE FROM employees WHERE age < 25;
```

This SQL statement deletes rows from the "employees" table where the "age" is less than 25.

These basic SQL commands demonstrate how to create tables, insert data, retrieve data, update records, and delete records in a PostgreSQL database. The syntax is fundamental and can be extended with more complex operations and clauses as needed.