A database is a collection of data that is specifically organized for rapid search and retrieval processed by a computer.

SQL(Structured Query Language) is a domain-specific programming language designed to handle data in tables.

PostgreSQL is a great choice for:

* Applications that require consistent and well-structured data, such as financial or banking systems.
* Complex reporting and data analysis.
* Applications that can benefit from advanced features, such as stored procedures, triggers, and full-text search.

NoSQL databases are a better fit for:

* Applications that deal with large volumes of unstructured or semi-structured data, such as social media platforms, IoT devices, or content management systems.
* Applications that require high performance, scalability, and availability, such as real-time analytics, gaming platforms, or seach engines.
* Projects where data modeling and schema design may evolve over time, due to the flexible storage approach.

To create a new database, you can use this query template:

CREATE DATABASE database\_name;

The following template is used to drop the database;

DROP DATABASE database\_name;

To create a new table, follow this general template:

CREATE TABLE table\_name(

column\_1 column\_1\_type,

column\_2 column\_2\_type,

...,

Column\_n column\_n\_type

);

To delete a table, use this statement:

DROP TABLE table\_name;

A template for a basic SELECT statement: the SELECT keyword, a list of values to extract with optional aliases for them, and a semicolon to indicate the end of the statement:

SELECT val1 [AS name1], ..., valN [AS nameM];

The overall template for statements that extract data from a table and evaluate expressions in it: keyword SELECT, list of expressions with optional aliases, keyword FROM, table name, and a semicolon to mark the end of the statement.

SELECT

exp1 [AS alias1], ..., expN [AS aliasN]

FROM

table\_name

;

In order to filter the selection there is a special operator WHERE in SQL. The syntax for this operator is as follows:

SELECT \*

FROM table

WHERE conditions;

List of comparisons operations: =, <, >, <=, >=, !<, !>, <>, !=

Logical expressions: NOT, AND, OR

You can insert a new record into a table with a simple query using INSERT INTO statement. Here is a template for a basic INSERT INTO statement:

INSERT INTO table\_name (column\_1, column\_2, ..., column\_n)

VALUES (list\_of\_values\_1) [, (list\_of\_values\_2), ..., (list\_of\_values\_m)];

When you know the order of columns and want to insert values into all the columns, you can follow the shorter INSERT INTO statement template:

INSERT INTO table\_name

VALUES (value\_1, value\_2, ..., value\_n);

The following query can be used to delete all the rows without deleting the table:

DELETE FROM table\_name;

If you want to delete only selected rows, you can use this template:

DELETE FROM table\_name

WHERE logical\_expression;

The ORDER BY clause allows you to sort the rows returned from the SELECT statement in ascending or descending order based on the specified expressions.

The ORDER BY clause pattern is the following:

ORDER BY expr1 [ASC, DESC], ..., exprN [ASC, DESC];

ORDER BY keyword, list of expressions (or corresponding aliases or numbers from the SELECT part of a query) with an optional ASC or DESC keyword.

BETWEEN, IN, LIKE, EXISTS, ANY, IS NULL, IS DISTINCT FROM.