STRUCTURED QUERY LANGUAGE –SQL

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1. INTRODUCTION FOR SQL

database computer language designed for managing data in relational database management systems (RDBMS).

SQL, is a standardized computer language that was originally developed by IBM for querying, altering and defining relational databases, using declarative statements.

What can SQL do?

• SQL can execute queries against a database

• SQL can retrieve data from a database

• SQL can insert records in a database

• SQL can update records in a database

• SQL can delete records from a database

• SQL can create new databases

• SQL can create new tables in a database

• SQL can create stored procedures in a database

• SQL can create views in a database

• SQL can set permissions on tables, procedures, and views Even if SQL is a standard, many of the database systems that exist today implement their own version of the SQL language. In this document, we will use the Microsoft SQL Server as an example.

→ Why is SQL still important?

Helpful in Pursuing Data Science as a Career

It's SQL. Big data platforms use SQL as their primary API to manage the relational databases. Joins, null value, indexes, primary and foreign keys, and subquery are some of the concepts which are beneficial to work with SQL in data science.

Is SQL needed in 2021?

SQL is used everywhere. It's in high demand because so many companies use it. **SQL is still the most popular language for data work in 2021.**

What are SQL data types?

Data types in SQL Server are organized into the following categories

•Exact numerics. Unicode character strings.

•Approximate numerics. Binary strings.

•Date and time. Other data types.

•Character strings.

•bigint. numeric.

•bit. smallint.

•decimal. smallmoney.etc

What is SQL in query?

SQL stands for **Structured Query Language**.

SQL lets you access and manipulate databases.

SQL became a standard of the American National Standards Institute in 1986, and of the International Organization for Standardization (ISO).

→Some of The Most Important SQL Commands

SELECT - extracts data from a database.

UPDATE - updates data in a database.

DELETE - deletes data from a database.

INSERT INTO - inserts new data into a database.

CREATE DATABASE - creates a new database.

ALTER DATABASE - modifies a database.

Some advantages of SQL are as follows:

•Faster Query Processing – Large amount of data is retrieved quickly and efficiently.

•No Coding Skills – For data retrieval, large number of lines of code is not required.

•Standardized Language –

•Portable –

•Interactive Language –

•Multiple data views –

Disadvantages of SQL :
Although SQL has many advantages, still there are a few disadvantages.

1.Complex Interface

2.Cost

3.Partial Control

Applications of SQL :

SQL is used by developers and DBAs (Database Administrators) in writing Data Integration Scripts.

It is used to deal with analytical queries to analyze the data and get instincts from it.

Retrieving Information

Modification/Manipulation of data and database table such as Insertion, Deletion and Updation.

Conclusion:

SQL Server lets you manage multiple users simultaneously and ensure that transactions observe the properties of the chosen isolation level. Locking guards data and the internal resources that enable a multiuser system to operate like a single-user system. You can choose to have your databases and applications use either optimistic or pessimistic concurrency control. With pessimistic concurrency, the locks acquired by data modification operations block users trying to retrieve data. With optimistic concurrency, the locks are ignored, and older committed versions of the data are read instead. In this chapter, we looked at the locking mechanisms in SQL Server, including full locking for data and leaf-level index pages and lightweight locking ...

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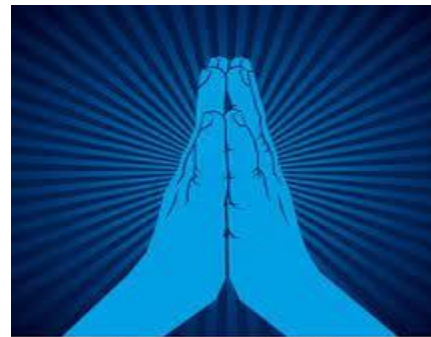
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