NoSQL Vs SQL

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NoSQL, which stands for “not only SQL,” is an approach to database design that provides flexible schemas for the storage and retrieval of data beyond the traditional table structures found in relational databases. While NoSQL databases have existed for many years, NoSQL databases have only recently become more popular in the era of cloud, big data and high-volume web and mobile applications. They are chosen today for their attributes around scale, performance and ease of use. The most common types of NoSQL databases are key-value, document, column and graph databases.

It's important to emphasize that the "No" in "NoSQL" is an abbreviation for "not only" and not the actual word "No." This distinction is important not only because many NoSQL databases support SQL like queries, but because in a world of microservices and polyglot persistence, NoSQL and relational databases are now commonly used together in a single application.

NoSQL databases do not follow all the rules of a relational database –specifically, it does use a traditional row/column/table database design and does not use structured query language (SQL) to query data.

To better understand, let’s go back to the advent of the first databases designed for the masses, which appeared around 1960. Those databases included database management systems (DBMS) to allow users to organize large quantities of data.

The original DBMSs were flat-file/comma-delimited, often proprietary to a particular application, and limited in the relationships they could uncover among data. DBMSs were also complex.

This eventually led to the development of relational database management systems (RDBMSs). Relational databases arranged data in tables that could be connected or related by common fields, separated from applications, and queried with SQL. In other words, the relational database placed data into tables, and SQL created an interface for interacting with it.

Relational databases and SQL work well for large servers and storage mediums. But as larger sets of frequently evolving, disparate data became more common for things like e-commerce applications, programmers needed something more flexible than SQL. NoSQL is that alternative.

NoSQL databases are built for specific data models and have flexible schemas that allow programmers to create and manage modern applications. NoSQL is also more agile because it's not built on the concept of tables and does not use SQL to manipulate or analyze data (although some NoSQL databases may have SQL-inspired query language).

NoSQL encompasses structured data (code in a specific format, written in such a way that search engines understand it), semi-structured data (data that contains tags or other markers to separate semantic elements and enforce hierarchies of records and fields within the data), unstructured data (information that either does not have a pre-defined data model or is not organized in a pre-defined manner), and polymorphic data (data that can be transformed to any distinct data type as required).

NoSQL enables you to be more agile, more flexible, and to iterate more quickly. NoSQL database enables simpler design, better control over availability and improved scalability.

THE END