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TYPES OF DATABASES

Relational Database

Relational databases are also called Relational Database Management Systems (RDBMS) or SQL databases. Historically, the most popular of these have been Microsoft SQL Server, Oracle Database, MySQL, and IBM DB2. A relational database stores and provides access to data points that are related to one another it based on a rational model of data, as proposed by E.F. Codd in 1970. Relational database refers to database that sores data in structured format, using row sand columns. It relational because the values within each table are related to each other. The of Relational database is to organizes data into table which can be linked or related based on data common to each. Relational function used to describe how example elements and thereby table frames are related to each other. Its goal is to generate a set of schemas that follow us to store information without unnecessary redundancy.

Analytical (OLAP)cate

Online Analytical Processing (OLAP) is an approach to answer multi-dimensional analytical queries swiftly in computing. It is a part of a border category of business intelligence, which also encompasses relational databases, report writing and data mining. It is a computing method that enables users to easily and selectively extract and query to analyze it from different points of view. OLAP is used to connect HANA information view or data model and to directly import all the business objects defined in the business layer for reporting. It goals is to pre-calculate and preaggregate data to make analysis faster. This pre-aggregated and pre-calculated data is an OLAP database or OLAP cube. The first product that performed OLAP queries was Express, which was released in 1970. However, the term did not appear until 1993 when it was coined by Edgar F. Codd.

Key-Value

It is a data storage paradigm designed for storing, retrieving, and managing associative arrays, and a data structure more commonly known today as a dictionary or harsh table. It has a major advantage: scalability, speed and flexibility. Key value stores handle size well and are good at processing a constant stream of read/write operations. It a type of nonrelational database that uses a simple key-value method to store data. It stores data as a collection of key-value pairs in which a key serves as a unique identifier. Both keys and values can be anything, ranging from simple object to complex compound objects. It is a type of database where data is stored in a "key-value" format and optimized for reading and writing that data.

Column-Family

It contains column of related data. It is tuple that consist of a key-value pair, where is key is mapped to a value that is a set of columns. It is a family of "table", each key value pair being a "row". The purpose

of a column family is to reduce the number of keys stored in the key-value store, resulting in improved during INSERT, UPDATE, and DELETE operations. Column Family contains multiple rows. Each column in column store database has a name, value, and Timestamp fields. Each row can contain a different number of columns. It is a set of data values of a particular type, one value for each of the database.

Graph

It is a database that uses graph structures for semantic queries with nodes, edges, and properties to represent and store data. Graph databases are purpose-built to store and navigate relationships. Relationships are first-class citizens in graph databases, and most of the value of graph databases is derived form these relationships. It used nodes to store data entities, and edges to store relationships between entities. Graph database is defined as a specialized, single-purpose platform for creating and manipulating graphs. Graph analytics is another commonly used term, and it refers specially to the process and analyzing data in a graph format using data points as nodes and relationships as edges. Graph Databases work by storing the relationships along with the data. A graph database not only stores the relationships between object in a native way, making queries about relationships fast and easy, but allows you to include different kinds of objects and different kinds of relationships in the graph.

Document

A document database is a type of nonrelational database that is designed to store and query data as JSON-like documents. The document model works well with use cases such as catalogs, user profiles, and content management systems where each document is unique and evolves over time. It used to design, query, and store the data in a document format(JSON document, XML, YAWL, or binary formats such as BSON and PDF).