

## Structural and Non-Structural Query Language

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**Abstract:** The Database system is rapidly increasing and it play an important role in all commercial-scientific software. In the current scenario every field work is related to computer they store their data in the database. Using database helps to maintain the large records. This paper aims to summarize the different database and their usage in IT field. In company database is more appropriate or more suitable to store the data.

**Keywords:** DBS, Database Management Systems-DBMS, Database-DB, Programming Language, Object-Oriented System.

### I. INTRODUCTION

The database system is used to develop the commercial-scientific application with database. The application requires set of element for collection transmission, storage and processing of data with computer. Database system allow the database develop application. This paper deal with the features of Nosql and need of Nosql in the market. In this paper we can discuss difference between structural database(sql) and Not structural database(Nosql) .

*History of Sql and Nosql:*

1. **SQL:** In 1970, Dr. E.F Codd published an article on database in which they describe a model for store and manipulate data using tables. After paper published IBM working on relational database. In 1986 All are using SQL as the data query language.

2. **NOSQL:** Nosql was introduced by Carlo Strozzi in 1998. The main aim to develop the Nosql language is that it does not rely on the structure and use more flexible data models. Nosql can means “not SQL” or “not only SQL”.

*Difference between SQL and NOSQL:*

Nosql is an approach that shifted traditional database management system. To describe the Nosql database we have to describe Sql, which is a query language used by RDBMS and it rely on tables, columns and rows to retrieve data from database. But In case of Nosql it does not depend on such structure and use more flexible data models.

### II. TYPES OF COMMANDS IN DATABASE

*SQL:*

There are different commands used in SQL and they are used to perform various functions. These functions include manipulating database objects, retrieval of database object, building database objects, updating existing data deleting data and many more.

The most important categories are

- DDL (Data Definition Language)
- DML (Data Manipulation Language)
- DQL (Data Query Language)

1. **Data Definition Language:** Data Definition Language, DDL, is the subset of SQL that are used by a database user to create and built the database objects, examples are deletion or the creation of a table. Some of the most Properties of DDL commands discussed below:

CREATE TABLE  
DROP INDEX  
ALTER INDEX  
CREATE VIEW  
ALTER TABLE  
DROP TABLE  
CREATE INDEX  
DROP VIEW

2. **Data Manipulating Language:** Data Manipulation Language, DML, is the subset of SQL used to change and manipulate data within objects of a relational database. There are three basic DML commands:

INSERT  
DELETE  
UPDATE

3. **Data Query Language:** Data Query Language (DQL) is the very commonly used subset of SQL for modern relational database users. The base command is as follows:

SELECT

This command, accompanied by many clauses and options and it is used to develop queries against a relational database. Queries, from vague to specific, from simple to complex, can be easily created.

*Different Variety of Nosql Database:*

1. **Key-Value Data Store:** Nosql database revel simplicity and very useful of developing large application. It have high –speed and it read and write in non-transaction data. Any type of data can be accessed via a key.

Key	Value
746133	Firstname: <b>George</b> Lastname: <b>Whitelock</b> productID: 2012: 5
135225	Firstname: <b>Luke</b> Lastname: <b>Whitelock</b> productID: 1285: 1 1077: 5
884256	Firstname: <b>Sam</b> Lastname: <b>Whitelock</b> productID: 1442: 2

Fig. 2.1. Key-Value Data Store

2. *Documents Stores*: Document Database stores document which are self-describing like JSON,XML and BSON. They are similar to the Key-value stores but difference is they have indexed to access the data but in case of key-value they have a key to access the data. They have either same or different structure.

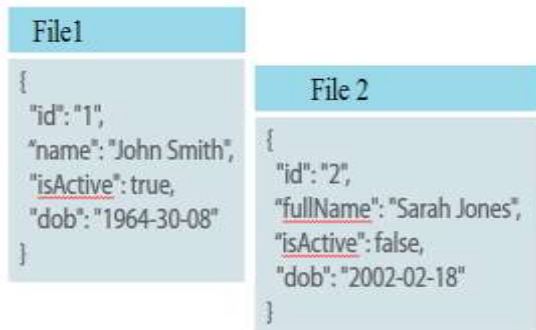


Fig. 2.2. Document Store

3. *Wide-Column Store*: Wide-column Nosql database store data in tabular form using row and column similar to RDBMS, but name and format can vary according to row and column.

Company			
1	Address		Project
	city		Java
	state		.Net
	Street		Php

Fig. 2.3. Wide-Column Store

4. *Graph Store*: A graph database use graph structure to store, map and query relationships.

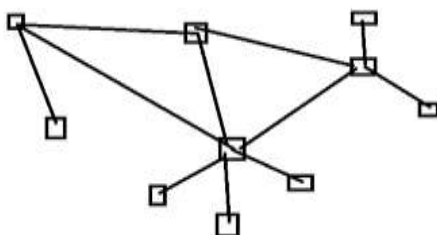


Fig. 2.4. Graph Store

*Features of Sql and Nosql:*

1. *Non-Structural Query Language:*

*Scalability:* It easy to add or reduce capacity quickly. These features adapt to data volume and complexity of cloud applications. This scalability also improves performance, allowing for continuous availability and very high read/write speeds.

*Performance:* By simply adding resource, companies can increase performance with Nosql database.

*High Availability:* Nosql database are generally designed to ensure high availability and avoid complexity.

*Global Availability:* Data replicated across multiple server, cloud resource, Distributed Nosql database can minimize latency and ensure a consistent application.

*Flexible Data Modeling:* Nosql offers the ability to implement flexible and fluid data model. The interaction between the application and database is faster.

2. *Structure Query Language:*

*High Performance:* Sql provide High performance to the database by using row and column. The data is accessed very fast as compare to simple file system.

*High Availability:* The Data is available as long as possible. So that user can access data at any time.

*Scalability and Flexibility:* These are the important feature of Sql. They can have scalability but less than Nosql. They store data is a structural manner.

*Robust Transactional Support:* The design of Sql database is robust.

*High Security:* It provide high security so that data is prevented and it doesn't produce failure.

*Comprehensive Application Development:* Sql provide comprehensive application development. So that Application work correctly.

*Management Ease:* Sql database is easily managed and it have less maintenance.

*Open Source:* Sql database is an Open Source which means that every person can use it without paying anything.

### III. EXAMPLE OF SQL AND NOSQL

*MySQL: The SQL Relational Database:*

The following are some MySQL benefits and strengths:

*Maturity:* MySQL have large community and extensive testing.

*Compatibility:* MySQL is available for all platforms, including Linux, Mac ,Windows. It also has connectors

to languages like Node.js, Java, Perl, Python, Ruby, C#, C++, and PHP, meaning that it's not limited to SQL query language.

*Replicable:* The MySQL database can be replicated across multiple nodes, means that it have scalability and availability.

Year	Name	Salary	Partner
20055	Vinod Rathor	20051	Vijes Setthi
20069	Anant Kumar	20051	Vijes Setthi
20073	Unnath Nayar	20051	Vijes Setthi
20075	Mukesh Singh	20073	Unnath Nayar
20064	Rakesh Patel	20073	Unnath Nayar

Fig. 3.1. Mysql Example

*MongoDB: The NoSQL Non-Relational Database:*

The following are some of MongoDB benefits and strengths:

*Dynamic Schema:* Dynamic Schema means that if user doesn't have fixed data schema then Mongoddb is good choice for them because it does not have fix structure t gives you flexibility to change your data schema without modifying any of your existing data.

*Scalability:* MongoDB gives a scalable functionality which means that it can easily scale-up and scale-down according to the requirement of user .

*Manageability:* The Mongoddb database doesn't have any fix structure and it doesn't require any database administration. Since it is very friendly in nature for both administration and developer.

*Speed:* It's highly speed able because it perform queries very fastly and in easy manner.

*Flexibility:* You can add new fields or columns on MongoDB without changing the existing rows or application performance.

MongoDB, on the other hand, is a good choice for that enterprises which doesn't have fix schemas and data is changes time to time So, they are not store in a structural form. So, MongoDB is required to store that type of schema.

V. REFERENCE

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Key	Column Family	
	Customer	Address
101	Firstname :- Ram Middlename :- kumar lastname:- Sharma	city:-jaipur street :- sitapur
102	Firstname:-Abbay Middlename:-lal lastname:- saini	city:-jhodipur street:- Rambhag

IV. CONCLUSION

MySQL is a good choice for that enterprises which have their pre-defined structure and schemas. It is used when the data is small and they store in well defined structure. Ex-Accounting Area.