INTRODUCTION:

MongoDB, the most popular NoSQL database, is an open-source document-oriented database. The term 'NoSQL' means 'non-relational'. It implies that MongoDB isn't based on the table-like relational database structure but provides an altogether different mechanism for storage and retrieval of data

Some of the key features of MongoDB include:

- **Document Oriented:** MongoDB stores the main subject in a minimal number of documents, not by breaking it up into multiple relational structures like RDBMS.
- **Indexing:** MongoDB uses indexing to process huge volumes of data in very little time.
- **Scalability:** MongoDB scales horizontally using sharding (partitioning data across various servers).
- **Replication and High Availability:** MongoDB increases the data availability with multiple copies of data on different servers.
- **Aggregation:** Aggregation operations process data records and return the computed results.

  MongoDB provides official driver support for all popular programming languages like C, C++, Rust, C#, Java, Node.js, Perl, PHP, Python, Ruby, Scala, Go, and Erlang.

Example

```
{
name: "vaishnavi",
age: "21",
blood_group: A+
}
```

SQL vs. NoSQL in MongoDB

Feature	SQL (Relational Databases)	MongoDB (NoSQL)
Data Model	Tables with fixed rows and columns	Flexible documents (JSON-like) with dynamic schema
Development History	Developed in the 1970s with a focus on reducing data duplication	Developed in the late 2000s with a focus on scaling and allowing for rapid application change
Schemas	Rigid	Flexible
Scaling	Vertical scaling (scale-up with a large server)	Horizontal scaling (scale-out across commodity servers)
Queries	Uses SQL for querying data	Uses its own query language specific to document structure
Best for	They are great for applications that require complex queries and transactions, such as financial systems and enterprise applications.	They are ideal for applications that need to handle large volumes of unstructured data, such as big data applications, real-time web apps, and content management systems.

Uses of MongoDB

1. Flexible Data Model: MongoDB's document-based data model allows for flexible and dynamic schema design, making it ideal for applications with rapidly changing data structures.

2. Scalability: MongoDB is designed for horizontal scaling, making it easy to scale your database as your application grows.

3. High Performance: MongoDB's query engine and indexing capabilities provide high performance and fast data retrieval.

4. Real-time Data Processing: MongoDB's native aggregation framework and real-time data processing capabilities make it suitable for applications that require fast data processing and analysis.

5. Big Data Analytics: MongoDB's ability to handle large amounts of unstructured and semi-structured data makes it a popular choice for big data analytics.

6. Content Management: MongoDB's flexible data model and scalability make it a popular choice for content management systems.

7. Mobile and Web Applications: MongoDB's ease of use, scalability, and high performance make it a popular choice for mobile and web applications.

Database

Structured Data: The information is typically organized in a specific format, often using tables with rows and columns. This makes it easier to search, filter, and analyze the data.

Database Management System (DBMS): This software acts like the filing cabinet manager. It allows you to store, retrieve, update, and manage all the data within the database.

Data Types: Databases can hold various information, including text, numbers, images, videos, and more.

MongoDB Installation
Download and Install MongoDB on windows using
https://www.mongodb.com/download-center/community

Download MongoDB shell using
https://www.mongodb.com/try/download/shell