Overview

MongoDB

- NoSQL database
- Document-oriented
- Schema-less
- Uses BSON (binary JSON) for data storage

SQL

- Relational database
- Table-based structure
- Schema-based
- Uses SQL (Structured Query Language)

Data Model

MongoDB

- Stores data in JSON-like documents (BSON format)
- Supports nested documents and arrays within documents
- Flexible schema allows for easy updates and changes

SQL

- Stores data in tables with predefined schema
- Uses rows and columns to organize data
- Requires strict adherence to schema definitions

Query Language

MongoDB

•Uses MongoDB Query Language (MQL)
•Queries are expressed as JSON-like documents
•Supports CRUD operations (Create, Read, Update, Delete) with powerful filtering and aggregation capabilities

SQL

- Uses SQL (Structured Query Language)
- Standardized language for querying relational databases
- Supports complex queries, joins, aggregations, and transactions

Scalability

MongoDB

- Designed for horizontal scalability (sharding)
- Scales easily by distributing data across multiple nodes
- Good for handling large volumes of unstructured or semi-structured data

SQL

- Primarily designed for vertical scalability (scaling up)
- Can also scale horizontally with clustering and replication
- Suitable for structured data and complex transactions

Use Cases

MongoDB

- Best suited for applications with evolving requirements or agile development
- Ideal for content management, real-time analytics, and IoT applications
- When flexibility and scalability are key requirements

SQL

- Best suited for applications with structured and consistent data requirements
- Ideal for financial applications, ERP systems, and traditional business applications
- When ACID (Atomicity, Consistency, Isolation, Durability) compliance and complex transactions are necessary