MongoDB is a cross-platform, document oriented database that provides, high performance, high availability, and easy scalability. MongoDB works on concept of collection and document.

History of MongoDB

The initial development of MongoDB began in 2007 when the company was building a platform as a service similar to **window azure.**

"Window azure is a cloud computing platform and infrastructure, created by Microsoft, to build, deploy and manage applications and service through a global network."

MongoDB was developed by a NewYork based organization named 10gen which is now known as MongoDB Inc. It was initially developed as a PAAS (Platform As A Service). Later in 2009, it is introduced in the market as an open source database server that was maintained and supported by MongoDB Inc.

The first ready production of MongoDB has been considered from version 1.4 which was released in March 2010.

### MongoDB4.0.9 - was the latest and stable version which was released on Apr 16, 2019.

First of all, we should know what is document oriented database?

## **Database**

Database is a physical container for collections. Each database gets its own set of files on the file system. A single MongoDB server typically has multiple databases.

## **Collection**

Collection is a group of MongoDB documents. It is the equivalent of an RDBMS table. A collection exists within a single database. Collections do not enforce a schema. Documents within a collection can have different fields. Typically, all documents in a collection are of similar or related purpose.

## **Document**

A document is a set of key-value pairs. Documents have dynamic schema. Dynamic schema means that documents in the same collection do not need to have the same set of fields or structure, and common fields in a collection's documents may hold different types of data.

The following table shows the relationship of RDBMS terminology with MongoDB.

## **Sample Document**

Following example shows the document structure of a blog site, which is simply a comma separated key value pair.

**\_id** is a 12 bytes hexadecimal number which assures the uniqueness of every document. You can provide \_id while inserting the document. If you don’t provide then MongoDB provides a unique id for every document. These 12 bytes first 4 bytes for the current timestamp, next 3 bytes for machine id, next 2 bytes for process id of MongoDB server and remaining 3 bytes are simple incremental VALUE.

## **Advantages of MongoDB over RDBMS**

* **Schema less** − MongoDB is a document database in which one collection holds different documents. Number of fields, content and size of the document can differ from one document to another.
* Structure of a single object is clear.
* No complex joins.
* Deep query-ability. MongoDB supports dynamic queries on documents using a document-based query language that's nearly as powerful as SQL.
* Tuning.
* **Ease of scale-out** − MongoDB is easy to scale.
* Conversion/mapping of application objects to database objects not needed.
* Uses internal memory for storing the (windowed) working set, enabling faster access of data.

## **Why Use MongoDB?**

* **Document Oriented Storage** − Data is stored in the form of JSON style documents.
* Index on any attribute
* Replication and high availability
* Auto-sharding
* Rich queries
* Fast in-place updates
* Professional support by MongoDB

## **Where to Use MongoDB?**

* Big Data
* Content Management and Delivery
* Mobile and Social Infrastructure
* User Data Management
* Data Hub