MongoDB -- M of MEAN Stack
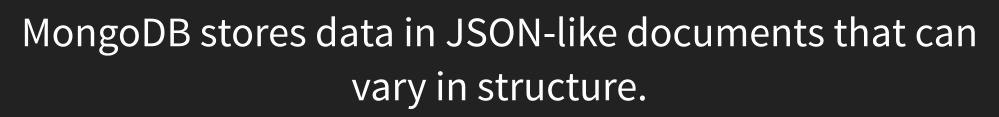
Written in C and C++ making it much faster

NoSQL Database

Difference between SQL and NoSQL

Why MongoDB ?

MongoDB stores data in JSON-like documents that can vary in structure.
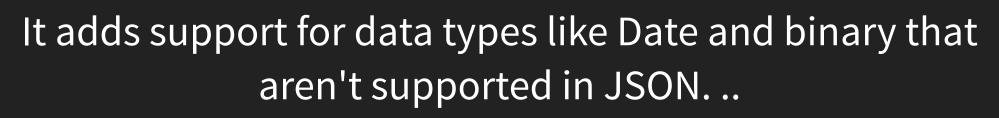
Related information is stored together for fast query access through the MongoDB query language.

MongoDB uses dynamic schemas, meaning that you can create records without first defining the structure, such as the fields or the types of their values.
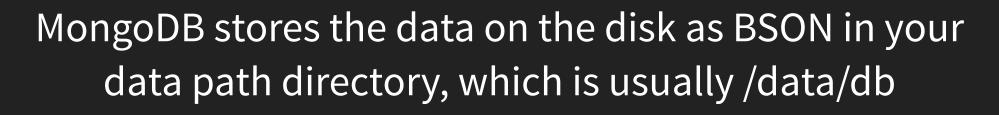
BSON

BSON is the binary encoding of JSON-like documents that MongoDB uses when storing documents in collections.

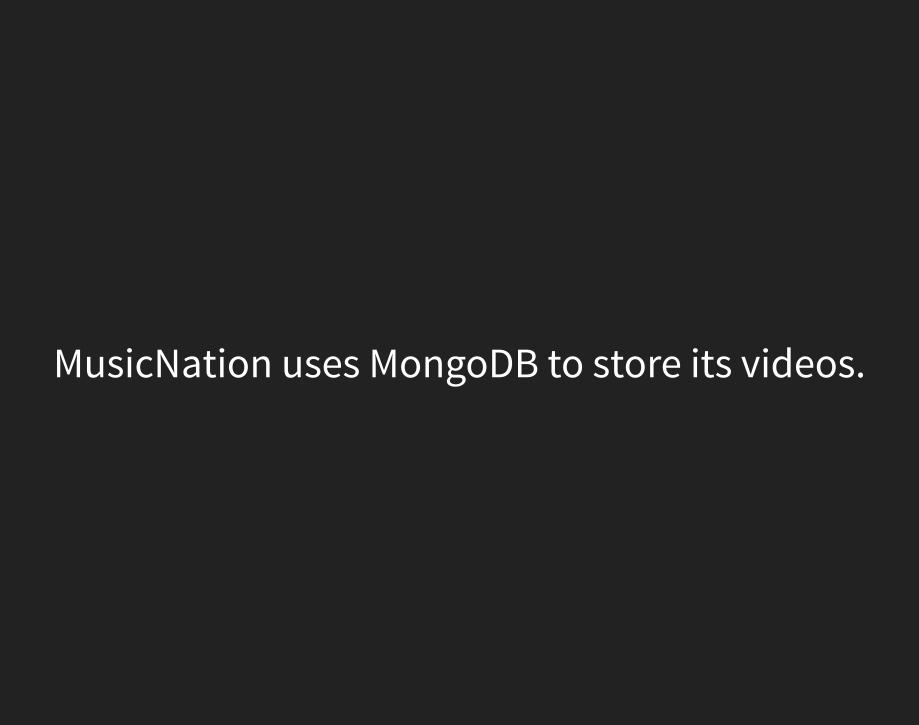It adds support for data types like Date and binary that aren't supported in JSON. ..

MongoDB represents JSON documents in binary-encoded format called BSON behind the scenes.

How is Data Stored in MongoDB using BSON ?

A given mongo database is broken up into a series of BSON files on disk, with increasing size up to 2GB.

MongoDB stores the data on the disk as BSON in your data path directory, which is usually /data/db

t is no problem to store 100MB videos in the database. For example,

MusicNation uses MongoDB to store its videos.

Enough About MongoDB .. Lets Dive into real terminology in MongoDB !

Create Database

```
use DatabaseName
```

```
use pizzaShop
```

See All DBs

```
show dbs;
```

Collections

Similar to Tables in MySQL

A grouping of MongoDB documents. A collection is the equivalent of an RDBMS table. .

A collection exists within a single database.
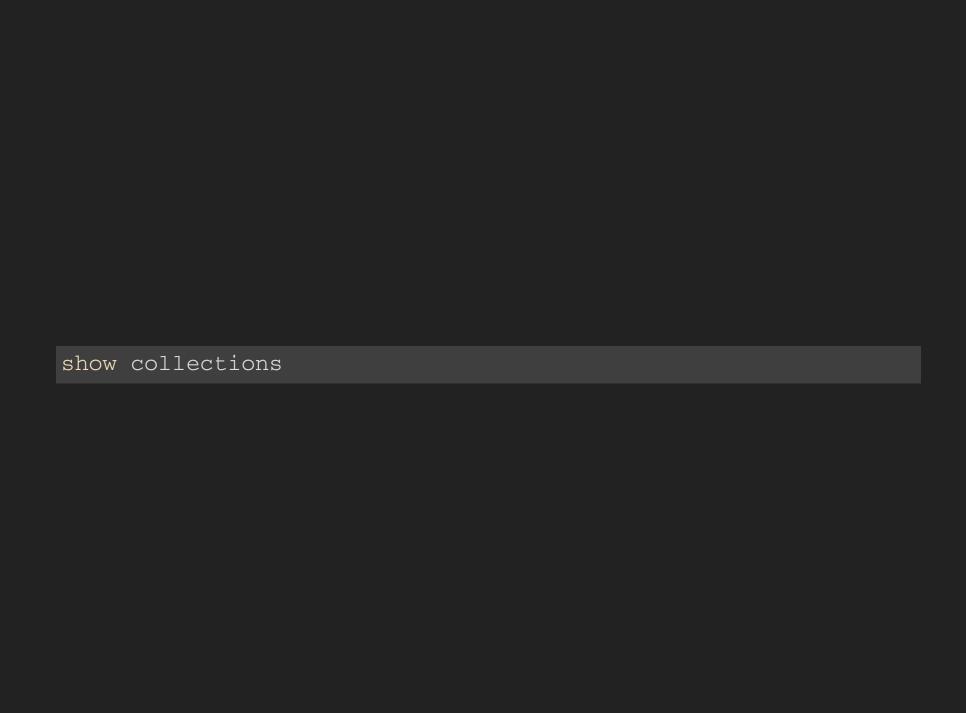
Collections do not enforce a schema.

Lets create a Collection pizzahut..

```
db.createCollection('pizzahut')
```

Lets Create it with some options

```
db.createCollection("pizzahut", { capped : true,  size :
    6142800, max : 10000 } )
```

Get All Collection in DB

```
show collections
```
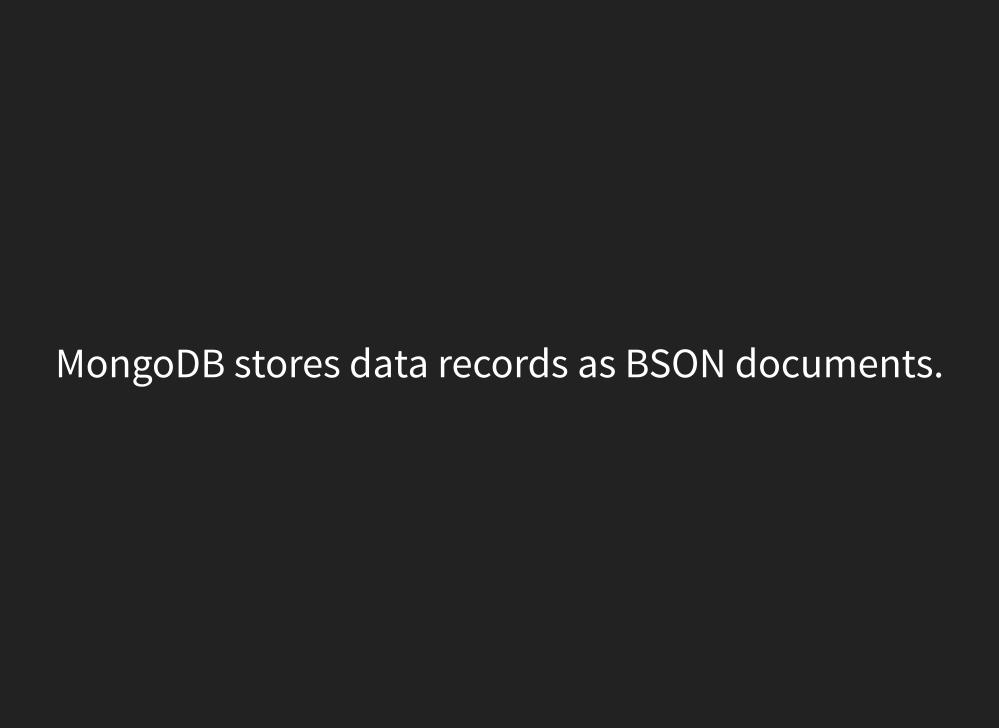
We don't have schema in MongoDB

What Schema ?

No prior Struture of our data

Data in MongoDB has a flexible schema.Documents in the same collection. They 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.

What's Document then ?

Documents

MongoDB stores data records as BSON documents.

BSON is a binary representation of JSON documents, though it contains more data types than JSON.

Documents are similar to rows in MySQL

Lets create one then

```
db.pizzahut.insert({name:'Cheese',price:'20$'});
```

Bulk Insert

```
db.pizzahut.insert([
{name:'Cheese',price:'20$'}
,{name:'HumBurger'},
{taste:'Chilly'}
]);
```

Query in MongoDB

Analogue to select statement in SQL

```
db.pizzahut.find();
```

Make it pretty

```
db.pizzahut.find().pretty;
```

Display in Sorted Order then

```
db.pizzahut.find().sort({"name":-1});
```
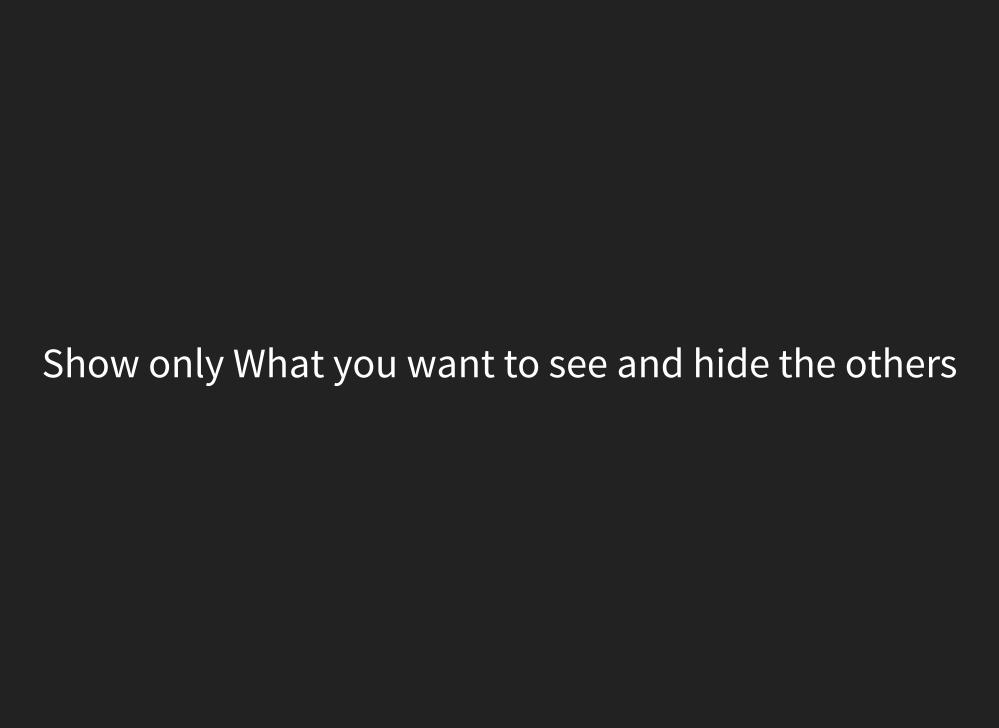
1 for Ascending Order and -1 for Descending Order

Deleting a Document in MongoDB

```
db.pizzahut.remove({name:'Cheese'});
```

Delete Only 1 Record

```
db.pizzahut.remove({name:'Cheese'},1);
```

Projection in MongoDB

Show only What you want to see and hide the others

```
db.pizzahut.find({},{"name":1,_id:0})
```

Limit the Records

Show only the First 5 Records

```
db.pizzahut.find({},{"name":1,_id:0}).limit(2)
```

Aggregation in MongoDB

Similar to count ,sum in MySQL

```
db.pizzahut.aggregate([{$group:{_id:"$by_user",name:{$sum:1}}}
```

Connect MongoDB with NodeJS

Install MongoDB Drivers

```
npm install mongodb --save
```

```
var MongoClient = require('mongodb').MongoClient;


MongoClient.connect("mongodb://localhost:27017/pizzahut", func

    if(err) throw err;

    //Write databse Insert/Update/Query code here..

});
```

```javascript
db.collection('Persons', function (err, collection) {

    collection.insert({ id: 1, name: 'Pizzahut', cost: '50

});
```