MongoDB

Difference between SQL and NoSQL

SQL	NoSQL
Relational Database Management System	Distributed Database Management System
Fixed or Predefined Schema (Structured)	Dynamic Schema (Unstructured)
Vertically Scalable	Horizontally Scalable
Tables	Collections
Rows	Documents

Installation

- Download MongoDB from https://www.mongodb.com/try/download/community
- Follow the installation steps mentioned in below links:
  - For Windows: https://docs.mongodb.com/manual/tutorial/install-mongodb-on-windows/
  - For MacOS: https://docs.mongodb.com/manual/tutorial/install-mongodb-on-os-x-tarball/
  - For Linux: https://docs.mongodb.com/manual/administration/install-on-linux/
- Next, you need to install mongo client to connect to mongodb through command line. So download and install mongo shell client from this link - https://www.mongodb.com/try/download/shell

Run MongoDB Server

- Run MongoDB with parameters (MacOS):

```
$ mongod --dbpath=/usr/local/var/mongodb --logpath=/usr/local/var/log/mongodb/mongo.log --fork
```

- On Windows:

```
$ "C:\Program Files\MongoDB\Server\{version}\bin\mongod.exe” --dbpath=“c:\data\db" --logpath=“c:\data\logs\mongo.log”
```

- On Ubuntu (if you have installed MongoDB using tarball):

```
$ mongod --dbpath=/var/lib/mongo --logpath=/var/log/mongodb/mongod.log --fork
```

Connect to MongoDB Server

- To connect to local mongodb server run following command (By default mongosh connects to localhost and port 27017):

```
$ mongosh
```

- To connect to mongodb server on different port use --port parameter

```
$ mongosh --port 28015
```

- To connect to mongodb server on different port use --host and --port parameter

```
$ mongosh --host mongodb0.example.com:28015
```

```
$ mongosh --host mongodb0.example.com --port 28015
```

Working with Mongo Shell

- To display all the databases:

```
$ show dbs
```

- Show current database:

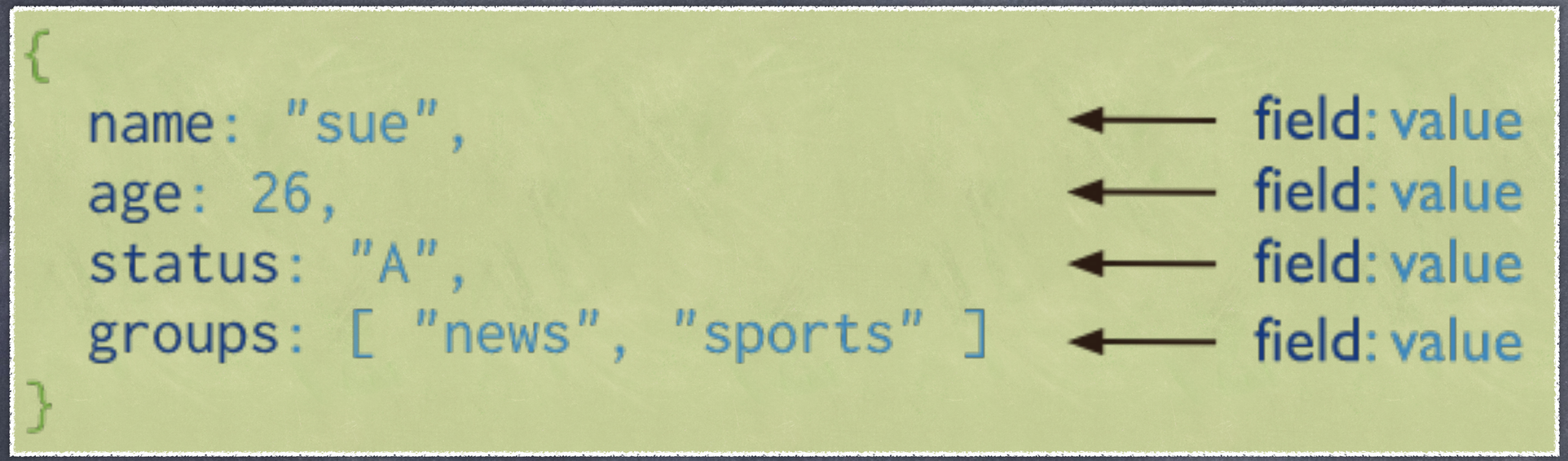
```
$ db
```

- Switch to the database:

```
$ use <database>
```

- By default database is not created until and unless there is atleast one collection.

MongoDB - Document Database



- A record in MongoDB is a Document, which is a data structure composed of field and value pairs.
- MongoDB Documents are similar to JSON Objects.

MongoDB - Create Operations

- db.collection.insertOne()
- db.collection.insertMany()

MongoDB - Find Operations

- db.collection.find()
- db.collection.findOne()

```
db.users.find(                                  <-- collection
    { age: { $gt: 18 } },                       <-- query criteria
    { name: 1, address: 1 }                     <-- projection
).limit(5)                                      <-- cursor modifier
```

MongoDB - Update Operations

- db.collection.updateOne()
- db.collection.updateMany()
- db.collection.replaceOne()

```
db.users.updateMany(                          <-- collection
   { age: { $lt: 18 } },                      <-- update filter
   { $set: { status: "reject" } }             <-- update action
)
```

MongoDB - Delete Operations

- db.collection.deleteOne()
- db.collection.deleteMany()

```
db.users.deleteMany(
   { status: "reject" }
)
```