Introduction

THIS DOCUMENT COVERS

- Cheat Sheet
- Queries

Cheat Sheet

General

	Column Header
Binaries	`C:\Program Files\MongoDB\Server\4.4\bin`
Default End Point	`localhost:27017`
Dump	`mongodump --uri="mongodb://localhost:27017" --archive=myarchive --gzip`
Restore	`mongorestore --uri="mongodb://localhost:27017" --drop --archive=myarchive --gzip`

Basic Commands

	Column Header
Create database	`use mydb;`
Create collection	`db.createCollection("c")`
List collection names	`show collections`
List databases	`show dbs`
Insert one doc	`db.c.insertOne( { nm: "Jo"} );`
Insert many docs	`db.c.insertMany`
Get all docs	`db.c.find()`
Drop collections	`db.c.drop();`
Delete single document	`db.c.deleteOne( {nm:”Joe”})`

Basic Queries

	Column Header
Embedded Document	`find({"person.sex":"male"}, {})`

Queries

Embedded Documents

```
db.c.find({“person.sex”:"male", “person.first”:john}, {nm:1,_id:0})
```

And Filter

The following only return male whose name is don.

Query

```
db.c.find({sex:"male", nm:"don"}, {nm:1,_id:0})
```

Result

```
{ "nm" : "don" }
```

Conditionals

We can list all the people whose age is between 21 and 50 inclusive as follows.

Input collections

```
{ "nm" : "ken", "age" : 45 }
{ "nm" : "kim", "age" : 23 }
{ "nm" : "jon", "age" : 60 }
```

Query

```
db.c.find({ age: {"$gte" : 23, "$lte" : 50}}, {_id:0})
```

Result

```
{ "nm" : "ken", "age" : 45 }
{ "nm" : "kim", "age" : 23 }
```

In

We can list the 23- and 45-years old.

Input collections

```
{ "nm" : "ken", "age" : 45 }
{ "nm" : "kim", "age" : 23 }
{ "nm" : "jon", "age" : 60 }
```

Query

```
db.c.find({ age: {"$in" : [23,45]}}, {_id:0})
```

Result

```
{ "nm" : "ken", "age" : 45 }
```

```
{ "nm" : "kim", "age" : 23 }
```

Logical OR

We can list anyone who is 23 or whose name is jon as follows

Input Collection

```
{ "nm" : "kim", "age" : 23 }
{ "nm" : "jon", "age" : 60 }
```

Query

```
{ "nm" : "ken", "age" : 45 }
{ "nm" : "kim", "age" : 23 }
{ "nm" : "jon", "age" : 60 }
```

Result

```
db.c.find({ "$or" : [  {age:23}, {nm: "jon"}]}, {_id:0})
```

Null

Consider the following

Input Collection

```
{ "x" : 1, "nm" : null }
{ "x" : 2 }
{ "x" : 3, "nm" : "ken" }
```

Then checking for null returns the documents that have null for that field value or for which the field is not set at all

Query

```
db.c.find({nm:null}, {_id:0})
```

Results

```
{ "x" : 1, "nm" : null }
{ "x" : 2 }
```

If we don't want the documents which don't even have that key we do this

Query

```
db.c.find({nm: {"$eq" :null, "$exists":true}}, {_id:0})
```

Results

```
{ "x" : 1, "nm" : null }
```

SEARCHING ARRAYS

Single element match

Image we have this

```
{ "fruit" : [ "apple", "orange", "pear" ] }
{ "fruit" : [ "apple", "banana" ] }
{ "fruit" : [ "banana", "kiwi" ] }
```

Then we can find all documents whose fruit array contains apple as follows

```
db.c1.find({fruit: "apple"},{_id:0})
```

Which gives us

```
{ "fruit" : [ "apple", "orange", "pear" ] }
{ "fruit" : [ "apple", "banana" ] }
```

$all – multi element match

Image we have this

```
{ "fruit" : [ "apple", "orange", "pear" ] }
{ "fruit" : [ "apple", "banana" ] }
{ "fruit" : [ "banana", "kiwi" ] }
```

We can find all documents whose fruit field's array contains both the values apple and pear

```
> db.c1.find({fruit: {"$all" : [ "apple", "pear"]}},{_id:0})
```

Which gives us

```
{ "fruit" : [ "apple", "orange", "pear" ] }
```

Array equality

If we want to perform an exact match, we can use array equality. Imagine we have this

```
{ "fruit" : [ "apple", "orange", "pear" ] }
{ "fruit" : [ "apple", "banana" ] }
{ "fruit" : [ "banana", "kiwi" ] }
```

We can do an exact match as follows.

```
db.c1.find({fruit: ["banana", "kiwi"]},{_id:0})
```

```
{ "fruit" : [ "banana", "kiwi" ] }
```

Which gives us

```
{ "fruit" : [ "apple", "pear" ] }
```

Query Size

We can query for all documents whose fields array value is of a certain length

```
db.fruit.find({fruit: {"$size":2}} , {_id:0})
{ "fruit" : [ "apple", "pear" ] }
```

Imagine we have this

```
{ "fruit" : [ "apple", "orange", "pear" ] }
{ "fruit" : [ "apple", "banana" ] }
{ "fruit" : [ "banana", "kiwi" ] }
```

We can find all documents whose fruit field is an array of size 2

```
db.c1.find({fruit: {"$size":2} },{_id:0})
```

Which gives us

```
{ "fruit" : [ "apple", "banana" ] }
{ "fruit" : [ "banana", "kiwi" ] }
```

Slice

A positive number returns first n elements so given

```
{ "x" : [ 10, 11, 12, 13, 14, 15, 15 ] }
```

We can take first 3 elements in the result

```
db.nums.find({}, {x:{"$slice":3}})
```

Giving

```
{ "_id" : ObjectId("5ec25a6b9d4450d02edd4142"), "x" : [ 10, 11, 12 ] }
```

A negative number returns last three

```
db.nums.find({}, {x:{"$slice":-3}})
```

Giving

```
{ "_id" : ObjectId("5ec25a6b9d4450d02edd4142"), "x" : [ 14, 15, 16 ] }
```

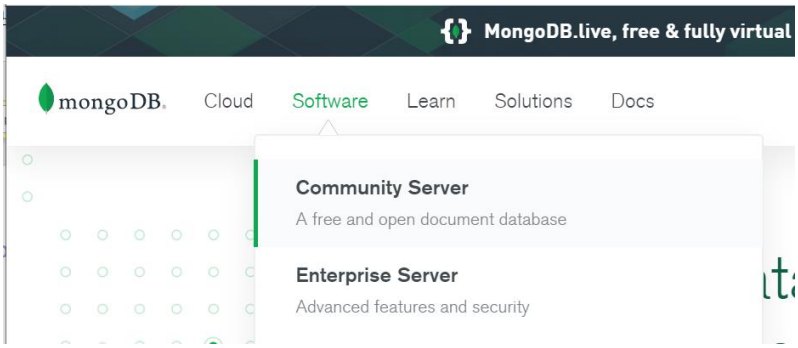
Indexing

We can index into arrays

```
db.nums.find({"x.1":11})
```

Installation

Install the community server from mongodb.com.



The binaries are installed to the following location which we should add to our path.

C:\Program Files\MongoDB\Server\4.4\bin

I have chosen to install it into `C:\Users\rps\Code\temp\mongo` . I have also chosen custom and decided not to install it as a service as I am just playing around. Now we need to create a folder for data which I am going to call `C:\Users\rps\Code\temp\mongo\Data` Finally open a command prompt as an administrator and run the command

```
mongod --dbpath C:\Users\rps\Code\temp\mongo\Data
```

By default, MongoDB listens on port 27017

The Shell

Assuming we have ran the server as per the previous section we can open the mongo shell. The shell is a complete JavaScript interpreter in addition to its mongo role. We can list the current database as follows.

```
db
>> test
```

To create a new database if it does not exist use the `use` command. If it does exist the use command will switch to that database. The database is not actually created until you first create a collection and insert a value into it. Before we enter the following command there is no database called `mydatabase` and no collection called `acollect`.

```
use mydatabase
```