NoSQL databases

Lab # 2

Hockey:

(1) Starting server and connecting to running db

> `mongo`

(2) Connecting automatically to default

(3) List databases

> `show dbs`

(4) Create and log in to database

> `use hockey`

```
==> Downloading https://homebrew.bintray.com/bottles/mongodb-3.6.2.high_sierra.bottle.1.tar.gz
==> Downloading from https://akamai.bintray.com/05/054a441ee469d2c519daf9715a61727371d7351cef57874b044f49
######################################################################## 100.0%
==> Pouring mongodb-3.6.2.high_sierra.bottle.1.tar.gz
==> Caveats
To have launchd start mongodb now and restart at login:
  brew services start mongodb
Or, if you don't want/need a background service you can just run:
  mongod --config /usr/local/etc/mongod.conf
==> Summary
🍺  /usr/local/Cellar/mongodb/3.6.2: 19 files, 288.5MB
~ : dominic o - mongo
MongoDB shell version v3.6.2
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.6.2
Server has startup warnings:
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten]
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the
 database.
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten] **          Read and write access to data and con
figuration is unrestricted.
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten]
> dbs
2018-02-13T20:13:49.071+0000 E QUERY    [thread1] ReferenceError: dbs is not defined :
@(shell):1:1
> show dbs
admin   0.000GB
local   0.000GB
tate-db 0.012GB
> use hockey
switched to db hockey
>
```

(5) Create collection called players and list collections

```
==> Caveats
To have launchd start mongodb now and restart at login:
  brew services start mongodb
Or, if you don't want/need a background service you can just run:
  mongod --config /usr/local/etc/mongod.conf
==> Summary
🍺  /usr/local/Cellar/mongodb/3.6.2: 19 files, 288.5MB
~ : dominic o - mongo
MongoDB shell version v3.6.2
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.6.2
Server has startup warnings:
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten]
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the
 database.
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten] **          Read and write access to data and con
figuration is unrestricted.
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten]
> dbs
2018-02-13T20:13:49.071+0000 E QUERY    [thread1] ReferenceError: dbs is not defined :
@(shell):1:1
> show dbs
admin   0.000GB
local   0.000GB
tate-db 0.012GB
> use hockey
switched to db hockey
> db.createCollection("players")
{ "ok" : 1 }
> show collections
players
>
```

(6) Add *Craig Adams* to collection

```
 mongod --config /usr/local/etc/mongod.conf
==> Summary
🍺 /usr/local/Cellar/mongodb/3.6.2: 19 files, 288.5MB
~ : dominic o - mongo
MongoDB shell version v3.6.2
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.6.2
Server has startup warnings:
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten]
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten] ** WARNING: Access control is not enabled for the
 database.
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten] **          Read and write access to data and con
figuration is unrestricted.
2018-02-13T20:13:24.172+0000 I CONTROL  [initandlisten]
> dbs
2018-02-13T20:13:49.071+0000 E QUERY    [thread1] ReferenceError: dbs is not defined :
@(shell):1:1
> show dbs
admin    0.000GB
local    0.000GB
tate-db  0.012GB
> use hockey
switched to db hockey
> db.createCollection("players")
{ "ok" : 1 }
> show collections
players
> db.players.insert({"position":"Right Wing","id":8465166,"weight":200,"height":"6' 0\"","imageUrl":"http
://1.cdn.nhle.com/photos/mugs/8465166.jpg","birthplace":"Seria, BRN","age":37,"name":"Craig Adams","birth
day":"April 26, 1977","number":27})
WriteResult({ "nInserted" : 1 })
>
```

(7) Players have been added to the collection as defined from the .insert()
command.
But every insert did create a new instance, Mongo doesn't check if a record already
exists and therefore a new _id has been generated even thought the documents
hold the same information.

```
        "nUpserted" : 0,
        "nMatched" : 0,
        "nModified" : 0,
        "nRemoved" : 0,
        "upserted" : [ ]
})
> show PlanCache(
Display all 176 possibilities? (y or n)
> show db.players
2018-02-13T20:32:06.538+0000 E QUERY    [thread1] Error: don't know how to show [db.players] :
shellHelper.show@src/mongo/shell/utils.js:950:11
shellHelper@src/mongo/shell/utils.js:703:15
@(shellhelp2):1:1
> show db.players.find()
2018-02-13T20:32:35.245+0000 E QUERY    [thread1] Error: don't know how to show [db.players.find()] :
shellHelper.show@src/mongo/shell/utils.js:950:11
shellHelper@src/mongo/shell/utils.js:703:15
@(shellhelp2):1:1
> db.getCollection('players').find({})
{ "_id" : ObjectId("5a83491c7a38aac95a6e5aa3"), "position" : "Right Wing", "id" : 8465166, "weight" : 200
, "height" : "6' 0\"", "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg", "birthplace" : "Seri
a, BRN", "age" : 37, "name" : "Craig Adams", "birthday" : "April 26, 1977", "number" : 27 }
{ "_id" : ObjectId("5a834a847a38aac95a6e5aa4"), "position" : "Right Wing", "id" : 8465166, "weight" : 200
, "height" : "6' 0\"", "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg", "birthplace" : "Seri
a, BRN", "age" : 37, "name" : "Craig Adams", "birthday" : "April 26, 1977", "number" : 27 }
{ "_id" : ObjectId("5a834a847a38aac95a6e5aa5"), "position" : "Right Wing", "id" : 8475761, "weight" : 195
, "height" : "6' 2\"", "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8475761.jpg", "birthplace" : "Gard
ena, CA, USA", "age" : 23, "name" : "Beau Bennett", "birthday" : "November 27, 1991", "number" : 19 }
{ "_id" : ObjectId("5a834a847a38aac95a6e5aa6"), "position" : "Left Wing", "id" : 8471260, "weight" : 202,
 "height" : "6' 1\"", "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8471260.jpg", "birthplace" : "Meado
w Lake, SK, CAN", "age" : 29, "name" : "Blake Comeau", "birthday" : "February 18, 1986", "number" : 17 }
>
```

(8) Adding the same player again with an already existing ID throws an error.

```
shellHelper@src/mongo/shell/utils.js:703:15
@(shellhelp2):1:1
> show db.players.find()
2018-02-13T20:32:35.245+0000 E QUERY    [thread1] Error: don't know how to show [db.players.find()] :
shellHelper.show@src/mongo/shell/utils.js:950:11
shellHelper@src/mongo/shell/utils.js:703:15
@(shellhelp2):1:1
> db.getCollection('players').find({})
{ "_id" : ObjectId("5a83491c7a38aac95a6e5aa3"), "position" : "Right Wing", "id" : 8465166, "weight" : 200
, "height" : "6' 0\"", "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg", "birthplace" : "Seri
a, BRN", "age" : 37, "name" : "Craig Adams", "birthday" : "April 26, 1977", "number" : 27 }
{ "_id" : ObjectId("5a834a847a38aac95a6e5aa4"), "position" : "Right Wing", "id" : 8465166, "weight" : 200
, "height" : "6' 0\"", "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg", "birthplace" : "Seri
a, BRN", "age" : 37, "name" : "Craig Adams", "birthday" : "April 26, 1977", "number" : 27 }
{ "_id" : ObjectId("5a834a847a38aac95a6e5aa5"), "position" : "Right Wing", "id" : 8475761, "weight" : 195
, "height" : "6' 2\"", "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8475761.jpg", "birthplace" : "Gard
ena, CA, USA", "age" : 23, "name" : "Beau Bennett", "birthday" : "November 27, 1991", "number" : 19 }
{ "_id" : ObjectId("5a834a847a38aac95a6e5aa6"), "position" : "Left Wing", "id" : 8471260, "weight" : 202,
 "height" : "6' 1\"", "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8471260.jpg", "birthplace" : "Meado
w Lake, SK, CAN", "age" : 29, "name" : "Blake Comeau", "birthday" : "February 18, 1986", "number" : 17 }
> db.players.insert({"_id":ObjectId("5a83491c7a38aac95a6e5aa3"),"position":"Right Wing","id":8465166,"wei
ght":200,"height":"6' 0\"","imageUrl":"http://1.cdn.nhle.com/photos/mugs/8465166.jpg","birthplace":"Seria
, BRN","age":37,"name":"Craig Adams","birthday":"April 26, 1977","number":27})
WriteResult({
        "nInserted" : 0,
        "writeError" : {
                "code" : 11000,
                "errmsg" : "E11000 duplicate key error collection: hockey.players index: _id_ dup key: {
 : ObjectId('5a83491c7a38aac95a6e5aa3') }"
        }
})
>
```

(9) There are still 4 documents inside my collection - just as before.

(10) Pretty print info:

```
            "id" : 8475761,
            "weight" : 195,
            "height" : "6' 2\"",
            "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8475761.jpg",
            "birthplace" : "Gardena, CA, USA",
            "age" : 23,
            "name" : "Beau Bennett",
            "birthday" : "November 27, 1991",
            "number" : 19
}
{
            "_id" : ObjectId("5a834a847a38aac95a6e5aa6"),
            "position" : "Left Wing",
            "id" : 8471260,
            "weight" : 202,
            "height" : "6' 1\"",
            "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8471260.jpg",
            "birthplace" : "Meadow Lake, SK, CAN",
            "age" : 29,
            "name" : "Blake Comeau",
            "birthday" : "February 18, 1986",
            "number" : 17
}
> db.getCollection('players').find({"_id":ObjectId("5a834a847a38aac95a6e5aa4")}).pretty()
... ^C

> db.getCollection('players').find({5a834a847a38aac95a6e5aa4}).pretty()
2018-02-13T20:47:31.388+0000 E QUERY    [thread1] SyntaxError: identifier starts immediately after numeri
c literal @(shell):1:34
> db.getCollection('players').find({"_id":5a834a847a38aac95a6e5aa4}).pretty()
2018-02-13T20:47:42.503+0000 E QUERY    [thread1] SyntaxError: identifier starts immediately after numeri
c literal @(shell):1:40
> db.getCollection('players').find({"_id":"5a834a847a38aac95a6e5aa4"}).pretty()
> db.getCollection('players').find({_id:"5a834a847a38aac95a6e5aa4"}).pretty()
> db.players.find({_id:"5a834a847a38aac95a6e5aa4"}).pretty()
> db.players.find({"_id":"5a834a847a38aac95a6e5aa4"}).pretty()
> db.players.find({"name":"Blake Comeau"}).pretty()
{
            "_id" : ObjectId("5a834a847a38aac95a6e5aa6"),
            "position" : "Left Wing",
            "id" : 8471260,
            "weight" : 202,
            "height" : "6' 1\"",
            "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8471260.jpg",
            "birthplace" : "Meadow Lake, SK, CAN",
            "age" : 29,
            "name" : "Blake Comeau",
            "birthday" : "February 18, 1986",
            "number" : 17
}
>
```

```
            "weight" : 202,
            "height" : "6' 1\"",
            "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8471260.jpg",
            "birthplace" : "Meadow Lake, SK, CAN",
            "age" : 29,
            "name" : "Blake Comeau",
            "birthday" : "February 18, 1986",
            "number" : 17
}
> db.players.find({"position":"Left Wing"}).pretty()
{
            "_id" : ObjectId("5a834a847a38aac95a6e5aa6"),
            "position" : "Left Wing",
            "id" : 8471260,
            "weight" : 202,
            "height" : "6' 1\"",
            "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8471260.jpg",
            "birthplace" : "Meadow Lake, SK, CAN",
            "age" : 29,
            "name" : "Blake Comeau",
            "birthday" : "February 18, 1986",
            "number" : 17
}
> db.players.find({"name":"Craig Adams"}).pretty()
{
            "_id" : ObjectId("5a83401c7a38aac95a6e5aa3"),
            "position" : "Right Wing",
            "id" : 8465166,
            "weight" : 200,
            "height" : "6' 0\"",
            "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
            "birthplace" : "Seria, BRN",
            "age" : 37,
            "name" : "Craig Adams",
            "birthday" : "April 26, 1977",
            "number" : 27
}
{
            "_id" : ObjectId("5a834a847a38aac95a6e5aa4"),
            "position" : "Right Wing",
            "id" : 8465166,
            "weight" : 200,
            "height" : "6' 0\"",
            "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
            "birthplace" : "Seria, BRN",
            "age" : 37,
            "name" : "Craig Adams",
            "birthday" : "April 26, 1977",
            "number" : 27
}
>
```

```
w Lake, SK, CAN", "age" : 29, "name" : "Blake Comeau", "birthday" : "February 18, 1986", "number" : 17 }
> db.getCollection('players').find({}).pretty()
{
        "_id" : ObjectId("5a83491c7a38aac95a6e5aa3"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 27
}
{
        "_id" : ObjectId("5a834a847a38aac95a6e5aa4"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 27
}
{
        "_id" : ObjectId("5a834a847a38aac95a6e5aa5"),
        "position" : "Right Wing",
        "id" : 8475761,
        "weight" : 195,
        "height" : "6' 2\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8475761.jpg",
        "birthplace" : "Gardena, CA, USA",
        "age" : 23,
        "name" : "Beau Bennett",
        "birthday" : "November 27, 1991",
        "number" : 19
}
{
        "_id" : ObjectId("5a834a847a38aac95a6e5aa6"),
        "position" : "Left Wing",
        "id" : 8471260,
        "weight" : 202,
        "height" : "6' 1\"",
        "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8471260.jpg",
        "birthplace" : "Meadow Lake, SK, CAN",
        "age" : 29,
        "name" : "Blake Comeau",
```

(11) Remove a single *Craig Adams* instance

Remove all players

```
        "_id" : ObjectId("5a83491c7a38aac95a6e5aa3"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 27
}
{
        "_id" : ObjectId("5a834a847a38aac95a6e5aa4"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageurl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 27
}
> db.players.delete("_id" : ObjectId("5a834a847a38aac95a6e5aa6")
... ^C

> db.players.deleteOne({"_id" : ObjectId("5a834a847a38aac95a6e5aa6") })
{ "acknowledged" : true, "deletedCount" : 1 }
> db.players.deleteMany({"name":"Craig Adams"})
{ "acknowledged" : true, "deletedCount" : 2 }
> db.players.drop()
true
>
```

(12) Add all players again, change attributes

```
7
> db.players.updateOne({name:"Craig Adams"}, { $set:{"number":9}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.players.find({"name":"Craig Adams"}).pretty()
{
        "_id" : ObjectId("5a83529e7a38aac95a6e5aaa"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 9
}
> db.players.updateOne({name:"Craig Adams"}, { $set:{"from":"Ireland"}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.players.find({"name":"Craig Adams"}).pretty()
{
        "_id" : ObjectId("5a83529e7a38aac95a6e5aaa"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 9,
        "from" : "Ireland"
}
>
```

(13) Add new attributes

```
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 9,
        "from" : "Ireland",
        "Cities" : [
                "Chicago",
                "Chayenne"
        ]
}
> db.players.updateOne({name:"Craig Adams"}, { $set:{"Movies":["Casablanca", "A few dollars more"]}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.players.find({"name":"Craig Adams"}).pretty()
{
        "_id" : ObjectId("5a83529e7a38aac95a6e5aaa"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 9,
        "from" : "Ireland",
        "Cities" : [
                "Chicago",
                "Chayenne"
        ],
        "Movies" : [
                "Casablanca",
                "A few dollars more"
        ]
}
>
```

(14) Add more movies

```
                "Chayenne"
        ],
        "Movies" : [
                "Casablanca",
                "A few dollars more"
        ]
}
> db.players.updateOne({name:"Craig Adams"}, { $set:{"Movies":["Casablanca", "A few dollars more", "The M
altese Falcon"]}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.players.find({"name":"Craig Adams"}).pretty()
{
        "_id" : ObjectId("5a83529e7a38aac95a6e5aaa"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 9,
        "from" : "Ireland",
        "Cities" : [
                "Chicago",
                "Chayenne"
        ],
        "Movies" : [
                "Casablanca",
                "A few dollars more",
                "The Maltese Falcon"
        ]
}
>
```

9

(15) Remove image

```
                "Chayenne"
        ],
        "Movies" : [
                "Casablanca",
                "A few dollars more",
                "The Maltese Falcon"
        ]
}
> db.players.updateOne({name:"Craig Adams"}, { $set:{"imageUrl":""}})
{ "acknowledged" : true, "matchedCount" : 1, "modifiedCount" : 1 }
> db.players.find({"name":"Craig Adams"}).pretty()
{
        "_id" : ObjectId("5a83529e7a38aac95a6e5aaa"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthday" : "April 26, 1977",
        "number" : 9,
        "from" : "Ireland",
        "Cities" : [
                "Chicago",
                "Chayenne"
        ],
        "Movies" : [
                "Casablanca",
                "A few dollars more",
                "The Maltese Falcon"
        ]
}
>
```

(16) Import all players from JSON file, find all goalies

```
Lab 2 : dominic ● — mongoimport —db hockey —file ~/Documents/CIT/nosql-databases/Lab\ 2/players.json
2018-02-20T22:15:02.652+0000    no collection specified
2018-02-20T22:15:02.652+0000    using filename 'players' as collection
2018-02-20T22:15:02.673+0000    connected to: localhost
2018-02-20T22:15:02.675+0000    Failed: error processing document #1: invalid character '{' looking for b
eginning of object key string
2018-02-20T22:15:02.676+0000    imported 0 documents
Lab 2 : dominic ● — mongoimport —db hockey —file ~/Documents/CIT/nosql-databases/Lab\ 2/players.json
2018-02-20T22:16:36.637+0000    no collection specified
2018-02-20T22:16:36.637+0000    using filename 'players' as collection
2018-02-20T22:16:36.662+0000    connected to: localhost
2018-02-20T22:16:36.665+0000    Failed: error unmarshaling bytes on document #0: JSON decoder out of sync
 - data changing underfoot?
2018-02-20T22:16:36.665+0000    imported 0 documents
Lab 2 : dominic ● — mongoimport —db hockey —file ~/Documents/CIT/nosql-databases/Lab\ 2/players.json
2018-02-20T22:17:15.987+0000    no collection specified
2018-02-20T22:17:15.987+0000    using filename 'players' as collection
2018-02-20T22:17:16.003+0000    connected to: localhost
2018-02-20T22:17:16.041+0000    imported 1 document
Lab 2 : dominic ● — db.players.drop
bash: db.players.drop: command not found
Lab 2 : dominic ● — mongoimport —db hockey —file ~/Documents/CIT/nosql-databases/Lab\ 2/players.json —
jsonArray
2018-02-20T22:33:00.534+0000    no collection specified
2018-02-20T22:33:00.535+0000    using filename 'players' as collection
2018-02-20T22:33:00.563+0000    connected to: localhost
2018-02-20T22:33:00.631+0000    imported 25 documents
Lab 2 : dominic ● — ▊
```

```
function () {
    this._prettyShell = true;
    return this;
}
> db.players.find({position:"Goalie"}).pretty()
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592d0"),
        "position" : "Goalie",
        "id" : 8470594,
        "weight" : 180,
        "height" : "6' 2\"",
        "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8470594.jpg",
        "birthplace" : "Sorel, QC, CAN",
        "age" : 30,
        "name" : "Marc-Andre Fleury",
        "birthdate" : "November 28, 1984",
        "number" : 29
}
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592d2"),
        "position" : "Goalie",
        "id" : 8471306,
        "weight" : 220,
        "height" : "6' 1\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8471306.jpg",
        "birthplace" : "Fussen, DEU",
        "age" : 29,
        "name" : "Thomas Greiss",
        "birthdate" : "January 29, 1986",
        "number" : 1
}
>
```

(17) Find all defenders age 21

```
        "name" : "Thomas Greiss",
        "birthdate" : "January 29, 1986",
        "number" : 1
}
> db.players.find({position:"Goalie"}, {age:21}).pretty()
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592d0"), "age" : 30 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592d2"), "age" : 29 }
> db.players.find({position:"Defenseman"}, {age:21}).pretty()
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592c7"), "age" : 27 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592c8"), "age" : 32 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592c9"), "age" : 26 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592cb"), "age" : 28 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592cc"), "age" : 27 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592cd"), "age" : 34 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592ce"), "age" : 21 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592cf"), "age" : 36 }
{ "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592d1"), "age" : 31 }
> db.players.find({position:"Defenseman"} && { age:21 }).pretty()
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592ce"),
        "position" : "Defenseman",
        "id" : 8476884,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8476884.jpg",
        "birthplace" : "Estevan, SK, CAN",
        "age" : 21,
        "name" : "Derrick Pouliot",
        "birthdate" : "January 16, 1994",
        "number" : 51
}
>
```

11

(18) Wing players - got 8 matches

```
2018-02-20T23:05:43.422+0000 E QUERY    [thread1] SyntaxError: missing ) after argument list @(shell):1:2
1
> db.players.find({"$or": [{ position:"Left Wing" }, { position:"Right Wing" }]}).pretty()
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592bb"),
        "position" : "Right Wing",
        "id" : 8475761,
        "weight" : 195,
        "height" : "6' 2\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8475761.jpg",
        "birthplace" : "Gardena, CA, USA",
        "age" : 23,
        "name" : "Beau Bennett",
        "birthdate" : "November 27, 1991",
        "number" : 19
}
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592bc"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthdate" : "April 26, 1977",
        "number" : 27
}
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592bd"),
        "position" : "Left Wing",
        "id" : 8471260,
        "weight" : 202,
        "height" : "6' 1\"",
        "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8471260.jpg",
        "birthplace" : "Meadow Lake, SK, CAN",
        "age" : 29,
        "name" : "Blake Comeau",
        "birthdate" : "February 18, 1986",
        "number" : 17
}
{
```

(19) Find all player in their 30

```
    return this;
}
> db.players.find({ $and: [ { age: { $gte: 30 }}, { age: { $lt: 40 } } ]}).pretty()
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592bc"),
        "position" : "Right Wing",
        "id" : 8465166,
        "weight" : 200,
        "height" : "6' 0\"",
        "imageUrl" : "http://1.cdn.nhle.com/photos/mugs/8465166.jpg",
        "birthplace" : "Seria, BRN",
        "age" : 37,
        "name" : "Craig Adams",
        "birthdate" : "April 26, 1977",
        "number" : 27
}
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592bf"),
        "position" : "Right Wing",
        "id" : 8466393,
        "weight" : 205,
        "height" : "6' 1\"",
        "imageUrl" : "http://2.cdn.nhle.com/photos/mugs/8466393.jpg",
        "birthplace" : "Laval, QC, CAN",
        "age" : 35,
        "name" : "Pascal Dupuis",
        "birthdate" : "April 07, 1979",
        "number" : 9
}
{
        "_id" : ObjectId("5a8ca21c8cdfc1e8d4f592c1"),
        "position" : "Left Wing",
        "id" : 8470543,
        "weight" : 195,
        "height" : "6' 0\"",
        "imageUrl" : "http://3.cdn.nhle.com/photos/mugs/8470543.jpg",
        "birthplace" : "Regina, SK, CAN",
        "age" : 35,
        "name" : "Chris Kunitz",
```