EXERCISE 1

```
show dbs
```

"John Travolta",

```
admin
            0.000GB
config
           0.000GB
          0.000GB
local
mongo_practice 0.000GB
> use mongo_practice
switched to dbmongo_practice
>db.movies.find.pretty()
uncaught\ exception: Type Error:\ db. movies. find. pretty\ is\ not\ a\ function:
@(shell):1:1
>db.movies.find()
{ "_id" : ObjectId("6104fa96e9faf8b7ac9daae4"), "title" : "fight club", "writer" : "Chuck Palahniuko", "year" : 1999, "actors" : [ "Brad Pitt",
"Edward Norton"]}
{ "_id" : ObjectId("6104fb13e9faf8b7ac9daae5"), "title" : "pulp fiction", "writer" : "Quentin Tarantino", "year" : 1994, "actors" : [ "John
Travolta", "Uma Thurman" ] }
{ "_id" : ObjectId("6104fb7ae9faf8b7ac9daae6"), "title" : "inglorious basterds", "writer" : "Quentin Tarantino", "year" : 2009, "actors" : [
"Brad Pitt", "Diane Kruger", "Eli Roth" ] }
{ "_id" : ObjectId("6104fc63e9faf8b7ac9daae7"), "title" : "The Hobbit:An unexpected Journey", "writer" : "J.R.R. Tolkein", "year" : 2012,
"franchise" : "The Hobbit" }
>db.movies.find().pretty()
{
    "_id": ObjectId("6104fa96e9faf8b7ac9daae4"),
    "title": "fight club",
    "writer": "Chuck Palahniuko",
    "year": 1999,
    "actors" : [
         "Brad Pitt",
         "Edward Norton"
    1
    "_id" :ObjectId("6104fb13e9faf8b7ac9daae5"),
    "title": "pulp fiction",
    "writer" : "Quentin Tarantino",
    "year": 1994,
    "actors" : [
```

```
"Uma Thurman"
    1
}
{
    "_id":ObjectId("6104fb7ae9faf8b7ac9daae6"),
    "title": "inglorious basterds",
    "writer": "Quentin Tarantino",
    "year" : 2009,
    "actors" : [
        "Brad Pitt",
        "Diane Kruger",
        "Eli Roth"
    ]
}
    "_id": ObjectId("6104fc63e9faf8b7ac9daae7"),
    "title": "The Hobbit:An unexpected Journey",
    "writer": "J.R.R. Tolkein",
    "year" : 2012,
    "franchise" : "The Hobbit"
}
>db.movies.insert({title:"TheHobbit:The Desolation of Smaug", writer:"J.R.R. Tolkein", year:2013, franchise:"The Hobbit"})
WriteResult({ "nInserted" : 1 })
>db.movies.insert({title:"TheHobbit:The Battle of five Armies", writer:"J.R.R. Tolkein", year:2012, franchise:"The Hobbit", synopsis:"Biblo
and company are forced to engage in a war against an array of combatants and keep the lonely Mountain from falling into the hands of a
rising darkness"})
WriteResult({ "nInserted" : 1 })
>db.movies.insert({title:"Pee Wee Herman's Big Adventure"})
WriteResult({ "nInserted": 1 })
>db.movies.insert({title:"Avatar"})
WriteResult({ "nInserted" : 1 })
GET ALL DOCUMENT'S
db.movies.find().pretty()
    "_id" :ObjectId("6104fa96e9faf8b7ac9daae4"),
    "title": "fight club",
    "writer": "Chuck Palahniuko",
     "year" : 1999,
```

```
"actors" : [
        "Brad Pitt",
        "Edward Norton"
    ]
{
    "_id" :ObjectId("6104fb13e9faf8b7ac9daae5"),
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    "writer": "Quentin Tarantino",
    "year" : 1994,
    "actors" : [
        "John Travolta",
        "Uma Thurman"
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    "title": "inglorious basterds",
    "writer" : "Quentin Tarantino",
    "year" : 2009,
    "actors" : [
        "Brad Pitt",
        "Diane Kruger",
        "Eli Roth"
}
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    "writer": "J.R.R. Tolkein",
    "year" : 2012,
    "franchise" : "The Hobbit"
}
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    "title": "The Hobbit:The Desolation of Smaug",
    "writer": "J.R.R. Tolkein",
    "year" : 2013,
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```
"franchise" : "The Hobbit"
}
    "_id" :ObjectId("610549df20ea11fa5a5dd068"),
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    "writer": "J.R.R. Tolkein",
    "year": 2012,
    "franchise" : "The Hobbit",
    "synopsis": "Biblo and company are forced to engage in a war against an array of combatants and keep the lonely Mountain from
falling into the hands of a rising darkness"
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    "_id":ObjectId("61054a1320ea11fa5a5dd069"),
    "title" : "Pee Wee Herman's Big Adventure"
}
{ "_id" : ObjectId("61054a1f20ea11fa5a5dd06a"), "title" : "Avatar" }
db.movies.find({writer:"Quentin Tarantino"}).pretty()
    "_id":ObjectId("6104fb13e9faf8b7ac9daae5"),
    "title": "pulp fiction",
    "writer" : "Quentin Tarantino",
    "year" : 1994,
    "actors" : [
        "John Travolta",
        "Uma Thurman"
    ]
}
    "_id":ObjectId("6104fb7ae9faf8b7ac9daae6"),
    "title": "inglorious basterds",
    "writer": "Quentin Tarantino",
    "year" : 2009,
    "actors" : [
        "Brad Pitt",
        "Diane Kruger",
         "Eli Roth"
```

```
db.movies.find({actors:{$in:["Brad Pitt"]}}).pretty()
{
    "_id" :ObjectId("6104fa96e9faf8b7ac9daae4"),
    "title": "fight club",
    "writer" : "Chuck Palahniuko",
    "year" : 1999,
    "actors" : [
         "Brad Pitt",
         "Edward Norton"
    ]
    "_id":ObjectId("6104fb7ae9faf8b7ac9daae6"),
    "title": "inglorious basterds",
    "writer" : "Quentin Tarantino",
    "year" : 2009,
    "actors" : [
         "Brad Pitt",
         "Diane Kruger",
         "Eli Roth"
    1
}
db.movies.find({franchise:"The Hobbit"}).pretty()
{
    "_id": ObjectId("6104fc63e9faf8b7ac9daae7"),
    "title": "The Hobbit:An unexpected Journey",
    "writer" : "J.R.R. Tolkein",
    "year" : 2012,
    "franchise" : "The Hobbit"
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    "title": "The Hobbit:The Desolation of Smaug",
    "writer" : "J.R.R. Tolkein",
    "year" : 2013,
    "franchise" : "The Hobbit"
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```
}
    "_id" :ObjectId("610549df20ea11fa5a5dd068"),
    "title": "The Hobbit:The Battle of five Armies",
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    "synopsis": "Biblo and company are forced to engage in a war against an array of combatants and keep the lonely Mountain from
falling into the hands of a rising darkness"
db.movies.find (\{year: \{\$lt: 2000\}\}).pretty ()
{
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         "Edward Norton"
    ]
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    "writer": "Quentin Tarantino",
    "year": 1994,
    "actors" : [
         "John Travolta",
         "Uma Thurman"
}
db.movies.find({$or:[{year:{$lt:2000}},{year:{$gt:2010}}]}).pretty()
{
    "_id":ObjectId("6104fa96e9faf8b7ac9daae4"),
    "title": "fight club",
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    "year" : 1999,
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"actors" : [
        "Brad Pitt",
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{
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    "year" : 2012,
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    "writer" : "J.R.R. Tolkein",
    "year" : 2013,
    "franchise" : "The Hobbit"
}
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    "writer": "J.R.R. Tolkein",
    "year" : 2012,
    "franchise": "The Hobbit",
    "synopsis": "Biblo and company are forced to engage in a war against an array of combatants and keep the lonely Mountain from
falling into the hands of a rising darkness"
}
```

db.movies.update{{title:"TheHobbit:An Unexpected Journey"],{\$set:{synopsis:"A reluctant hobbit Biblo Baggins sets out to the lonely Mountain with a sprinted group of dwarves to reclaim their mountain home- and the gold within it -from the dragon smaug"}})

WriteResult({ "nMatched" : 0, "nUpserted" : 0, "nModified" : 0 }})

>db.movies.update{{title:"TheHobbit:The Desolation of Smaug"},{\$set:{synopsis:"The dwarves along with biblobaggins and gandalf the grey, continue their quest to reclaim Erebor their homesland from SmaugBiblo Baggins is in possession of a mysterious and magical ring"}})

WriteResult{{ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 }}

db.movies.update{{title:"pulp fiction"},{\$set:{actors:["Samuel L Jackson"]}})

WriteResult({ "nMatched" : 1, "nUpserted" : 0, "nModified" : 1 }}

db.movies.find().pretty()

{

 "__id" :ObjectId("6104fa96e9faf8b7ac9daae4"),

 "title" : "fight club",

 "writer" : "Chuck Palahniuko",

 "year" : 1999,

 "actors" : [

```
"Brad Pitt",
         "Edward Norton"
}
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    "year": 1994,
    "actors" : [
         "Samuel L Jackson"
    1
}
    "_id":ObjectId("6104fb7ae9faf8b7ac9daae6"),
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    "year" : 2009,
    "actors" : [
         "Brad Pitt",
         "Diane Kruger",
         "Eli Roth"
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```
}
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           "synopsis": "A reluctant hobbit Biblo Baggins sets out to the lonely Mountain with a sprinted group of dwarves to reclaim their
mountain home- and the gold within it -from the dragon smaug"
}
{
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           "synopsis": "The dwarves along with biblobaggins and gandalf the grey, continue their quest to reclaim Erebor their homesland from the continue their quest to reclaim Erebor their homesland from the continue their quest to reclaim Erebor their homesland from the continue their quest to reclaim Erebor their homesland from the continue their quest to reclaim Erebor their homesland from the continue their quest to reclaim Erebor their homesland from the continue the con
SmaugBiblo Baggins is in possession of a mysterious and magical ring"
}
           "_id":ObjectId("610549df20ea11fa5a5dd068"),
           "title": "The Hobbit:The Battle of five Armies",
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            "year" : 2012,
           "franchise": "The Hobbit",
           "synopsis": "Biblo and company are forced to engage in a war against an array of combatants and keep the lonely Mountain from
falling into the hands of a rising darkness"
}
           "_id":ObjectId("61054a1320ea11fa5a5dd069"),
           "title": "Pee Wee Herman's Big Adventure"
}
{ "_id" : ObjectId("61054a1f20ea11fa5a5dd06a"), "title" : "Avatar" }
(i-search)`':
```

```
db.movies.find({synopsis:{$regex:"Biblo"}}).pretty()
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"synopsis" : "A reluctant hobbit Biblo Baggins sets out to the lonely Mountain with a sprinted group of dwarves to reclaim their mountain home- and the gold within it -from the dragon smaug"
              "_id" : ObjectId("6105493820ea11fa5a5dd067"),
"title" : "The Hobbit:The Desolation of Smaug",
"writer" : "J.R.R. Tolkein",
                witer : J.N.N. JOKELY,
"year" : 2013,
"franchise": "The Hobbit",
"synopsis" : "The dwarves along with biblo baggins and gandalf the grey, continue their quest to reclaim Erebor their homesland from SmaugBiblo Baggins is in possession of a mysterious and magical ring"
              "_id": ObjectId("610549df20ea11fa5a5dd068"),
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"writer": "J.R.R. Tolkein",
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db.movies.find({synopsis:{$regex:"gandalf"}}).pretty()
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"synopsis": "The dwarves along with biblo baggins and gandalf the grey, continue their quest to reclaim Erebor their homesland from SmaugBiblo Baggins is in possession of a mysterious and magical ring"
               vies.find({$and:[{synopsis:{$regex:"Biblo"}},{synopsis:{$not:/gandalf/}}]}).pretty()
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tle": "The Hobbit:The Battle of five Armies",
tlem': "J.R.R. Tolkein',
im': J.R.R. Tolkein',
im': 2012,
inchise": "The Hobbit",
inchise": "The Hobbit",
inchise": "The Hobbit",
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"writer" : "J.R.R. Tolkein",
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2013,
se": "The Hobbit",
se": "The Hobbit",
s": "The dwarves along with biblo baggins and gandalf the grey, continue their quest to reclaim Erebor their homesland from SmaugBiblo Baggins is in possession of a mysterious and magical rir
s": "The dwarves along with biblo baggins and gandalf the grey, continue their quest to reclaim Erebor their homesland from SmaugBiblo Baggins is in possession of a mysterious and magical rir
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"title" : "The Hobbit:An unexpected Journey",
"writer" : "J.R.R. Tolkein",
                     writer": "J.R.R. Tolkein",
year": 2012,
franchise": "The Hobbit",
synopsis": "A reluctant hobbit Biblo Baggins sets out to the lonely Mountain with a sprinted group of dw
db.movies.remove({title: "Pee Wee Herman's Big Adventure"})
WriteResult({ "nRemoved" : 1 })
>db.movies.find().pretty()
{
              "_id": ObjectId("6104fa96e9faf8b7ac9daae4"),
              "title": "fight club",
              "writer": "Chuck Palahniuko",
               "year" : 1999,
               "actors":[
                             "Brad Pitt",
```

```
"Edward Norton"
    1
}
    "_id":ObjectId("6104fb13e9faf8b7ac9daae5"),
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    "year" : 1994,
    "actors" : [
        "Samuel L Jackson"
    ]
}
    "_id":ObjectId("6104fb7ae9faf8b7ac9daae6"),
    "title": "inglorious basterds",
    "writer" : "Quentin Tarantino",
    "year" : 2009,
    "actors" : [
        "Brad Pitt",
        "Diane Kruger",
        "Eli Roth"
    ]
}
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mountain home- and the gold within it -from the dragon smaug"
}
    "_id" :ObjectId("6105493820ea11fa5a5dd067"),
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    "year" : 2013,
    "franchise": "The Hobbit",
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```
"synopsis": "The dwarves along with biblobaggins and gandalf the grey, continue their quest to reclaim Erebor their homesland from
SmaugBiblo Baggins is in possession of a mysterious and magical ring"
{
    "_id": ObjectId("610549df20ea11fa5a5dd068"),
    "title": "The Hobbit:The Battle of five Armies",
    "writer": "J.R.R. Tolkein",
    "year": 2012,
    "franchise": "The Hobbit",
    "synopsis": "Biblo and company are forced to engage in a war against an array of combatants and keep the lonely Mountain from
falling into the hands of a rising darkness"
{ "_id" : ObjectId("61054a1f20ea11fa5a5dd06a"), "title" : "Avatar" }
db.movies.remove({title:"Avatar"})
WriteResult({ "nRemoved": 1 })
>db.movies.find().pretty()
   db.users.insert( {username: "GoodGuyGreg", first_name:"Good Guy", last_name:"Greg"})
 IriteResult({ "nInserted" : 1 })
b db.users.insert( {username: "ScumbagSteve",full_name:{ first:"Scumbag", last:"Steve"}})
 WriteResult({ "nInserted" : 1 })
```

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"_id" : ObjectId("6105a7a2cb8f46e2f3f99f05"),
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"title": "Passes out at party",
"body": "Wakes up early and cleans house"
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         "username" : "GoodGuyGreg",
"title" : "Steals your identity",
"body" : "Raises your credit score"
         "username" : "GoodGuyGreg",
"title" : "Reports a bug in your code",
"body" : "Sendsd you a Pull Request"
         "_id" : ObjectId("6105a824cb8f46e2f3f99f08"),
        "username": "ScumbagSteve",
"title": "Borrows something",
"body": "Sells it"
        "_id" : ObjectId("6105a86acb8f46e2f3f99f09"),
"username" : "ScumbagSteve",
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"title": "Forks your repo on github",

"body": "Sets to private"

db.comments.find({post:db.posts.findOne({title:"Reports a bug in your code"})})
 db.posts.aggregate([{
.. $match:{title:"Reports a bug in your code"}},
.. {$lookup:{from:'comments', localField:'_id', foreignField:'post', as:'comments'}}]).pretty()
             "_id" : ObjectId("6105a7facb8f46e2f3f99f07"),
            "username" : "GoodGuyGreg",
"title" : "Reports a bug in your code",
"body" : "Sendsd you a Pull Request",
             "comments" : [
                                        "_id" : ObjectId("6105b050cb8f46e2f3f99f14"),
                                        "username" : "ScumbagSteve",
"comment" : "Denied your PR cause I found a hack",
                                         "post" : ObjectId("6105a7facb8f46e2f3f99f07")
```

```
iteResult({ "nInserted" : 1 })
db.comments.find().pretty()
                      "_id" : ObjectId("6105afd1cb8f46e2f3f99f10"),
                     "username" : "GoodGuyGreg",
"comment" : "Hope you get a good deal!",
                      "post" : ObjectId("6105a824cb8f46e2f3f99f08")
                      "_id" : ObjectId("6105affdcb8f46e2f3f99f11"),
                     "username": "GoodGuyGreg",
"comment": "whats mine is yours",
                      "post" : ObjectId("6105a64acb8f46e2f3f99f09")
                      "_id" : ObjectId("6105b018cb8f46e2f3f99f12"),
                     "username" : "GoodGuyGreg",
"comment" : "dont violate the license agreement!",
                      "post" : ObjectId("6105a88dcb8f46e2f3f99f0a")
                      "_id" : ObjectId("6105b037cb8f46e2f3f99f13"),
                     "username" : "ScumbagSteve",
"comment" : "It still isnt clear",
                      "post" : ObjectId("6105a7a2cb8f46e2f3f99f05")
                      "_id" : ObjectId("6105b050cb8f46e2f3f99f14"),
                     "username" : "ScumbagSteve",
"comment" : "Denied your PR cause I found a hack",
                      "post" : ObjectId("6105a7facb8f46e2f3f99f07"
   posts.find((username:"GoodGuyGreg"))
id": ObjectId("6105a7a2cb8f4Ge2f3f99f06"), "username": "GoodGuyGreg", "title": "Passes out at party", "body": "Wakes up early and cleans house")
id": ObjectId("6105a7d1cb8f4Ge2f3f99f06"), "username": "GoodGuyGreg", "title": "Steals your identity", "body": "Raises your credit score" }
id": ObjectId("6105a7d1cb8f4Ge2f3f99f06"), "username": "GoodGuyGreg", "title": "Reports a bug in your code", "body": "Sendsd you a Pull Request" }
.posts.find((username: "ScumbagSteve"))
id": ObjectId("6105a82dcb8f4Ge2f3f99f08"), "username": "ScumbagSteve", "title": "Borrows something", "body": "Sells it" }
id": ObjectId("6105a82dcb8f4Ge2f3f99f08"), "username": "ScumbagSteve", "title": "Borrows everything', "body": "The end" }
id": ObjectId("6105a82dcb8f4Ge2f3f99f08"), "username": "ScumbagSteve", "title": "Forks your repo on github", "body": "Sets to private" }
.collections.find((username:"GoodGuyGreg"))
.comments.find((username:"GoodGuyGreg"))
id": ObjectId("6105af6de2f3f99f10"), "username": "GoodGuyGreg", "comment": "Hope you get a good deall", "post": ObjectId("6105a82dcb8f4Ge2f3f99f08") }
id": ObjectId("6105af6de2f3f99f11"), "username": "GoodGuyGreg", "comment": "whats mine is yours", "post": ObjectId("6105a6dcb8f4Ge2f3f99f09") }
id": ObjectId("6105af6de2f3f99f11"), "username": "GoodGuyGreg", "comment": "dont violate the license agreement!", "post": ObjectId("6105a8dcb8f4Ge2f3f99f09") }
.comments.find((username: "ScumbagSteve"))
                                                                                  ent" : "It still isnt clear", "post" : ObjectId("6105a7a2cb8f46e2f3f99f05") }
unt" : "Denied your PR cause I found a hack", "post" : ObjectId("6105a7facb8f46e2f3f99f07") }
db.posts.aggregate([
$match: { title: 'Reports a bug in your code' }
},
$lookup: {
from: 'comments'.
localField: '_id',
foreignField: 'post',
as: 'comments'
}
]).pretty();
```

EXERCISE 2

ATLANTA POPULATION

1.

```
db.zipcodes.find({$and:[{city:"ATLANTA"},{state:"GA"}]}).pretty()
> show dbs
admin
                  0.000GB
config
                  0.000GB
                  0.000GB
local
mongo_practice 0.000GB
                  0.002GB
population
> use population
switched to db population
 ob.zipcodes.find({$and:[{city:"ATLANTA"},{state:"GA"}]}).pretty()
         "_id" : "30303",
         "city" : "ATLANTA",
"loc" : [
                   -84.388846,
                  33.752504
         ],
"pop" : 1845,
         "state" : "GA"
         "_id" : "30305",
"city" : "ATLANTA",
"loc" : [
                   -84.385145,
                  33.831963
         "_id" : "30306",
"city" : "ATLANTA",
         "loc" : [
                   -84.351418,
                   33.786027
         ],
"pop" : 20081,
"state" : "GA"
         "_id" : "30307",
"city" : "ATLANTA",
"loc" : [
                   -84.335957,
                  33.769138
```

2.

```
db.zipcodes.aggregate([{$match:{city:"ATLANTA", state:"GA"}}])
"_id" : "30303", "city" : "ATLANTA", "loc" : [ -84.388846, 33.7
"_id" : "30305", "city" : "ATLANTA", "loc" : [ -84.385145, 33.8
"_id" : "30306", "city" : "ATLANTA", "loc" : [ -84.355147, 33.8
" id" : "30307", "city" : "ATLANTA", "loc" : [ -84.35557, 33.8
                                                                                                                                            1845, "state" :
19122, "state"
                                                                                   -84.388846, 33.752504 ],
                                                                                                                               "pop"
                                                                                                                                                                           "GA"
                                                                                   -84.385145, 33.831963
                                                                                                                               "pop"
                                                                                                                                                         "state"
                                                                                                                               "pop"
                                                                                                                                            20081,
                                                                                                                                                                           "GA"
                                                                                   -84.351418, 33.786027
                                                                                                                                            16330, "state"
             "30307",
"30308",
                                             "ATLANTA",
"ATLANTA",
"ATLANTA",
                             "city"
                                                                 "loc"
                                                                                                                                                         "state"
   id"
                                                                                   -84.335957, 33.769138
                                                                                                                               "pop"
                                                                                                                                                                           "GA"
                                                                "loc"
                                                                                  -84.375744, 33.771839
                                                                                                                                "pop"
                             "city"
   id"
             "30309",
"30312",
                             "city"
"city"
                                                                "loc"
                                                                                  -84.388338, 33.798407
                                                                                                                                                         "state"
                                                                                                                               "pop"
                                                                                                                                            14766,
                                                                                                                                                                           "GA"
   id"
                                                                "loc"
                                             "ATLANTA",
                                                                                                                               "pop"
                                                                                                                                                         "state"
   id"
                                                                                                                                                                           "GA"
                                            "ATLANTA", "loc"
                                                                                   -84.378125, 33.746749
                                                                                                                                            17683,
             "30310",
"30311",
                             "city"
                                                                                                                               "pop"
                                                                                                                                            34017,
                                                                                                                                                         "state"
                                                                                                                                                                           "GA"
   id"
                                                                                   -84.423173, 33.727849
                                                                                                                                        : 3401,
: 34880, "state" : "GA" }
8038, "state" : "GA
41061, "state" : "GA
                             "city"
"city"
"city"
"city"
"city"
"city"
                                                                                                                         ], "pop" : "pop" : "
   id"
                                                                                  -84.470219, 33.722957
            "30311",
"30313",
"30315",
"30314",
"30316",
"30318",
"30324",
"30319"
                                                                                                                                                                           "GA"
                                                                                  -84.39352, 33.76825 ],
-84.380771, 33.705062
  _id"
   _id"
                                                                                                                                            26649, "state"
16395, "state"
                                                                                  -84.425546, 33.756103 ],
-84.31685, 33.749788 ],
-84.333913, 33.721686 ],
                                                                                                                                                                          "GA"
   _id"
                                                                                                                             "pop"
                                                                                                                                           16395, '
34668,
                                                                                                                               "pop"
                                                                                                                                                        "state"
   id"
                                                                                   -84.333913, 33.721686
                             "city"
"city"
                                             "ATLANTA",
                                                                "loc"
                                                                                                                               "pop"
                                                                                                                                                         "state"
                                                                                                                                            53894,
                                                                                   -84.445432, 33.786454
   id"
                                                                                                                                                                           "GA"
                                                                "loc"
                                                                                                                                                        "state"
                                                                                                                                            15044,
                                                                                   -84.354867, 33.820609
   id"
                                                                                                                                            150-
32138, "sta-
25 "state"
                                             "ATLANTA",
             "30319",
"30326",
   id"
                             "city"
                                                                                   -84.335091, 33.868728
                                                                                                                               "pop"
                                                                                                                                                        "state"
                                                                                                                                                                           "GA"
                                             "ATLANTA", "loc"
"ATLANTA", "loc"
                                                                "loc"
                                                                                                                               "pop"
                             "city"
   id"
                                                                                   -84.358232, 33.848168
             "30327",
"30330",
                                                                                                                                      " : 18467, "state" : "
: 643, "state" : "GA"
                                                                                  -84.419966, 33.862723 ], "pop"
-84.434735, 33.70645 ], "pop"
                             "city"
                                                                                                                                                                          "GA"
   id"
                                              "ATLANTA",
                             "city"
                                                                "loc"
                                                                                  -84.434735, 33.70645 ],
   id"
     "it" for more
```

3.

```
> db.students.aggregate([{$match:{city:"ATLANTA"}},{$count:"Total number of zipcodes"}])
> db.zipcodes.aggregate([{$match:{city:"ATLANTA"}},{$count:"Total number of zipcodes"}])
{ "Total number of zipcodes" : 41 }
```

4.

```
o.zipcodes.aggregate([{$sort:{pop:-1}}])
_id" : "60623", "city" : "CHICAGO", "loc" :
_id" : "11226", "city" : "BROOKLYN", "loc" :
                                                                                     sort:{pop:-1}}])
"CHICAGO", "loc": [ -87.7157, 41.849015 ], "pop": 112047, "state": "IL" }
"BROOKLYN", "loc": [ -73.956985, 40.646694 ], "pop": 111396, "state": "NY" }
"NEW YORK", "loc": [ -73.958805, 40.768476 ], "pop": 106564, "state": "NY" }
"NEW YORK", "loc": [ -73.968312, 40.797466 ], "pop": 106027, "state": "NY" }
"BELL GARDENS", "loc": [ -118.17205, 33.969177 ], "pop": 99568, "state": "CA" }
"CHICAGO", "loc": [ -87.556012, 41.725743 ], "pop": 98612, "state": "IL" }
"LOS ANGELES", "loc": [ -118.258189, 34.007856 ], "pop": 96074, "state": "CA" }
"CHICAGO", "loc": [ -87.704322, 41.920903 ], "pop": 95971, "state": "IL" }
"CHICAGO", "loc": [ -87.624277, 41.693443 ], "pop": 94317, "state": "IL" }
"NORMAILY" "loc": [ -118.881767, 33.98664 ], "pop": 94318, "state": "CA" }
                     "10021",
"10025",
"90201",
                                                      "city"
id"
                                                       "city"
id"
                                                      "city"
_id"
                     "60617",
"90011",
                                                       "city"
id"
                                                       "city"
id"
                      "60647",
                                                                                      "CHICAGO", "loc"
"CHICAGO", "loc"
"NORWALK", "loc"
                                                       "city"
id"
                      "60628",
                                                      "city"
                                                                                                                                                                  -87.624277, 41.693443
-118.081767, 33.90564
id"
                      "90650",
                                                       "city"
                                                                                                                                                                                                                                                            "pop"
                                                                                                                                                                                                                                                                                                                 "state"
                                                                                                                                                                                                                                                                                                                                                     "CA"
id"
                                                                                                                                                                                                                                                                                        94188,
                                                                                      "CHICAGO", "loc"
"CHICAGO", "loc"
"CHICAGO", "loc"
"CHICAGO", "loc"
                     "60620",
"60629",
                                                      "city"
                                                                                                                                                                  -87.654251, 41.741119
-87.706936, 41.778149
                                                                                                                                                                                                                                                            "pop"
                                                                                                                                                                                                                                                                                        92005,
                                                                                                                                                                                                                                                                                                                 "state"
id"
                                                       "city"
                                                                                                                                                                                                                                                            "pop"
                                                                                                                                                                                                                                                                                                                 "state"
                                                                                                                                                                                                                                                                                                                                                     "IL"
id"
                                                                                                                                                                                                                                                                                        91814,
                                                                                     "CHICAGO", "loc" : [ -87.706936, 41.778149 ], "pop" : 91814, "state" : "CHICAGO", "loc" : [ -87.653279, 41.809721 ], "pop" : 89762, "state" : "CHICAGO", "loc" : [ -87.704214, 41.946401 ], "pop" : 88377, "state" : "JACKSON HEIGHTS", "loc" : [ -73.878551, 40.740388 ], "pop" : 88241, "ARLETA", "loc" : [ -118.420692, 34.258081 ], "pop" : 87079, "state" "BROOKLYN", "loc" : [ -73.914483, 40.662474 ], "pop" : 87079, "state" "SOUTH GATE", "loc" : [ -118.201349, 33.94617 ], "pop" : 87026, "state" "RIDGEWOOD", "loc" : [ -73.896122, 40.703613 ], "pop" : 85732, "state" "BRONX", "loc" : [ -73.871242, 40.873671 ], "pop" : 85710, "state" : '
                                                      "city"
"city"
                      "60609",
id"
                      "60618",
id"
                                                      "city"
                     "11373",
"91331",
                                                                                                                                                                                                                                                                                                                  88241, "state"
"state" : "CA"
id"
                                                                                                                                                                                                                                                                                                                                                                           : "NY"
                                                       "city"
id"
                                                                                                                                                                                                                                                                                          87079, "state" : "NY" }
: 87026, "state" : "CA"
: 85732, "state" : "NY"
710, "state" : "NY" }
                                                      "city"
"city"
"city"
                     "11212",
"90280",
id"
id"
                     "11385",
"10467",
                                                      "city
                                                      "city"
```

POPULATION BY STATE

2.

```
db.zipcodes.aggregate([{$group:{_id:"$state"}},{$sort:{pop:-1}}])
          "NV"
          "TX"
          "WY"
          "AZ"
          "CO"
         "MO"
  id"
         "ME"
  id"
         "CA"
          "MA"
  id"
         "KY"
  id"
         "NJ"
  id"
         "MI"
         "ID"
         "DC"
  id"
  id"
         "CT"
  id"
         "NY"
  id"
         "MT"
         "UT"
 id"
         "NE"
" id"
         "GA"
   "it" for more
  1. db.zipcodes.aggregate({$match:{city:"ATLANTA"}},{$group:{_id:'$city',zips:{$sum:1}}})
```

{ "_id" : "ATLANTA", "zips" : 41 } $db. zipcodes. aggregate (\{\$match: \{city: "ATLANTA"\}\}, \{\$group: \{_id: '\$city', Population: \{\$sum: '\$pop'\}\}\}))$ { "_id" : "ATLANTA", "Population" : 630046 } $db.zipcodes.aggregate(\{\$group: \{_id: \$state', Population: \{\$sum: \$pop'\}\}\}))$ $\{\, "_id": "NV", "Population": 1201833 \,\}$ { "_id" : "TX", "Population" : 16984601 } { "_id" : "WY", "Population" : 453528 } { "_id" : "AZ", "Population" : 3665228 } { "_id" : "CO", "Population" : 3293755 } { "_id" : "MO", "Population" : 5110648 } { "_id" : "ME", "Population" : 1226648 } { "_id" : "CA", "Population" : 29754890 } { "_id" : "MA", "Population" : 6016425 } { "_id" : "KY", "Population" : 3675484 } { "_id" : "NJ", "Population" : 7730188 } { "_id" : "MI", "Population" : 9295297 } { "_id" : "ID", "Population" : 1006749 } { "_id" : "DC", "Population" : 606900 } { "_id" : "CT", "Population" : 3287116 }

```
{ "_id" : "NY", "Population" : 17990402 }
{ "_id" : "MT", "Population" : 798948 }
{ "\_id" : "UT", "Population" : 1722850 }
{ "_id" : "NE", "Population" : 1578139 }
{ "_id" : "GA", "Population" : 6478216 }
Type "it" for more
     3. \qquad db. zipcodes. aggregate (\{\$group: \{ id: \{ state: "\$state" \}, population: \{ \$sum: "\$pop" \} \}\}, \{ \$sort: \{ population: -1 \} \}, \{ \$limit: 3 \}) \\
{ "_id" : { "state" : "CA" }, "population" : 29754890 }
{ "_id" : { "state" : "NY" }, "population" : 17990402 }
{ "_id" : { "state" : "TX" }, "population" : 16984601 }
POPULATION BY CITY
     { "_id" : { "city" : "SAINT PETERS", "state" : "MO" }, "population" : 43133 }
{ "\_id" : { "city" : "PRICHARD", "state" : "WV" }, "population" : 1215 }
{ "\_id" : { "city" : "RANCHITA", "state" : "CA" }, "population" : 389 }
{ "_id" : { "city" : "DARDANELLE", "state" : "AR" }, "population" : 8281 }
 \{ \, "\_id" : \{ \, "city" : "TRIDELL", \, "state" : "UT" \, \}, \, "population" : 363 \, \} 
{ "_id" : { "city" : "TURTLE CREEK", "state" : "PA" }, "population" : 8157 }
 \{ \ "\_id" : \{ \ "city" : "HOUSTON", \ "state" : "PA" \}, \ "population" : 6060 \} 
{ "_id" : { "city" : "MALONE", "state" : "TX" }, "population" : 491 }
{ "_id" : { "city" : "ROUND MOUNTAIN", "state" : "NV" }, "population" : 1302 }
{ "\_id" : { "city" : "ROSSFORD", "state" : "OH" }, "population" : 5861 }
{ "_id" : { "city" : "SAN MARTIN", "state" : "CA" }, "population" : 5563 }
{ "_id" : { "city" : "FAIRBANKS", "state" : "AK" }, "population" : 31379 }
 \{ \ "\_id" : \{ \ "city" : "SOUTH \ SHORE", \ "state" : "SD" \}, \ "population" : 487 \ \} 
{ "_id" : { "city" : "HOSSTON", "state" : "LA" }, "population" : 766 }
{ "_id" : { "city" : "PEMBERTON", "state" : "MN" }, "population" : 880 }
{ "_id" : { "city" : "HOPE", "state" : "RI" }, "population" : 3653 }
{ "_id" : { "city" : "COATS", "state" : "NC" }, "population" : 4437 }
{ "_id" : { "city" : "PECK", "state" : "KS" }, "population" : 1023 }
{ "_id" : { "city" : "FORT BENTON", "state" : "MT" }, "population" : 2795 }
{ "_id" : { "city" : "LAWRENCE", "state" : "NE" }, "population" : 594 }
Type "it" for more
     2. \qquad db.zipcodes.aggregate(\{\$group: \underline{id:\{city:"\$city",state:"\$state"\},population:\{\$sum:'\$pop'\}\}\}, \{\$sort:\{population:-1\}\}) \\
{ "_id" : { "city" : "CHICAGO", "state" : "IL" }, "population" : 2452177 }
{ "_id" : { "city" : "BROOKLYN", "state" : "NY" }, "population" : 2300504 }
```

```
{ "_id" : { "city" : "LOS ANGELES", "state" : "CA" }, "population" : 2102295 }
{ " id" : { "city" : "HOUSTON", "state" : "TX" }, "population" : 2095918 }
{ "\_id" : { "city" : "PHILADELPHIA", "state" : "PA" }, "population" : 1610956 }
{ "_id" : { "city" : "NEW YORK", "state" : "NY" }, "population" : 1476790 }
{ "_id" : { "city" : "BRONX", "state" : "NY" }, "population" : 1209548 }
{ "_id" : { "city" : "SAN DIEGO", "state" : "CA" }, "population" : 1049298 }
{ "_id" : { "city" : "DETROIT", "state" : "MI" }, "population" : 963243 }
{ "_id" : { "city" : "DALLAS", "state" : "TX" }, "population" : 940191 }
{ "_id" : { "city" : "PHOENIX", "state" : "AZ" }, "population" : 890853 }
{ "_id" : { "city" : "MIAMI", "state" : "FL" }, "population" : 825232 }
{ "_id" : { "city" : "SAN JOSE", "state" : "CA" }, "population" : 816653 }
{ " id" : { "city" : "SAN ANTONIO", "state" : "TX" }, "population" : 811792 }
{ "\_id" : { "city" : "BALTIMORE", "state" : "MD" }, "population" : 733081 }
{ "_id" : { "city" : "SAN FRANCISCO", "state" : "CA" }, "population" : 723993 }
{ "_id" : { "city" : "MEMPHIS", "state" : "TN" }, "population" : 632837 }
{ "\_id" : { "city" : "SACRAMENTO", "state" : "CA" }, "population" : 628279 }
{ "_id" : { "city" : "JACKSONVILLE", "state" : "FL" }, "population" : 610160 }
{ "_id" : { "city" : "ATLANTA", "state" : "GA" }, "population" : 609591 }
Type "it" for more
                    3. db.zipcodes.aggregate({$group:{_id:{city:"$city"},population:{$sum:'$pop'}}},{$sort:{population:-1}},{$limit:3})
{ "_id" : { "city" : "CHICAGO" }, "population" : 2452177 }
{ "_id" : { "city" : "BROOKLYN" }, "population" : 2341387 }
{ "_id" : { "city" : "HOUSTON" }, "population" : 2123053 }
                              \label{thm:population:spop} $$db.zipcodes.aggregate({\match:{state:"TX"}},{\spop:_id:'$city',Population:{\spop:}}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'$pop:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},{\spop:_id:'}},
                              1}},{$limit:3})
{ "_id" : "HOUSTON", "Population" : 2095918 }
{ "_id" : "DALLAS", "Population" : 940191 }
{ "_id" : "SAN ANTONIO", "Population" : 811792 }
db.zipcodes.aggregate([
         { $group: { _id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } },
         { $group: { _id: "$_id.state", avgCityPop: { $avg: "$pop" } } }
{ "_id" : "NV", "avgCityPop" : 18209.590909090908 }
{ "_id" : "TX", "avgCityPop" : 13775.02108678021 }
{ "_id" : "WY", "avgCityPop" : 3384.5373134328356 }
{ "_id" : "AZ", "avgCityPop" : 20591.16853932584 }
{ "_id" : "CO", "avgCityPop" : 9981.07575757575 }
{ "_id" : "MO", "avgCityPop" : 5672.195338512764 }
```

```
{ "_id" : "ME", "avgCityPop" : 3006.4901960784314 }
{ "_id" : "CA", "avgCityPop" : 27756.42723880597 }
\{\,\hbox{\tt "\_id"}:\hbox{\tt "MA"},\hbox{\tt "avgCityPop"}:14855.37037037037\,\}
{ "_id" : "KY", "avgCityPop" : 4767.164721141375 }
{ "_id" : "NJ", "avgCityPop" : 15775.89387755102 }
\{\,\hbox{\tt "\_id"}:\hbox{\tt "MI"},\hbox{\tt "avgCityPop"}:12087.512353706112\,\}
{ "_id" : "ID", "avgCityPop" : 4320.811158798283 }
{ "_id" : "DC", "avgCityPop" : 303450 }
{ "_id" : "CT", "avgCityPop" : 14674.625 }
{ "_id" : "MT", "avgCityPop" : 2593.987012987013 }
{ "_id" : "NY", "avgCityPop" : 13131.680291970803 }
{ "_id" : "UT", "avgCityPop" : 9518.508287292818 }
{ "_id" : "NE", "avgCityPop" : 3034.882692307692 }
{ "_id" : "GA", "avgCityPop" : 11547.62210338681 }
Type "it" for more
BONUS 1
db.zipcodes.aggregate([{$sort:{avgCityPop:-1}},{$limit:3}])
{ "_id" : "01026", "city" : "CUMMINGTON", "loc" : [ -72.905767, 42.435296 ], "pop" : 1484, "state" : "MA" }
{ "_id" : "01013", "city" : "CHICOPEE", "loc" : [ -72.607962, 42.162046 ], "pop" : 23396, "state" : "MA" }
{ "_id" : "01011", "city" : "CHESTER", "loc" : [ -72.988761, 42.279421 ], "pop" : 1688, "state" : "MA" }
BONUS 2
db.zipcodes.aggregate( [{ $group: {_id: { state: "$state", city: "$city" }, pop: { $sum: "$pop" } } }, { $group: {_id: "$_id.state", avgCityPop: {
$avg: "$pop" } } },{$sort:{avgCityPop:-1}},{$limit:3}] )
{ "\_id" : "DC", "avgCityPop" : 303450 }
{ "_id" : "CA", "avgCityPop" : 27756.42723880597 }
{ "_id" : "FL", "avgCityPop" : 27400.958963282937 }
```

EXERCISE 3

MONGODB COMPLEX QUERIES

 $C:\USER\Downloads\mbox{$\mbo$ $100.4.1 \ bin>mongoimport -- db\ restaurants -- collection\ addresses--file\ C: \ Users \ USER \ Assignments \ 'restaurants.json' and the staurants are staurants.$

2021-08-02T01:08:39.731+0530 connected to: mongodb://localhost/

2021-08-02T01:08:39.834+0530 3772 document(s) imported successfully. 0 document(s) failed to import.

EXERCISE QNS

```
id" : ObjectId("6106f99585e29051a03be21d"),
 d" : [
-73.8601152,
40.7311739
            ],
"street" : "63 Road",
"zipcode" : "11374"
},
"borough" : "Queens",
"cuisine" : "Jewish/Kosher",
"grades" : [
                        "date" : ISODate("2014-11-24T00:00:00Z"),
"grade" : "Z",
"score" : 20
                        "date" : ISODate("2013-01-17T00:00:00Z"),
"grade" : "A",
"score" : 13
                        "date" : ISODate("2012-08-02T00:00:00Z"),
"grade" : "A",
"score" : 13
                        "date" : ISODate("2011-12-15T00:00:00Z"),
"grade" : "B",
"score" : 25
],
"name" : "Tov Kosher Kitchen",
"restaurant_id" : "40356068"
"_id" : ObjectId("6106f99585e29051a03be21e"),
"address" : {
```

```
b.restaurant.find({},{"restaurant_id" : 1,"name":1,"borough":1,"cuisine" :1,"_id":0});
b.addresses.find({},{"restaurant_id" : 1,"name":1,"borough":1,"cuisine" :1,"_id":0});
borough" : "Queens", "cuisine" : "Jewish/Kosher", "name" : "Tov Kosher Kitchen", "restaurant_id" : "40356068" }
borough" : "Staten Island", "cuisine" : "Jewish/Kosher", "name" : "Kosher Kitchen", "restaurant_id" : "40356442" }
borough" : "Bronx", "cuisine" : "Bakery", "name" : "Morris Park Bake Shop", "restaurant_id" : "4035645" }
borough" : "Brooklyn", "cuisine" : "Chinese", "name" : "May May Kitchen", "restaurant_id" : "40356429" }
borough" : "Brooklyn", "cuisine" : "American ", "name" : "I East 6618 Fetteet Kitchen", "restaurant_id" : "40359480" }
borough : "Brooklyn", "cuisine" : "American ", "name" : "Regina Caterers", "restaurant_id" : "40356649" }
borough : "Brooklyn", "cuisine" : "American ", "name" : "Riviera Caterer", "restaurant_id" : "40356618" }
borough : "Brooklyn", "cuisine" : "American ", "name" : "Name" : "Carvel Ice Cream", "restaurant_id" : "40360076" borough : "Brooklyn", "cuisine" : "Ice Cream, Gelato, Yogurt, Ices", "name" : "Carvel Ice Cream", "restaurant_id" : "40360076" borough : "Brooklyn", "cuisine" : "Ice Cream, Gelato, Yogurt, Ices", "name" : "Carvel Ice Cream", "restaurant_id" : "40361390" }
borough : "Brooklyn", "cuisine" : "Delicatessen", "name" : "Nordi Delicacies", "restaurant_id" : "40361390" }
borough : "Brooklyn", "cuisine" : "Delicatessen", "name" : "Seuda Foods", "restaurant_id" : "40361086" }
borough : "Brooklyn", "cuisine" : "Delicatessen", "name" : "Sal's Deli', "restaurant_id" : "40361618" }
borough : "Manhattan", "cuisine" : "Delicatessen", "name" : "Bully'S Deli ", "restaurant_id" : "40361618" }
borough : "Manhattan", "cuisine" : "Delicatessen", "name" : "Sul's Deli ", "restaurant_id" : "40361618" }
borough : "Manhattan", "cuisine" : "Delicatessen", "name" : "Sul's Deli ", "restaurant_id" : "4036161898" }
borough : "Manhattan", "cuisine" : "Delicatessen", "name" : "Sul's Deli ", "restaurant_id" :
```

3.

```
> db.addresses.find((),("restaurant_id" : 1,"name":1,"borough":1,"cuisine" :1));
(" id" : 0bjectId("610679958e29951a03be212"), "borough" : "Queens", "cuisine" : "Jewish/Kosher", "name" : "Tov Kosher Kitchen", "restaurant_id" : "40356068" }
(" id" : 0bjectId("610679958e29951a03be212"), "borough" : "Staten Island", "cuisine" : "Jewish/Kosher", "name" : "Kosher Island", "restaurant_id" : "40356042" }
(" id" : 0bjectId("610679958e29951a03be217"), "borough" : "Bronx", "cuisine" : "Akery", "name" : "Morris Park Bake Shop", "restaurant_id" : "30075465" }
(" id" : 0bjectId("610679958e29951a03be221"), "borough" : "Brooklyn", "cuisine" : "American ", "name" : "Lest 667h Street Kitchen", "restaurant_id" : "403550489" }
(" id" : 0bjectId("610679958e29951a03be2221"), "borough" : "Brooklyn", "cuisine" : "American ", "name" : "Regina Caterers", "restaurant_id" : "40356048" }
(" id" : 0bjectId("6106799588e29951a03be2221"), "borough" : "Brooklyn", "cuisine" : "American ", "name" : "Riviera Caterer", "restaurant_id" : "40356048" }
(" id" : 0bjectId("6106799588e29951a03be2221"), "borough" : "Brooklyn", "cuisine" : "American ", "name" : "Riviera Caterer", "restaurant_id" : "40356018" }
(" id" : 0bjectId("6106799588e29951a03be2221"), "borough" : "Brooklyn", "cuisine" : "Riciera, "elato, vogurt, Ices", "name" : "Carvel Ice Cream", "restaurant_id" : "40360076" }
(" id" : 0bjectId("610679958e29951a03be225"), "borough" : "Rooklyn", "cuisine" : "Reciera, Gelato, Vogurt, Ices", "name" : "Carvel Ice Cream", "restaurant_id" : "40360076" }
(" id" : 0bjectId("610679958e29951a03be227"), "borough" : "Brooklyn", "cuisine" : "Pewish/Kosher", "name" : "Brooklyn", "cuisine" : "Pewish/Kosher", "name" : "Sol's Deliz : "restaurant_id" : "40356085")
(" id" : 0bjectId("610679958e29951a03be228"), "borough" : "Rooklyn", "cuisine" : "Delicatessen", "name" : "Bol'icatessen", "restaurant_id" : "40360085")
(" id" : 0bjectId("610679958e29951a03be228"), "borough" : "Rooklyn", "cuisine" : "Delicatessen", "name" : "Sol's Deli : "restaurant_id" : "40360085")
(" i
```

4.

```
"zipcode" : "10462"
},
"borough" : "Bronx",
"cuisine" : "Bakery",
"grades" : [
    {
        "date": ISODate("2014-03-03T00:00:00Z"),
         "grade" : "A",
         "score" : 2
    },
    {
         "date": ISODate("2013-09-11T00:00:00Z"),
         "grade" : "A",
         "score" : 6
    },
    {
         "date": ISODate("2013-01-24T00:00:00Z"),
         "grade" : "A",
         "score" : 10
    },
         "date": ISODate("2011-11-23T00:00:00Z"),
         "grade" : "A",
         "score" : 9
    },
         "date": ISODate("2011-03-10T00:00:00Z"),
         "grade" : "B",
         "score" : 14
    }
],
"name": "Morris Park Bake Shop",
"restaurant_id" : "30075445"
"_id" : ObjectId("6106f99585e29051a03be224"),
"address" : {
    "building" : "2300",
```

}

```
"coord" : [
        -73.8786113,
        40.8502883
    ],
    "street": "Southern Boulevard",
    "zipcode" : "10460"
},
"borough" : "Bronx",
"cuisine" : "American ",
"grades" : [
    {
         "date": ISODate("2014-05-28T00:00:00Z"),
         "grade" : "A",
         "score" : 11
    },
    {
         "date": ISODate("2013-06-19T00:00:00Z"),
         "grade" : "A",
         "score" : 4
    },
         "date": ISODate("2012-06-15T00:00:00Z"),
         "grade" : "A",
         "score" : 3
    }
],
"name" : "Wild Asia",
"restaurant_id" : "40357217"
     db.addresses.find({borough: "Bronx"}).limit(5).pretty()
"_id" : ObjectId("6106f99585e29051a03be21f"),
"address" : {
    "building" : "1007",
    "coord" : [
        -73.856077,
```

}

```
40.848447
    ],
    "street" : "Morris Park Ave",
    "zipcode" : "10462"
},
"borough" : "Bronx",
"cuisine": "Bakery",
"grades" : [
    {
         "date": ISODate("2014-03-03T00:00:00Z"),
         "grade" : "A",
         "score" : 2
    },
    {
         "date": ISODate("2013-09-11T00:00:00Z"),
         "grade" : "A",
         "score" : 6
    },
    {
         "date" : ISODate("2013-01-24T00:00:00Z"),
         "grade" : "A",
         "score" : 10
    },
         "date": ISODate("2011-11-23T00:00:00Z"),
         "grade" : "A",
         "score" : 9
    },
    {
         "date": ISODate("2011-03-10T00:00:00Z"),
         "grade" : "B",
         "score" : 14
     7.
     db. addresses. find (\{borough: "Bronx"\}). skip (5). limit (5). pretty ()\\
           db.addresses.find({grades: { $elemMatch:{"score":{$gt:90}}}}).pretty()
     9.
           db. addresses. find (\{grades: \{\$elemMatch: \{"score": \{\$gt: 80, \$lt: 100\}\}\}\}); \\
```

```
{ "id": ObjectId("6106f99585e29051a03be41e"), "address": { "building": "345", "coord": [-73.9864626, 40.7266739], "street": "East 6
Street", "zipcode": "10003" }, "borough": "Manhattan", "cuisine": "Indian", "grades": [ { "date": ISODate("2014-09-15T00:00:002"),
"grade": "A", "score": 5 }, { "date": ISODate("2014-01-14T00:00:00Z"), "grade": "A", "score": 8 }, { "date": ISODate("2013-05-
30T00:00:00Z"), "grade": "A", "score": 12 }, { "date": ISODate("2013-04-24T00:00:00Z"), "grade": "P", "score": 2 }, { "date":
ISODate("2012-10-01T00:00:00Z"), "grade": "A", "score": 9}, { "date": ISODate("2012-04-06T00:00:00Z"), "grade": "C", "score": 92}, {
"date" : ISODate("2011-11-03T00:00:00Z"), "grade" : "C", "score" : 41 } ], "name" : "Gandhi", "restaurant_id" : "40381295" }
{ "_id" : ObjectId("6106f99585e29051a03be57d"), "address" : { "building" : "130", "coord" : [ -73.984758, 40.7457939 ], "street" :
"Madison Avenue", "zipcode": "10016" }, "borough": "Manhattan", "cuisine": "Pizza/Italian", "grades": [ { "date": ISODate("2014-12-
24T00:00:002"), "grade": "Z", "score": 31 }, { "date": ISODate("2014-06-17T00:00:002"), "grade": "C", "score": 98 }, { "date": 9
ISODate("2013-12-12T00:00:002"), "grade": "C", "score": 32 }, { "date": ISODate("2013-05-22T00:00:002"), "grade": "B", "score": 21 }, {
"date": ISODate("2012-05-02T00:00:00Z"), "grade": "A", "score": 11 }], "name": "Bella Napoli", "restaurant_id": "40393488" }
 \{ "\_id" : ObjectId ("6106f99685e29051a03bede8"), "address" : \{ "building" : "", "coord" : [ -74.0163793, 40.7167671 ], "street" : "Hudson and the street of the street 
River", "zipcode": "10282" }, "borough": "Manhattan", "cuisine": "American ", "grades": [ { "date": ISODate("2014-06-27T00:00:00Z"),
"grade": "C", "score": 89 }, { "date": ISODate("2013-06-06T00:00:00Z"), "grade": "A", "score": 6 }, { "date": ISODate("2012-06-
19T00:00:002"), "grade": "A", "score": 13 }], "name": "West 79Th Street Boat Basin Cafe", "restaurant_id": "40756344" }
                          10.
                                          db.addresses.find({"address.coord": {$lt:-95.754168}});
{ "_id" : ObjectId("6106f99685e29051a03be863"), "address" : { "building" : "3707", "coord" : [ -101.8945214, 33.5197474 ], "street" : "82
Street", "zipcode": "11372" }, "borough": "Queens", "cuisine": "American ", "grades": [ { "date": ISODate("2014-06-04T00:00:00Z"),
"grade": "A", "score": 12 }, { "date": ISODate("2013-11-07T00:00:00Z"), "grade": "B", "score": 19 }, { "date": ISODate("2013-05-
ISODate("2012-04-03T00:00:002"), "grade": "A", "score": 12 }, { "date": ISODate("2011-11-16T00:00:002"), "grade": "A", "score": 7 } ],
"name": "Burger King", "restaurant_id": "40534067" }
                          11. db.addresses.find(
{$and:
{"cuisine":{$ne:"American"}},
{"grades.score":{$gt:70}},
{"address.coord":{$It :-65.754168}}
      );
                          12. db.addresses.find(
 "cuisine":{$ne:"American"},
"grades.score":{$gt:70},
"address.coord":{$It :-65.754168}
                          13. \quad db. addresses. find ({\$and: [\{"cuisine": \{\$ne: "American"\}\}, \{"grades.grade": "A"\}, \{"borough": \{\$ne: "Brooklyned and the statement of the statement of
                                           "}}]}).sort({"cuisine":-1}).pretty()
```

13.

```
14.
db.addresses.find( {name: /^Wil/}, { "restaurant_id": 1, "name":1, "borough":1, "cuisine":1 } )
{ "_id" : ObjectId("6106f99585e29051a03be224"), "borough" : "Bronx", "cuisine" : "American ", "name" : "Wild Asia", "restaurant_id" :
"40357217" }
{ "_id" : ObjectId("6106f99585e29051a03be23e"), "borough" : "Brooklyn", "cuisine" : "Delicatessen", "name" : "Wilken'S Fine Food",
"restaurant_id" : "40356483" }
{ "_id" : ObjectId("6106f99685e29051a03bf02e"), "borough" : "Bronx", "cuisine" : "Pizza", "name" : "Wilbel Pizza", "restaurant_id" :
"40871979" }
         15.
db.addresses.find( {name: /ces$/}, { "restaurant_id": 1, "name":1, "borough":1, "cuisine":1})
{ "_id" : ObjectId("6106f99685e29051a03be6ae"), "borough" : "Manhattan", "cuisine" : "American ", "name" : "Pieces", "restaurant_id" :
"40399910" }
{ "_id" : ObjectId("6106f99685e29051a03be770"), "borough" : "Queens", "cuisine" : "American ", "name" : "S.M.R Restaurant Services",
"restaurant_id" : "40403857" }
{ "_id" : ObjectId("6106f99685e29051a03be775"), "borough" : "Manhattan", "cuisine" : "American ", "name" : "Good Shepherd Services",
"restaurant_id": "40403989" }
{ "_id" : ObjectId("6106f99685e29051a03bec20"), "borough" : "Queens", "cuisine" : "Ice Cream, Gelato, Yogurt, Ices", "name" : "The Ice
Box-Ralph'S Famous Italian Ices", "restaurant id": "40690899" }
{ "_id" : ObjectId("6106f99685e29051a03bee2b"), "borough" : "Brooklyn", "cuisine" : "Jewish/Kosher", "name" : "Alices", "restaurant_id" :
"40782042" }
{ "_id" : ObjectId("6106f99685e29051a03bf046"), "borough" : "Manhattan", "cuisine" : "American ", "name" : "Re: Sources",
"restaurant id": "40876068" }
         16.
```

```
db.addresses.find( {name: /.*Reg*./}, { "restaurant_id": 1, "name":1, "borough":1, "cuisine":1 })
{ "id": ObjectId("6106f99585e29051a03be222"), "borough": "Brooklyn", "cuisine": "American", "name": "Regina Caterers",
"restaurant id": "40356649" }
{ "_id" : ObjectId("6106f99585e29051a03be234"), "borough" : "Queens", "cuisine" : "Chinese", "name" : "Ho Mei Restaurant",
"restaurant id": "40362432" }
{ "_id" : ObjectId("6106f99585e29051a03be237"), "borough" : "Brooklyn", "cuisine" : "Caribbean", "name" : "Shashemene Int'L Restaura",
"restaurant_id": "40362869" }
{ " id" : ObjectId("6106f99585e29051a03be238"), "borough" : "Manhattan", "cuisine" : "Irish", "name" : "Dj Reynolds Pub And
Restaurant", "restaurant id": "30191841" }
{ "_id" : ObjectId("6106f99585e29051a03be259"), "borough" : "Manhattan", "cuisine" : "American ", "name" : "Palm Restaurant",
"restaurant id": "40364355" }
{ "_id" : ObjectId("6106f99585e29051a03be25a"), "borough" : "Manhattan", "cuisine" : "American ", "name" : "Old Town Bar &
Restaurant", "restaurant id": "40364389" }
{ "id": ObjectId("6106f99585e29051a03be25b"), "borough": "Manhattan", "cuisine": "Italian", "name": "Isle Of Capri Resturant",
"restaurant_id": "40364373" }
{ "_id" : ObjectId("6106f99585e29051a03be260"), "borough" : "Manhattan", "cuisine" : "Latin (Cuban, Dominican, Puerto Rican, South &
Central American)", "name": "Seville Restaurant", "restaurant_id": "40364439" }
{ "_id" : ObjectId("6106f99585e29051a03be263"), "borough" : "Queens", "cuisine" : "Jewish/Kosher", "name" : "Ben-Best Deli &
Restaurant", "restaurant_id": "40364529" }
{ "id": ObjectId("6106f99585e29051a03be268"), "borough": "Manhattan", "cuisine": "Italian", "name": "Marchis Restaurant",
"restaurant_id" : "40364668" }
{ "_id" : ObjectId("6106f99585e29051a03be26f"), "borough" : "Queens", "cuisine" : "Pizza/Italian", "name" : "New Park Pizzeria &
Restaurant", "restaurant id": "40364744" }
{ "_id" : ObjectId("6106f99585e29051a03be278"), "borough" : "Manhattan", "cuisine" : "Italian", "name" : "Forlinis Restaurant",
"restaurant_id": "40365098" }
{ "_id" : ObjectId("6106f99585e29051a03be279"), "borough" : "Manhattan", "cuisine" : "Irish", "name" : "Dorrian'S Red Hand Restaurant",
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"restaurant_id": "40361606" }
{ "_id" : ObjectId("6106f99585e29051a03be22a"), "borough" : "Queens", "cuisine" : "Delicatessen", "name" : "Sal'S Deli", "restaurant_id" :
"40361618" }
{ "id": ObjectId("6106f99585e29051a03be22b"), "borough": "Manhattan", "cuisine": "Delicatessen", "name": "Bully'S Deli",
"restaurant_id" : "40361708" }
{ "id": ObjectId("6106f99585e29051a03be22c"), "borough": "Manhattan", "cuisine": "American ", "name": "Glorious Food",
"restaurant_id": "40361521" }
{ "_id" : ObjectId("6106f99585e29051a03be22d"), "borough" : "Queens", "cuisine" : "Delicatessen", "name" : "Steve Chu'S Deli &
Grocery", "restaurant id": "40361998" }
{ "_id" : ObjectId("6106f99585e29051a03be22e"), "borough" : "Brooklyn", "cuisine" : "American ", "name" : "C & C Catering Service",
"restaurant_id": "40357437" }
{ "_id" : ObjectId("6106f99585e29051a03be22f"), "borough" : "Manhattan", "cuisine" : "American ", "name" : "P & S Deli Grocery",
"restaurant id": "40362264" }
{ "_id" : ObjectId("6106f99585e29051a03be230"), "borough" : "Manhattan", "cuisine" : "Chicken", "name" : "Harriet'S Kitchen",
"restaurant id": "40362098" }
```

```
{ "_id" : ObjectId("6106f99585e29051a03be231"), "borough" : "Brooklyn", "cuisine" : "Ice Cream, Gelato, Yogurt, Ices", "name" : "Taste
The Tropics Ice Cream", "restaurant id": "40356731" }
Type "it" for more
                  22.
db.addresses.find(
                     "grades.date": ISODate("2014-08-11T00:00:00Z").
                     "grades.grade":"A",
                     "grades.score" : 11
                    },
                    {"restaurant_id": 1, "name": 1, "grades": 1}
                 );
{ "_id" : ObjectId("6106f99585e29051a03be29a"), "grades" : [ { "date" : ISODate("2014-08-11T00:00:00Z"), "grade" : "A", "score" : 13 }, {
"date": ISODate("2013-07-22T00:00:00Z"), "grade": "A", "score": 9 }, { "date": ISODate("2013-03-14T00:00:00Z"), "grade": "A", "score":
12 }, { "date" : ISODate("2012-07-02T00:00:00Z"), "grade" : "A", "score" : 11 }, { "date" : ISODate("2012-02-02T00:00:00Z"), "grade" : "A",
"score": 10 }, { "date": ISODate("2011-08-24T00:00:00Z"), "grade": "A", "score": 11 } ], "name": "Neary'S Pub", "restaurant_id":
"40365871" }
 \{ "\_id" : ObjectId ("6106f99585e29051a03be377"), "grades" : [ \{ "date" : ISODate ("2014-08-11T00:00:00Z"), "grade" : "A", "score" : 11 \}, \{ (under the context of the co
"date": ISODate("2013-12-10T00:00:00Z"), "grade": "A", "score": 9 }, { "date": ISODate("2013-06-10T00:00:00Z"), "grade": "A", "score":
12 }, { "date" : ISODate("2012-06-08T00:00:00Z"), "grade" : "A", "score" : 13 }, { "date" : ISODate("2012-01-25T00:00:00Z"), "grade" : "A",
"score": 8 }, { "date": ISODate("2011-09-13T00:00:002"), "grade": "A", "score": 12 } ], "name": "Don Filippo Restaurant", "restaurant_id"
: "40372417" }
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: 2 }, { "date" : ISODate("2012-10-23T00:00:00Z"), "grade" : "A", "score" : 13 }, { "date" : ISODate("2012-04-16T00:00:00Z"), "grade" : "A",
"score": 11 }, { "date": ISODate("2011-11-15T00:00:00Z"), "grade": "A", "score": 12 } ], "name": "Mustang Sally'S Restaurant",
"restaurant_id" : "40397374" }
{ "_id" : ObjectId("6106f99685e29051a03be846"), "grades" : [ { "date" : ISODate("2015-01-12T00:00:00Z"), "grade" : "A", "score" : 10 }, {
"date" : ISODate("2014-08-11T00:00:00Z"), "grade" : "A", "score" : 9 }, { "date" : ISODate("2014-01-14T00:00:00Z"), "grade" : "A", "score" :
13 }, { "date" : ISODate("2013-02-07T00:00:00Z"), "grade" : "A", "score" : 10 }, { "date" : ISODate("2012-04-30T00:00:00Z"), "grade" : "A",
"score": 11 }], "name": "Club Macanudo (Cigar Bar)", "restaurant_id": "40526406" }
{ "_id" : ObjectId("6106f99685e29051a03be93c"), "grades" : [ { "date" : ISODate("2014-08-11T00:00:002"), "grade" : "A", "score" : 8 }, {
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: 4 }, { "date" : ISODate("2012-10-09T00:00:00Z"), "grade" : "B", "score" : 19 }, { "date" : ISODate("2012-05-10T00:00:00Z"), "grade" : "A",
"score": 11 }, { "date": ISODate("2011-11-23T00:00:00Z"), "grade": "A", "score": 9 } ], "name": "Marino'S Pizza & Restaurant",
"restaurant_id": "40560917" }
{ "_id" : ObjectId("6106f99685e29051a03beae6"), "grades" : [ { "date" : ISODate("2015-01-05T00:00:002"), "grade" : "A", "score" : 9 }, {
"date" : ISODate("2014-08-11T00:00:00Z"), "grade" : "A", "score" : 10 }, { "date" : ISODate("2014-03-04T00:00:00Z"), "grade" : "B", "score"
: 22 }, { "date" : ISODate("2013-09-13T00:00:00Z"), "grade" : "A", "score" : 5 }, { "date" : ISODate("2013-01-16T00:00:00Z"), "grade" : "A",
"score": 11 }], "name": "Gene'S Coffee Shop", "restaurant_id": "40614916" }
 \{ \ "\_id" : ObjectId("6106f99685e29051a03bec52"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grade" : "A", \ "score" : 10 \ \}, \ \{ \ "\_id" : ObjectId("6106f99685e29051a03bec52"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grade" : "A", \ "score" : 10 \ \}, \ \{ \ "\_id" : ObjectId("6106f99685e29051a03bec52"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grade" : "A", \ "score" : 10 \ \}, \ \{ \ "\_id" : ObjectId("6106f99685e29051a03bec52"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : "A", \ "score" : 10 \ \}, \ \{ \ "\_id" : ObjectId("6106f99685e29051a03bec52"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : "A", \ "score" : 10 \ \}, \ \{ \ "\_id" : ObjectId("6106f99685e29051a03bec52"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : "A", \ "score" : 10 \ \}, \ \{ \ "\_id" : ObjectId("6106f99685e29051a03bec52"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grades" : [ \ \{ \ "date" : ISODate("2014-08-11T00:00:002"), \ "grad
"date": ISODate("2014-02-20T00:00:00Z"), "grade": "A", "score": 7 }, { "date": ISODate("2013-08-29T00:00:00Z"), "grade": "A", "score":
7 }, { "date" : ISODate("2013-03-29T00:00:00Z"), "grade" : "A", "score" : 10 }, { "date" : ISODate("2012-03-07T00:00:00Z"), "grade" : "A",
"score": 12 }, { "date": ISODate("2011-11-18T00:00:00Z"), "grade": "A", "score": 11 }, { "date": ISODate("2011-10-12T00:00:00Z"),
"grade": "P", "score": 4 }], "name": "Union Cafe Restaurant", "restaurant id": "40698823" }
{ "_id" : ObjectId("6106f99685e29051a03bf0bc"), "grades" : [ { "date" : ISODate("2014-08-11T00:00:00Z"), "grade" : "A", "score" : 10 }, {
"date": ISODate("2013-08-28T00:00:00Z"), "grade": "A", "score": 9 }, { "date": ISODate("2012-09-05T00:00:00Z"), "grade": "A", "score":
11 }, { "date" : ISODate("2011-08-25T00:00:00Z"), "grade" : "A", "score" : 7 } ], "name" : "Jojo'S Pizza", "restaurant_id" : "40892913" }
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23.

```
db. addresses. find (\{"grades.1.date": ISODate("2014-08-11T00:00:002"), "grades.1.grade": "A", "grades.1.score": 9\}, \{"restaurant\_id": "Grades.1.grade": "A", "grades.1.score": 9\}, \{"restaurant\_id": "Grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades.1.grades
1,"name":1,"grades":1});
{ "_id" : ObjectId("6106f99685e29051a03be846"), "grades" : [ { "date" : ISODate("2015-01-12T00:00:00Z"), "grade" : "A", "score" : 10 }, {
"date": ISODate("2014-08-11T00:00:00Z"), "grade": "A", "score": 9 }, { "date": ISODate("2014-01-14T00:00:00Z"), "grade": "A", "score":
13 }, { "date" : ISODate("2013-02-07T00:00:00Z"), "grade" : "A", "score" : 10 }, { "date" : ISODate("2012-04-30T00:00:00Z"), "grade" : "A",
"score": 11 }], "name": "Club Macanudo (Cigar Bar)", "restaurant_id": "40526406" }
db.addresses.find({"address.coord.1":{$gt:42, $lte:52}},{"restaurant_id": 1,"name":1,"coord":1});
{ "id": ObjectId("6106f99585e29051a03be4ba"), "name": "T.G.I. Friday'S", "restaurant id": "40387990" }
 \{ \ "\_id" : ObjectId("6106f99585e29051a03be4eb"), \ "name" : "T.G.I. \ Fridays", \ "restaurant\_id" : "40388936" \} 
{ "_id" : ObjectId("6106f99685e29051a03be745"), "name" : "Di Luvio'S Deli", "restaurant_id" : "40402284" }
{ "_id" : ObjectId("6106f99685e29051a03be97f"), "name" : "La Caridad 78", "restaurant_id" : "40568285" }
{ "_id" : ObjectId("6106f99685e29051a03bf04b"), "name" : "Bijan'S", "restaurant_id" : "40876618" }
{ "_id" : ObjectId("6106f99685e29051a03bf060"), "name" : "Hyatt, Ny Central/Room Service", "restaurant_id" : "40879243" }
{ "_id" : ObjectId("6106f99685e29051a03bf075"), "name" : "Sports Center At Chelsea Piers (Sushi Bar)", "restaurant_id" : "40882356" }
                  25.
db.addresses.find().sort({"name":1})
                  26.
db.addresses.find().sort({"name":-1})
                  27.
db.addresses.find().sort({"cuisine":1,"borough":-1})
                  28
db.addresses.find({"address.street": {$exists:true}});
db. addresses. find (\{"address.coord": \{\$type:1\}\})
db.addresses.find({ "grades.score": { $mod : [7, 0]}},{"restaurant_id" :1, "name":1, "grades": 1})
                  31
        db.addresses.find(
                            { name :
                              { $regex : "mon.*", $options: "i" }
                                   "name":1,
                                   "borough":1,
                                   "address.coord":1,
                                   "cuisine":1
```

```
db.addresses.find({ name : /.*mon.*/}, {"name":1,"borough":1, "address.coord":1, "cuisine":1});
                                  32
db.addresses.find(
                                    { name :
                                        { $regex : /^Mad/i, }
                                                 "name":1,
                                                 "borough":1,
                                                 "address.coord":1,
                                                 "cuisine":1
                                              }
                                    );
db.addresses.find({ name : /^Mad/}, {"name":1,"borough":1, "address.coord":1, "cuisine" :1});
{ "_id" : ObjectId("6106f99685e29051a03be762"), "address" : { "coord" : [ -73.9860597, 40.7431194 ] }, "borough" : "Manhattan",
"cuisine": "American", "name": "Madison Square" }
 \{ "\_id" : ObjectId ("6106f99685e29051a03be826"), "address" : \{ "coord" : [ -73.9830219999999, 40.742313 ] \}, "borough" : "Manhattan", "manhattan"
"cuisine" : "Indian", "name" : "Madras Mahal" }
{ "_id" : ObjectId("6106f99685e29051a03bead8"), "address" : { "coord" : [ -74.000002, 40.72735 ] }, "borough" : "Manhattan", "cuisine" :
"American ", "name" : "Madame X" }
" = 10.5 \times 10^{10} = 
"cuisine": "French", "name": "Madison Bistro" }
{ "_id" : ObjectId("6106f99685e29051a03bec0a"), "address" : { "coord" : [ -73.9717845, 40.6897199 ] }, "borough" : "Brooklyn", "cuisine" :
"African", "name" : "Madiba" }
{ "_id" : ObjectId("6106f99685e29051a03bef14"), "address" : { "coord" : [ -73.9040753, 40.9069011 ] }, "borough" : "Bronx", "cuisine" :
"Italian", "name" : "Madison'S" }
 \{ \ "\_id" : ObjectId("6106f99685e29051a03bef91"), \ "address" : \{ \ "coord" : [ \ -73.9886598, \ 40.7565811 \ ] \ \}, \ "borough" : "Manhattan", \ "cuisine" \} 
: "Hotdogs", "name" : "Madame Tussaud'S" }
{ "_id" : ObjectId("6106f99685e29051a03befc8"), "address" : { "coord" : [ -73.95623719999999, 40.7761697 ] }, "borough" : "Manhattan",
"cuisine" : "American ", "name" : "Mad River Bar & Grille" }
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