

Lab 1

- Create a free cluster on Atlas.
- Install Mongo Shell.
- Load a sample dataset.
- Explore databases and collections.- Execute find queries using query

```
mongosh mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase
Microsoft Windows [Version 10.0.19044.2604]
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C:\Users\Laptop>mongosh
Current Mongosh Log ID: 6402509fde9e5cc13b67b87
Connecting to:
  mongodb://127.0.0.1:27017/?directConnection=true&serverSelectionTimeoutMS=2000&appName=mongosh+1.7.1
MongoNetworkError: connect ECONNREFUSED 127.0.0.1:27017

C:\Users\Laptop>mongosh "mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase" --apiVersion 1 --username salnamabroukk
Enter password: *****
Current Mongosh Log ID: 640250a6fe87f53b515be691
Connecting to:
  mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase?appName=mongosh+1.7.1
Using MongoDB:
  5.0.15 (API Version 1)
Using Mongosh:
  1.7.1

For mongosh info see: https://docs.mongodb.com/mongosh-shell/

Atlas atlas-oosdaj-shard-0 [primary] myFirstDatabase> show dbs
sample_airbnb    52.26 MiB
sample_analytics 9.18 MiB
sample_geospatial 2.41 MiB
sample_guides    40.00 KiB
sample_mflix     47.81 MiB
sample_restaurants 9.65 MiB
sample_supplies  1.14 MiB
sample_training   53.61 MiB
sample_weatherdata 2.78 MiB
admin            280.00 KiB
local            1.90 GiB
Atlas atlas-oosdaj-shard-0 [primary] myFirstDatabase> use sample_training
switched to db sample_training
Atlas atlas-oosdaj-shard-0 [primary] sample_training> show collections
companies
grades
inspections
posts
routes
trips
zips
Atlas atlas-oosdaj-shard-0 [primary] sample_training> db.grades.find();
[
  {
    _id: ObjectId("56d5f7eb604eb380b0d8d8ce"),
    student_id: 0,
    scores: [
      { type: 'exam', score: 78.40446309504266 },
      { type: 'quiz', score: 73.36224783231339 },
      { type: 'homework', score: 46.980982486720535 },
      { type: 'homework', score: 76.67556138656222 }
    ]
  },
]
```

- operators (\$ne, \$eq, \$gt, \$regex, etc) and projection.

```
mongosh mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase
1,
  class_id: 465
},
{
  _id: ObjectId("56d5f7eb604eb380b0d8d8e0"),
  student_id: 1,
  scores: [
    { type: 'exam', score: 90.8264171922822 },
    { type: 'quiz', score: 51.77230177525646 },
    { type: 'homework', score: 68.97104926017997 },
    { type: 'homework', score: 2.8270734687576238 }
  ]
},
  class_id: 302
},
{
  _id: ObjectId("56d5f7eb604eb380b0d8d8e1"),
  student_id: 1,
  scores: [
    { type: 'exam', score: 33.63395086942907 },
    { type: 'quiz', score: 46.7200034427161 },
    { type: 'homework', score: 13.084793373731118 },
    { type: 'homework', score: 30.05232124487215 }
  ]
},
  class_id: 460
}
]
Type "it" for more
Atlas atlas-oosdaj-shard-0 [primary] sample_training> db.grades.countDocuments({class_id: {$eq: 176}});
194
Atlas atlas-oosdaj-shard-0 [primary] sample_training> db.grades.countDocuments({class_id: {$ne: 176}});
30886
Atlas atlas-oosdaj-shard-0 [primary] sample_training> db.grades.countDocuments({class_id: {$gt: 176}});
46688
Atlas atlas-oosdaj-shard-0 [primary] sample_training> db.grades.countDocuments({score: {$elemMatch: {type: {$regex: /%h/}}}});
0
Atlas atlas-oosdaj-shard-0 [primary] sample_training> db.grades.countDocuments({score: {$elemMatch: {type: {$regex: /%h/}}}});
0
```

```
mongosh mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.countDocuments({scores : {$elemMatch : {type : {$regex : /%}}}},{});
100000
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.countDocuments({scores : {$elemMatch : {type : {$regex : /%.*%}}}},{});
100000
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> 
```

- Insert arrays and arrays of nested documents.
- Execute find queries on arrays and arrays of nested documents using \$elemMatch, \$all and \$size

```
mongosh mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase
SyntaxError: Missing semicolon. (1:38)
> 1 | db.grades.insertInto({student_id : 2}){
    |                                     ^
    2 |

Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> let first = {scores : { $elemMatch : { score : { $gt : 35.2514}}}}
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> let second = {scores : { $elemMatch : { score : { $lt : 25.2514}}}}
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> let filter = {$or : [first, second]}
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> let projection = {}
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.countDocuments(filter, projection);
99992
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> 
```

```
mongosh mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.insertOne({student_id : 10001})
{
  acknowledged: true,
  insertedId: ObjectId("6409a5fc37d664510f1b2e15")
}
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.find({student_id : 10001})
[ { _id: ObjectId("6409a5fc37d664510f1b2e15"), student_id: 10001 } ]
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> 
```

```
mongosh mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.updateOne({student_id : 10001}, {$set : {level : "Senior"}});
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.updateOne({student_id : 10001}, {$set : {sport : ["Swimming", "Polo"]}});
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.find({student_id : 10001})
[
  {
    _id: ObjectId("6409a5fc37d664510f1b2e15"),
    student_id: 10001,
    level: 'Senior',
    sport: [ 'Swimming', 'Polo' ]
  }
]
```

```
mongosh mongodb+srv://<credentials>@cluster0.gx6ndag.mongodb.net/myFirstDatabase
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.updateOne({student_id : 10001}, {$set : {pets : [{animal : "cat", name : "Leo"},{animal : "bird", name : "Lola"}]}});
{
  acknowledged: true,
  insertedId: null,
  matchedCount: 1,
  modifiedCount: 1,
  upsertedCount: 0
}
Atlas atlas-oosdaj-shard-0 [primary] sample_trainings> db.grades.find({student_id : 10001})
[
  {
    _id: ObjectId("6409a5fc37d664510f1b2e15"),
    student_id: 10001,
    level: 'Senior',
    sport: [ 'Swimming', 'Polo' ],
    pets: [
      { animal: 'cat', name: 'Leo' },
      { animal: 'bird', name: 'Lola' }
    ]
  }
]
```