Objectives

After completing this lab you will be able to:

- Measure the time it takes to execute a query with the explain function
- Describe the process of creating, listing and deleting indexes
- Evaluate the effectiveness of an index

theia@theiadocker-rajendraabro:/home/project$ mongosh mongodb://root:s63mpAKDdI6BmVaaEj1hawzO@172.21.118.50:27017
Current Mongosh Log ID: 694d41ab3589688ac29dc29c
Connecting to:
mongodb://<credentials>@172.21.118.50:27017/?directConnection=true&appName=mongosh+2.5.9
Using MongoDB: 4.4.29
Using Mongosh: 2.5.9

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

To help improve our products, anonymous usage data is collected and sent to MongoDB periodically (https://www.mongodb.com/legal/privacy-policy).
You can opt-out by running the disableTelemetry() command.

The server generated these startup warnings when booting
2025-12-25T11:33:39.315+00:00: Using the XFS filesystem is strongly recommended with the WiredTiger storage engine. See http://dochub.mongodb.org/core/prodnotes-filesystem
---

Select the training database.

test> use training
switched to db training

Create a collection named bigdata.

training> db.createCollection("bigdata")
{ ok: 1 }

Exercise 2 - Insert documents

- Let us insert a lot of documents into the newly created collection.
- This should take around 3 minutes, so please be patient.
- The code given below will insert 200000 documents into the ‘bigdata’ collection.
- Each document would have a field named **account_no** which is a simple auto increment number.
- And a field named **balance** which is a randomly generated number, to simulate the bank balance for the account.

```
training> use training
... for
(i=1;i<=200000;i++){print(i);db.bigdata.insert({"account_no":i,"balance":Math.round(Math.rando
m()*1000000)})}
already on db training

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mongodb://root:s63mpAKDdI6BmVaaEj1hawzO@172.21.118.50:27017
Current Mongosh Log ID: 694d41ab3589688ac29dc29c
Connecting to:
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```

Verify that 200000 documents got inserted by running the below command.

```
training> db.bigdata.countDocuments()
0
```

Exercise 3 - Measure the time taken by a query

Let us run a query and find out how much time it takes to complete.

Let us query for the details of account number 58982.

```
training>
db.bigdata.find({"account_no":58982}).explain("executionStats").executionStats.executionTime
Millis
0
```

Exercise 4 - Working with indexes

create an index on the field **account_no**.

```
training>
... db.bigdata.createIndex({"account_no":1})
Account_no_1
```

to get a list of indexes on the ‘bigdata’ collection.

```
training> db.bigdata.getIndexes()
[
  { v: 2, key: { _id: 1 }, name: '_id_' },
  { v: 2, key: { account_no: 1 }, name: 'account_no_1' }
]
```

Exercise 5 - Find out how effective an index is

the details of account number 69271.

training> db.bigdata.find({"account_no":
69271}).explain("executionStats").executionStats.executionTimeMillis

0

Exercise 6 - Delete an index

dtraining> db.bigdata.dropIndex({"account_no":1})
{ nIndexesWas: 2, ok: 1 }
training>
(To exit, press Ctrl+C again or Ctrl+D or type .exit)
training>