

Basic Databases – Lab 07

Setup softwares:

To install MongoDB database and MongoDB Compass software, please follow the instructions provided:

Step 1: Create a MongoDB Database.

- Visit the MongoDB website at <https://www.mongodb.com/> to access the necessary resources.
- Follow the instructions provided to create a new MongoDB database.

MongoDB.

Deploy your database

Use a template below or set up [advanced configuration options](#). You can also edit these configuration options once the cluster is created.

M10 **\$0.09/hour**
For production applications with sophisticated workload requirements.

STORAGE	RAM	vCPU
10 GB	2 GB	2 vCPUs

SERVERLESS **\$0.11/1M reads**
For application development and testing, or workloads with variable traffic.

STORAGE	RAM	vCPU
Up to 1TB	Auto-scale	Auto-scale

M0 **FREE**
For learning and exploring MongoDB in a cloud environment.

STORAGE	RAM	vCPU
512 MB	Shared	Shared

Provider: ☐ AWS ☐ Google Cloud ☒ Azure

Region: ★ Recommended region ⓘ
 Toronto (canadacentral) ★

Name:

FREE

Create

Free forever! Your M0 cluster is ideal for experimenting in a limited sandbox. You can upgrade to a production cluster anytime.

[I'll deploy my database later](#)

Step 2: Set up Login Account Information.

- As part of the installation process, you will need to set up a login account for MongoDB.
- Follow the instructions to create your account.

The screenshot shows the MongoDB Atlas interface for 'Project 0'. The 'Data Services' tab is active, and the 'Username and Password' sub-tab is selected. A green box highlights the 'Username and Password' sub-tab. A blue information banner states: 'We autogenerated a username and password for your first database user in this project using your MongoDB Cloud registration information.' Below this, a text box explains: 'Create a database user using a username and password. Users will be given the *read and write to any database privilege* by default. You can update these permissions and/or create additional users later. Ensure these credentials are different to your MongoDB Cloud username and password.' The 'Username' field is highlighted with a blue box and a circled '1'. The 'Password' field is highlighted with a blue box and a circled '2'. To the right of the password field are buttons for 'Autogenerate Secure Password' and 'Copy'. At the bottom is a green 'Create User' button. The left sidebar shows navigation options: DEPLOYMENT (Database, Data Lake), SERVICES (Triggers, Data API, Data Federation, Search), SECURITY, Quickstart (Backup, Database Access, Network Access, Advanced), and New On Atlas.

Step 3: Download and Install MongoDB Compass Software

- Find the MongoDB Compass software and select the version compatible with your operating system.
- Download the installation file and run it.
- Follow the on-screen prompts to complete the installation of MongoDB Compass.

Connect to Cluster0

✓

✓

3

Set up connection securityChoose a connection methodConnect

Connecting with MongoDB Compass

I don't have MongoDB Compass installed

I have MongoDB Compass installed

1. Select your operating system and download MongoDB Compass

Windows 64-bit (7+)

Download Compass (1.36.4)

or

Copy download URL

Compass is an interactive tool for querying, optimizing, and analyzing your MongoDB data.

2. Copy the connection string, then open MongoDB Compass

mongodb+srv://

You will be prompted for the password for the **jamebane8** user's (Database User) username. When entering your password, make sure that any special characters are [URL encoded](#).

RESOURCES

[Connect with Compass](#)[Access your Database Users](#)

[Import and Export Data](#)[Troubleshoot Connections](#)

Go Back

Close

Step 4: Connect to the MongoDB Database Using MongoDB Compass.

- Launch MongoDB Compass after the installation process is finished.
- In MongoDB Compass, you will find the connection setup interface.
- Follow the provided instructions to configure the connection string, including the URI, Username, and Password.

MongoDB Compass
Connect Edit View Help

Compass

New connection +

Saved connections

Recents

New Connection

Connect to a MongoDB deployment

URI ⓘ Edit Connection String ☐

mongodb+srv:// ⓘ

Advanced Connection Options

General **Authentication** TLS/SSL Proxy/SSH In-Use Encryption Advanced

Authentication Method

None Username/Password X.509 Kerberos LDAP AWS IAM

Username ⓘ

Password ⓘ

Authentication Database ⓘ

Authentication Mechanism

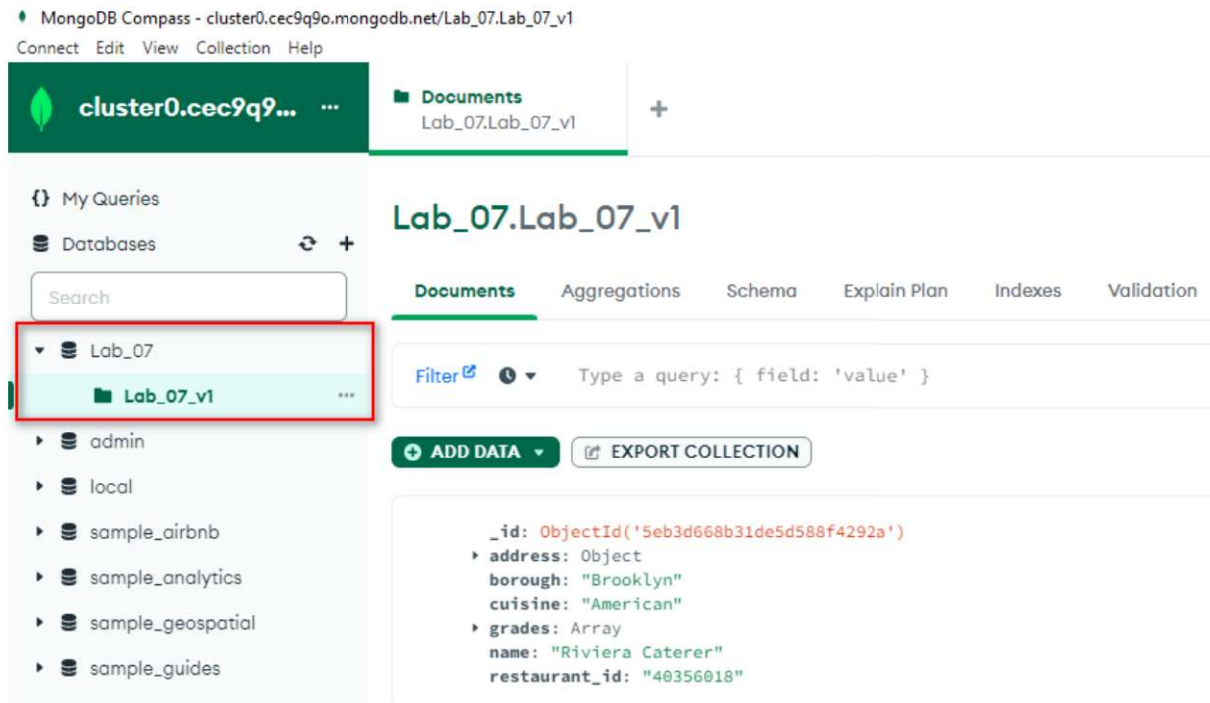
Default SCRAM-SHA-1 SCRAM-SHA-256

Save Save & Connect Connect

Requirements:

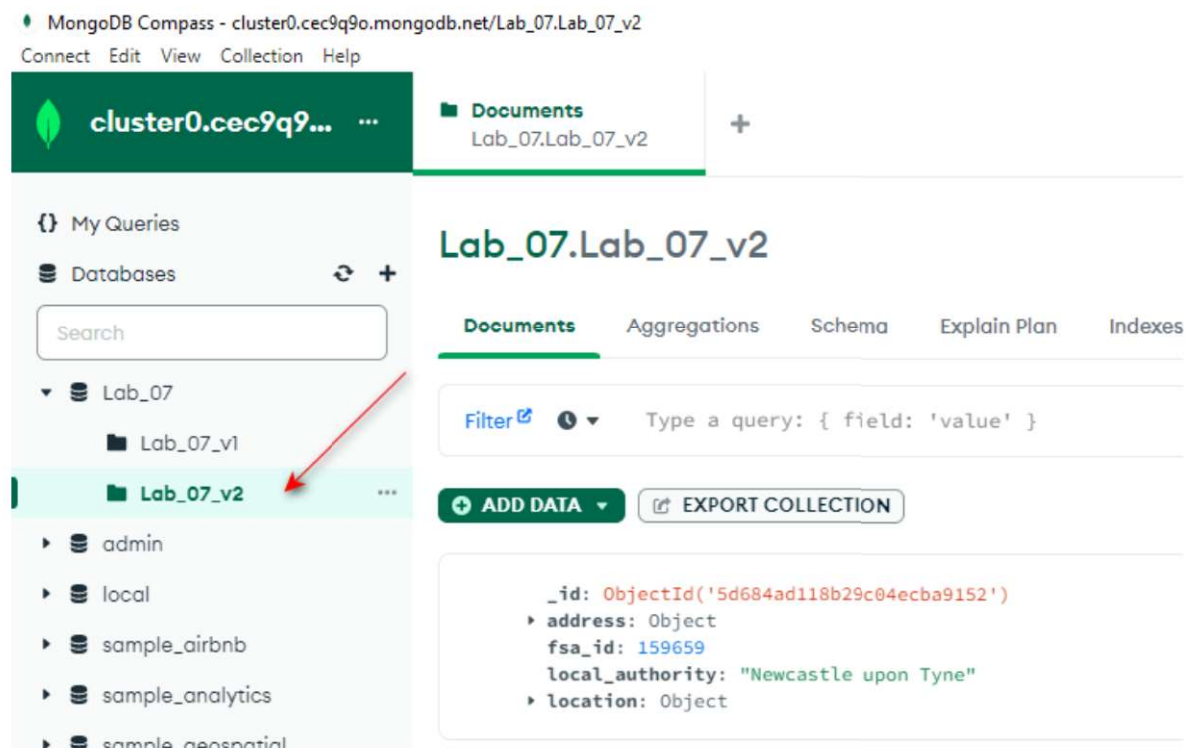
Please use MongoDB Compass software to fulfill the following requirements:

1. Create a new database and collection: **(0.5 point)**
 - Use the provided file **Lab_07.json** to create a new database with the specified database name and collection name as shown in the instructions.
 - Import the contents of the JSON file into the newly created collection.



2. Create a new collection: (0.5 point)

- Utilize the provided file **Lab_07.csv** to create a new collection with the specified name as shown in the instructions.
- Import the contents of the CSV file into the newly created collection.





3. Perform the following operations on the collection mentioned in the first question: (4 points)

- a. Create a new document. (0.5 point)

Insert Document

To Collection Lab_07.Lab_07_v1

VIEW  

```
1 ▼ /**
2  * Paste one or more documents here
3  */
4  {
5  ▼  "_id": {
6    |    "$oid": "646cc9b270f38a989adb6cd7"
7    |  }
8  }
```

Cancel Insert

- b. Display the fields “_id”, “address”, and “name” for all the documents. (0.5 point)

```
_id: ObjectId('5eb3d668b31de5d588f4292a')
▼ address: Object
  building: "2780"
  ▶ coord: Array
    street: "Stillwell Avenue"
    zipcode: "11224"
  name: "Riviera Caterer"
```

```
_id: ObjectId('5eb3d668b31de5d588f4292b')
▼ address: Object
  building: "7114"
  ▶ coord: Array
    street: "Avenue U"
    zipcode: "11234"
  name: "Wilken'S Fine Food"
```

- c. Display the fields “grades”, “name”, and “restaurant_id” but exclude the field “_id” for all the documents. (0.5 point)


```
▼ grades: Array
  ▸ 0: Object
  ▸ 1: Object
  ▸ 2: Object
  ▸ 3: Object
  name: "Riviera Caterer"
  restaurant_id: "40356018"
```

```
▼ grades: Array
  ▸ 0: Object
  ▸ 1: Object
  ▸ 2: Object
  ▸ 3: Object
  ▸ 4: Object
  ▸ 5: Object
  name: "Wilken'S Fine Food"
  restaurant_id: "40356483"
```

- d. Display the first 10 documents located in the borough of “Brooklyn”. (0.5 point)

```
_id: ObjectId('5eb3d668b31de5d588f4292a')
▸ address: Object
  borough: "Brooklyn"
  cuisine: "American"
▸ grades: Array
  name: "Riviera Caterer"
  restaurant_id: "40356018"
```

```
_id: ObjectId('5eb3d668b31de5d588f4292b')
▸ address: Object
  borough: "Brooklyn"
  cuisine: "Delicatessen"
▸ grades: Array
  name: "Wilken'S Fine Food"
  restaurant_id: "40356483"
```

- e. Find the documents that have “Rivi” as the first four letters in their name and retrieve the “_id”, “address”, “borough”, “cuisine”, and “name” fields. (0.5 point)

```
_id: ObjectId('5eb3d668b31de5d588f4292a')
  address: Object
    borough: "Brooklyn"
    cuisine: "American"
    name: "Riviera Caterer"
```

```
_id: ObjectId('5eb3d668b31de5d588f43f39')
  address: Object
    borough: "Queens"
    cuisine: "American"
    name: "Riviera"
```

- f. Find the documents where the score is greater than 50 but less than 60. (0.5 point)

```
_id: ObjectId('5eb3d668b31de5d588f42936')
  address: Object
    borough: "Brooklyn"
    cuisine: "Chinese"
  grades: Array
    0: Object
      date: 2014-09-16T00:00:00.000+00:00
      grade: "B"
      score: 21
    1: Object
      date: 2013-08-28T00:00:00.000+00:00
      grade: "A"
      score: 7
    2: Object
      date: 2013-04-02T00:00:00.000+00:00
      grade: "C"
      score: 56 (50 < 56 < 60)
    3: Object
      date: 2012-08-15T00:00:00.000+00:00
      grade: "B"
      score: 27
    4: Object
      date: 2012-03-28T00:00:00.000+00:00
      grade: "B"
      score: 27
  name: "May May Kitchen"
  restaurant_id: "40358429"
```

- g. Sort the document's name in descending order along with all the columns. (0.5 point)


```
_id: ObjectId('5eb3d669b31de5d588f46d98')
  address: Object
    borough: "Staten Island"
    cuisine: "Pizza"
  grades: Array
    name: "Zz'S Pizza & Grill"
    restaurant_id: "41702705"
```

```
_id: ObjectId('5eb3d669b31de5d588f4742c')
  address: Object
    borough: "Manhattan"
    cuisine: "Other"
  grades: Array
    name: "Zz Clam Bar"
    restaurant_id: "50001062"
```

h. Find the highest score for each document. (0.5 point)

```
_id: ObjectId('5eb3d668b31de5d588f444c9')
highest_score: 12
```

```
_id: ObjectId('5eb3d669b31de5d588f48221')
highest_score: 3
```

```
_id: ObjectId('5eb3d668b31de5d588f45008')
highest_score: 12
```

```
_id: ObjectId('5eb3d669b31de5d588f453b2')
highest_score: 20
```

```
_id: ObjectId('5eb3d669b31de5d588f46e61')
highest_score: 4
```

```
_id: ObjectId('5eb3d668b31de5d588f444c9')
  address: Object
    borough: "Manhattan"
    cuisine: "Irish"
  grades: Array
    0: Object
      date: 2014-10-02T00:00:00.000+00:00
      grade: "A"
      score: 6
    1: Object
      date: 2013-09-23T00:00:00.000+00:00
      grade: "A"
      score: 10
    2: Object
      date: 2013-04-18T00:00:00.000+00:00
      grade: "A"
      score: 10
    3: Object
      date: 2012-03-28T00:00:00.000+00:00
      grade: "A"
      score: 12
    4: Object
      date: 2011-11-14T00:00:00.000+00:00
      grade: "A"
      score: 12
  name: "Gabby O'Haras"
  restaurant_id: "41242148"
```

--- The end ---