

Homework Assignment #3 Setup

(MongoDB)

1. Create an account in the Atlas cloud: <https://www.mongodb.com/cloud/atlas>. Here are some additional instructions on how to set up your free Atlas cluster: <https://docs.atlas.mongodb.com/getting-started/>.
(**NOTE:** Don't load the sample data offered by MongoDB. We have our own data.)
2. When prompted to create a cluster, use "CS224P" as the cluster name and choose the following configurations:

Deploy your cluster

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

☐ M10 \$0.08/hour
For production applications with sophisticated workload requirements.

STORAGE	RAM	vCPU
10 GB	2 GB	2 vCPUs

☐ Serverless \$0.09/1M reads
For application development and testing, or workloads with variable traffic.

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

☒ M0 Free
For learning and exploring MongoDB in a cloud environment.

STORAGE	RAM	vCPU
512 MB	Shared	Shared

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

Name

You cannot change the name once the cluster is created.

☒ Automate security setup ⓘ

☐ Preload sample dataset ⓘ

Provider



Region

Iowa (us-central1) ★

★ Recommended ⓘ Low carbon emissions ⓘ

Tag (optional)

Create your first tag to categorize and label your resources; more tags can be added later. [Learn more.](#)

I'll do this later

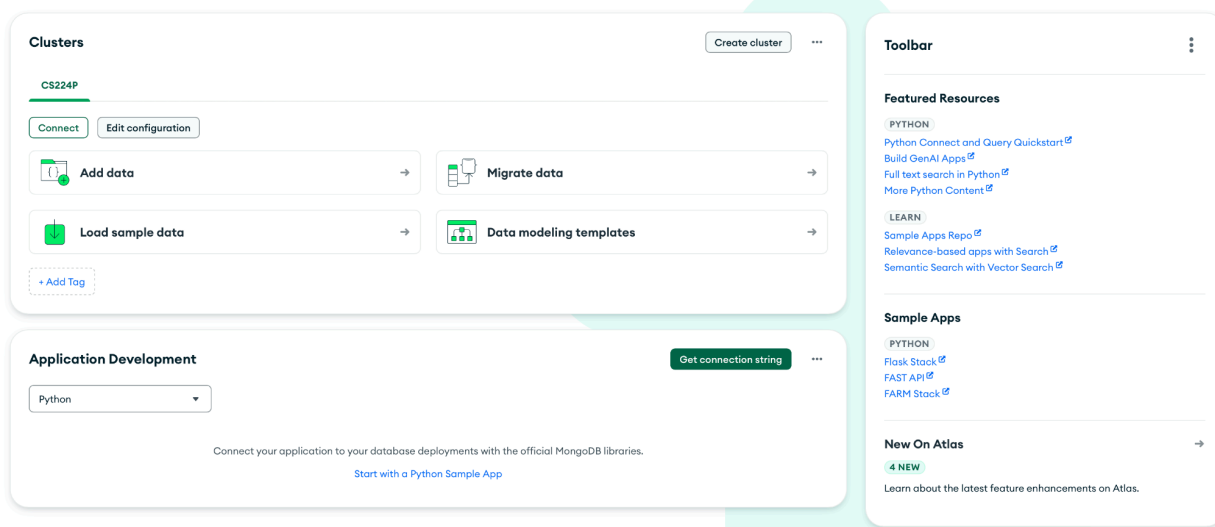
Go to Advanced Configuration

Create Deployment

3. It will take a few minutes before your cluster is successfully created. After that, you will see something like the following screenshot in your dashboard page:

JAMIE'S ORG - 2024-10-16 > PROJECT 0

Overview



4. Choose "Connect" and you will be prompted with a pair of randomly generated credentials. Note this is different from your Atlas account credentials. **Save the password somewhere because you will need that throughout the assignment.**

Connect to CS224P



You need to secure your MongoDB Atlas cluster before you can use it. Set which users and IP addresses can access your cluster now. [Read more](#)

1. Add a connection IP address

✓ Your current IP address () has been added to enable local connectivity. Add another later in [Network Access](#).

2. Create a database user

This first user will have [atlasAdmin](#) permissions for this project.

We autogenerated a username and password. You can use this or create your own.

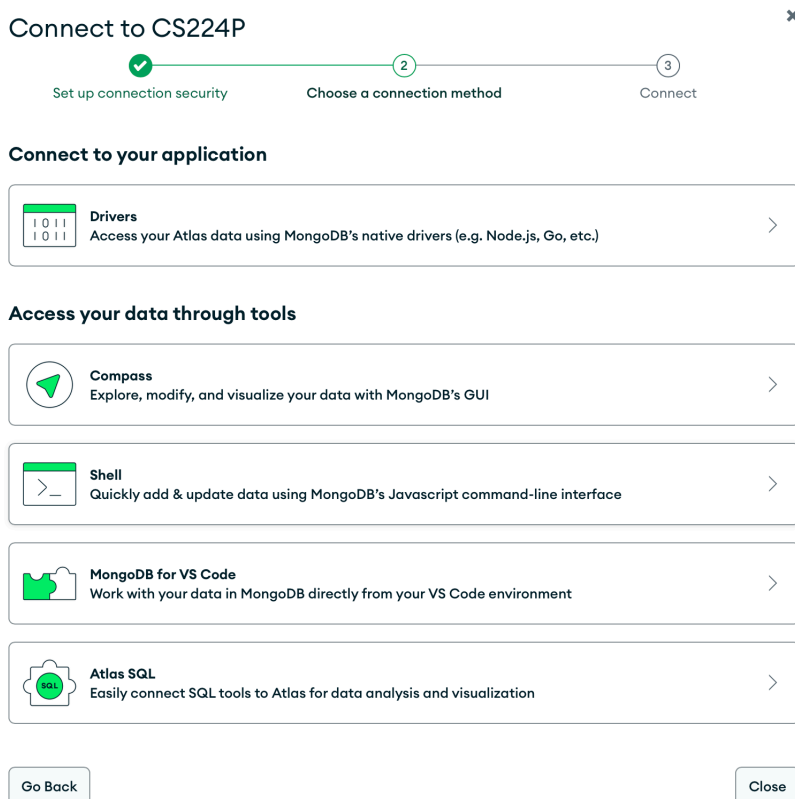
❗ You'll need your database user's credentials in the next step. Copy the database user password.

Username

Password

HIDE

5. You will be presented with different methods to access the database. This doc will show using Compass for loading data. You will also need to use the Python Driver to complete the assignment. For each connection method, follow the steps shown in the connection window and make sure to **replace the password placeholder using the password you just saved**.



Loading data using Compass:

1. Follow the instructions from "Access your data through tools -> Compass" to install MongoDB Compass and connect to your cluster created on Compass.

Connect to CS224P

Set up connection security Choose a connection method Connect

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

macOS 64-bit (10.15+)

Download Compass (1.44.5) 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

Use this connection string in your application

mongodb+srv://[redacted]:<db_password>@cs224p.dvy1u.mongodb.net/

Replace <db_password> with the password for the westjugal02 user. Ensure any options are URL encoded.

RESOURCES

Connect with Compass Import and Export Data

Access your Database Users Troubleshoot Connections

Go Back Done

- Download all of the JSON files - one for each collection – from [Canvas](#).
- Create a new database with the name “zotmusic” from Compass. Note you also need to specify the first collection you want to add to the database. We will just use the “users” collection.

Create Database

Database Name

zotmusic

Collection Name

users

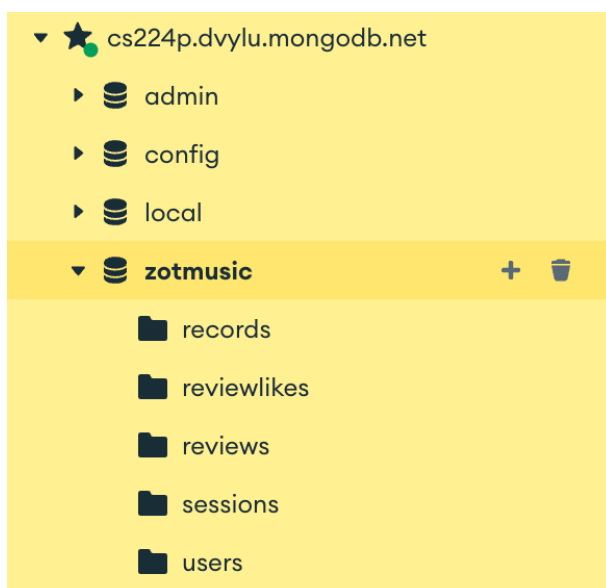
☐ Time-Series

Time-series collections efficiently store sequences of measurements over a period of time. [Learn More](#)

> Additional preferences (e.g. Custom collation, Capped, Clustered collections)

Cancel Create Database

- Finish the creation of 5 empty collections as shown below:



5. Using the **Add Data** feature in each collection, load its data by uploading the JSON files that you downloaded – do this one after another into independent collections.
6. Once you have loaded the data into all 5 collections, you are ready to go for the assignment!

Getting started with MongoDB using Jupyter/Python:

Your HW3 will be completed as an .ipynb file first then converted into PDF, so it'd be a good idea to familiarize yourself with this environment now. :-)).

To connect to your cluster using Python interfaces, follow the Atlas instructions from "Connect -> Drivers" and choose Python.

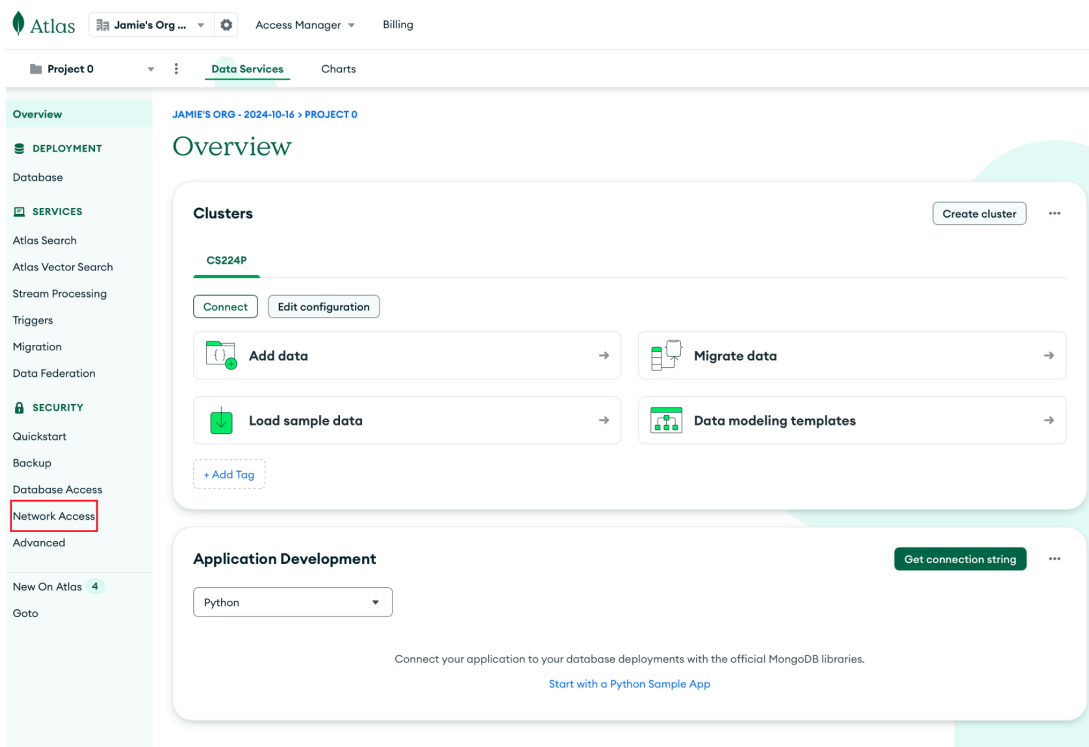
We have prepared a [helper.ipynb \(Jupyter notebook\)](#) file to make your first interaction with MongoDB a bit smoother. The file has a few examples on inserting data into and querying a database. You should open this file using a Jupyter environment of your choice, e.g., online services like [Google Colab](#), [DeepNote](#), [UCI ICS's free JupyterHub service](#), or a local installation via [Anaconda](#).

Troubleshooting:

- MongoDB has a security feature of only allowing your specified IP addresses to connect to your cluster. The feature may require you to whitelist your current

public IP address every time your IP address changes. This can be done in the Atlas cluster webpage.

- If you are using Colab or any other external environment to connect to the cluster, you may want to whitelist all addresses.
- To do so, go to “Network Access” under the Security tab from the Atlas cluster:



- Then click on “add ip address”
- Add 0.0.0.0/0 and confirm

Add IP Access List Entry

! This access list entry potentially allows access to all IPv4 addresses

Atlas only allows client connections to a cluster from entries in the project's IP Access List. Each entry should either be a single IP address or a CIDR-notated range of addresses. [Learn more](#)

ALLOW ACCESS FROM ANYWHERE

Access List Entry:

Comment:



This entry is temporary and will be deleted in

6 hours

Cancel

Confirm