

CS4221/CS5421

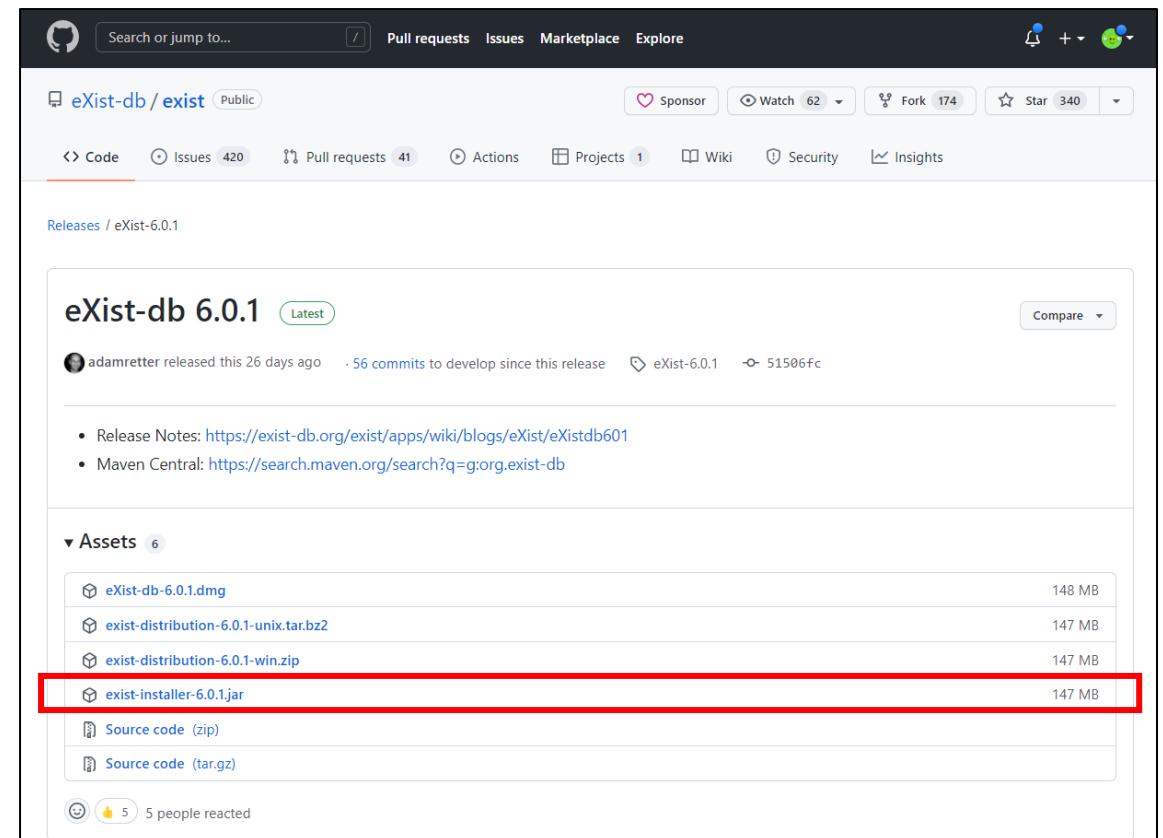
Tutorial 6: eXist-db & MongoDB Hands-on

Mark Meng Huasong

Windows platform is used in my demonstration.
The installation of both DB systems is slightly different from Mac ones.
For Mac users, please refer to Zemmy's session recording if you've encountered any technique issue.

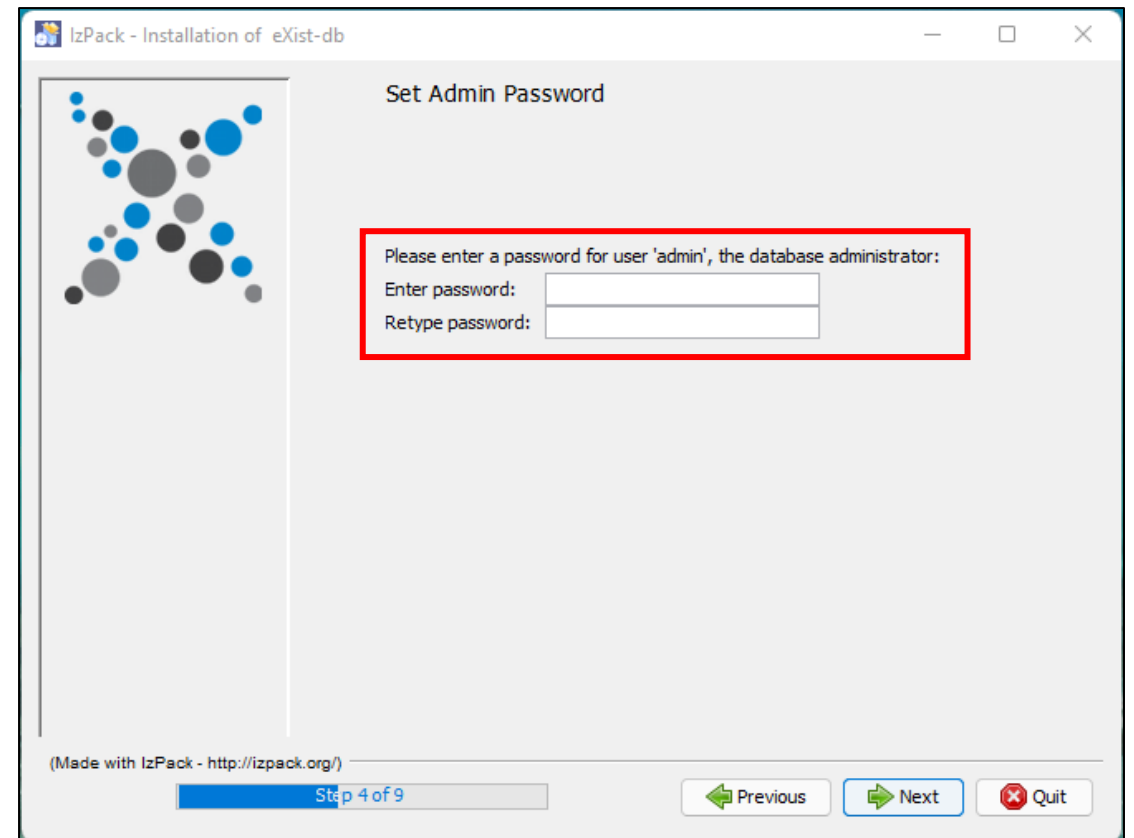
eXist-db

- Go to official website and download the installation package
 - You will be redirected to the latest release page on GitHub.
 - You can download either 5.x or 6.x. Both are latest versions.
 - To install on Windows, click the installer **JAR file** (!!! Not the zip file).
 - You can just double click to start installation if you have the Java properly installed.



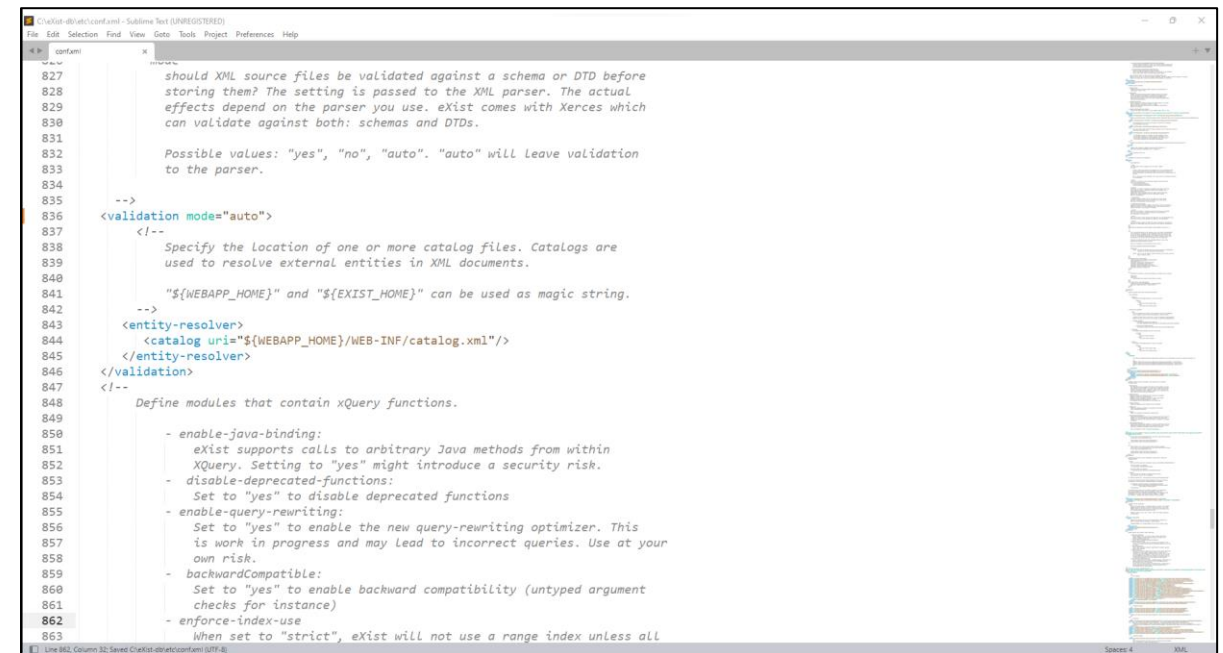
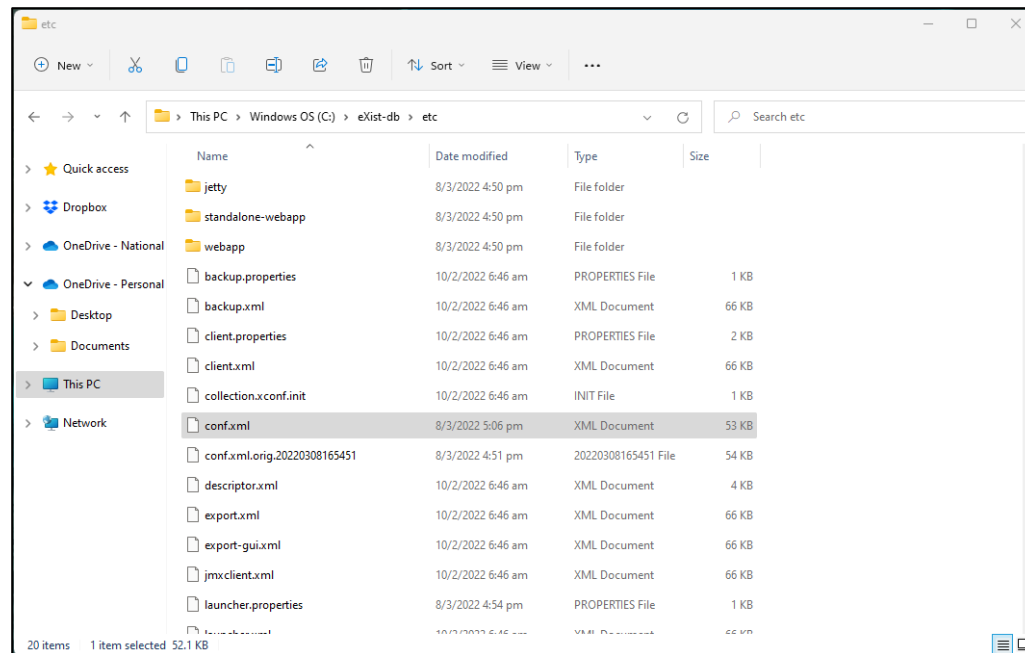
eXist-db

- Install the JAR package
 - You will be given a chance to set your admin password here.
 - **You can leave them blank as by default the password is empty.**



eXist-db

- Enable validation mode (*DTD, to be covered in the upcoming lecture*)
 - Go to the directory of installation, find the `etc/conf.xml` file. Search the text “validation mode”, change from “no” to “auto”, then save it.



eXist-db

- Launch eXist-db
 - Once installed it, you'll have to manually launch the “**eXist-db Database**” as an app on Windows.
 - You can see a configuration window popped up. There is no need to change the settings.

The image shows the 'eXist-db Configuration' window. It contains the following sections:

- Java Memory:** Memory usage: 79 free/3607 max mb. Min Memory: 64, Max Memory: 2,048. A note states: 'Memory settings only become effective after restart and only apply when eXist-db is started via the system tray launcher.'
- Caches:** General Cache: 256, Collection Cache: 64. A note states: 'Total cache size should not exceed 1/3 of max memory unless you have more than 2GB available. These sizes are in megabytes.'
- Data Directory:** C:\eXist-db\etc\l\data, with a 'Select' button. A note states: 'Changing the data directory will create an empty database in the new location (unless there's already data in it).'
- Jetty Ports:** HTTP Port: 8080, SSL Port: 8443. A note states: 'Set the ports used by the integrated web server. Please make sure those ports are not used by other processes.'

A 'Save' button is located at the bottom right.

eXist-db

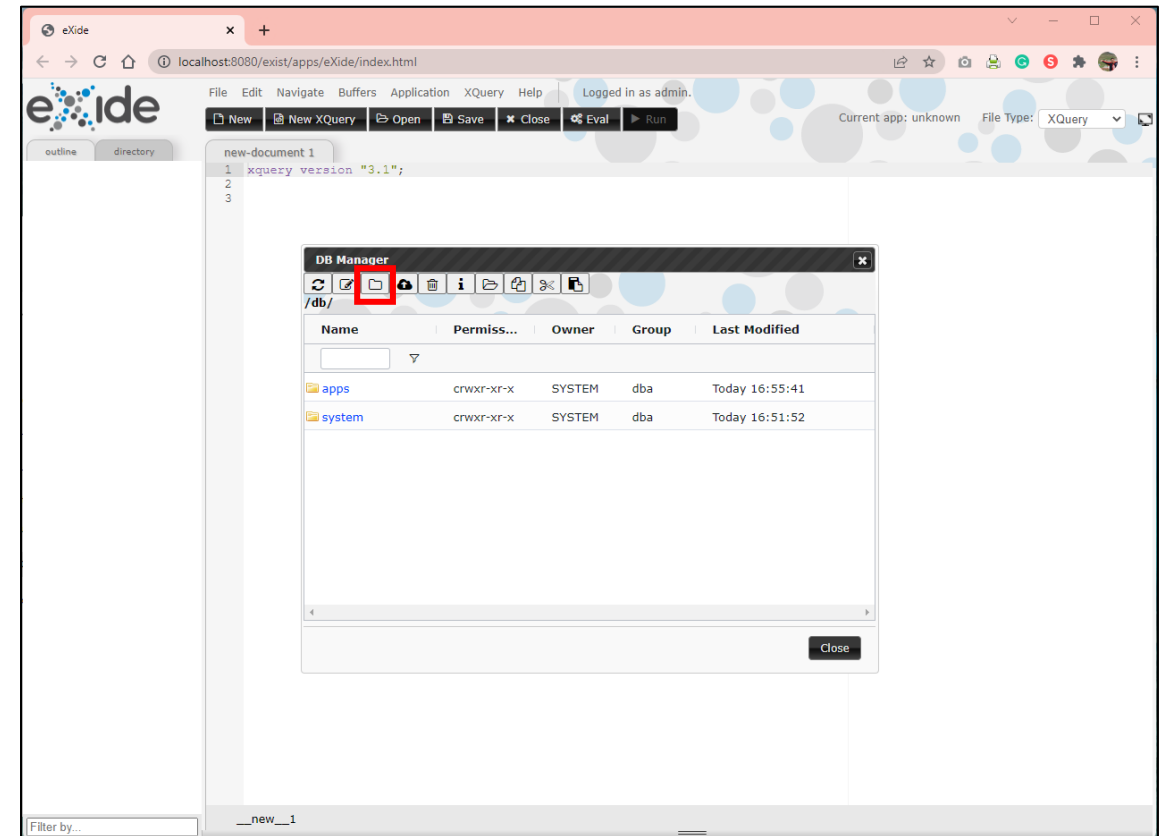
- Open the eXide through your browser

- You should see the exist-db is active now from the status bar.
- Right click it and click “**open eXide**”.
- You will be directed to localhost:8080 on your browser.
 - *If your browser display an XML (not a webpage), refresh it.*



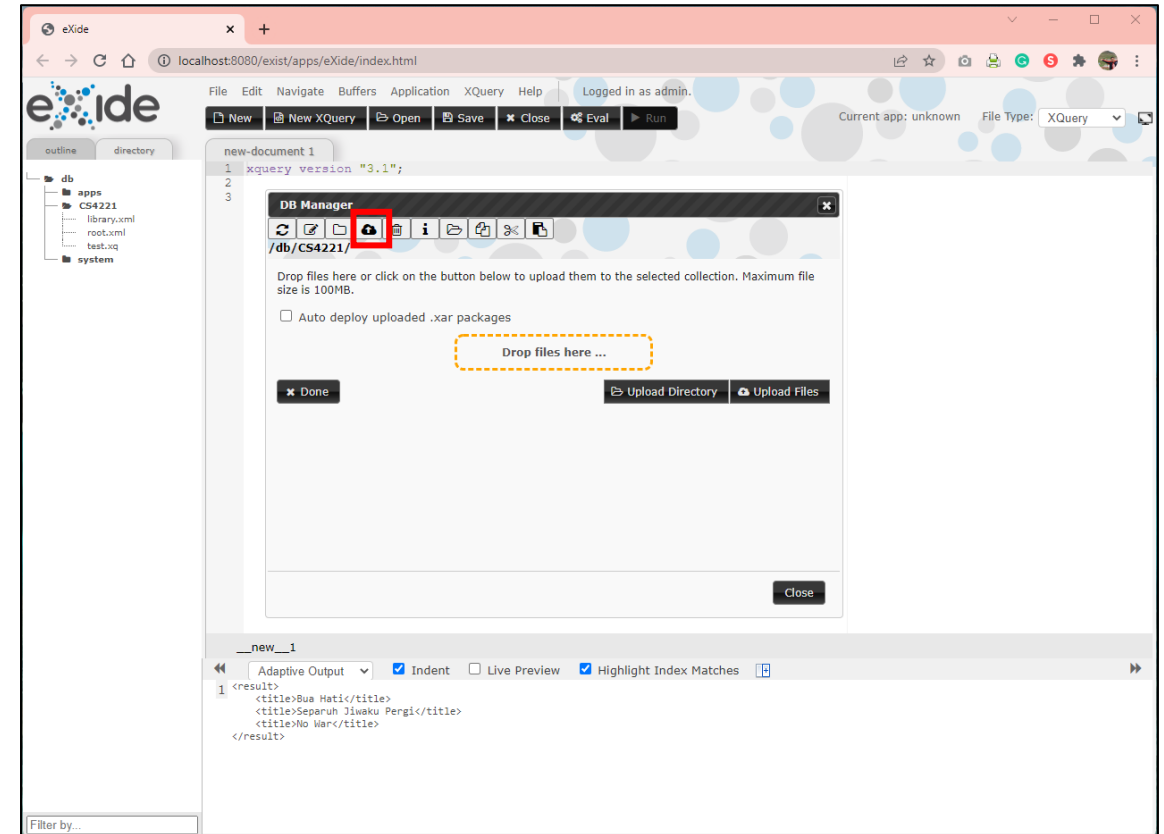
eXist-db

- Create a collection (database)
 - Click “File” on the menu bar, then click “DB Manager”.
 - You will be prompted to type in user and password (user “admin” with empty password by default).
 - Click “Create Collection” (as shown in red box), with you preferred name (e.g., “cs4221”)



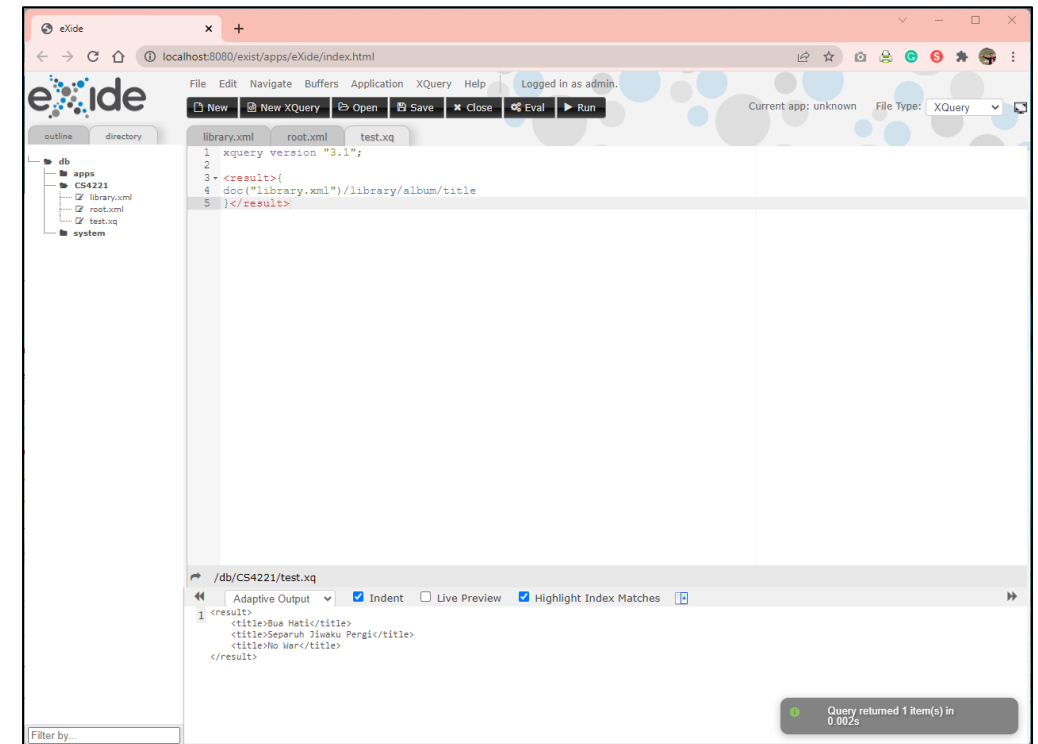
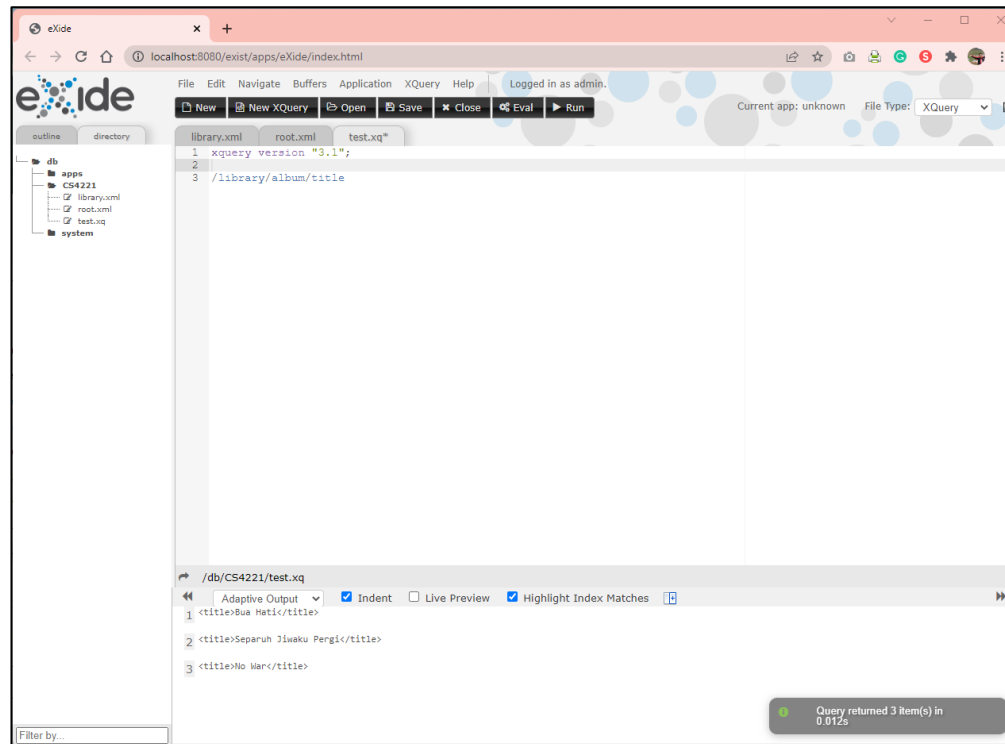
eXist-db

- Import from XML
 - Click “File” on the menu bar, then click “DB Manager”.
 - Click “Upload Files”, upload the music library file “library.xml” (find on Luminus).



eXist-db

- XPath & XQuery
- You can create an “.xq” file to query data.
(Left: XPath, Right: XQuery (multiple lines))



eXist-db

- Demonstration

mangoDB*

- Go to official website and download the installation package
- You need to download MongoDB (Windows Installer) and MongoDB Database Tools (to use mongoimport).

* MongoDB is not examined, just for you to explore.



mongodb-windows-x86_64-5.0.6-signed.msi

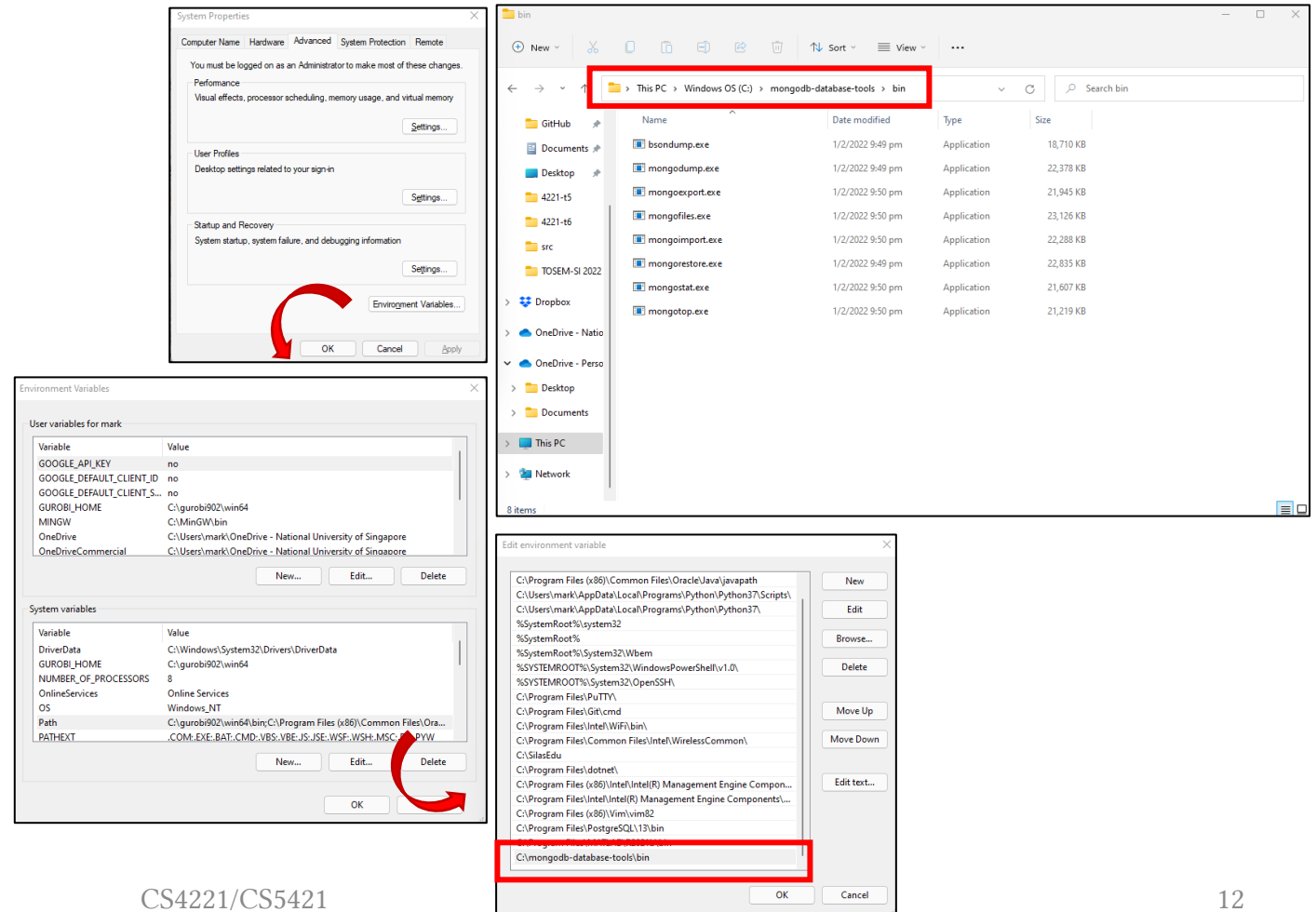


mongodb-database-tools-windows-x86_64-100.5.2.zip

mangoDB

- Configure system environment to use mangoimport

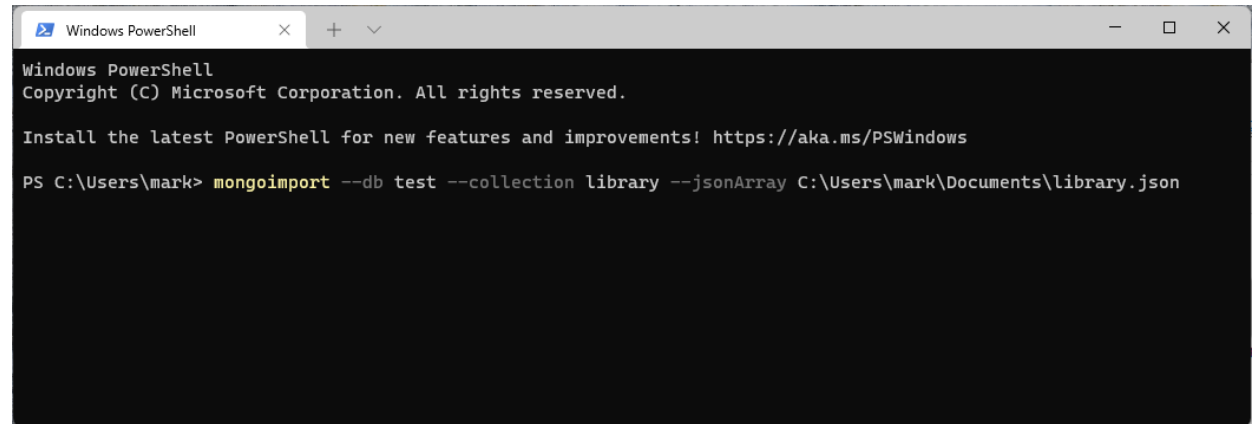
- Extract the zip file (database tools) to your local directory and add them to the PATH.



mangoDB

- Import from .json file
- Open terminal (terminal) and execute the command below.

```
mongoimport --db test --collection library --jsonArray <path_of_json_file>
```



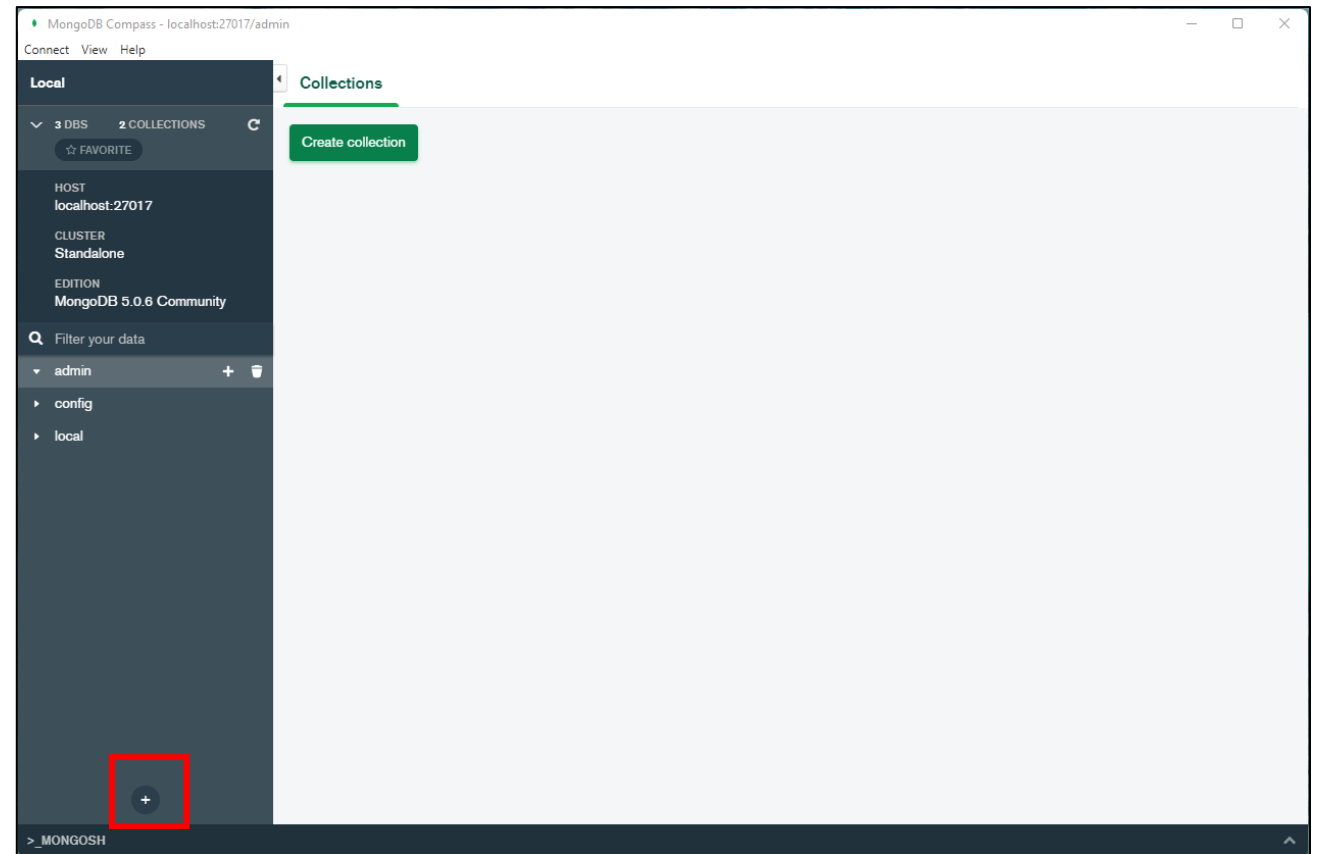
```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\mark> mongoimport --db test --collection library --jsonArray C:\Users\mark\Documents\library.json
```

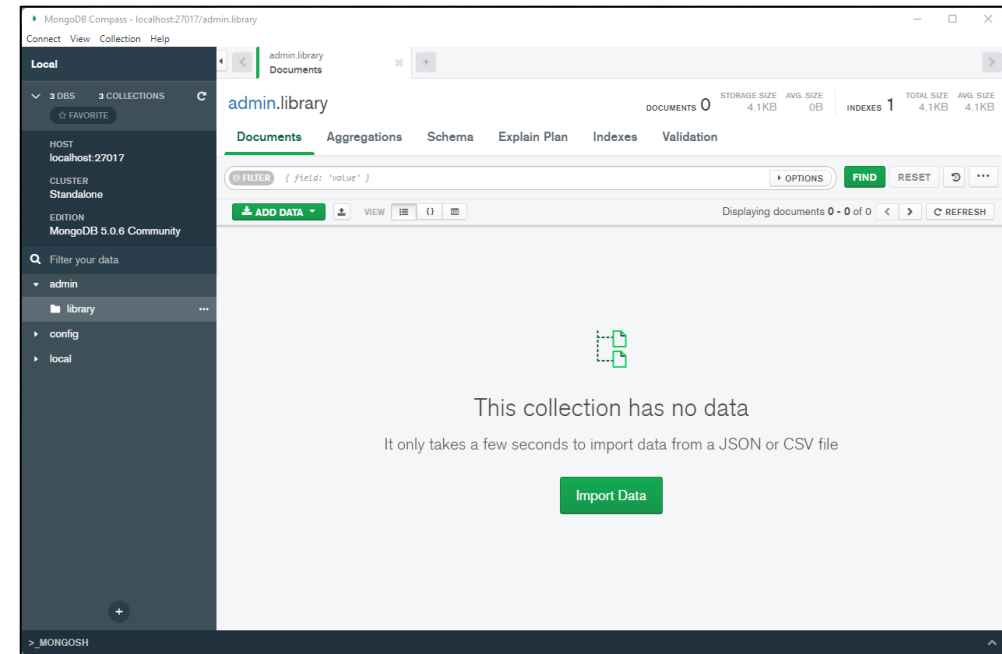
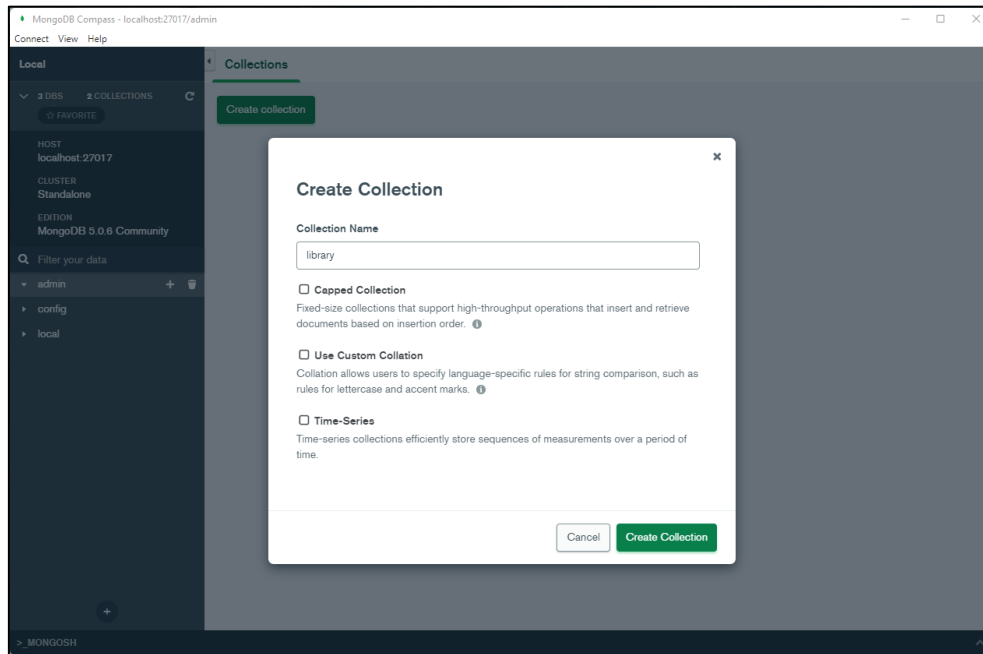
mangoDB

- Otherwise, you can also import data from GUI (mangoDB Compass)
- Open mangoDB Compass.
- Click “Connect” to have the GUI as shown on the right.
- Click “+” to create a database named “test”



mangoDB

- Otherwise, you can also import data from GUI (mongoDB Compass)
- Create a collection (database) named “library” and then import data.



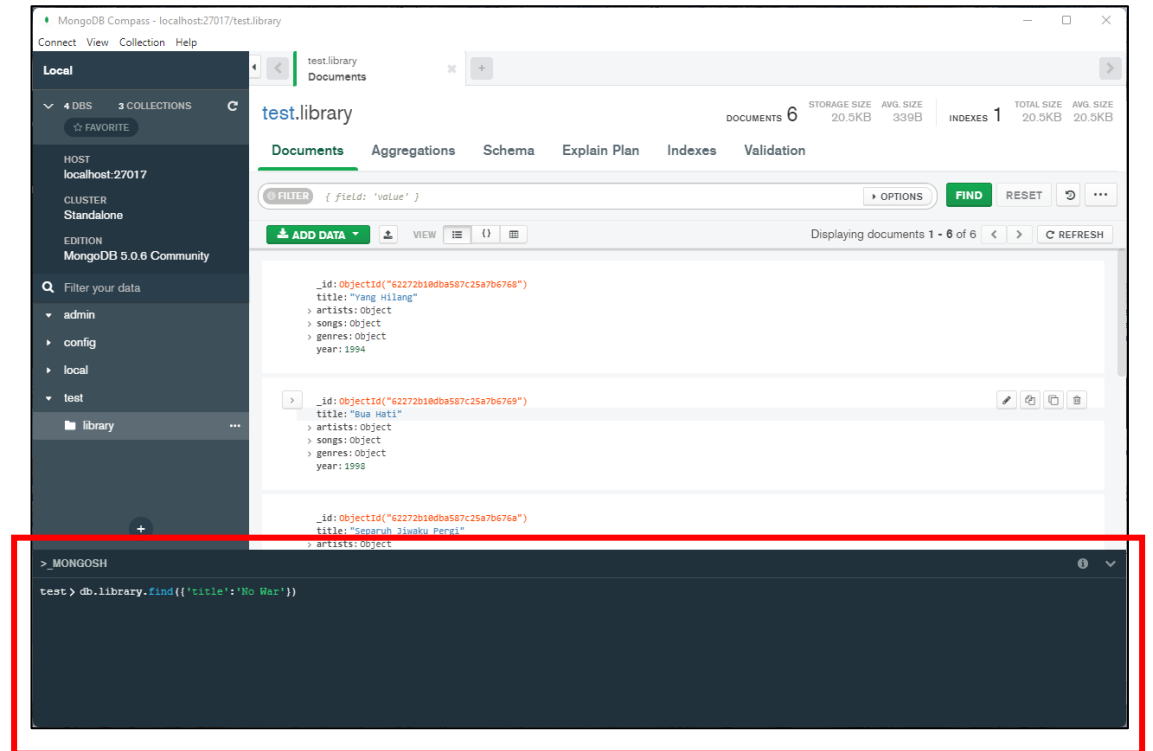
mangoDB

- Perform query through MONGOSH

- Click “>_MONGOSH” at the bottom.

- Try to make a query

(e.g. `db.library.find({'title': 'No War'})`)



mangoDB

- Demonstration

See you next week...