



# Introduction to Database Systems: CS312

## MongoDB

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# Getting started with Mongo in Docker

Start  
MongoDB

Windows

MacOS and Linux

Killing a  
container

Exam2

Practical 04

Create a Docker container from DockerHub for Mongo: Windows.

```
docker pull mongo
```

Create a Docker container from DockerHub for Mongo: MacOS and Linux.

```
sudo docker pull mongo
```

# Setup Mongo in Docker Container

## Windows, Powershell

Start  
MongoDB

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container

Exam2

Practical 04



Create a local directory for your data

```
mkdir c:\mongodata
```

Start a Docker container running the Mongo DB server

```
docker run -it -v c:\mongodata:/data/db --name mongodb -d mongo
```

Check log to see that the server is operational

```
docker logs mongodb  
docker ps
```

Run instance of MongoDB, goes into root of container.

```
docker exec -it mongodb bash
```

# Setup Mongo in Docker Container

## Windows, Powershell

Start  
MongoDB

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Exam2

Practical 04



Start the MongoDB client

```
mongo
```

You are now able to run MongoDB commands here.

Note: exit to quit.

# Setup Mongo in Docker Container

## Windows, Powershell

Start  
MongoDB

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Exam2

Practical 04



Leave the container

```
exit
```

Stop Mongo container

```
docker stop mongodb
```

Removing all stopped containers, if necessary due to errors in  
launching container

```
docker rm $(docker ps -a -q)
```

# Setup Mongo in Docker Container

## MacOS and Linux, Terminal

Start  
MongoDB

Windows

MacOS and Linux

Killing a  
container

Exam2

Practical 04



Create a directory for data to persist.

```
mkdir -p ~/mongodata
```

Start a Docker container running the Mongo DB server

```
sudo docker run -it -v ~/mongodata:/data/db --name mongodb -d mongo
```

Check log to see that the server is operational

```
sudo docker logs mongodb  
sudo docker ps
```

Run instance of MongoDB, goes into root of container.

```
sudo docker exec -it mongodb bash
```

# Setup Mongo in Docker Container

## MacOS and Linux, Terminal

Start  
MongoDB  
Windows  
MacOS and Linux  
Killing a  
container  
Exam2  
Practical 04



Start the MongoDB client

```
mongo
```

You are now able to run MongoDB commands here.  
Note: exit to quit.

# Setup Mongo in Docker Container

## MacOS and Linux, Terminal

Start  
MongoDB

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Exam2

Practical 04



Leave the container

```
exit
```

Stop MongoDB container

```
sudo docker stop mongodb
```

Removing all stopped containers, if necessary due to errors in  
launching container

```
sudo docker rm $(docker ps -a -q)
```



# Killing a Docker Container

If you have trouble running it, try relaunching the container

## Find out the container's ID

```
docker ps
```

Your container's ID. This one is; 4e9d863407ac

CONTAINER ID
4e9d863407ac

IMAGE
mongo

## Stop MongoDB container

```
docker stop mongodb # Windows
```

```
sudo docker stop mongodb # MacOS and Linux
```

## Remove MongoDB container

```
docker rm 4e9d863407ac # Windows
```

```
sudo docker rm 4e9d863407ac # MacOS and Linux
```

You should now be able to run your run and execute commands from above.

# Copy code into mongoDB's data directory

File: sandbox/mongoDemo.py

Start  
MongoDB

Killing a  
container

Exam2

Practical 04

Note: We complete these commands OUTSIDE the container.

Make a src/ directory in mongodata/: Windows

```
mkdir c:\mongodata\src\
```

Make a src/ directory in mongodata/: MacOS and Linux

```
mkdir ~/mongodata/src/
```

Copy your sandbox/pymongoDemo.py file into your data directory:  
Windows

```
copy mongoDemo.py C:\mongoData\src\
```

Copy your sandbox/pymongoDemo.py file into your data directory:  
MacOS and Linux

```
cp mongoDemo.py ~/mongodata/src/
```

# Setup PyMongo in Docker Container

Docker's *root* Terminal

Start  
MongoDB

Killing a  
container

Exam2

Practical 04

Note: We complete these commands INSIDE the container.

Get ready to install Python: update software packages

```
apt-get update
```

Install Python (ver 3) and PIP in the MongoDB container

```
apt-get install python3-pip
```

Install Pymongo in the MongoDB container

```
pip3 install pymongo
```

Navigate to File:abstraction.py to run

```
cd /data/db/src/  
python3 mongoDemo.py
```

## From the SLIDES

The exam requirements have been simplified.

- Given on Wednesday, 11<sup>th</sup> Nov. at 11:30am
- Using `sakai.allegheny.edu` (see **Tests & Quizes** tab)
- Complete by Thursday, 12<sup>th</sup> by 3pm (a day to complete)
- Multiple choice, matching and short essay
- Lab material is not on the test.
- Writing queries in MongoDB
- Concepts about using Python for simple automation
- Basic Django setup
- Short answers over concepts

## GitHub submission

- Write queries in MongoDB
- File: `sandbox/04_practical/queries.md`
  - Move the directory (`04_practical/`) into your practicals repository (with files) to submit your work.
- GitHub Classroom repository link:  
<https://classroom.github.com/a/3FKw8tMD>
- Useful commands:
  - `git add -A`
  - `git commit -m "Your commit caption here"`
  - `git push`
- Your check-marked assignment is due by 11<sup>nd</sup> Nov 2020, 11:30 EDT

**THINK**