

## Exercise 1: Install the Pymongo driver

You need the Pymongo driver installed to access the MongoDB database from Python.

Open a new terminal and run the following command:

1. 1
1. python3 -m pip install pymongo

Copied!

If the above command results in error /usr/bin/python3: No module named pip, you need to install pip (PIP is a package manager for Python packages or modules) and then install pymongo.

1. 1
2. 2
3. 3
1. curl https://bootstrap.pypa.io/get-pip.py -o get-pip.py
2. python3 get-pip.py
3. python3 -m pip install pymongo

Copied!

This action installs the Python MongoDB driver like in the following image.

```
theia@theia-: /home/project$ python3 -m pip install pymongo
Collecting pymongo
  Downloading https://files.pythonhosted.org/packages/10/3b/46541b4ee3000019b8ef5b1847292ddc77f492c162bc4d49c424db7fc97a/pymongo-4.1.1-cp36-cp36m-manylinux1_x86_64.whl (464kB)
    100% |#####| 471kB 2.7MB/s
Installing collected packages: pymongo
Successfully installed pymongo-4.1.1
```

## Exercise 2: Connect to mongodb server using Python

Open `mongo_connect.py` in IDE

Copy and paste the below code into this file.

```
1. 1
2. 2
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4. 4
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12. 12
13. 13
14. 14
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16. 16
17. 17
18. 18
19. 19
20. 20
21. 21
22. 22
23. 23

1. from pymongo import MongoClient
2. user = 'root'
3. password = 'MjQwOTgtcnNhbm5h' # CHANGE THIS TO THE PASSWORD YOU NOTED IN THE EARLIER EXERCISE - 2
4. host='localhost'
5. #create the connection url
6. connecturl = "mongodb://{}:{}@{}:27017/?authSource=admin".format(user,password,host)
7.
8. # connect to mongodb server
9. print("Connecting to mongodb server")
10. connection = MongoClient(connecturl)
11.
12. # get database list
13. print("Getting list of databases")
14. dbs = connection.list_database_names()
15.
16. # print the database names
```

```

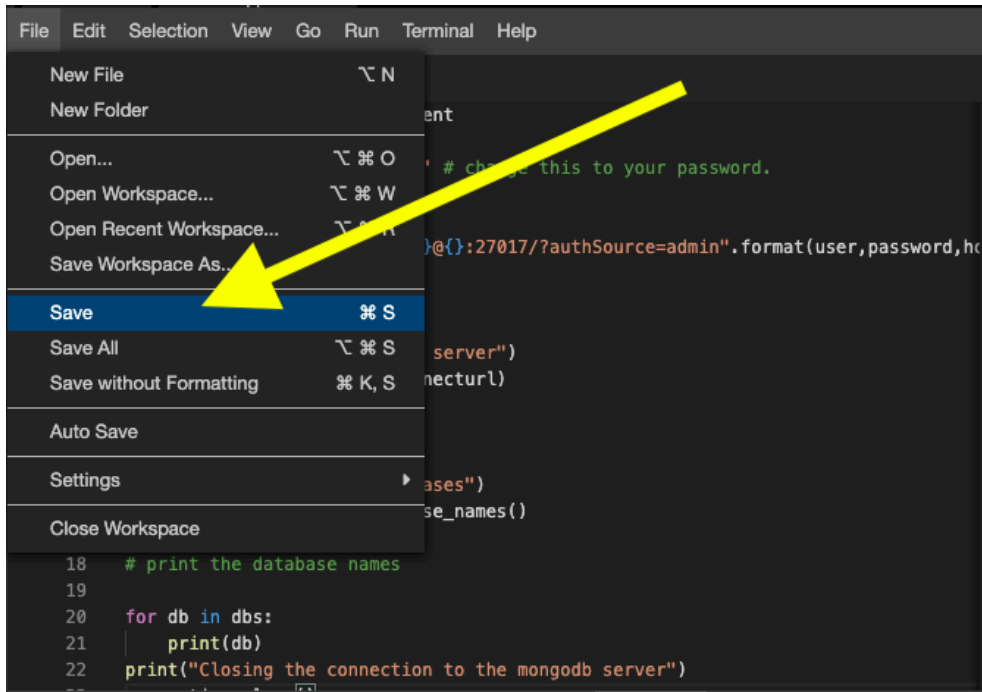
17.
18. for db in dbs:
19.     print(db)
20. print("Closing the connection to the mongodb server")
21.
22. # close the server connecton
23. connection.close()

```

Copied!

Note: Please ensure that you have replaced the password value in the file above with the password for your MongoDB server.

Save the code file using the File->Save menu option, like in the following image.



Copy and paste the following code on the terminal to run this file.

```

1. 1
1. python3 mongo_connect.py

```

Copied!

You should see an output like the one in the following image.

```

theia@theiadocker-rsannareddy:/home/project$ python mongo_connect.py
Connecting to mongodb server
Getting list of databases
admin
config
local
Closing the connection to the mongodb server
theia@theiadocker-rsannareddy:/home/project$

```

## Exercise 4 - Working with documents

In this exercise, you will make the Python program do the following tasks:

- Connect to the MongoDB server
- Select a database named training
- Select a collection named python
- Insert a sample document
- Query all the documents in the training database and python collection
- Close the connection to the server

Open `mongo_connect.py` in IDE

Copy and paste the following code into `mongo_query.py`.

```

1. 1
2. 2

```

```

3. 3
4. 4
5. 5
6. 6
7. 7
8. 8
9. 9
10. 10
11. 11
12. 12
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34. 34
35. 35
36. 36
37. 37
38. 38
39. 39
40. 40

```

```

1. from pymongo import MongoClient
2. user = 'root'
3. password = 'MjQwOTgtcnNhbm5h' # CHANGE THIS TO THE PASSWORD YOU NOTED IN THE EARLIER EXERCISE - 2
4. host='localhost'
5. #create the connection url
6. connecturl = "mongodb://{user}:{password}@localhost:27017/?authSource=admin".format(user,password,host)
7.
8. # connect to mongodb server
9. print("Connecting to mongodb server")
10. connection = MongoClient(connecturl)
11.
12. # select the 'training' database
13.
14. db = connection.training
15.
16. # select the 'python' collection
17.
18. collection = db.python
19.
20. # create a sample document
21.
22. doc = {"lab":"Accessing mongodb using python", "Subject":"No SQL Databases"}
23.
24. # insert a sample document
25.
26. print("Inserting a document into collection.")
27. db.collection.insert_one(doc)
28.
29. # query for all documents in 'training' database and 'python' collection
30.
31. docs = db.collection.find()
32.
33. print("Printing the documents in the collection.")
34.
35. for document in docs:
36.     print(document)
37.
38. # close the server connecton
39. print("Closing the connection.")
40. connection.close()

```

*Handwritten notes:*

- your password* (pointing to line 3)
- change to mongodb-stressary* (pointing to line 18)
- prepare to be inserted* (pointing to line 22)
- insert* (pointing to line 27)
- show output* (pointing to line 31)
- real print* (pointing to line 36)

Copied!

Note: Please ensure you have replaced the password value in the above file with the password for the MongoDB server you copied.

Save the file.

Run the file using the following command.

1. 1
1. python3 mongo\_query.py

Copied!

You should see an output like the one in the following below.

```
theia@theiadosker-: /home/project$ python3 mongo_query.py
Connecting to mongodb server
Inserting a document into collection.
Printing the documents in the collection.
{'_id': ObjectId('64b5b63efe8fc494a6a999bb'), 'lab': 'Accessing mongodb using python', 'Subject': 'No SQL Databases'}
Closing the connection.
```

## Practice exercise

Write a Python program that can:

- Connect to the MongoDB server
- Select a database named training
- Select a collection named mongodb\_glossary
- Insert the following documents into the collection mongodb\_glossary

1. 1
2. 2
3. 3
1. {"database": "a database contains collections"}
2. {"collection": "a collection stores the documents"}
3. {"document": "a document contains the data in the form of key value pairs."}

Copied!

- Query and print all the documents in the training database and mongodb\_glossary collection
- Close the connection to the server

## Solution to practice exercise

1. 1
2. 2
3. 3
4. 4
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6. 6
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10. 10
11. 11
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34. 34
35. 35
36. 36
37. 37
38. 38
39. 39
40. 40
41. 41
42. 42
43. 43
44. 44

```
1. from pymongo import MongoClient
2. user = 'root'
3. password = 'MjQwOTgtcnNhbm5h' # CHANGE THIS TO THE PASSWORD YOU NOTED IN THE EARLIER EXERCISE - 2
4. host='localhost'
5. #create the connection url
6. connecturl = "mongodb://{}:{}:27017/?authSource=admin".format(user,password,host)
7.
8. # connect to mongodb server
9. print("Connecting to mongodb server")
10. connection = MongoClient(connecturl)
11.
12. # select the 'training' database
13.
14. db = connection.training
15.
16. # select the 'python' collection
17.
18. collection = db.mongodb_glossary
19.
20. # create documents
21.
22. doc1 = {"database":"a database contains collections"}
23. doc2 = {"collection":"a collection stores the documents"}
24. doc3 = {"document":"a document contains the data in the form of key value pairs."}
25.
26. # insert documents
27. print("Inserting documents into collection.")
28.
29. db.collection.insert_one(doc1)
30. db.collection.insert_one(doc2)
31. db.collection.insert_one(doc3)
32.
33. # query for all documents in 'training' database and 'python' collection
34.
35. docs = db.collection.find()
36.
37. print("Printing the documents in the collection.")
38.
39. for document in docs:
40.     print(document)
41.
42. # close the server connection
43. print("Closing the connection.")
44. connection.close()
```

Copied!

## Summary

In this lab, you have gained an understanding of working with MongoDB in Python.

## Author(s)

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