nosql

November 7, 2023

[1]:
```
pip install pymongo
```

```
Collecting pymongo
  Obtaining dependency information for pymongo from https://files.pythonhosted.o
rg/packages/50/16/d5b3e2d5d23e81bfd0a1bc04a038f7075992ebffa361f789880a155a2c61/p
ymongo-4.6.0-cp311-cp311-win_amd64.whl.metadata
  Downloading pymongo-4.6.0-cp311-cp311-win_amd64.whl.metadata (22 kB)
Collecting dnspython<3.0.0,>=1.16.0 (from pymongo)
  Obtaining dependency information for dnspython<3.0.0,>=1.16.0 from https://fil
es.pythonhosted.org/packages/f6/b4/0a9bee52c50f226a3cbfb54263d02bb421c7f2adc1365
20729c2c689c1e5/dnspython-2.4.2-py3-none-any.whl.metadata
  Downloading dnspython-2.4.2-py3-none-any.whl.metadata (4.9 kB)
Downloading pymongo-4.6.0-cp311-cp311-win_amd64.whl (472 kB)
   ---------------------------------------- 0.0/472.7 kB ? eta -:--:--
    --------------------------------------- 10.2/472.7 kB ? eta -:--:--
    --------------------------------------- 10.2/472.7 kB ? eta -:--:--
   -- ------------------------------------- 30.7/472.7 kB 217.9 kB/s eta 0:00:03
   --- ------------------------------------ 41.0/472.7 kB 245.8 kB/s eta 0:00:02
   ------ ----------------------------------- 81.9/472.7 kB 416.7 kB/s eta 0:00:01
   --------- ---------------------------- 122.9/472.7 kB 514.3 kB/s eta 0:00:01
   ------------ ------------------------ 174.1/472.7 kB 655.4 kB/s eta 0:00:01
   ------------ ------------------------ 174.1/472.7 kB 655.4 kB/s eta 0:00:01
   ---------------------- -------------- 286.7/472.7 kB 842.9 kB/s eta 0:00:01
   ----------------------- ------------- 307.2/472.7 kB 905.4 kB/s eta 0:00:01
   ----------------------- ------------- 307.2/472.7 kB 905.4 kB/s eta 0:00:01
   ------------------------------------ -- 440.3/472.7 kB 1.0 MB/s eta 0:00:01
   ------------------------------------ -- 440.3/472.7 kB 1.0 MB/s eta 0:00:01
   -------------------------------------  471.0/472.7 kB 921.6 kB/s eta 0:00:01
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   ---------------------------------------- 472.7/472.7 kB 778.6 kB/s eta 0:00:00
Downloading dnspython-2.4.2-py3-none-any.whl (300 kB)
   ---------------------------------------- 0.0/300.4 kB ? eta -:--:--
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   ---------- ----------------------------- 81.9/300.4 kB ? eta -:--:--
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```

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   -------------------- --------------- 174.1/300.4 kB 419.0 kB/s eta 0:00:01
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   --------------------------------- ---- 266.2/300.4 kB 606.6 kB/s eta 0:00:01
   ----------------------------------- ---- 297.0/300.4 kB 592.4 kB/s eta 0:00:01
   ----------------------------------- ---- 297.0/300.4 kB 592.4 kB/s eta 0:00:01
   ------------------------------------ --- 300.4/300.4 kB 501.9 kB/s eta 0:00:00
Installing collected packages: dnspython, pymongo
Successfully installed dnspython-2.4.2 pymongo-4.6.0
Note: you may need to restart the kernel to use updated packages.


[notice] A new release of pip is available: 23.2.1 -> 23.3.1
[notice] To update, run: python.exe -m pip install --upgrade pip
```

[5]:
```
import pymongo
client=pymongo.MongoClient("mongodb+srv://Sain:sainiscool@cluster0.ugatn9a.
 ↪mongodb.net/?retryWrites=true&w=majority")
db=client.test
```

[6]:
```
client
```

[6]:
```
MongoClient(host=['ac-aqjmefu-shard-00-00.ugatn9a.mongodb.net:27017', 'ac-
aqjmefu-shard-00-02.ugatn9a.mongodb.net:27017', 'ac-aqjmefu-
shard-00-01.ugatn9a.mongodb.net:27017'], document_class=dict, tz_aware=False,
connect=True, retrywrites=True, w='majority', authsource='admin',
replicaset='atlas-rn8vu9-shard-0', tls=True)
```

[7]:
```
db=client['mongodb'] #creating database
```

[8]:
```
emp=db['employee'] #creating collection (table)
```

[9]:
```
data={
"name":"Sain Marbaniang",
"id":12345,
"role":"Devloper"
}
```

Data created but not inserted into the table

[10]:
```
emp.insert_one(data)
```

[10]:
```
InsertOneResult(ObjectId('65487b494dd5d66951e82560'), acknowledged=True)
```

[11]:
```
data1={
"mail":"hari@gmail.com",
"phone":9861298765
}
```

[12]:
```
emp.insert_one(data1)
```

[12]:
```
InsertOneResult(ObjectId('654881084dd5d66951e82561'), acknowledged=True)
```

[13]:
```
data2={
"skills":["C","Java","Python"],
"language":["Hindi","English"]
}
```

[14]:
```
emp.insert_one(data2)
```

[14]:
```
InsertOneResult(ObjectId('6548812a4dd5d66951e82562'), acknowledged=True)
```

[15]:
```
data3=[
{"name": "Amy", "address": "Apple st 652" },
{"name":"Hannah", "address": "Mountain 21" },
{"name":"Michael", "address": "Valley 345" },
{"name": "Sandy", "address": "Ocean blvd 2" },
{"name": "Betty", "address": "Green Grass 1" },
{"name":"Richard", "address": "Sky st 331" }
]
```

[17]:
```
emp.insert_many(data3) #insering multiple data at a time
```

[17]:
```
InsertManyResult([ObjectId('654881ae4dd5d66951e82563'),
ObjectId('654881ae4dd5d66951e82564'), ObjectId('654881ae4dd5d66951e82565'),
ObjectId('654881ae4dd5d66951e82566'), ObjectId('654881ae4dd5d66951e82567'),
ObjectId('654881ae4dd5d66951e82568')], acknowledged=True)
```

[18]:
```
emp.find_one()
```

[18]:
```
{'_id': ObjectId('65487b494dd5d66951e82560'),
 'name': 'Sain Marbaniang',
 'id': 12345,
 'role': 'Devloper'}
```

[21]:
```
for i in emp.find(): #selecting all data
    print(i)
```

```
{'_id': ObjectId('65487b494dd5d66951e82560'), 'name': 'Sain Marbaniang', 'id':
12345, 'role': 'Devloper'}
{'_id': ObjectId('654881084dd5d66951e82561'), 'mail': 'hari@gmail.com', 'phone':
```

```
9861298765}
{'_id': ObjectId('6548812a4dd5d66951e82562'), 'skills': ['C', 'Java', 'Python'],
'language': ['Hindi', 'English']}
{'_id': ObjectId('654881ae4dd5d66951e82563'), 'name': 'Amy', 'address': 'Apple
st 652'}
{'_id': ObjectId('654881ae4dd5d66951e82564'), 'name': 'Hannah', 'address':
'Mountain 21'}
{'_id': ObjectId('654881ae4dd5d66951e82565'), 'name': 'Michael', 'address':
'Valley 345'}
{'_id': ObjectId('654881ae4dd5d66951e82566'), 'name': 'Sandy', 'address': 'Ocean
blvd 2'}
{'_id': ObjectId('654881ae4dd5d66951e82567'), 'name': 'Betty', 'address': 'Green
Grass 1'}
{'_id': ObjectId('654881ae4dd5d66951e82568'), 'name': 'Richard', 'address': 'Sky
st 331'}
```

[22]:
```
for i in emp.find({'name':'Amy'}):
    print(i)
```

```
{'_id': ObjectId('654881ae4dd5d66951e82563'), 'name': 'Amy', 'address': 'Apple
st 652'}
```

[24]:
```
prod=db['products']
```

[25]:
```
prod_data=[
{ "ProductID": 1, "Name": "Laptop", "Price": 999, "Category": "Electronics" },
{ "ProductID": 2, "Name": "T-shirt", "Price": 20, "Category": "Clothing" },
{ "ProductID": 3, "Name": "Headphones", "Price": 50, "Category": "Electronics" }
]
```

[27]:
```
prod.insert_many(prod_data)
```

[27]:
```
InsertManyResult([ObjectId('654884f84dd5d66951e82569'),
ObjectId('654884f84dd5d66951e8256a'), ObjectId('654884f84dd5d66951e8256b')],
acknowledged=True)
```

[28]:
```
for i in prod.find():
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 999, 'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e8256a'), 'ProductID': 2, 'Name': 'T-shirt',
'Price': 20, 'Category': 'Clothing'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 50, 'Category': 'Electronics'}
```

[29]:
```
for i in prod.find({'Category': 'Electronics'}):
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 999, 'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 50, 'Category': 'Electronics'}
```

[30]:
```
for i in prod.find({'Price': {'$gte':50}}):
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 999, 'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 50, 'Category': 'Electronics'}
```

[31]:
```
for i in prod.find({},{"Name":1,"Price":1}):
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'Name': 'Laptop', 'Price': 999}
{'_id': ObjectId('654884f84dd5d66951e8256a'), 'Name': 'T-shirt', 'Price': 20}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'Name': 'Headphones', 'Price': 50}
```

[32]:
```
for i in prod.find({},{"_id":0,"Name":1,"Price":1}):
    print(i)
```

```
{'Name': 'Laptop', 'Price': 999}
{'Name': 'T-shirt', 'Price': 20}
{'Name': 'Headphones', 'Price': 50}
```

[33]:
```
for i in prod.find({},{"Price":0}):
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e8256a'), 'ProductID': 2, 'Name': 'T-shirt',
'Category': 'Clothing'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Category': 'Electronics'}
```

[34]:
```
for i in prod.find().sort({"Price":1}):
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e8256a'), 'ProductID': 2, 'Name': 'T-shirt',
'Price': 20, 'Category': 'Clothing'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 50, 'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 999, 'Category': 'Electronics'}
```

[35]:
```
for i in prod.find().sort({"Price":-1}).limit(1):
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 999, 'Category': 'Electronics'}
```

[36]:
```
prod.update_one({ "Name": "Laptop" }, { "$set": { "Price": 1099 } })
```

[36]:
```
UpdateResult({'n': 1, 'electionId': ObjectId('7fffffff00000000000002ce'),
'opTime': {'ts': Timestamp(1699251757, 5), 't': 718}, 'nModified': 1, 'ok': 1.0,
'$clusterTime': {'clusterTime': Timestamp(1699251757, 5), 'signature': {'hash':
b'\xdbP\x1d\xef\xe5\xed\xc1k\x83o\x84O\xfa\x85\xd7\x99\x1aH\xca,', 'keyId':
7260018185204662274}}, 'operationTime': Timestamp(1699251757, 5),
'updatedExisting': True}, acknowledged=True)
```

[37]:
```
for i in prod.find():
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 1099, 'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e8256a'), 'ProductID': 2, 'Name': 'T-shirt',
'Price': 20, 'Category': 'Clothing'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 50, 'Category': 'Electronics'}
```

[38]:
```
prod.update_many({},{"$inc":{"Price":10}})
```

[38]:
```
UpdateResult({'n': 3, 'electionId': ObjectId('7fffffff00000000000002ce'),
'opTime': {'ts': Timestamp(1699251806, 18), 't': 718}, 'nModified': 3, 'ok':
1.0, '$clusterTime': {'clusterTime': Timestamp(1699251806, 18), 'signature':
{'hash': b',\x92\xd8\x16\rN\x16\x8c_5\xa4\xd9\x02\x82\xdeQ\xb9?Q!', 'keyId':
7260018185204662274}}, 'operationTime': Timestamp(1699251806, 18),
'updatedExisting': True}, acknowledged=True)
```

[39]:
```
for i in prod.find():
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 1109, 'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e8256a'), 'ProductID': 2, 'Name': 'T-shirt',
'Price': 30, 'Category': 'Clothing'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 60, 'Category': 'Electronics'}
```

[40]:
```
prod.update_many({},{"$inc":{"Price":-20}})
```

[40]:
```
UpdateResult({'n': 3, 'electionId': ObjectId('7fffffff00000000000002ce'),
'opTime': {'ts': Timestamp(1699251870, 11), 't': 718}, 'nModified': 3, 'ok':
1.0, '$clusterTime': {'clusterTime': Timestamp(1699251870, 11), 'signature':
{'hash': b'\xf3\x90/M)\x06\tdW<L\x9f\xd9\xf6t2\x19{b\xd8', 'keyId':
7260018185204662274}}, 'operationTime': Timestamp(1699251870, 11),
'updatedExisting': True}, acknowledged=True)
```

[41]:
```
for i in prod.find():
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 1089, 'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e8256a'), 'ProductID': 2, 'Name': 'T-shirt',
'Price': 10, 'Category': 'Clothing'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 40, 'Category': 'Electronics'}
```

[42]:
```
pipeline=[{"$match":{'Category': 'Electronics'}},{ "$group": { '_id': 'null',␣
↪'avgPrice': { '$avg': "$Price" } } }]
```

[43]:
```
avg_price=list(prod.aggregate(pipeline))
print(avg_price)
```

```
[{'_id': 'null', 'avgPrice': 564.5}]
```

[44]:
```
prod.delete_one({'ProductID': 2})
```

[44]:
```
DeleteResult({'n': 1, 'electionId': ObjectId('7fffffff00000000000002ce'),
'opTime': {'ts': Timestamp(1699252017, 21), 't': 718}, 'ok': 1.0,
'$clusterTime': {'clusterTime': Timestamp(1699252017, 21), 'signature': {'hash':
b'\xd9\xf8.\xd69\xf6\xd2\x0e\xb0\xb9\xbc\xd6<s\xd2\r\xed\xf8M\xfd', 'keyId':
7260018185204662274}}, 'operationTime': Timestamp(1699252017, 21)},
acknowledged=True)
```

[45]:
```
for i in prod.find():
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e82569'), 'ProductID': 1, 'Name': 'Laptop',
'Price': 1089, 'Category': 'Electronics'}
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 40, 'Category': 'Electronics'}
```

[46]:
```
prod.delete_many({'Price':{'$gt':100}})
```

[46]:
```
DeleteResult({'n': 1, 'electionId': ObjectId('7fffffff00000000000002ce'),
'opTime': {'ts': Timestamp(1699252063, 8), 't': 718}, 'ok': 1.0, '$clusterTime':
{'clusterTime': Timestamp(1699252063, 8), 'signature': {'hash':
b'\xc5\xac\x84[\x9f\xebm\x0b\x88\xc0\xa9!\x8f7o\x8f!\x1f\x94J', 'keyId':
```

```
7260018185204662274}}, 'operationTime': Timestamp(1699252063, 8)},
acknowledged=True)
```

[47]:
```
for i in prod.find():
    print(i)
```

```
{'_id': ObjectId('654884f84dd5d66951e8256b'), 'ProductID': 3, 'Name':
'Headphones', 'Price': 40, 'Category': 'Electronics'}
```

[48]:
```
prod.drop() #drop the complete prod collection
```