Python Database Connectivity

1. **Python with MongoDB by Using pymongo Driver**

2. **Python with MySQL by Using pymysql Driver**

1. **Python with MongoDB by Using pymongo Driver**

Q1: How to install pymongo?

Ans: pip install pymongo

Q2: # wtite python script to connect with monngodb and display all databases

Make sure first install pymongo package

pip install pymongo

import pymongo

client = pymongo.MongoClient()

db_list = client.list_database_names()

print('The Available Database Name:')

print('*'*40)

n=1

for db in db_list:

    print(n,':',db)

    n=n+1

client.close()

print()

print('-'*40)

print()

OR

```python
from pymongo import MongoClient
client = MongoClient()
print('The Available Database Name:')
print('*'*40)
n=1
for db in db_list:
        print(n,':',db)
        n=n+1
client.close()
```

Write a program in python to create a databases name PythonDB and in that

Database create a collection named with employee and insert one document

```python
import pymongo
client = pymongo.MongoClient()
db = client['PythonDB']
emp_collection = db.employees
document = {'ENO':100, 'ENAME':'Durga','ESAL':1000, 'EADDR':'Hyderabad'}
emp_collection.insert_one(document)
print('Document Inserted')
client.close()
```

 # Write a program in python to create a databases name PythonDB2 and in that

 # Database create a collection named with employee and insert Multiple document

```python
import pymongo

client = pymongo.MongoClient()

db = client['PythonDB']

emp_collection = db.employees

emp_list = [

{'Eno':200, 'Ename':'Sunny','Esal':2000,'Eaddr':'Mumbai'},

{'Eno':300, 'Ename':'Bunny','Esal':3000,'Eaddr':'Hyderabad'},

{'Eno':400, 'Ename':'chinny','Esal':4000,'Eaddr':'Hyderabad'},

{'Eno':500, 'Ename':'Pinny','Esal':5000,'Eaddr':'Mumbai'}

]

emp_collection.insert_many(emp_list)

print('All document Inserted Successfully')

client.close()
```

'''Read Dynamic data from end user and insert into Database'''

```python
import pymongo

client = pymongo.MongoClient('localhost',27017)

db = client['PythonDB'] #Database Creation if db is not available

empcollection = db.employees #Employees Collection create if it not available
```

```python
while True:
    eno = int(input('Enter Employees No:'))
    ename = input('Enter Employees Name:')
    esal = float(input('Enter Employees Salary:'))
    eaddr = input('Enter Employees Address:')
    documents = {'ENO':eno, 'ENAME':ename, 'ESAL':esal, 'EADDR':eaddr}
empcollection.insert_one(documents)
print('Employee Documents Inserted Successfully')
option = input('Do You Want to Insert one more Documents[Yes|No]:').lower()
while option not in ('yes','y','no','n'):
    option = input('Invalid Option! Please select valid option[Yes|No]:')
if option in ('no','n'):
    break
print('Thanks for Using Our Application!!!!!!!!!')
client.close()
```

'''To Finde onlye One Documents from collection employees of PythonDB Database'''

```python
import pymongo
client = pymongo.MongoClient('mongodb://127.0.0.1:27017')
db = client['PythonDB']
empcoll = db.employees

document = empcoll.find_one()
# print(type(document))
```

```python
# print(document)
print('from First Way:')
print('.'*40)
print('Employee Number:',document['ENO'])
print('Employee Name:',document['ENAME'])
print('Employee Salary:',document['ESAL'])
print('Employee Address:',document['EADDR'])
print()
print('from Second Way:')
print('.'*40)
print('Employee Number:',document.get('ENO'))
print('Employee Number:',document.get('ENAME'))
print('Employee Number:',document.get('ESAL'))
print('Employee Number:',document.get('EADDR'))
client.close()


'''To Finde onlye All Documents from collection employees of
PythonDB Database'''
from pymongo import MongoClient
client = MongoClient()
db = client['PythonDB']
empcoll = db.employees

empCursor = empcoll.find()
# print(empCursor)
# print(type(empCursor))
print('ENO\tENAME\tESAL\tEADDR')
```

```python
for document in empCursor:
    print(f"{document['ENO']}\t{document['ENAME']}\t{document['ESAL']}\t{document['EADDR']}")

    # Another Way
    # print(f"{document.get('ENO')}\t{document.get('ENAME')}\t{document.get('ESAL')}\t{document.get('EADDR')}")

client.close()

'''
```

To find all Employees whose salary is greater than 1500

```python
'''
import pymongo

client = pymongo.MongoClient()

db = client['PythonDB']

empColl = db.employees


empCursor = empColl.find({'ESAL':{'$gt':1500}})

print('ENO\tENAME\tESAL\tEADDR')

for document in empCursor:
    print(f"{document['ENO']}\t{document['ENAME']}\t{document['ESAL']}\t{document['EADDR']}")

    # Another Way
    # print(f"{document.get('ENO')}\t{document.get('ENAME')}\t{document.get('ESAL')}\t{document.get('EADDR')}")
```

client.close()

'''

find the all employees information based on descending order of salary

Shell :   **db.employees.find().sort({'ESAL':-1})**

on Python: **empColl.find().sort('ESAL',-1)**

'''

from pymongo import MongoClient

client = MongoClient()

db = client['PythonDB']

empcoll = db.employees

empCursor = empcoll.find().sort('ESAL',-1)

print(empCursor)

print(type(empCursor))

print('ENO\tENAME\tESAL\tEADDR')

for document in empCursor:

                                                    print(f"{document['ENO']}\t{document['ENAME']}\t{document['ESAL']}\t{document['EADDR']}")

                                                    # Another Way

                                                    # print(f"{document.get('ENO')}\t{document.get('ENAME')}\t{document.get('ESAL')}\t{document.get('EADDR')}")

```
client.close()
'''
```

To Display 3 employees information who are having least salary

Shell:
                                   db.employees.
find().sort({'ESAL':1}).limit(3)

Python:
                                 empColl.find(
).sort('ESAL',1).limit(3)

'''

```python
from pymongo import MongoClient
client = MongoClient()
db = client['PythonDB']
empcoll = db.employees

empCursor = empcoll.find().sort('ESAL',1).limit(3)
# print(empCursor)
# print(type(empCursor))
print('ENO\tENAME\tESAL\tEADDR')
for document in empCursor:
    print(f"{document['ENO']}\t{document['ENAME']}\t{document['ESAL']}\t{document['EADDR']}")
    # Another Way
    # print(f"{document.get('ENO')}\t{document.get('ENAME')}\t{document.get('ESAL')}\t{document.get('EADDR')}")
```

```python
client.close()


'''
Display Employee information based on Take employee name by End User
'''
import pymongo
name = input('Enter Emplyee Name to get information:')


client = pymongo.MongoClient()
db = client['PythonDB']
empColl = db.employees


document = empColl.find_one({'ENAME':name})


if document is not None:
                                        print('Emplyoyee Information')

                                        print('='*40)
                                        print('Employee Number:',document.get('ENO'))

                                        print('Employee Name:',document.get('ENAME'))

                                        print('Employee Salary:',document.get('ESAL'))

                                        print('Employee Address:',document.get('EADDR'))
else:
```

```
                                print(f"{name
} is not available")
client.close()
```

2.   Python with MySQL by Using pymysql Driver

Q1: How to install pymysql?

Ans: pip install pymysql

```
'''
```

Write a python Script to Connect with MySql Database, Where Database name : durgadb,

in Mysql durgadb shold be available.

```
'''
```

```python
from pymysql import connect


# con = connect(host='127.0.0.1', port = 3306, database='durgadb',
user='root',password='1234')

con = connect(host='localhost', port = 3306, database='durgadb',
user='root',password='1234')

if con is not None:
                                print(f'Python
Connected With Mysql, Now You Can Communicate With Mysql')
else:
                                print('Somethi
ng goes Wrong!!!')
```

```
'''

Write a python Script to Connect with MySql Database, Where
Database name : durgadb,

in Mysql durgadb shold be available.

'''


from pymysql import connect


# con = connect(host='127.0.0.1', port = 3306, database='durgadb',
user='root',password='1234')

con = connect(host='localhost', port = 3306, database='durgadb',
user='root',password='1234')

if con is not None:
                                                          print(f'Python
Connected With Mysql, Now You Can Communicate With Mysql')
else:
                                                          print('Somethi
ng goes Wrong!!!')


'''

Write a python script to List out all tables in durgadb which is
available in MySql Database.

'''

from pymysql import connect

con = connect(host='127.0.0.1',port=3306, database='employee',
user='root',password='1234')

cursor = con.cursor()

cursor.execute('show tables')
```

```python
tables = cursor.fetchall()

i=1

print(f'All Tables in Avalabale in employee')

for table in tables:

                                                    print(f'{i}   :
                                                    {table[0]}')

                                                    i=i+1


'''
```

Write a python script to Create a table in durga db

create table employees(eno int(5) primary key, ename varchar(40),esal double(10,2),eaddr varchar(10))

```python
'''

from pymysql import connect

con = connect(host='127.0.0.1',port=3306,
user='root',database='durgadb',password='1234')

cursor = con.cursor()

command = 'CREATE TABLE EMPLOYEES(ENO INT(5) PRIMARY
KEY, ENAME VARCHAR(46),ESAL DOUBLE(10,2),EADDR
VARCHAR(10))'

cursor.execute(command)

print('Table Created in durgadb successfylly!')

cursor.close()

con.close()


'''
```

Write a python script to insert data into employees table which is the table of durgadb.

INSERT INTO EMPLOYEES(ENO,ENAME,ESAL,EADDR) VALUES (...............)

'''

```
from pymysql import connect

con = connect(host='localhost',user='root',port=3306, database='durgadb',password='1234')

cursor = con.cursor()

sql = 'INSERT INTO EMPLOYEES(ENO,ENAME,ESAL,EADDR) VALUES (%s,%s,%s,%s)'

records = [(100, 'Sunny',1000,'Mumbai'),(200, 'Bunny',2000,'Noida'),(300, 'Chinny',3000,'Delhi'),(400, 'Dunny',1000,'Bihar'),]

cursor.executemany(sql, records)

con.commit()

print('Data Inserted Successfully!')


con.close()
cursor.close()
```

'''

Write a python script to Select all data from employees table of durgadb

SELECT * FROM EMPLOYEES

'''

```
from pymysql import connect

con = connect(host='localhost',port=3306, user='root',password='1234',database='durgadb')

cursor = con.cursor()

cursor.execute('SELECT * FROM EMPLOYEES')
```

```python
all_data = cursor.fetchall()

for data in all_data:

    print(f'Eno: {data[0]} | ENAME: {data[1]} | ESAL : {data[2]} | EADDR: {data[3]}')
```