**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

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**

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**

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'''**

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

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'''**

import pymongo

client = pymongo.MongoClient('mongodb://127.0.0.1:27017')

db = client['PythonDB']

empcoll = db.employees

document = empcoll.find\_one()

# print(type(document))

# 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')

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**

**'''**

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)**

**'''**

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')}")

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.**

**'''**

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('Something 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('Something 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')

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))**

**'''**

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')

all\_data = cursor.fetchall()

for data in all\_data:

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