**MySQL - DATABASE / CRUD IN PYTHON**

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**Steps involved to connect a database using MySQL**

1. Install Connector
2. Import the module in the program
3. Used the connector to create a connection against the database
4. Using Connection we will create a cursor object – The Cursor is the key. Using Cursor we can execute all sql statements.

To connect and work with MySql database from the python script, we need to install the mysql connector

**In PyCharm (on the Terminal)**

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Windows PowerShell

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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

(.venv) PS C:\Users\kamal\PycharmProjects\pythonDatabaseProject> python --version

Python 3.11.7

(.venv) PS C:\Users\kamal\PycharmProjects\pythonDatabaseProject> pip -V

pip 23.2.1 from C:\Users\kamal\PycharmProjects\pythonDatabaseProject\.venv\Lib\site-packages\pip (python 3.11)

(.venv) PS C:\Users\kamal\PycharmProjects\pythonDatabaseProject> pip install mysql-connector-python

Collecting mysql-connector-python

Obtaining dependency information for mysql-connector-python from https://files.pythonhosted.org/packages/d9/91/007a0d60fee8db4f7385075dc50bf62d2d359b417b374ec06b06ce6c2d64/mysql\_connector\_python-8.3.0-cp311-cp311-win\_amd64.whl.metadata

Downloading mysql\_connector\_python-8.3.0-cp311-cp311-win\_amd64.whl.metadata (2.0 kB)

Downloading mysql\_connector\_python-8.3.0-cp311-cp311-win\_amd64.whl (15.4 MB)

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Installing collected packages: mysql-connector-python

Successfully installed mysql-connector-python-8.3.0

[notice] A new release of pip is available: 23.2.1 -> 24.0

[notice] To update, run: python.exe -m pip install --upgrade pip

(.venv) PS C:\Users\kamal\PycharmProjects\pythonDatabaseProject>

**READ RECORD FROM THE MYSQL DATABASE**

Create a file <filename.py>.

The code to check the connection and retrieve the data from database (READ) is as below:

**Code:**

import mysql.connector  
from mysql.connector import errorcode  
  
try:  
 cnx = mysql.connector.connect(host='localhost',database='pythondb',user='root', password='Jerrick2911')  
 *#print("Connected to MySQL - pythondb")* cursor = cnx.cursor()  
 cursor.execute("select \* from project")  
  
 *#USING CURSOR.FETCHONE* '''oneRecord=cursor.fetchone()  
 while oneRecord is not None:  
 print(oneRecord)  
 oneRecord = cursor.fetchone()'''  
  
 *# USING CURSOR.FETCHALL* allRecords = cursor.fetchall()  
 *# PRINT THE ROWCOUNT* print("Total Number of Records : ", cursor.rowcount)  
 for rec in allRecords:  
 print(rec)  
  
 print("<----------All records printed--------->")  
except mysql.connector.Error as err:  
 if err.errno == errorcode.ER\_ACCESS\_DENIED\_ERROR:  
 print("Something is wrong with your user name or password")  
 elif err.errno == errorcode.ER\_BAD\_DB\_ERROR:  
 print("Database does not exist")  
 else:  
 print(err)  
finally:  
 cursor.close()  
 cnx.close()

**Output:**

Total Number of Records : 5

(100, 'Python Developer', 'Kumar JesuRanjan', Decimal('75000.00'))

(101, 'Project Manager', 'Purusoth', Decimal('78000.00'))

(102, 'Hardware Maintenance', 'Ragav', Decimal('82000.00'))

(103, 'Java Developer', 'Kingsly', Decimal('90000.00'))

(104, 'Database Admin', 'Anwar', Decimal('95000.00'))

<----------All records printed--------->

**CREATE RECORD FROM THE MYSQL DATABASE**

Create a file <filename.py>.

The code to check the connection and WRITE the data from database (CREATE) is as below:

**Code:**

import mysql.connector  
from mysql.connector import errorcode  
  
try:  
 cnx = mysql.connector.connect(host='localhost',database='pythondb',user='root', password='Jerrick2911')  
 print("Connected to MySQL - pythondb")  
 cursor = cnx.cursor()  
  
 try:  
 cursor.execute("INSERT INTO project values(105,'Network Engineer', 'Kalivarathan', 88000.00);")  
 cnx.commit()  
 print("Record Added")  
 finally:  
 cnx.rollback()  
  
except mysql.connector.Error as err:  
 if err.errno == errorcode.ER\_ACCESS\_DENIED\_ERROR:  
 print("Something is wrong with your user name or password")  
 elif err.errno == errorcode.ER\_BAD\_DB\_ERROR:  
 print("Database does not exist")  
 else:  
 print(err)  
  
finally:  
 cursor.close()  
 cnx.close()

**Output:**

Connected to MySQL - pythondb

Record Added

**Output in MySQL:**

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**DELETE RECORD FROM THE MYSQL DATABASE**

Create a file <filename.py>.The code to check the connection and remove the data from database (DELETE) is as below:

**Code:**

import mysql.connector  
from mysql.connector import errorcode  
  
def deleteRecord(id):  
 try:  
 cnx = mysql.connector.connect(host='localhost', database='pythondb', user='root', password='Jerrick2911')  
 print("Connected to MySQL - pythondb")  
 cursor = cnx.cursor()  
 try:  
 delString = "delete from project where projectId='%d'"  
 args = (id)  
  
 cursor.execute(delString % args)  
 cnx.commit()  
 print("Record Deleted")  
 finally:  
 cnx.rollback()  
  
 except mysql.connector.Error as err:  
 if err.errno == errorcode.ER\_ACCESS\_DENIED\_ERROR:  
 print("Something is wrong with your user name or password")  
 elif err.errno == errorcode.ER\_BAD\_DB\_ERROR:  
 print("Database does not exist")  
 else:  
 print(err)  
  
 finally:  
 cursor.close()  
 cnx.close()  
  
prId = int(input("Please enter the recored to be deleted : "))  
deleteRecord(prId)

**Ouput in Console**

Please enter the recored to be deleted : 106

Connected to MySQL - pythondb

Record Deleted

**Output in MySQL:**

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Description automatically generated

**Code:**

import mysql.connector  
from mysql.connector import errorcode  
  
def updateRecord(id,sal):  
 try:  
 cnx = mysql.connector.connect(host='localhost', database='pythondb', user='root', password='Jerrick2911')  
 print("Connected to MySQL - pythondb")  
 cursor = cnx.cursor()  
 try:  
 updateString = "update project set projectStaffSal='%f' where projectId='%d'"  
 args = (sal,id)  
  
 cursor.execute(updateString % args)  
 cnx.commit()  
 print("Record Updated")  
 finally:  
 cnx.rollback()  
  
 except mysql.connector.Error as err:  
 if err.errno == errorcode.ER\_ACCESS\_DENIED\_ERROR:  
 print("Something is wrong with your user name or password")  
 elif err.errno == errorcode.ER\_BAD\_DB\_ERROR:  
 print("Database does not exist")  
 else:  
 print(err)  
  
 finally:  
 cursor.close()  
 cnx.close()  
  
prId = int(input("Please enter the recored to be updated : "))  
prSal = float(input("Please enter the salary to be updated : "))  
updateRecord(prId,prSal)

**Output in Console:**

Please enter the recored to be updated : 100

Please enter the salary to be updated : 85000

Connected to MySQL - pythondb

Record Updated

**Before Update:**

**A screenshot of a computer

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**After Update:**

**A screenshot of a computer

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**QUIZ**

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