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Platform Engineering

Assignment-2

- Operating on database through DB clients- connectors.

Database used - mysql

Programming language used – python

Question:

To perform functions- create ,update ,select ,delete

1. Auto create query for insert ,update ,delete
2. Auto create query for bulk insertion
3. To run a procedure

Mysql db:

```
C:\Users\Adithya>mysql -u root -p
Enter password: **********
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 15
Server version: 8.0.34 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```
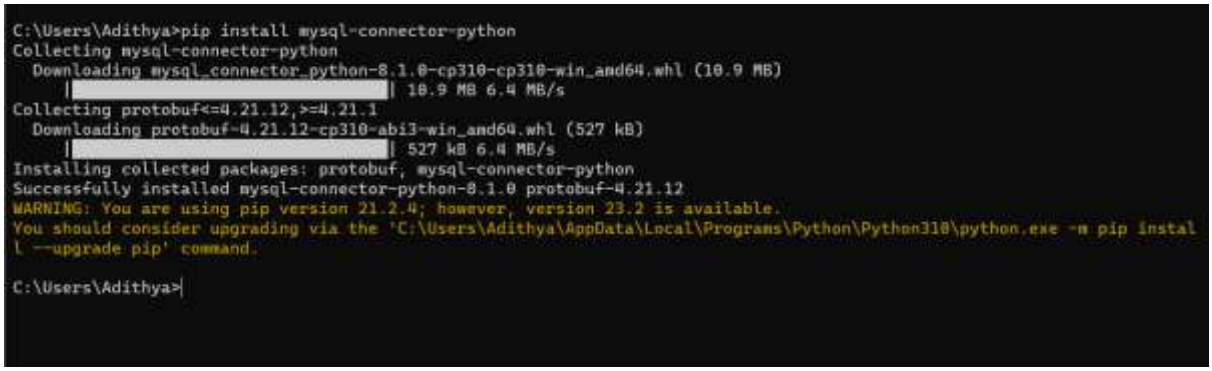
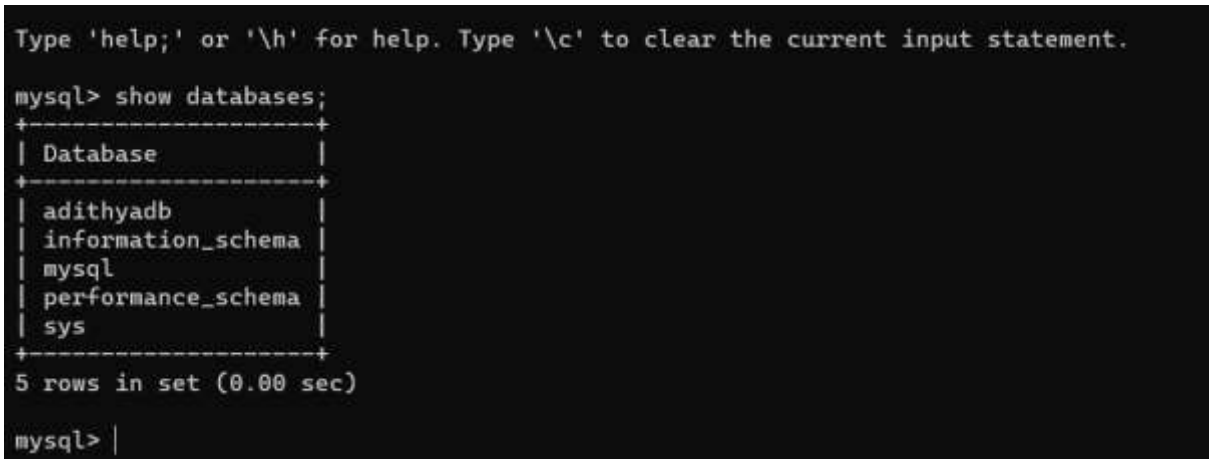

mysql and python versions:

```
Command Prompt
Microsoft Windows [Version 10.0.22621.1992]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Adithya>mysql --version
mysql  Ver 8.0.34 for Win64 on x86_64 (MySQL Community Server - GPL)

C:\Users\Adithya>python version
Starting Python ...
C:\Program Files\Simcenter\v1610_student\Amesim\sys\python\win64\Python.exe: can't open file 'version': [Errno 2] No suc
h file or directory

C:\Users\Adithya>python --version
Starting Python ...
Python 2.7.12

C:\Users\Adithya>pip --version
pip 21.2.4 from C:\Users\Adithya\AppData\Local\Programs\Python\Python310\lib\site-packages\pip (python 3.10)

C:\Users\Adithya>
```

Downloading python connector in command prompt:

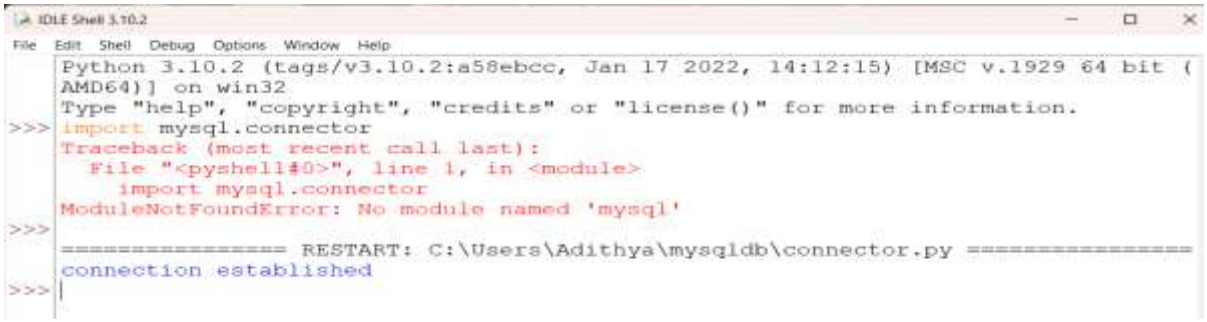


Databases present in mysql:



Python code to establish connection between mysql and python to perform CRUD operations:

After connection:



Creating table:

```
import mysql.connector
conn=mysql.connector.connect(host='localhost', password='Adithya@20', user='root' ,database='adithyadb')
if conn.is_connected():
    print("connection established")
else:
    print("connection not established")
cur=conn.cursor();
que="CREATE TABLE biodata(firstname varchar(30), lastname varchar(30), dept varchar(20),age int)"
cur.execute(que)
conn.commit
print("table created")
```

After creating table:

```
mysql> show tables;
Empty set (0.03 sec)

mysql> show tables;
+--------------------+
| Tables_in_adithyadb |
+--------------------+
| biodata            |
+--------------------+
1 row in set (0.00 sec)
```

Inserting data in the table:

py code:

```
insertdata.py - C:\Users\Adithya\mysqldb\insertdata.py (3.10.2)
File Edit Format Run Options Window Help
import mysql.connector
conn=mysql.connector.connect(host='localhost', password='Adithya@20', user='root' ,database='adithyadb')
if conn.is_connected():
    print("connection established")
else:
    print("connection not established")
cur=conn.cursor();
que='INSERT INTO biodata values("Adithya" ,"K" ,"IT" ,20)'
cur.execute(que)
conn.commit
print("data added")
```

```
================ RESTART: C:\Users\Adithya\mysqldb\insertdata.py
connection established
data added
>>>
```

Database being updated:

```
mysql> select * from biodata;
+-----------+----------+------+------+
| firstname | lastname | dept | age  |
+-----------+----------+------+------+
| Adithya   | k        | IT   |   20 |
+-----------+----------+------+------+
1 row in set (0.01 sec)

mysql>
```

Adding bulk values to table:

```
bulkinsert.py - C:/Users/Adithya/bulkinsert.py (3.10.2)
File Edit Format Run Options Window Help
import mysql.connector
conn=mysql.connector.connect(host='localhost', password='Adithya@20', user='root' ,database='adithyadb')
if conn.is_connected():
    print("connection established")
else:
    print("connection not established")

print("inserting bulk values")
for i in range(0,3,1):
    cur=conn.cursor();
    fname=input("Enter your first name:")
    lname=input("Enter your last name:")
    dept=input("Enter your department:")
    age=int(input("Enter your age:"))
    que='INSERT INTO biodata VALUES("{}","{}","{}","{}")'.format(fname,lname,dept,age)
    cur.execute(que);
    conn.commit
print("data inserted")
```

```
========== RESTART: C:/Users/Adithya/bulkinsert.py =
connection established
inserting bulk values
Enter your first name:akilesh
Enter your last name:m
Enter your department:it
Enter your age:23
Enter your first name:praveen
Enter your last name:v
Enter your department:mech
Enter your age:21
Enter your first name:abishek
Enter your last name:m
Enter your department:ece
Enter your age:22
data inserted
>>>
```

Database after inserting:

```
mysql> select * from biodata;
+-----------+----------+------+------+
| firstname | lastname | dept | age  |
+-----------+----------+------+------+
| Adithya   | k        | IT   |   20 |
| akilesh   | m        | it   |   23 |
| praveen   | v        | mech |   21 |
| abishek   | m        | ece  |   22 |
+-----------+----------+------+------+
4 rows in set (0.00 sec)
```

Updating values:

```
updatedata.py - C:/Users/Adithya/mysqldb/updatedata.py (3.10.2)
File Edit Format Run Options Window Help
import mysql.connector
conn=mysql.connector.connect(host='localhost', password='Adithya@20', user='root' ,database='adithyadb')
if conn.is_connected():
    print("connection established")
else:
    print("connection not established")
cur=conn.cursor();
que="UPDATE biodata SET age=20 WHERE firstname='praveen'"
cur.execute(que)
conn.commit
print("data updated")
```

```
========== RESTART: C:/Users/Adithya/mysqldb/updatedata.py
connection established
data updated
>>>
```

Database after updation:

```
mysql> select * from biodata;
+-----------+----------+------+------+
| firstname | lastname | dept | age  |
+-----------+----------+------+------+
| Adithya   | k        | IT   |   20 |
| akilesh   | m        | it   |   23 |
| praveen   | v        | mech |   20 |
| abishek   | m        | ece  |   22 |
+-----------+----------+------+------+
4 rows in set (0.00 sec)
```

Deleting values:

```
deletedata.py - C:/Users/Adithya/mysqldb/deletedata.py (3.10.2)
File Edit Format Run Options Window Help
import mysql.connector
conn=mysql.connector.connect(host='localhost', password='Adithya@20', user='root' ,database='adithyadb')
if conn.is_connected():
    print("connection established")
else:
    print("connection not established")
cur=conn.cursor();
que='DELETE FROM biodata WHERE firstname="Adithya"'
cur.execute(que)
conn.commit
print("data deleted")

================ RESTART: C:/Users/Adithya/mysqldb/deletedata.py
connection established
data deleted
>>>
```

Database after deletion:

```
mysql> select * from biodata;
+-----------+----------+------+------+
| firstname | lastname | dept | age  |
+-----------+----------+------+------+
| akilesh   | m        | it   |   23 |
| praveen   | v        | mech |   20 |
| abishek   | m        | ece  |   22 |
+-----------+----------+------+------+
3 rows in set (0.00 sec)
```

PROCEDURE:

Procedure to retrieve student age above 20:

```
mysql> DELIMITER &&
mysql> CREATE PROCEDURE above_age()
    -> BEGIN
    -> SELECT * FROM biodata WHERE age>20;
    -> SELECT COUNT(firstname) AS no_student FROM biodata;
    -> END &&
Query OK, 0 rows affected (0.02 sec)
```

Calling the procedure:

```
mysql> CALL above_age();
    -> END &&
+-----------+----------+------+------+
| firstname | lastname | dept | age  |
+-----------+----------+------+------+
| akilesh   | m        | it   |   23 |
| abishek   | m        | ece  |   22 |
+-----------+----------+------+------+
2 rows in set (0.00 sec)

+------------+
| no_student |
+------------+
```