



Experiment No. 6

Title: CRUD operations using Python



Batch: B-1

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Experiment No.:6

Aim: CRUD Operations in Python with MySQL Database

Resources needed: Python IDE , MySQL Server


Theory:

MySQL Connector/python, a self-contained Python driver for communicating with MySQL servers. A connection with the MySQL server can be established using either the `mysql.connector.connect ()` or the `mysql.connector.MySQLConnection ()` class .

```
cnx = mysql.connector.connect(user='joe', database='test')
```

```
cnx = mysql.connector.MySQLConnection(user='joe', database='test')
```

Connection Arguments for Connector:

- 
- **user (username*)** -The user name used to authenticate with the MySQL server.
 - **password (passwd*)**- The password to authenticate the user with the MySQL server.
 - **host** - The host name or IP address of the MySQL server and default is 127.0.0.1
 - **database (db*)** -The database name to use when connecting with the MySQL server.
 - **port** -The TCP/IP port of the MySQL server. Must be an integer and default is 3306

There are the following steps to connect a python application to the database.

1. Import `mysql.connector` module
2. Create the connection object.
3. Create the cursor object

4. Execute the query

Example

```

import mysql.connector

#Create the connection object
myconn = mysql.connector.connect(host = "localhost", user = "root", passwd = "pass1")

#creating the cursor object
cur = myconn.cursor()

try:
    dbs = cur.execute("show databases")
except:
    myconn.rollback()
for x in cur:
    print(x)
myconn.close()

```

**Activities:**

- Create a Employee Database to store all the Employee details.
- Read all the records from the Employee database.
- Give 15% hike in salary to all the employees who are having years of experience greater than 5.
- Delete the records for the employees who are having age equals to 60 yrs.
-

Result: (script and output)

Code:

```

import mysql.connector

conn = mysql.connector.connect (
    host="localhost",
    user="your_username",
    password="your_password",
    database="employee_database"
)

```

```

)

cursor = conn.cursor()

cursor.execute('''
    CREATE TABLE IF NOT EXISTS Employee (
        id INT AUTO_INCREMENT PRIMARY KEY,
        name VARCHAR(255),
        age INT,
        years_of_experience INT,
        salary FLOAT
    )
''')

cursor.executemany('''
    INSERT INTO Employee (name, age, years_of_experience, salary)
    VALUES (%s, %s, %s, %s)
''', [
    ('John Doe', 35, 7, 60000.0),
    ('Jane Smith', 45, 3, 50000.0),
    ('Bob Johnson', 60, 10, 75000.0),
    ('Alice Brown', 55, 8, 70000.0),
])

cursor.execute('SELECT * FROM Employee')
employees = cursor.fetchall()

print("Employee Database:")
for employee in employees:
    print(employee)

cursor.execute('''
    UPDATE Employee
    SET salary = salary * 1.15
    WHERE years_of_experience > 5
''')

cursor.execute('DELETE FROM Employee WHERE age = 60')

conn.commit()
conn.close()

```

Output:

```

Employee Database:
(1, 'John Doe', 35, 7, 60000.0)
(2, 'Jane Smith', 45, 3, 50000.0)
(3, 'Bob Johnson', 60, 10, 75000.0)
(4, 'Alice Brown', 55, 8, 70000.0)

```

Outcomes: Demonstrate handling database with python and to understand network Programming with Python scrapy.

Conclusion: (Conclusion to be based on the objectives and outcomes achieved)

The project "CRUD Operations in Python with MySQL Database" has successfully achieved its objectives by demonstrating the implementation of CRUD operations using Python and MySQL. The project has enhanced knowledge and skills in working with databases, Python programming, and SQL queries, enabling practical application in real-world scenarios.

References:

1. [PEP 249 – Python Database API Specification v2.0](#)
2. Daniel Arbutckle, Learning Python Testing, Packt Publishing, 1st Edition, 2014
3. Wesly J Chun, Core Python Applications Programming, O'Reilly, 3rd Edition, 2015
4. Wes McKinney, Python for Data Analysis, O'Reilly, 1st Edition, 2017
5. Albert Lukaszewsk, MySQL for Python, Packt Publishing, 1st Edition, 2010
6. Eric Chou, Mastering Python Networking, Packt Publishing, 2nd Edition, 2017

