Experiment No. 13
Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python
Date of Performance:
Date of Submission:

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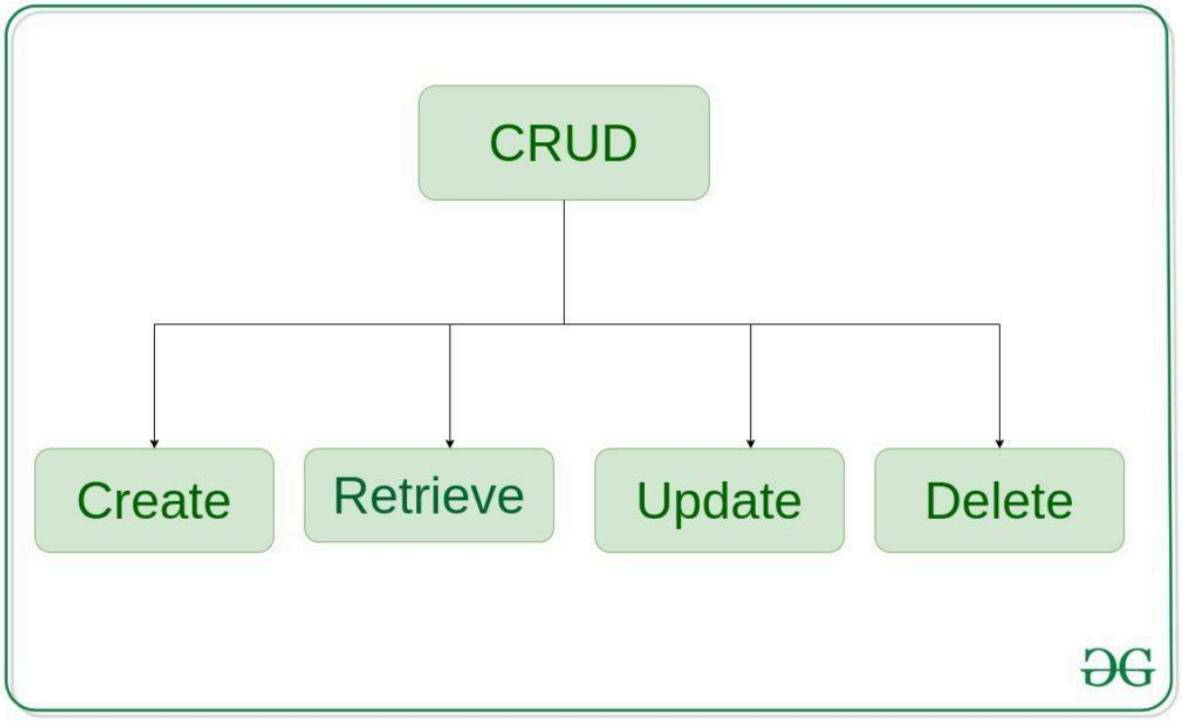
Title: Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python

Aim: To study and implement CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python

Objective: To introduce database connectivity with python

Theory:

In general CRUD means performing Create, Retrieve, Update and Delete operations on a table in a database. Let's discuss what actually CRUD means,



Create – create or add new entries in a table in the database.
Retrieve – read, retrieve, search, or view existing entries as a list(List View) or retrieve a particular entry in detail (Detail View)
Update – update or edit existing entries in a table in the database
Delete – delete, deactivate, or remove existing entries in a table in the database

Code:

```
import sqlite3


conn = sqlite3.connect('mydatabase.db')


cursor = conn.cursor()


cursor.execute('''
    CREATE TABLE IF NOT EXISTS users (
        id INTEGER PRIMARY KEY,
        name TEXT NOT NULL,
        age INTEGER
    )
''')


def create_user(name, age):
      cursor.execute('INSERT INTO users (name, age) VALUES (?, ?)',
(name, age))
    conn.commit()
    print('User created successfully!')


def read_users():
    cursor.execute('SELECT * FROM users')
    users = cursor.fetchall()
    if users:
        for user in users:
```

```
            print(f'ID: {user[0]}, Name: {user[1]}, Age: {user[2]}')
    else:
        print('No users found.')


def update_user(user_id, name, age):
    cursor.execute('UPDATE users SET name=?, age=? WHERE id=?', (name,
age, user_id))
    conn.commit()
    print('User updated successfully!')


def delete_user(user_id):
    cursor.execute('DELETE FROM users WHERE id=?', (user_id,))
    conn.commit()
    print('User deleted successfully!')


def main():
    create_user('Alice', 25)
    create_user('Bob', 30)

    print('---Users---')
    read_users()

    update_user(1, 'Alice Smith', 26)

    print('---Updated Users---')
    read_users()
```

```
    delete_user(2)


    print('---After Deletion---')
    read_users()


if __name__ == "__main__":
    main()


conn.close()
```

Output:

User created successfully!

User created successfully!

---Users---

ID: 1, Name: Alice, Age: 25

ID: 2, Name: Bob, Age: 30

User updated successfully!

---Updated Users---

ID: 1, Name: Alice Smith, Age: 26

ID: 2, Name: Bob, Age: 30

User deleted successfully!

---After Deletion---

ID: 1, Name: Alice Smith, Age: 26

Conclusion: CRUD operations has been studied and implemented.