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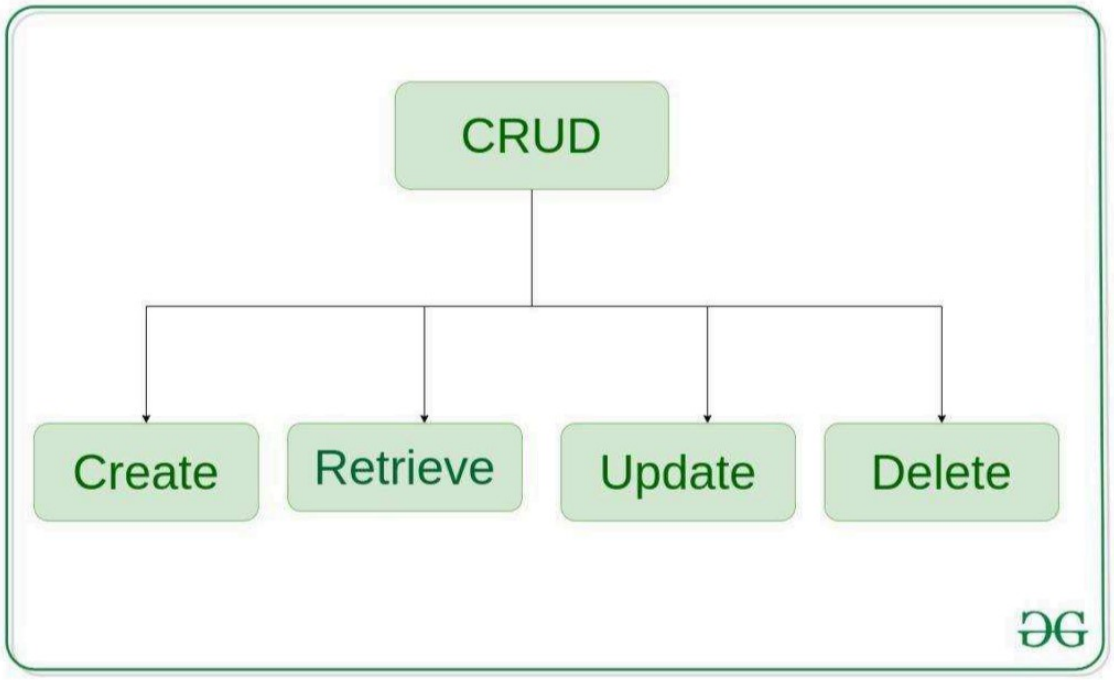
Title: Program to demonstrate CRUD (create, read, update and delete) operations on database (SQLite/ MySQL) using python

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('data.db')

cursor = conn.cursor()

cursor.execute('''CREATE TABLE IF NOT EXISTS employees

        (id INTEGER PRIMARY KEY, name TEXT, age INTEGER, position TEXT)''')


cursor.execute("INSERT INTO employees (name, age, position) VALUES ('Siddhi', 20, 'Manager')")

cursor.execute("INSERT INTO employees (name, age, position) VALUES ('Kashif', 20, 'Developer')")

cursor.execute("INSERT INTO employees (name, age, position) VALUES ('Deepak', 20, 'Analyst')")

cursor.execute("INSERT INTO employees (name, age, position) VALUES ('Reyansh', 14, 'Designer')")

cursor.execute("INSERT INTO employees (name, age, position) VALUES ('Omkar', 19, 'Engineer')")

conn.commit()


cursor.execute("SELECT * FROM employees")

rows = cursor.fetchall()

print("Records in the employees table:")

for row in rows:

    print(row)
```

```
cursor.execute("UPDATE employees SET age = 18 WHERE name = 'Siddhi'")

conn.commit()

print("\nAfter updating Siddhi's age:")

cursor.execute("SELECT * FROM employees")

rows = cursor.fetchall()

for row in rows:

    print(row)


cursor.execute("DELETE FROM employees WHERE name = 'Reyansh'")

conn.commit()

print("\nAfter deleting Reyansh's record:")

cursor.execute("SELECT * FROM employees")

rows = cursor.fetchall()

for row in rows:

    print(row)


conn.close()
```

Output:

```
Records in the employees table:
(1, 'Siddhi', 20, 'Manager')
(2, 'Kashif', 20, 'Developer')
(3, 'Deepak', 20, 'Analyst')
(4, 'Reyansh', 14, 'Designer')
(5, 'Omkar', 19, 'Engineer')

After updating Siddhi's age:
(1, 'Siddhi', 18, 'Manager')
(2, 'Kashif', 20, 'Developer')
(3, 'Deepak', 20, 'Analyst')
(4, 'Reyansh', 14, 'Designer')
(5, 'Omkar', 19, 'Engineer')

After deleting Reyansh's record:
(1, 'Siddhi', 18, 'Manager')
(2, 'Kashif', 20, 'Developer')
(3, 'Deepak', 20, 'Analyst')
(5, 'Omkar', 19, 'Engineer')
```

Conclusion:

we have demonstrated how to perform CRUD operations (Create, Read, Update, Delete) on a database using Python and SQLite. We started by creating a SQLite database connection and a table named 'employees'. Then, we inserted data into the table, read the data, updated an entry, and deleted a record. Throughout the process, we utilized SQLite commands executed through Python's sqlite3 module.