Python - SQL Introduction with SQLite

Setup

SQLite3 and the SQLite3 Python Module should be installed if Python3 is installed on your system.

Insert Lab

This lab allows you to add records to a database, and then fetch all records in the database and print them out

lab-insert.py

```
import sqlite3

conn = sqlite3.connect('lab.db')
cursor = conn.cursor()
cursor.execute('CREATE TABLE IF NOT EXISTS student(name,age,allergy)')
conn.commit()
conn.close()

def insert(name,age,allergy):
    conn = sqlite3.connect('lab.db')
    cursor = conn.cursor()
    cursor.execute('INSERT INTO student(name,age,allergy) VALUES(?,?,?)',
(name,age,allergy))
    conn.commit()
    conn.close()

def fetch():
    conn = sqlite3.connect('lab.db')
    cursor = conn.cursor()
    query = cursor.execute('SELECT * FROM student')
    query = query.fetchall()
    conn.close()

    return query

while True:
    name = input('Name: ')
    age = input('Age: ')
    allergy = input('Allergy: ')
    insert(name,age,allergy)
    query = fetch()
    print(query)
```

Search Lab

This lab allows you to search for records based on matching a name.
We print out the full query, each item in the query list, and then a tabbed formatted view of the data to show the different ways the results can be dealt with

lab-search.py

```
import sqlite3

conn = sqlite3.connect('lab.db')
cursor = conn.cursor()
cursor.execute('CREATE TABLE IF NOT EXISTS student(name,age,allergy)')
conn.commit()
conn.close()

def fetch(name):
    conn = sqlite3.connect('lab.db')
    cursor = conn.cursor()
    query = cursor.execute('SELECT * FROM student where name like ?',(f'%
{name}%',))
    query = query.fetchall()
    conn.close()

    return query

while True:
    name = input('Name to Search: ')
    query = fetch(name)
    print(query)
    print()

    for record in query:
        print(record)
    print()

    print('Name:\t Age: \t Allergy:')
    for record in query:
        print(f'{record[0]}\t {record[1]}\t {record[2]}')
```

Note App

This lab allows you to build a searchable note taking app.

lab-note.py

```
import sqlite3

conn = sqlite3.connect('note.db')
cursor = conn.cursor()
cursor.execute('CREATE TABLE IF NOT EXISTS note(title,message)')
conn.commit()
conn.close()

def insert():
    conn = sqlite3.connect('note.db')
    cursor = conn.cursor()
    title = input('Note Title: ')
    message = input('Note Message: ')
    cursor.execute('INSERT INTO note(title,message) VALUES(?,?)',
(title,message))
    conn.commit()
    conn.close()
    print(f'ADDED: {title}: {message}')

def fetch():
    conn = sqlite3.connect('note.db')
    cursor = conn.cursor()
    value = input('Search Query: ')
    query = cursor.execute('SELECT * FROM note where message like ?',(f'%
{value}%',))
    query = query.fetchall()
    conn.close()
    print(query)

while True:
    action = input('Action (search/ insert): ')
    if action.lower() == 'search':
        fetch()
    elif action.lower() == 'insert':
        insert()
    elif action.lower() == 'exit':
        break
    else:
        print(f'{action} command not understood')
```