SQL (Single table operations)

https://github.com/Techtonica/curriculum/blob/master/databases/sql-1.md

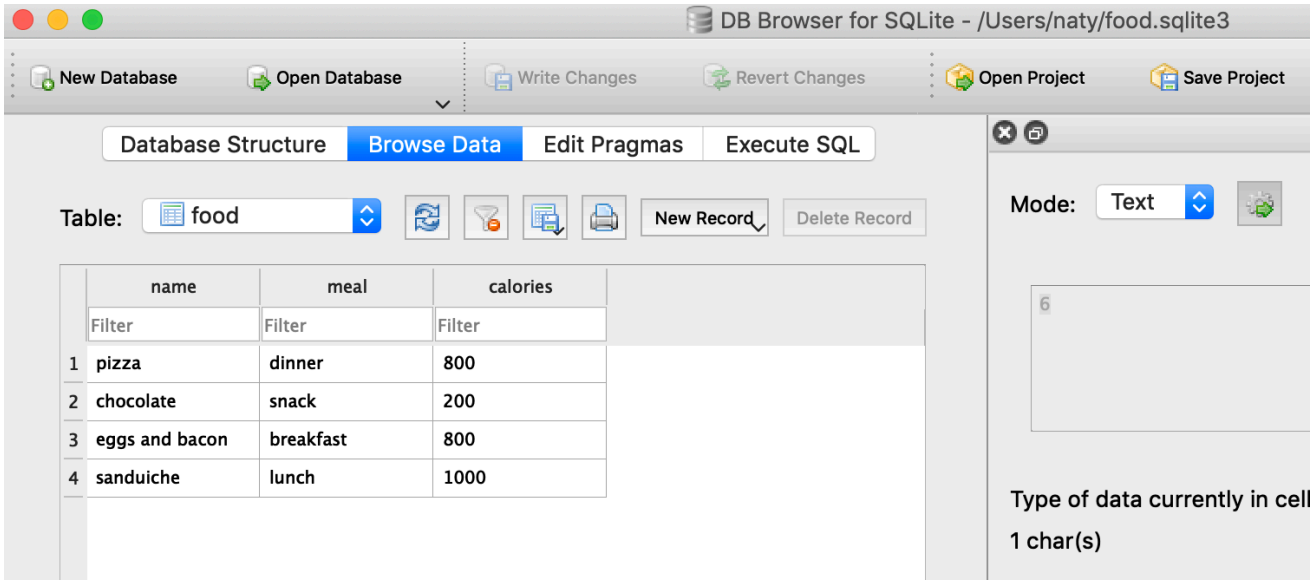
Independent Practice

Section 1: Creating tables and basic querying

1. Work through the Codecademy SQL Tutorial **Section 1 (Manipulation)**:
2. SQLite is a version of SQL that comes installed on mac! Try it out:
    - In Terminal, type `sqlite3 food.sqlite3` to use SQLite. This command will open sqlite and save your database to a file named `food.sqlite3`.
    - Try adding a table with the command `CREATE TABLE food (name TEXT, calories INTEGER);`
    - See that the table was created by typing `.tables` to see the list of all existing tables.
    - adding some data: `INSERT INTO food VALUES ("pizza", 500);`
    - See the data: `SELECT * from food;`

3. Using SQLite, try creating tables and adding, updating, deleting, and querying data yourself!
4. Download and install DB Browser for SQLite via its download page. Try opening the database you just created! Browse the data and get a feel for how to move around. One way to view SQL data is through the command line, and another way is through graphical tools like the SQLite Browser.
5. Try writing queries for the following using the `food` table:
    - Add a column to the table called `meal`
    - Update "pizza" to have it's meal be "dinner"
    - Insert 4 more rows into the food DB. Be sure to include values for all 3 colums – `name`, `calories`, and `meal`
    - Update "pizza" to have a different calories number
    - Select only the names of all the foods
    - Make up a query of your own using another command you've learned

```
$ sqlite3 food.sqlite3
SQLite version 3.24.0 2018-06-04 14:10:15
Enter ".help" for usage hints.
sqlite> CREATE TABLE food (name TEXT, calories INTEGER);
Error: table food already exists
sqlite> .tables
food
sqlite> INSERT INTO food VALUES ("pizza", 500);
Error: table food has 3 columns but 2 values were supplied
sqlite> SELECT * FROM food
   ...>
   ...> INSERT INTO food values ("pizza", 500);
Error: near "INSERT": syntax error
sqlite> INSERT INTO food VALUES ("pizza", 500);
Error: table food has 3 columns but 2 values were supplied
sqlite> SELECT * from food;
pizza|dinner|800
chocolate|snack|200
eggs and bacon|breakfast|800
sanduiche|lunch|1000
sqlite> SELECT name from food;
pizza
chocolate
eggs and bacon
sanduiche
sqlite> SELECT *
   ...> FROM movies
   ...> SELECT * from food
   ...> WHERE calories >200;
Error: near "SELECT": syntax error
sqlite> SELECT *
   ...> FROM food
   ...> WHERE calories >200;
pizza|dinner|800
eggs and bacon|breakfast|800
sanduiche|lunch|1000
sqlite>
```



Section 2: Queries

1. Work through the Codecademy SQL Tutorial **Section 2 (Queries)**

2. In sqlite, try writing queries for the following using the `food` table. Add some data to the table that meets the criteria below so you'll have something to query for.
    - Select all foods that have under 100 calories
    - Select the names of all foods that start with the letter "a"
    - Select all foods that start with "a" AND have meal equal to "dinner"
    - Select all foods where meal is "breakfast", sorted by calorie number
    - Make up a query of your own using another command you've learned

```
sqlite> SELECT *
   ...> FROM movies
   ...> SELECT * from food
   ...> WHERE calories >200;
Error: near "SELECT": syntax error
sqlite> SELECT *
   ...> FROM food
   ...> WHERE calories >200;
pizza|dinner|800
eggs and bacon|breakfast|800
sanduiche|lunch|1000
sqlite> SELECT *
   ...> FROM food
   ...> WHERE calories <1000;
pizza|dinner|800
chocolate|snack|200
eggs and bacon|breakfast|800
sqlite> SELECT name
   ...> FROM food
   ...> WHERE name LIKE 'a%';
sqlite> SELECT name
   ...> FROM food
   ...> WHERE name LIKE 'p%'
   ...> AND meal ='dinner';
pizza
sqlite> SELECT
   ...> ;
Error: near ";": syntax error
sqlite> SELECT *
   ...> WHERE meal = 'breakfast'
   ...> ORDER BY calories
   ...>
   ...> SELECT *
   ...> FROM food
```

```
   ...> WHERE meal = 'breakfast'
   ...> ORDER BY calories ASC;
Error: near "SELECT": syntax error
sqlite> SELECT *
   ...> FROM food
   ...> WHERE meal = 'breakfast'
   ...> ORDER BY calories ASC;
eggs and bacon|breakfast|800
sqlite> SELECT MIN(calories)
   ...> FROM food
   ...> ;
200
sqlite>
```

Section 3: Advanced queries

1. Now do the Codecademy SQL Tutorial **Section 3 (Aggregate functions)**
2. Try writing queries for the following using the `food` table:
    - Count the number of rows in the food table
    - Find the food with the maximum number of calories
    - Find the average number of calories for breakfast food
    - Make up a query of your own using another command you've learned

```
sqlite> SELECT COUNT(*)
   ...> FROM food;
4
sqlite> SELECT MAX(calories)
   ...> FROM food;
1000
sqlite> SELECT AVG(calories)
   ...> FROM food;
700.0
sqlite> SELECT SUM(calories)
   ...> FROM food;
2800
sqlite>
```