


This is CS50

CS50's Introduction to Computer Science

OpenCourseWare

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Fiftyville

Problem to Solve

The CS50 Duck has been stolen! The town of Fiftyville has called upon you to solve the mystery of the stolen duck. Authorities believe that the thief stole the duck and then, shortly afterwards, took a flight out of town with the help of an accomplice. Your goal is to identify:

- Who the thief is,
- What city the thief escaped to, and
- Who the thief's accomplice is who helped them escape

All you know is that the theft **took place on July 28, 2023** and that it **took place on Humphrey Street**.

How will you go about solving this mystery? The Fiftyville authorities have taken some of the town's records from around the time of the theft and prepared a SQLite database for you, `fiftyville.db`, which contains tables of data from around the town. You can query that table using SQL `SELECT` queries to access the data of interest to you. Using just the information in the database, your task is to solve the mystery.

Demo

```
$ sqlite3 fiftyville.db
SQLite version 3.40.1 2022-12-28 14:03:47
Enter ".help" for usage hints.
sqlite> .tables
airports                crime_scene_reports    people
atm_transactions        flights                 phone_calls
bakery_security_logs    interviews
bank_accounts           passengers
sqlite> .schema cr
```

Recorded with [asciinema](#)

Getting Started

For this problem, you'll use a database provided to you by CS50's staff.

▼ Download the distribution code

Log into [cs50.dev \(https://cs50.dev/\)](https://cs50.dev), click on your terminal window, and execute `cd` by itself. You should find that your terminal window's prompt resembles the below:

```
$
```

Next execute

```
wget https://cdn.cs50.net/2023/fall/psets/7/fiftyville.zip
```

in order to download a ZIP called `fiftyville.zip` into your codespace.

Then execute

```
unzip fiftyville.zip
```

to create a folder called `fiftyville`. You no longer need the ZIP file, so you can execute

```
rm fiftyville.zip
```

and respond with "y" followed by Enter at the prompt to remove the ZIP file you downloaded.

Now type

```
cd fiftyville
```

followed by Enter to move yourself into (i.e., open) that directory. Your prompt should now resemble the below.

```
fiftyville/ $
```

Execute `ls` by itself, and you should see a few files:

```
answers.txt  fiftyville.db  log.sql
```

If you run into any trouble, follow these same steps again and see if you can determine where you went wrong!

Specification

For this problem, equally as important as solving the mystery itself is the process that you use to solve the mystery. In `log.sql`, keep a log of all SQL queries that you run on the database. Above each query, label each with a comment (in SQL, comments are any lines that begin with `--`) describing why you're running the query and/or what information you're hoping to get out of that particular query. You can use comments in the log file to add additional notes about your thought process as you solve the mystery: ultimately, this file should serve as evidence of the process you used to identify the thief!

As you write your queries, you may notice that some of them can become quite complex. To help keep your queries readable, see principles of good style at [sqlstyle.guide](https://www.sqlstyle.guide) (<https://www.sqlstyle.guide>). The [indentation](https://www.sqlstyle.guide/#indentation) (<https://www.sqlstyle.guide/#indentation>) section may be particularly helpful!

Once you solve the mystery, complete each of the lines in `answers.txt` by filling in the name of the thief, the city that the thief escaped to, and the name of the thief's accomplice who helped them escape town. (Be sure not to change any of the existing text in the file or to add any other lines to the file!)

Ultimately, you should submit both your `log.sql` and `answers.txt` files.

Walkthrough



Hints

- Execute `sqlite3 fiftyville.db` to begin running queries on the database.
 - While running `sqlite3`, executing `.tables` will list all of the tables in the database.
 - While running `sqlite3`, executing `.schema TABLE_NAME`, where `TABLE_NAME` is the name of a table in the database, will show you the `CREATE TABLE` command used to create the table. This can be helpful for knowing which columns to query!
- You may find it helpful to start with the `crime_scene_reports` table. Start by looking for a crime scene report that matches the date and the location of the crime.
- See [this SQL keywords reference \(https://www.w3schools.com/sql/sql_ref_keywords.asp\)](https://www.w3schools.com/sql/sql_ref_keywords.asp) for some SQL syntax that may be helpful!

How to Test

Correctness

```
check50 cs50/problems/2024/x/fiftyville
```

How to Submit

```
submit50 cs50/problems/2024/x/fiftyville
```

Acknowledgements

Inspired by another case over at [SQL City \(https://mystery.knightlab.com/\)](https://mystery.knightlab.com/).