

Problem Description

Use SQLite3 to create and populate the following three tables.

Hint: I suggest creating a file **dmv.txt** that contains all of the commands required to complete and populate the tables.

tags Table

tag	state	vin
SEMI-COLON	AL	123ABC
!EQUAL	GA	456DEF
RUBICKS^3	AL	314159
!SPEEDING	AL	789RST
BUSTED	GA	60231023
2FAST	CA	00001111
BLUSCREEN	WA	11110000
WOZ	CA	987XYZ
WOZ	FL	1359

vehicles Table

vin	make	model	color	year
123ABC	Ford	Mustang	black	1992
456DEF	Ford	Mustang	red	2014
314159	Toyota	Prius	blue	2008
789RST	Dodge	Charger	red	2013
60231023	Chevy	Volt	yellow	2014
00001111	Apple	IIC	white	1980
11110000	Microsoft	Windows	blue	1990
987xyz	Apple	IIC	white	1981
1359	Ford	Mustang	white	2011

owners Table

vin	lname	fname
123ABC	Franklin	Ben
456DEF	Washington	George
314159	Taft	Howard
789RST	Gates	Bill
60231023	Jobs	Steve
00001111	Jobs	Steve
11110000	Gates	Bill
987xyz	Wozniak	Steve
1359	Wozniak	Steve

Use these tables to answer the questions below.

To start SQLite3, type the following command in a Linux terminal window.

sqlite3 dmv.db

Within SQLite3, type the following to load the text file contents **.read dmv.txt**

Sample Problems (Rework all problems below using Relational Algebra)

1. Write an SQL statement that will retrieve the tag of each vehicle within Alabama.
2. Write an SQL statement that will list the make and model of all blue vehicles.
3. Write an SQL statement that will determine the total number of vehicles owned by Bill Gates.
4. Write an SQL statement that will determine output the VIN of all Ford Mustangs.
5. Write an SQL statement that will output the tag of each vehicle whose owner has the first name Steve.
6. Write an SQL statement that will retrieve the last name and first name of the owner of vehicle with tag **!EQUAL**
7. Write an SQL statement that will determine the average year of all **blue** vehicles.
8. Write an SQL statement that will determine the number of states with tagged vehicles.
9. Write an SQL statement that will list all states where Steve Wozniak owns a vehicle.
10. Write an SQL statement that computes the Cartesian product of **tags** and **owners**