331 Databases Lab – Working with Fleet.db

In this lab, we will be using a Jupyter notebook to work with the SQLite database engine built into Python.

Working with the Fleet.db file

You will be using a database, called Fleet.db, that has just one table called *Fleet* listing all cars on NZ's roads. This Fleet.db file has been sourced from https://figshare.com/articles/NZ_vehicles_database/5971471, and is described as: "A copy of the New Zealand Vehicle Fleet database, downloaded from the Ministry of Transport web site (https://nzta.govt.nz/resources/new-zealand-motor-vehicle-register-statistics/new-zealand-vehicle-fleet-open-data-sets/) on 2017-12-14."

The Fleet table has the following fields:

ALTERNATIVE_MOTIVE_POWER	INDUSTRY_CLASS	ROAD_TRANSPORT_CODE
BASIC_COLOUR	INDUSTRY_MODEL_CODE	SUBMODEL
BODY_TYPE	MAKE	TLA
CC_RATING	MODEL	TRANSMISSION_TYPE
CHASSIS7	MOTIVE_POWER	VDAM_WEIGHT
CLASS	MVMA_MODEL_CODE	VEHICLE_TYPE
ENGINE_NUMBER	NUMBER_OF_AXLES	VEHICLE_USAGE
FIRST_NZ_REGISTRATION_YEAR	NUMBER_OF_SEATS	VEHICLE_YEAR
FIRST_NZ_REGISTRATION_MONTH	NZ_ASSEMBLED	VIN11
GROSS_VEHICLE_MASS	ORIGINAL_COUNTRY	WIDTH
HEIGHT	POWER_RATING	
IMPORT_STATUS	PREVIOUS_COUNTRY	

A sample of the Fleet table is available in Fleet-Sample.xlsx. Open this file, and work through the different fields to see the information they contain.

We will be using Pandas as an intermediate layer to access the data. We will, via Pandas, use the SQLite database engine to run SQL queries against the Fleet table. The result of a query then becomes available as a Pandas dataframe. Note that there is often a choice as to how you process data; sometimes it can be done by running an SQL query, or by directly working with the Pandas dataframe.

You may need to use Google to find more SQLite examples.

For interest:

- How many hydrogen fuel cell cars does NZ have?
- For more information, listen to: https://www.radionz.co.nz/audio/player?audio_id=2018631335

Neo4j:

- Check out https://neo4j.com/graphgist/graphing-the-song-lyrics-of-one-direction