

Visualization of a dataset - Practice 9

Objectives

1. Understand and analyze a complex dataset
2. Create visualizations starting from questions

Tool

- Text editor
- Tableau Desktop

Exercise

With CSV files

A dataset about the Formula One championship is available in the file *f1db_csv.zip*. The schema is described in the file *f1db_user_guide.txt*. Data are provided by Ergast (<http://ergast.com/mrd/db/>) and updated through the end of 2024.

With MySQL and Docker

The same dataset is also available in the Docker image `ghcr.io/diegmonti/f1db` as a MySQL database.

Install Docker and run the following command: `docker run --rm -p 3346:3306 -e MYSQL_ROOT_PASSWORD=f1db -e MYSQL_DATABASE=f1db ghcr.io/diegmonti/f1db --default-authentication-plugin=mysql_native_password`

After a few moments, a MySQL server with the *f1db* database should be running on port 3346 of your device.

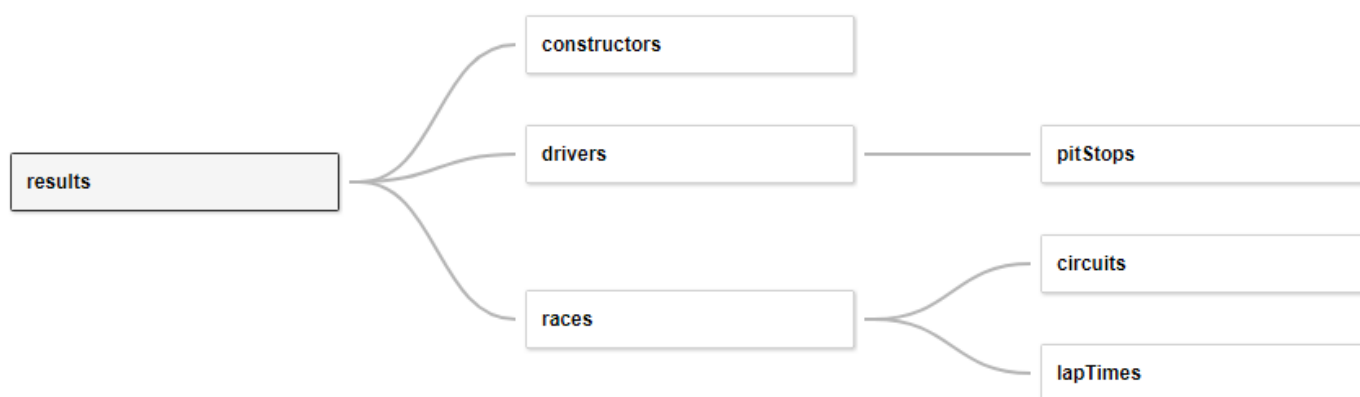
Install the MySQL drivers from <https://dev.mysql.com/downloads/connector/odbc/>.

Open Tableau Desktop and connect to the MySQL database:

Field	Value
Server	localhost
Port	3346
Database	f1db
Username	root
Password	f1db

Import the dataset

Drag the files/tables so that you create the following relationships:



Visualization 1

- How many circuits are available per country?

Visualization 2

- What is the number of races per season?

Visualization 3

- What is the number of constructors per nationality?

Visualization 4

- What is the number of drivers per nationality?

Visualization 5

- How many points has each constructor scored?
- In how many races does each constructor participate?

Visualization 6

- How many points has each driver scored?
- How many poles has each driver achieved?

The number of poles can be computed with the following formula: IF [Grid] == 1 THEN 1 ELSE 0 END.

Visualization 7

- What is the trend of fastest lap times over the years per circuit?

Please consider a reasonable number of circuits only.

Visualization 8

- What is the trend of pit stop times over the years per constructor in a given circuit?

Please consider a reasonable number of constructors only.