

Exercise Sheet 4 – Reading Data - SQL

INF161 Autumn Semester 2020

Exercise 1 Write a procedure that reads the content of the file `traffic_rules.json` and outputs the same content but in `csv` format.¹

Exercise 2 Write a procedure that reads the content of the file `traffic_rules.xlsx` and generates, for each sheet in the excel file, a dataframe encoding the data.

The sheet “rules_ordinal” represents the rules in the sheet “rules” with only ordinal data, while the sheet “rules_categorical” represents the rules in the sheet “rules” with only categorical data. Fit a linear regression model for each dataset (ordinal and categorical) that predicts if a vehicle should pass the crossing.

With what data does the model perform better? Why?

Exercise 3 Consider the table in Figure 1. Answer these questions by writing SQL queries.

1. What are the names of the animals in the table?
2. What are the names of the animals in the table that are cats?
3. How many IDs are in the table?
4. How many of each type of animal do we have in the table?
5. How many of each type of animal do we have in the table that are cats?
6. How to order the rows of the table in ascending order with respect to the names of the animals?

Now, consider also the table in Figure 2 and write an SQL query that:

7. returns a table with just two columns: the name of the pet and the name of the owner.

¹Use pandas.

ID	Name	Animal
1	Dr. Harris Bonkers	Rabbit
2	Moon	Dog
3	Ripley	Cat
4	Tom	Cat

Figure 1: Table “Animals”.

ID	Name	Pet_ID
1	Aubrey Little	1
2	Chett Crawfish	3
3	Jules Spinner	4
4	Magnus Burnsides	2

Figure 2: Table “Owners”.