Information Mining - winter semester 2019/2020

Exercise sheet 3

Excercise 1: Rules and decision trees

Following rules are given:

```
if speed = average and colour = blue
   then car_from_cologne
if speed = fast and colour = red
   then car_from_stuttgart
default car_from_wolfsburg
```

(a) Create a decision tree based on these rules.

The attribute `speed` can have the values `fast`, `average`, `slow`. The attribute `colour` consists of the values `red`, `blue` or `other`.

(b) How are decision trees transformed to rules?

(c) Why is the transformation of rules to decision trees considered more complex than the transformation of decision trees to rules? Give an example from the lecture.

Excercise 2: Rules and decision trees in *RapidMiner*

(a) Create two processes, which will create a decision tree and rules based on the given data[1]. The attribute `label` is the class.

Hint: The creation of the decision tree and the induction of the rules may take several minutes on slower PCs.

[1] `http://www.is.inf.uni-due.de/courses/im_ws19/uebung/data_a7.csv`