Exercise sheet 3

Exercise 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.

Exercise 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