Theoretical Computer Science – Exercise 3

SS 2022
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We will do the following exercises together during the tutorial:

Exercise 1

The automaton shown in the following transition table is the result of one of the questions from the previous exercise sheet, where we used the Rabin-Scott algorithm to transform a nondeterministic automaton to a deterministic one (the trap state is included in this table):

	s0	s1	s2	s3	s4	s5
a	s1	s3	s2	s3	s5	s4
b	s2	s4	s2	s4	s4	s4

The start state is s0, end states are s1, s3, and s4.

a) Draw the transition diagram.
b) Construct an equivalent minimal automaton and draw its transition diagram.

Exercise 2

a) Draw the transition diagram for the following DFA:

	s0	s1	s2	s3	s4	s5	s6
0	s4	s2	s3	s6	s5	s6	s6
1	s1	s1	s6	s3	s6	s3	s6

The start state is s0, end states are s3 and s5.

b) Construct an equivalent minimal automaton and draw its transition diagram.