

Formal Models SS 2018: Assignment 3

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Due 12.04.2018

Exercise 9

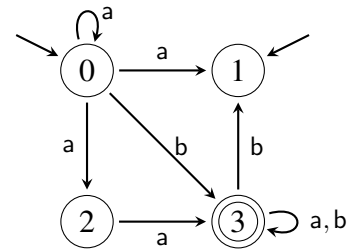
Given an automaton A with state $S = \{A, B, C, D\}$, alphabet $\Sigma = \{a, b\}$, initial states $I = \{A, C\}$, final state $F = \{B, D\}$, and transitions $T = \{(A, a, B), (A, a, C), (A, a, A), (B, a, B), (C, a, C), (C, a, D), (C, b, D), (D, b, D), (D, a, B)\}$. Draw the oracle automaton $\text{Oracle}(A)$.

Exercise 10

Given FA A from Exercise 9, draw the *optimized* oracle-automaton $\text{Oracle}(A)$. Is $\text{Oracle}(A)$ complete? Justify your answer.

Exercise 11

Draw the I/O-automaton for FA A as shown on the right.



Exercise 12

Draw an I/O-automaton modelling the digital circuit shown on the right. Use $\Sigma := \Theta := \{0, 1\}$ as input- and output-alphabet.

