First Assignment Automata & Process Theory (2IT15)

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5 March 2010

The deadline of this assignment is Wednesday, 17 March 2010. The assignment is graded in the week thereafter and resulting grade will be worth 12.5% of the total grade.

Assignment 1. Consider the following language L over the alphabet $\{a, b, c\}$:

$$L = \{w \in \{a, b, c\}^* \mid \exists x, y \in \{a, b, c\}^* : w = xabcy \vee w = xcbay\} .$$

a. Draw an automaton that accepts the language L.

b. Give a linear recursive specification for this automaton.

c. Give a deterministic and total automaton for the language L.

d. Are the automata in (a) and (c) bisimilar? If so, give a bisimulation relation between the two automata; otherwise, explain why they are not bisimilar.