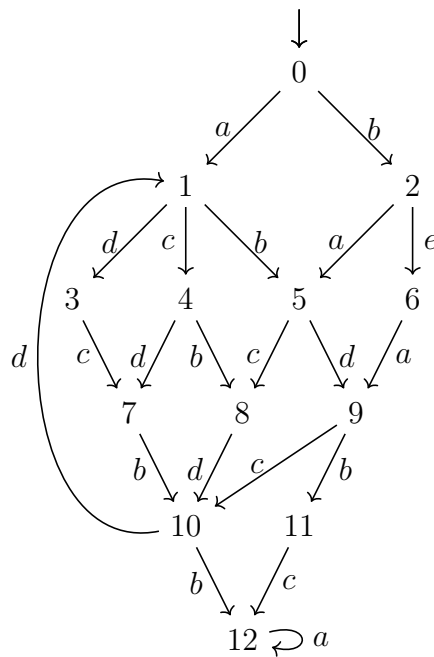


Model Checking – Exercise sheet 6

Exercise 6.1

Consider the following Kripke structure $\mathcal{K} = (S, A, \rightarrow, 0, AP, \nu)$, where $A = \{a, b, c, d, e\}$, $AP = \{p\}$, $\nu(6) = \{p\}$, and $\nu(s) = \emptyset$ if $s \neq 6$.



- (a) Write down the maximal independence relation $I \subseteq A \times A$.
- (b) Write down the maximal invisibility set $U \subseteq A$.
- (c) Compute a reduction function red that satisfies the ample set conditions C0–C3. Whenever possible, choose $red(s)$ such that it is a proper subset of $en(s)$, for each state s .
- (d) Use red to construct a reduced Kripke structure \mathcal{K}' that is stuttering equivalent to the original Kripke structure \mathcal{K} .