Formal Models SS 2012: Assignment 9

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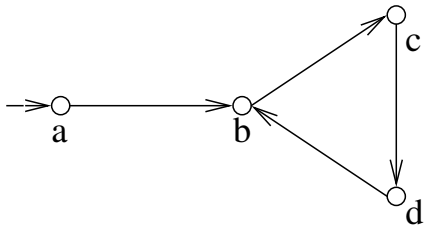
Due 31.05.2012

Exercise 33

Given LTS L as shown on the right.

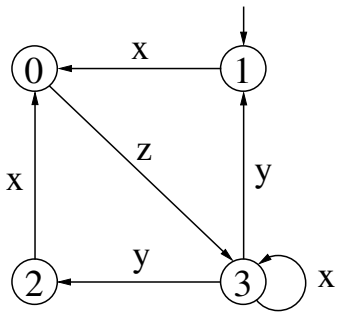
1. List all different infinite traces in L, using ω-notation, e.g. $ababab\cdots = (ab)^{\omega}$.
2. Find 6 equivalences between traces from part a), using notation π^i, e.g. $\pi_2 = \pi_1^1$ for $\pi_1 = xyz$ and $\pi_2 = yz$.



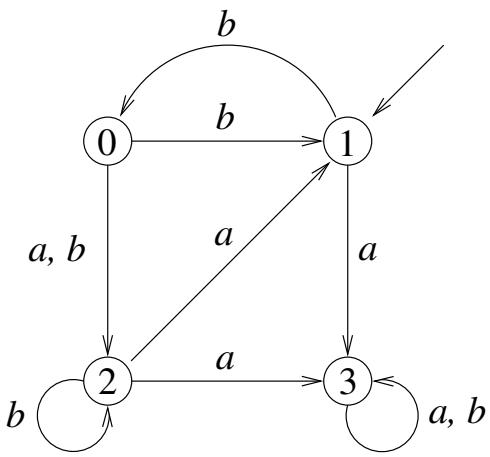
Exercise 34

Given LTS L and CTL/HML formulae 1 to 6 as shown below. For each state s of L, determine which of formulae 1 to 6 hold in s.

1. $\mathbf{EX}(\langle x\rangle\, 1)$
2. $\mathbf{AX}([y]\, 0)$
3. $\mathbf{AG}(\langle z\rangle\, 1 \rightarrow \langle y\rangle\, 1)$
4. $\mathbf{E}[\langle x\rangle\, 1\ \mathbf{U}\ \langle z\rangle\, 1]$
5. $\mathbf{EG}(\langle y\rangle\, 1)$
6. $\mathbf{EF}(\mathbf{EG}\, \langle x\rangle\, 1)$



Exercise 35
Draw the Kripke structure for the LTS as shown below.



Exercise 36
Draw a computation tree for each of the following CTL formulae (see also lecture slides 63-65).

1. **EF** p 2. **EX** p 3. **EG** p
4. **AX** p 5. **A**$[p$ **U** $q]$ 6. **E**$[p$ **U** $q]$