Formal Models SS 2018: Bonus-Assignment
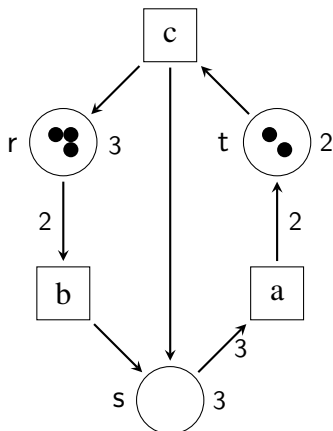
Institute for Formal Models and Verification, JKU Linz

Due 21.06.2018

To indicate that you solved an exercise and that you can present it in the exercise group, tick it off in our MOODLE course until **8am on the day of the exercise**. Unmarking and marking exercises at the begin of the exercise class is **not** possible.

Exercise 41
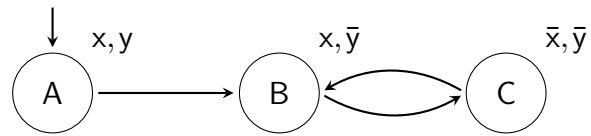
Given the following Place Transition Net N:

a) Draw the LTS corresponding to N.

b) Can a deadlock be reached in N? Justify your answer.

Exercise 42

Let P, Q and R be PA systems with $P = a.(c.P + d.P), Q = d.c.f.Q$ and $R = e.c.f.R$.
Draw the LTS for $P \mid\mid Q \mid\mid R$.

Exercise 43 Given Kripke structure K below. Formulate the transition function as propositional formula.

Exercise 44

- Formulate (a) two steps, (b) three steps done in K with the previously identified propositional formula.

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- Formulate that state $\bar{x}\bar{y}$ is not reachable after one step in propositional logic (from the initial state). Use limboole to evaluate your encoding.

- Now show that $\bar{x}\bar{y}$ is reachable after two steps.