Formal Models SS 2020: Assignment 7

Based on Video "Lecture 08. May 2014" on our webpage.
Institute for Formal Models and Verification, JKU Linz

due 14.05.2020

Guideline:

- To indicate that you solved an exercise, tick it off in our MOODLE course until the following deadline:

  10am on the day when the exercises due (10am 14.05.2020)

  Unmarking and marking exercises later is **not** possible.

- Upload your solved exercises in the Moodle course.

  Generate a single PDF file with all solved exercises, your name, and your matriculation number.

  Not following this format will lead to the deduction of points!

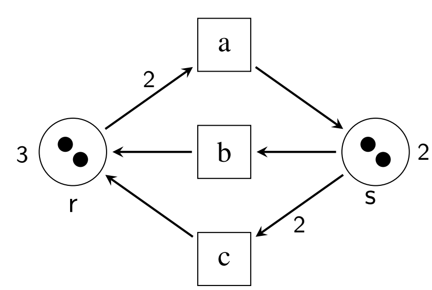
- We will randomly select and correct solved exercises and provide a sample solution.

Exercise 25
Draw the LTS for the CEN as given on lecture slide 39.

Exercise 26
Generalize the CEN from lecture slide 39 as follows: 2 producers and 2 consumers synchronize on a buffer with a capacity of 2. Draw your solution.

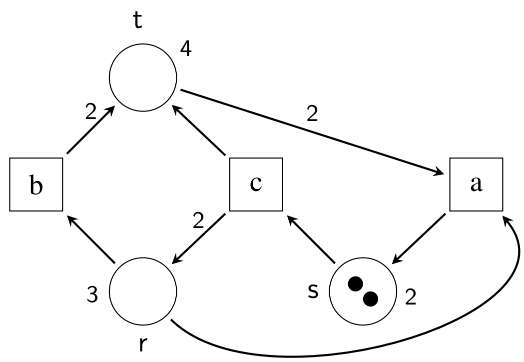
Exercise 27

Draw the LTS for PTN N shown on the right with the initial marking as given in the figure.



Exercise 28

Let N be the PTN shown below.



- Specify N formally as a 5-tuple $N = (P, I, T, G, C)$. How many markings for N are possible *theoretically*?
- Now let M be a marking of N with $M(r) = 1$, $M(s) = 0$, $M(t) = 2$. Which are the transitions that can fire in M? What are the possible new markings obtained from this?
- Is there a marking for N so that all transitions are enabled? Justify your answer!