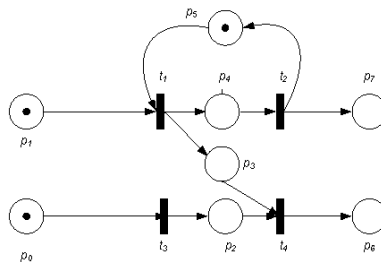


# Discrete and Continuous Dynamical Systems – tutorial

## Petri net models

### 1 Formal description of Petri net models

Let us given the following Petri net with its graphical description



The following tasks should be carried out

1. Construct the formal description
2. Give the marking vector  $\mu_0$  shown in the figure.
3. Construct the marking sequence starting from  $\mu_0$  that describes the operation of the Petri net.

### 2 Construction of Petri net models

Consider a simple coffee making automaton that prepares a cup of coffee for a given coin.

Its operation steps are as follows.

1. Make the selection of the coffee type and insert the coin (in arbitrary order).
2. If the automaton does not have plastic cup available, put your own cup.
3. Take your coffee.

TASK: Construct the graphical Petri net model of the automaton.

### 3 Homework:

- (a) Consider the graphical description of your Petri net given by the eps file named after your Neptun ID.
  1. Construct the formal description
  2. Give the marking vector  $\mu_0$  shown in the figure.
  3. Construct the marking sequence starting from  $\mu_0$  that describes the operation of the Petri net.
- (\*) **(Supplementary)**  
Give the action sequence which is necessary to operate a lift in a two-storied building!
  1. Design the Petri net of the action sequence!
  2. Give the initial state(s)!
  3. What are the possible final states?

**Deadline of submission: 2019.05.11. 12am**

(Submit your homework in a hand written scanned pdf file format to the e-mail address: [hangos.katalin@virt.uni-pannon.hu](mailto:hangos.katalin@virt.uni-pannon.hu)! Please, write your name and neptun ID on the paper!)