

CSCI910 – Software Requirements, Specifications and Formal Methods

Tutorial 4, CCNU Summer 2020

Objectives

- Get familiar with Petri Nets

Exercise 1:

Given the following Petri net structure, draw the Petri net graph.

$$P = \{p1, p2, p3, p4\}$$

$$T = \{t1, t2, t3, t4\}$$

$$I(t1) = \{ \}$$

$$I(t2) = \{p2, p4\}$$

$$I(t3) = \{p1, p3\}$$

$$I(t4) = \{p3\}$$

$$O(t1) = \{p1, p1, p2\}$$

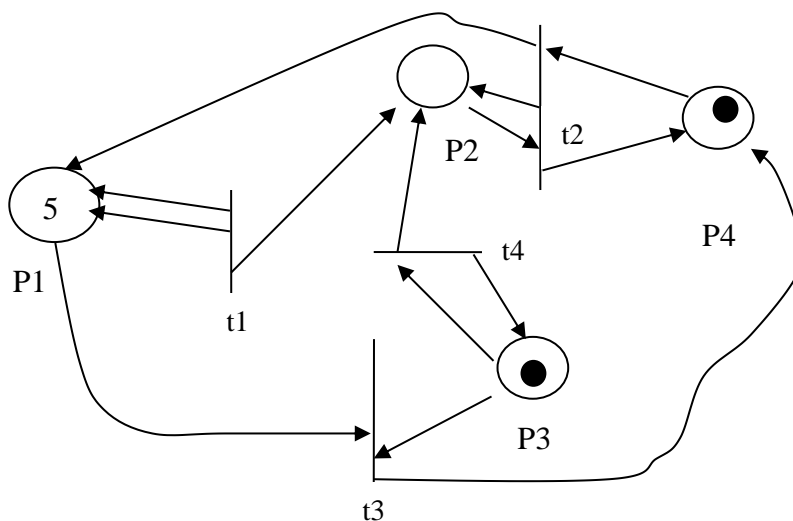
$$O(t2) = \{p2, p4, p1\}$$

$$O(t3) = \{p4\}$$

$$O(t4) = \{p2, p3\}$$

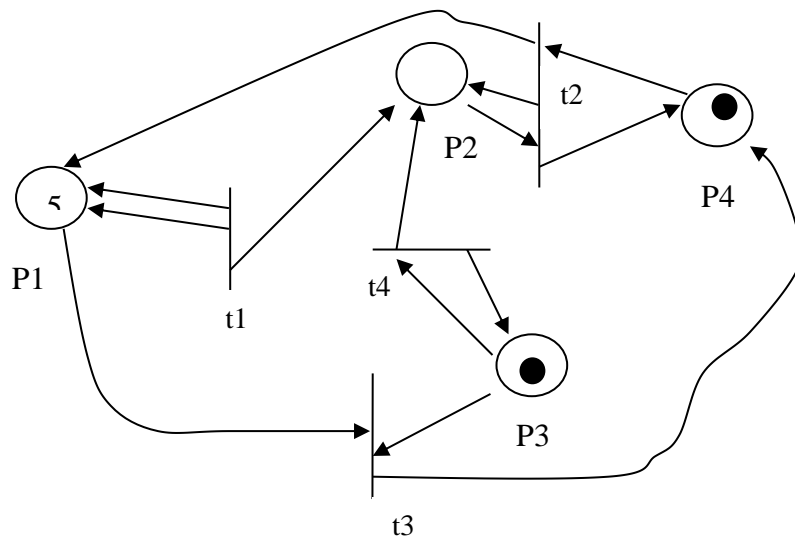
Exercise 2:

Assume that the initial marking of Petri net as follows. Evaluate which transition/transitions can be enabled.



Exercise 3:

Suppose transition $t3$ is fired first. What is the marking result after finishing transition $t3$.



Exercise 4:

Construct a CPN to model two traffic lights in an intersection. Two traffic lights can't be in green same time and must turns to green alternatively.

