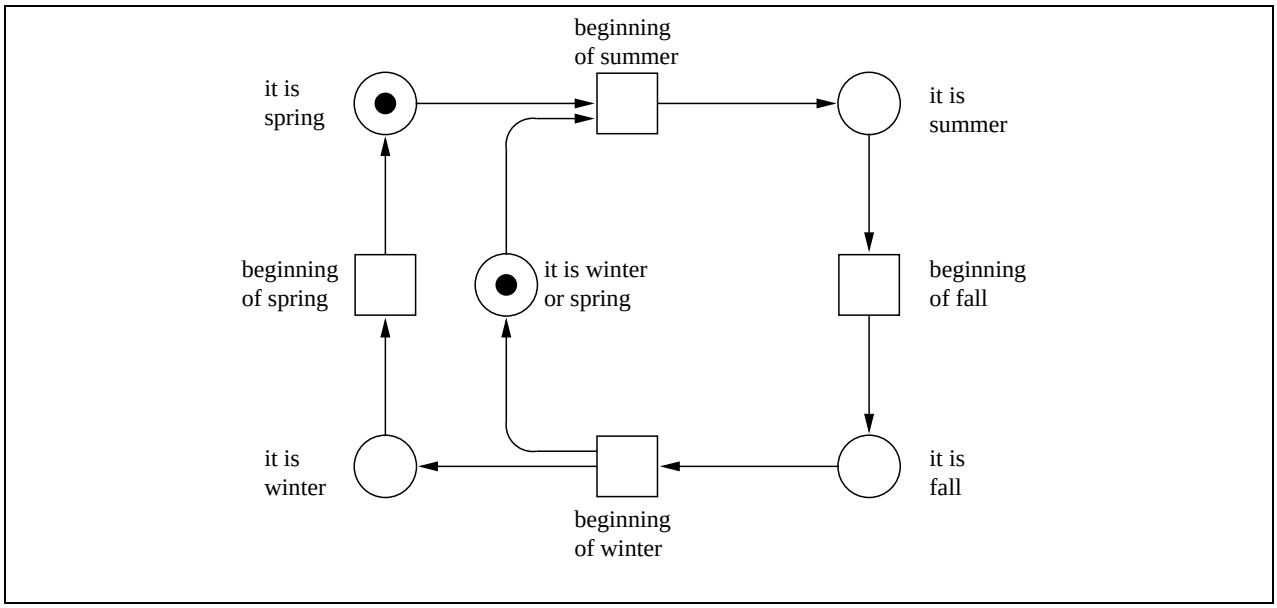
T-79.231 Parallel and Distributed Digital Systems Tutorial 2, Oct 2, 2001

1. Consider the P/T net below, where the capacity of its places is 1:



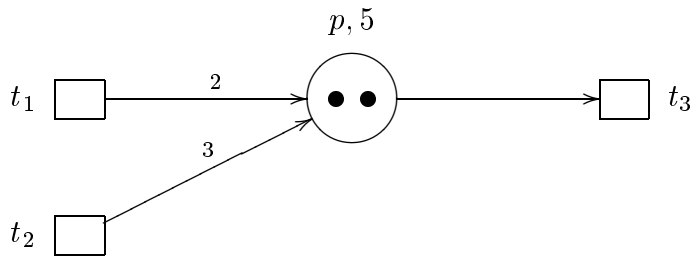
(a) Find the contacts in the system.

(b) Build the complement construction in the system.

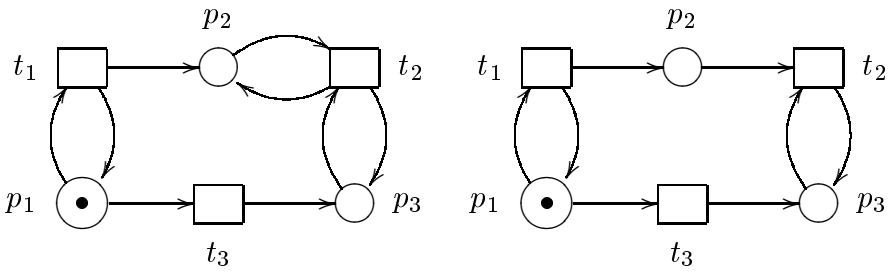
(c) What kind of semantics would you give to the complement places?

(d) Add a new place to the original system describing the property 'it is summer or winter'.

2. Build the complement construction for the net below:



3. Compute the coverability graph for the following nets (all places have unbounded capacities).



N_1 N_2

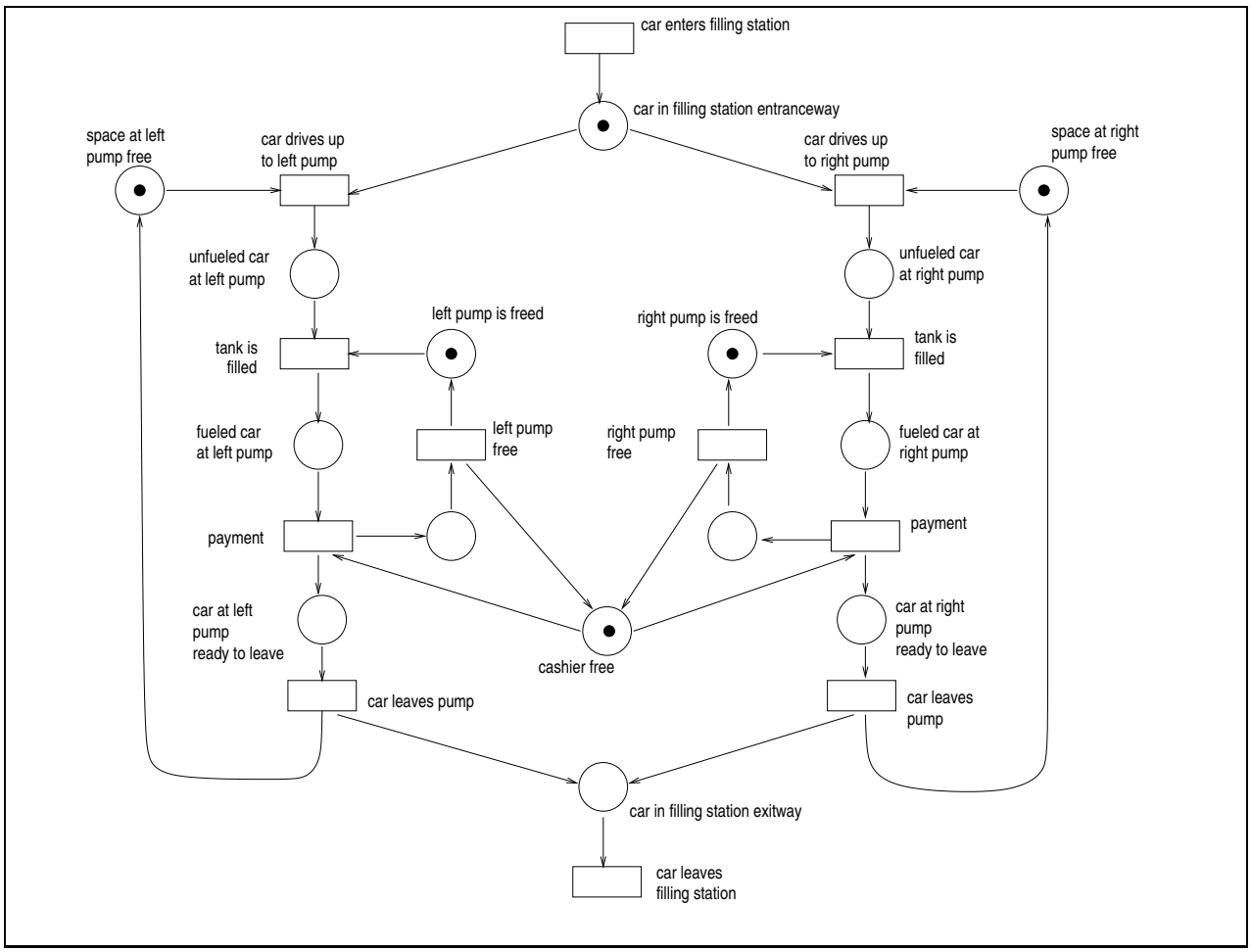
4. Let us consider the following P/T net modeling a self service fueling station:

   Let us assume that we are only interested in the quantitative aspects of the fueling station.

   Your task is to:

   (a) Simplify the net so that it is no longer possible to observe if the left or right pump is being used.

   (b) Add another cashier and two waiting slots to the system.


car enters filling station
car in filling station entranceway
space at left pump free
car drives up to left pump
car drives up to right pump
space at right pump free
unfueled car at left pump
unfueled car at right pump
left pump is freed
right pump is freed
tank is filled
tank is filled
fueled car at left pump
left pump free
right pump free
fueled car at right pump
payment
payment
car at left pump ready to leave
car at right pump ready to leave
cashier free
car leaves pump
car leaves pump
car in filling station exitway
car leaves filling station