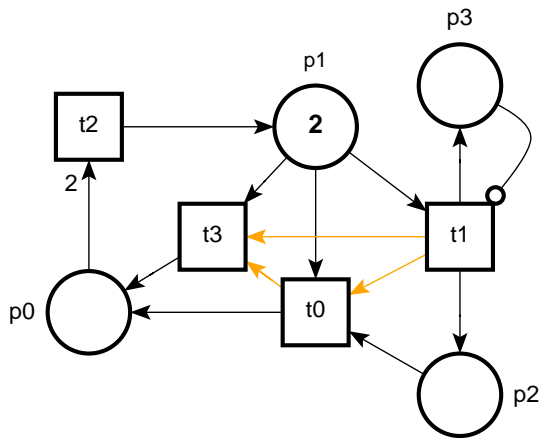


Petri Nets

Nom :

Prénom:

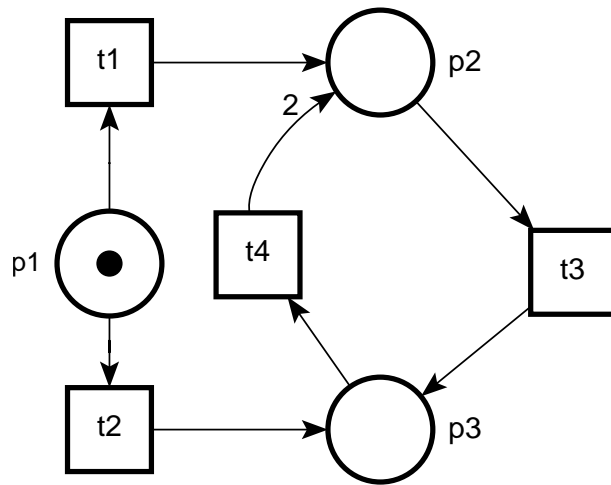
Q2: Priority arcs/inhibitor arcs



For the net given on the left

1. Build the reachability graph
2. Modify the priority arcs so that the behavior of the net is unchanged (i.e the marking graph).
3. Consider again the initial net given, delete one element of the net so that transitions t_2 , t_3 t_0 are dead transitions.

Q2: Coverability Graph



For the net given on the left:

1. Build the coverability tree using a Depth-First Search method.
2. Build the coverability tree using a Breadth-First Search
3. Is the net bounded ? Indicate the bounded places if any.
4. Give the dead markings if any.
5. Give a non complete repetitive sequence if any .
6. Give a stationary repetitive sequence if any.
7. Is the net infinitely active? justify
8. Is the net live? justify.

Q3: Structural analysis

Figure 1 gives a producer-consumer system composed of one producer, one consumer and one storage buffer that may contain at most N items.

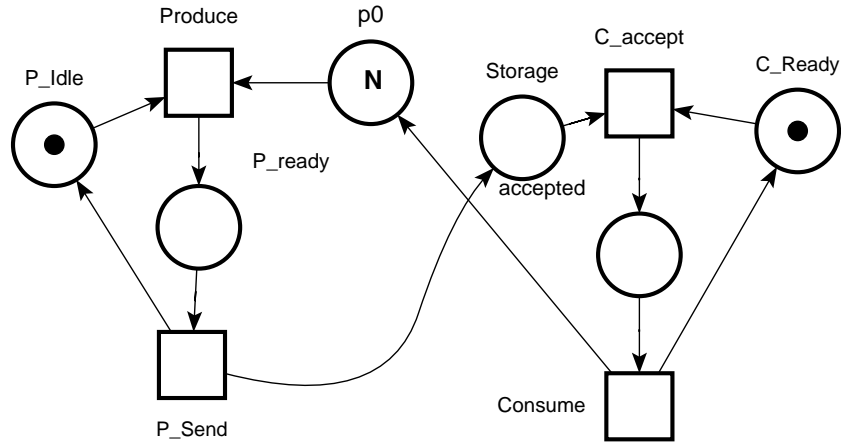


Figure 1

1. Give the place invariants for the net given Figure 1.
2. Does the net bounded? justify

3. It is assumed that the producer can no longer produce.
Give the different markings associated with this situation.