Exercises
Distributed Systemes: Part 2
Summer Term 2014
31.7.2014

6. Exercise sheet: Petri nets

Exercise 1
Model a traffic light by a Petri-Net.

(1) You can use any number of places, however only multiplicity 1 is allowd.

(2) Now only 3 places (one for each color) may be used, but there are no restrictions on the multiplicities.

Exercise 2
Prove or give a counterexample: $m[q\rangle m' \Leftarrow m' = m + \Delta q$.

Exercise 3
(1) Model the following Handshaking protocol by a Petri-Net:

Two processes P1 and P2 mutually exchange messages. P1 is the sender and P2 the receiver. P1 starts in state *Ready-to-Send*. When it has sent a message to P2, it moves into the state *Ready-to-Receive* and waits for an acknowledgement ACK sent by P2. Once the acknowledgement has been arrived, P1 can send more messages. P2 starts in state *Waiting-for-Messages*. If it receives a message, it confirms by sending an acknowledgement ACK to P1 and waits for more messages.

(2) Give the reachability tree.