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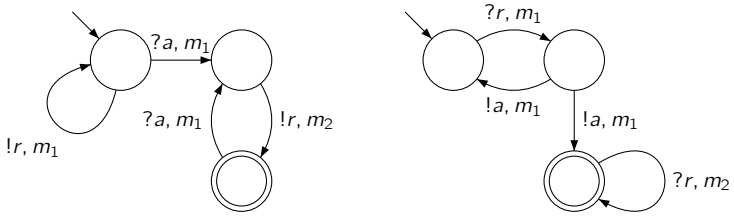
– Assignment 6 –

Since there is no lectures next week (01/02. Dec.), the next exercise assignment will be online on 10. Dec., and handed in until 17. Dec.

Exercise 1 (3 points)

Given the following CFM A:



Show that A is *not deadlock-free*. Justify your answer by indicating the sequence of configurations leading from the initial configuration γ_0 to the deadlock configuration γ_d and arguing why a final configuration is not reachable from γ_d.

Exercise 2 (4 points)

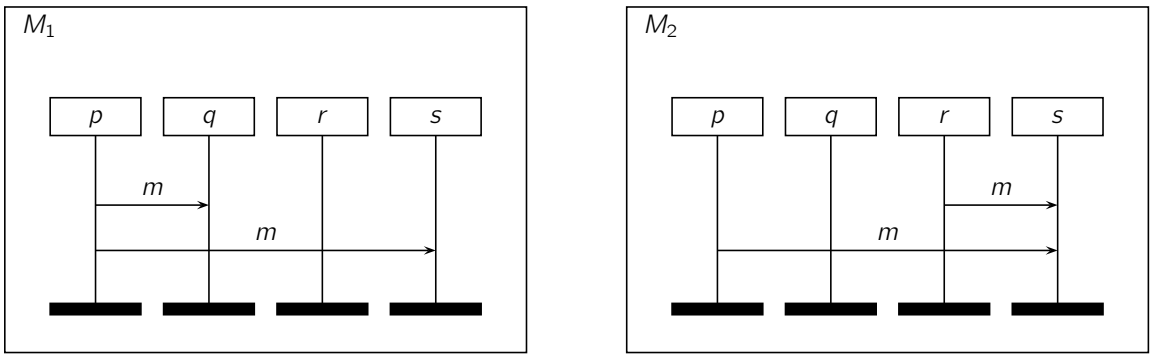
Prove the following statements:

1. locally accepting CFM is strictly weaker than CFM;
2. deadlock-free CFM is strictly weaker than CFM;

Note that, a CFM is said to have *local accepting* states if $F = \prod_{p \in \mathcal{P}} F_p$ for some $F_p \subseteq S_p$.

Exercise 3 (3 points)

Given two MSCs M_1 and M_2 as follows:



Show that the language of $\{M_1, M_2\}$:

1. is not *weak realizable*, i.e $|\mathbb{D}| = 1$;
2. is realizable, if $|\mathbb{D}| = 2$. (Hint: it suffices to give a CFM that realizes $\{M_1, M_2\}$ and justify why it realizes $\{M_1, M_2\}$.)