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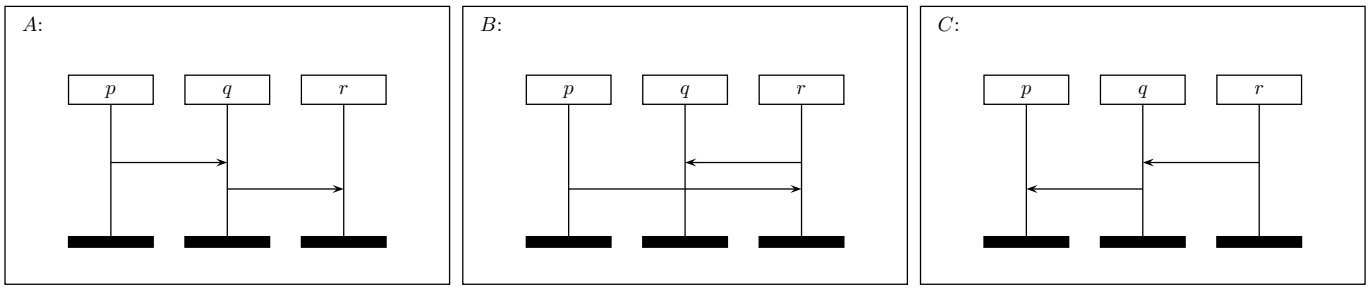
Foundations of UML
Winter term 2009
– Assignment 6a –

Hand in the solutions before the exercise class on December 16th.

Exercise 1 (5 points)



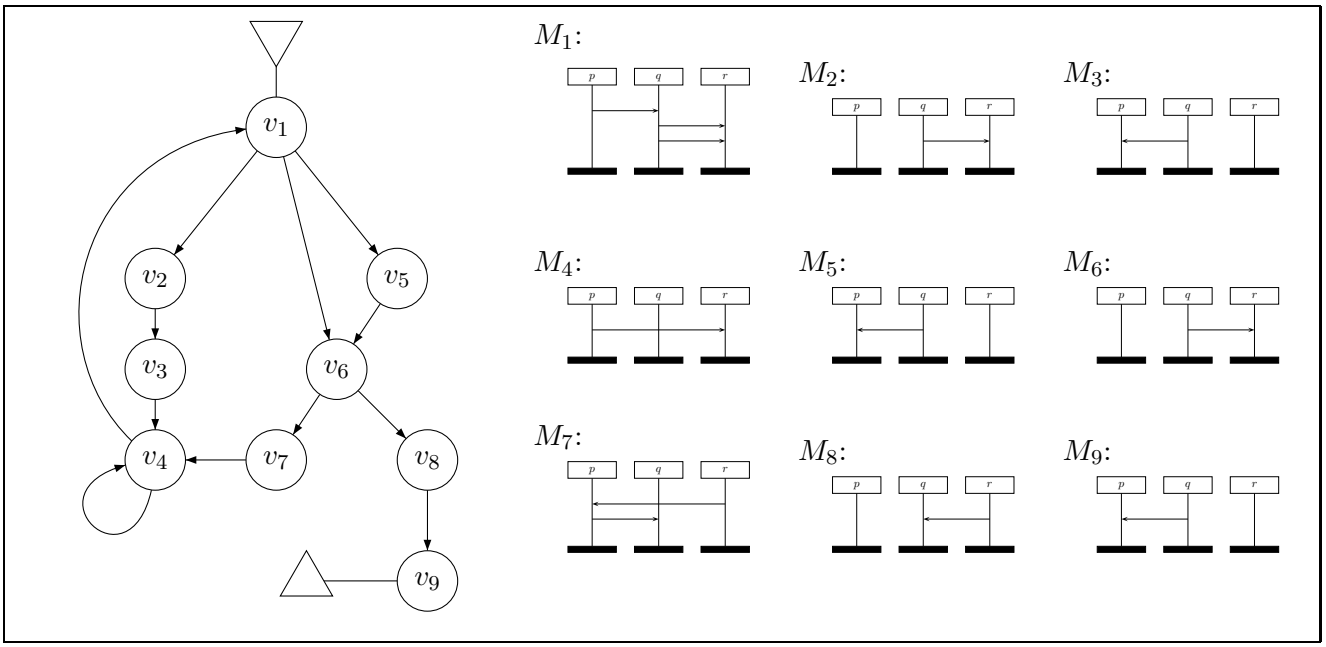
Check whether the following regular expressions are realisable or not:

- $\alpha_1 = A^* + B^* + C^*$,
- $\alpha_2 = A \cdot (B + C)^*$,
- $\alpha_3 = (A \cdot B \cdot C)^*$,
- $\alpha_4 = (A \cdot B)^*$,
- $\alpha_5 = (A \cdot C)^*$,

and if so, whether they can be done by a bounded, deadlock-free CFM?

Exercise 2 (10 points)

Given the following local-choice MSG $\mathcal{G}$ over $\mathcal{P} = \{p, q, r\}$, where $\lambda(v_i) = M_i$ (for $i \in \{1, \ldots, 9\}$):



Construct a deadlock-free CFM $\mathcal{A}$ according to the algorithm presented in the lecture. Determine, moreover, for every node $v \in V$ of $\mathcal{G}$ the maximal non-branching path $nbp(v)$.