Tutorial 10

1. Prove that using long steps (over a word, not just one letter) in the definition of bisimulation equivalence makes for an equivalent characterization.
2. Show that bisimulation equivalence is the greatest fixed point of function F (defined during the lecture).
3. Prove that the approximants (we define the k-th approximant to be equal to $F^k(S)$ where S is a universal relation) stabilize in at most $n-1$ steps where n is the number of processes.
4. Design a polynomial algorithm that computes the bisimulation equivalence in a finite family of processes.
5. Construct an example (family of processes with relations between them) showing that the approximation may not stabilize at any finite step.

Homework (not mandatory)

1. Find a family of processes for which the intersection of all finite approximants is not a fixed point of F.