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Paderborn, January 12, 2017

Advanced Distributed Algorithms and Data Structures

WS 2016

Homework Assignment 10

Problem 1:
Finish the proof of Theorem 9.1 (see the exercise at the end).

Problem 2:
In the proof of Theorem 9.3, consider a system state to be *legal* if for every node v, $v.D = \emptyset$ and $v.N = \Gamma(v)$. Show that Build-Clique is self-stabilizing with respect to this definition of a legal state.

Problem 3:
Finish the proof of Theorem 9.5 by proving the exercise on slide 30. Hint: Computing the expected number of rounds until u is introduced to some $w \notin S$ can be done with the help of a random variable X with $\Pr[X = k] = (1-p)^{k-1}p$. Why?