



Verteilte Algorithmen

Wintersemester 2007/08

Serie 2

31. Oktober 2007

Thema: Leader Election

Ausgabetermin: 31. Oktober 2007

Abgabe: 9. November 2007 (12:00)

Aufgabe 1 (*TimeSlice* (3 Punkte)) Geben Sie den Code für den *TimeSlice*-Algorithmus an (Aufgabe 3.10).

Aufgabe 2 (Verbesserter *OptFloodMax* (4 Punkte)) Consider the “further optimized” version of *OptFloodMax* described in Section 4.1.3, which prevents processes from sending *max-wid*-information to processes from which they have previously received such messages.

1. Give the code for this algorithm.
2. Prove the correctness of your algorithm by relating it to *OptFloodMax*, using the same sort of simulation strategy used in the proof of correctness for *OptFloodMax* (i.e., in the proof of Theorem 4.2).

(Aufgabe 4.4)

Aufgabe 3 (Verbesserter *SynchBFS* (6 Punkte)) Consider the optimized version of *SynchBFS* described in Section 4.2.2, which prevents processes from sending search messages to processes from which they have previously received such messages.

1. Give code for this algorithm.
2. Prove the correctness of your algorithm by relating it to *SynchBFS*, using the same sort of simulation strategy used in the proof of correctness for *OptFloodMax* (i.e., in the proof of Theorem 4.2).

(Aufgabe 4.6)