Submission: Tuesday, October 4 at the beginning of class.
Homework solution must be typed. You must work on this by yourself – no collaboration is allowed.

Homework

Both 337 and 437

1. Show a scenario that does not work with only f rounds, for n processes, n>f+1, for any (all possibilities of) n and f.
2. Prove that the previous algorithm is correct.

Hints:

- First, list what properties are needed to be proven, then prove them.
- Remember: no process decides before the *f*+1 round.
- Think about where vector values are coming from.
- Show that the values of the local vectors are identical at all the processes that make it to the *f*+1 round (why?) .

3. Messages from some specific processes may be delayed so that they may arrive in the next round rather than only in the round in which they were sent. What is the best way to change the algorithm if the number of those affected processes is smaller than, equal to, or larger than ***f*** ?

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Homework (cont.)

Only 437

-Suppose that n=6, and at most one process may lie (say whatever it wants, and maybe different things to different members, or maybe not say anything to some members on some messages). Construct the simplest algorithm that solves the consensus problem in this case.

Validity in this case: If a correct process decides on a value, there was a correct process that started with that value.