Concurrent Algorithms November 4, 2018

Exercise 6

Problem 1.   Is it possible to implement C&S using a finite number of base C&S objects one of which can be faulty in a non-responsive way?

Problem 2.   Implement an atomic SWMR register out of base SWMR registers, t of which can fail in a non-responsive way.

Problem 3.   Devise an obstruction-free, anonymous algorithm that implements binary consensus using a *finite* number of (unbounded) counters.

Problem 4.   According to the implementation of anonymous snapshot given in the lecture, if we place

  "If some Reg[j] contains a collect with a higher timestamp than ts, then return that collect"

by the following

  "If some Reg[j] contains a collect with a timestamp *no less than* ts, then return that collect",

is the implementation still correct? Justify your answer.