

Homework 3:

Problem 1:

Show that every n -consensus protocol has a bivalent state. The n -consensus protocol has n thread trying to decide on a value 0 or 1 subject to the conditions of consistency (all decide on the same value) and validity (some thread has proposed this value.)

Problem 2:

Proof that the Test and Test and Set Lock achieves mutual exclusion. Show that it allows for starvation.

Problem 3:

Show that the Anderson (Array Based) Lock achieves mutual exclusion and is starvation free.

Problem 4:

Show that an implementation of removal that only locks the predecessor node of the node to be deleted does not correctly implement set when one threads wants to remove and another thread wants to add.