

CMPE 436: Assignment 4
Fall 2017 Instructor: Alper Sen
Due Date: midnight, Nov 29, 2017 Demo Date: TBA

Question 1-

Assume that you have implemented the vector clock algorithm. However, some application needs Lamport's logical clock. Write a pseudo-code function *convert* that takes as input a vector time-stamp and outputs a logical clock time-stamp.

Question 2-

Prove that

$$s \rightarrow t \text{ iff } (s.v[s.p] \leq t.v[s.p]) \text{ and } (s.v[t.p] < t.v[t.p])$$

Question 3-

Implement token based Lamport's mutual exclusion algorithm. However, modify the algorithm such that at most k processes can be in the critical section concurrently. Develop test cases to demonstrate that your solution works.