

CS425/ECE428 Distributed Systems

Homework 3

(With revised figure in Question 3)

Due by 5 PM on ~~February 13, 2018~~ February 15, 2018

Submit electronically via Compass2g.

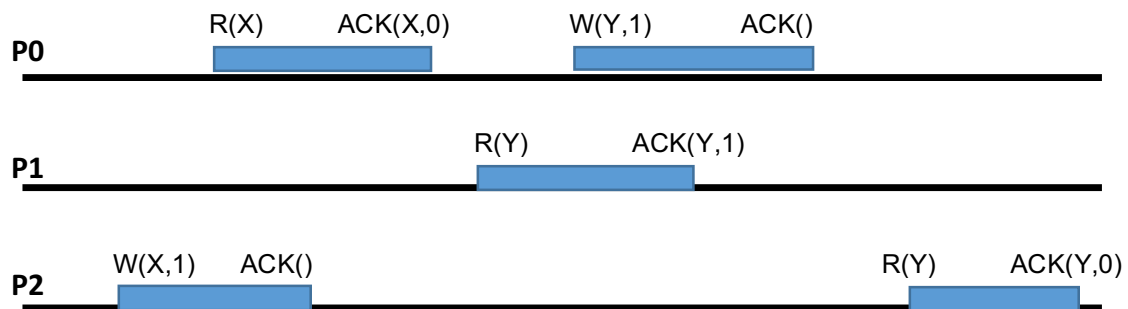
PDF format preferred.

Total 30 points

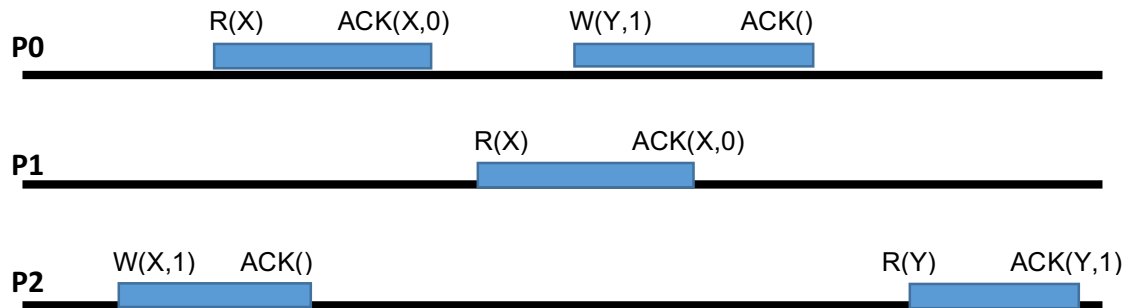
1. In each part of this question, if you answer NO, then delete a minimum number of operations to ensure that the modified execution will satisfy the specified property – circle the operations that you want to delete.

Assume that all variables are initialized to 0.

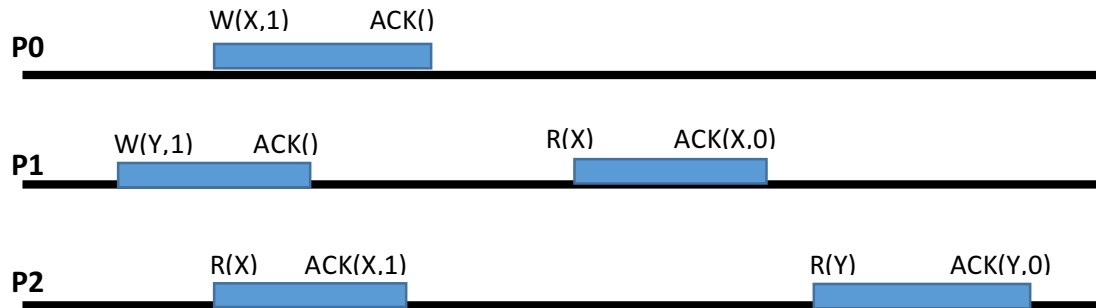
- a. Is the execution below linearizable? Explain your answer briefly. (5 points)



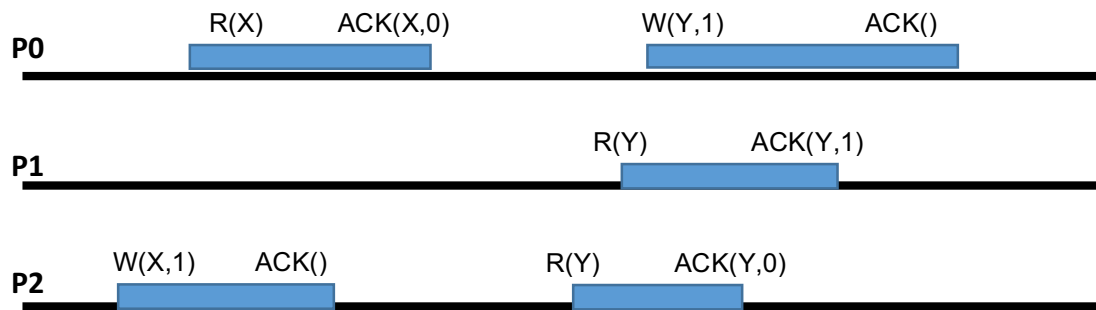
b. Is the execution below sequentially consistent? **(5 points)**



c. Is the execution below sequentially consistent? **(5 points)**



2. Given below is a linearizable execution, please draw linearization points (as triangles) for each of the operations. **(5 points)**



3. Using Chandy-Lamport algorithm, show when each process records its local state (you can annotate the figure) and list the channel states for each process captured in the snapshot. Black dotted lines are marker messages. Red lines are messages (A to F). **(10 points)**

