

Analysis: Ricart-Agrawala's Algorithm

- Safety
 - Two processes P_i and P_j cannot both have access to CS
 - If they did, then both would have sent Reply to each other
 - Thus, $(T_i, i) < (T_j, j)$ and $(T_j, j) < (T_i, i)$, which are together not possible
 - What if $(T_i, i) < (T_j, j)$ and P_i replied to P_j 's request before it created its own request?
 - Then it seems like both P_i and P_j would approve each others' requests
 - But then, causality and Lamport timestamps at P_i implies that $T_i > T_j$, which is a contradiction
 - So this situation cannot arise