Assignment Week 4&5 CPE 469  Due May 8th 11:59

Can be done in groups of two students

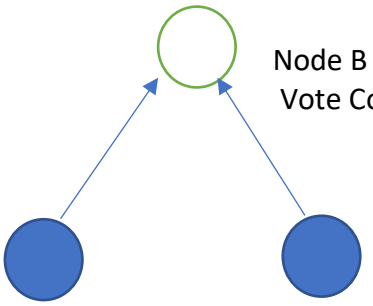
1. Implement Paxos as described in the article : Paxos Made Simple (10 extra credits)

2. Implement a Simplified version of Paxos Consensus protocol for leader election.

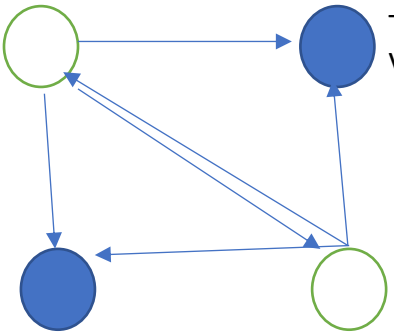
**Simplified Paxos Implementation details=> this implementation is equivalent to Paxos but is not Paxos 100% is called RAFT**

Create 8 nodes for this simulations
Every node can be : Follower, Candidate or Leader

1. All nodes start as followers.
2. If followers don't hear from the leader in an X amount of time, then they can become candidates. Every node has a timeout Y (a random number between 150-300ms) which is the amount of time each follower has to wait until becoming candidate, if the node receives a message from the leader before this timeout expires than the timer will be reset
3. The candidate requests votes from other nodes (it does also vote for himself), in this case "other" nodes are going to be all nodes in the system. The candidate also waits for Z time to receive the votes and counts them at the end of this timer
4. If the receiving nodes hasn't yet voted in this term, then the Node votes for the candidate




5. If the candidate gets a majority than the candidate becomes the leader
6. If two nodes become candidates at same time:
   For example, two nodes become candidates A,B
   Both send request for votes; the followers send response and they end up with same number of votes.




To break the tie, wait for a random amount of time and hold elections again