Problem Set 2

Using the GO language, implement the following distributed mutual exclusion protocols using at least ten (10) nodes:

1. **(10 marks)** Lamport's shared priority queue without Ricart and Agrawala's optimization.
2. **(10 marks)** Lamport's shared priority queue with Ricart and Agrawala's optimization.
3. **(5 marks)** Centralized server protocol.

(15 marks) Compare the performance of the three implementations (in terms of time). In particular, increase the number of nodes simultaneously requesting to enter the critical sections to investigate the performance trend for each of the protocol. For each experiment and for each protocol, compute the time between the first request and all the requesters exit the critical section. If you have ten nodes, therefore, your performance table should contain a total of 30 entries (ten entries for each of the three protocols).