Principles of Distributed Computing
Exercise 13

1 Determining the Median

Consider a radio packet network with $n$ nodes and without collision detection. Furthermore, assume that each node has a token of size $O(\log n)$ (a number) and is equipped with memory of size $O(\log n)$. Present an uniform algorithm which allows the nodes to determine the median in $O(n)$ time slots w.h.p.

**Hint:** You can assume that $n$ is odd and each token is unique. **Hint:** Initializing first and then trying to determine the median simplifies the task.

**Hint:** With a memory of size $O(\log n)$ the nodes can count up to $n$. 