

**Algorithm Design**  
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**Solution of Exercise C-11.1**

Repeat the directed leader election algorithm in each direction. That is, we begin by having each node send its ID to its left and right neighbors. When a node receives a message from its left (resp., right) neighbor, it computes the minimum of the sent ID and its own ID, and sends this out on the right (resp., left) link. If a node receives its own ID along either the left or right links, then it is the leader. The asymptotic message complexity of this algorithm is the same as in the directed case.