Q: *Rumor spreading*

There are *n* people, each in possession of a different rumor. They want to share all the rumors with each other by sending electronic messages. Assume that a sender includes all the rumors he or she knows at the time the message is sent and that a message may only have one addressee.

Design a greedy algorithm that always yields the minimum number of messages they need to send to guarantee that every one of them gets all the rumors.

A: Say people are labeled as P1, P2, … , P*n*

P1 sends a rumor to P2, P2 sends the same message plus their possessed rumor to P3, then from P3 to P4, until P*n*-1 sends all the combined rumors plus their possessed rumor to P*n*. Then P*n*, which possesses all the rumors at that point, sends them to P1, P2, … , P*n*-1.

The minimum number of messages that will be sent is $2n - 1$.