Finding the Leader

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Aim: To find the leader from the given impression sheet

Code: I've made a few adjustments to the impression sheet, creating a new and improved **'impression_2.csv'**.With the entry numbers acting as the nodes, I'm confident that this will streamline my work and be incredibly useful moving forward. The technique I used to find the leader is a random walk on the nodes and adding 1 coin to each node I'm visiting with the probability of 0.85 and 15% of the time I'm choosing a random node in the graph so that I can be sure that even if the graph is disconnected then we should keep going to every node otherwise it will be stuck inside that small graph and we can't find the leader. Combining all this, and we got a teleportation method to find the leader. So, in my code, I'm using pandas to handle files and note that I'm not creating a graph. I'm using only a sheet as a graph is very messy because of 143 nodes, so I preferred just to do a random walk in the sheet. Basically, for the first time, I chose a random node from column one and chose a random person that is connected to it. And started a random walk with an 85% chance that it would choose another from the connection of the previous node and a 15% chance to choose a random node. And that's how I am finding the leader by walking 1 million times.

Conculsion: Through a strategic combination of random walks and teleportation techniques on the impression sheet, I aimed to identify the leader among the nodes represented by entry numbers. By simulating 1 million random walks with a blend of deterministic and stochastic movement, I successfully uncovered 2023csb1091 as the primary leader, closely followed by 2023mcb1316. This approach not only accounted for the potential disconnection of nodes but also ensured comprehensive exploration of the network, leading to an effective determination of the leader.