

PROJECT-2(BONUS)

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- Failure model implementation

After creating all the nodes, we killed the required number of nodes using poison pill.

The killed nodes were randomly selected and then we passed these nodes to the topology to start the Gossip algorithm with alive nodes.

- Experiment

We took the number of killed nodes stable i.e 50 for each topology, then we tested all four topology by increasing number of nodes. We collected this data and plotted a graph which is figure1. The x axis shows the Number of nodes as mentioned in the graph and y axis shows the number of nodes converged.

- Observations

According to the test we performed, the major observation can be noticed from figure 1 is that the Full network converged the highest number of nodes as compared to the other topologies and the line topology converged the least. This is because full network is connected to every other node and even if we kill 50 nodes, the others are still connected and pass on the message to others. While, in line topology, one node is only connected to two nodes and if we kill 50 nodes and the line breaks, the message won't be able to pass forward.

The 3D and Imperfect 3D have a small difference because the Imperfect 3D nodes only have one extra neighbor which is selected randomly.

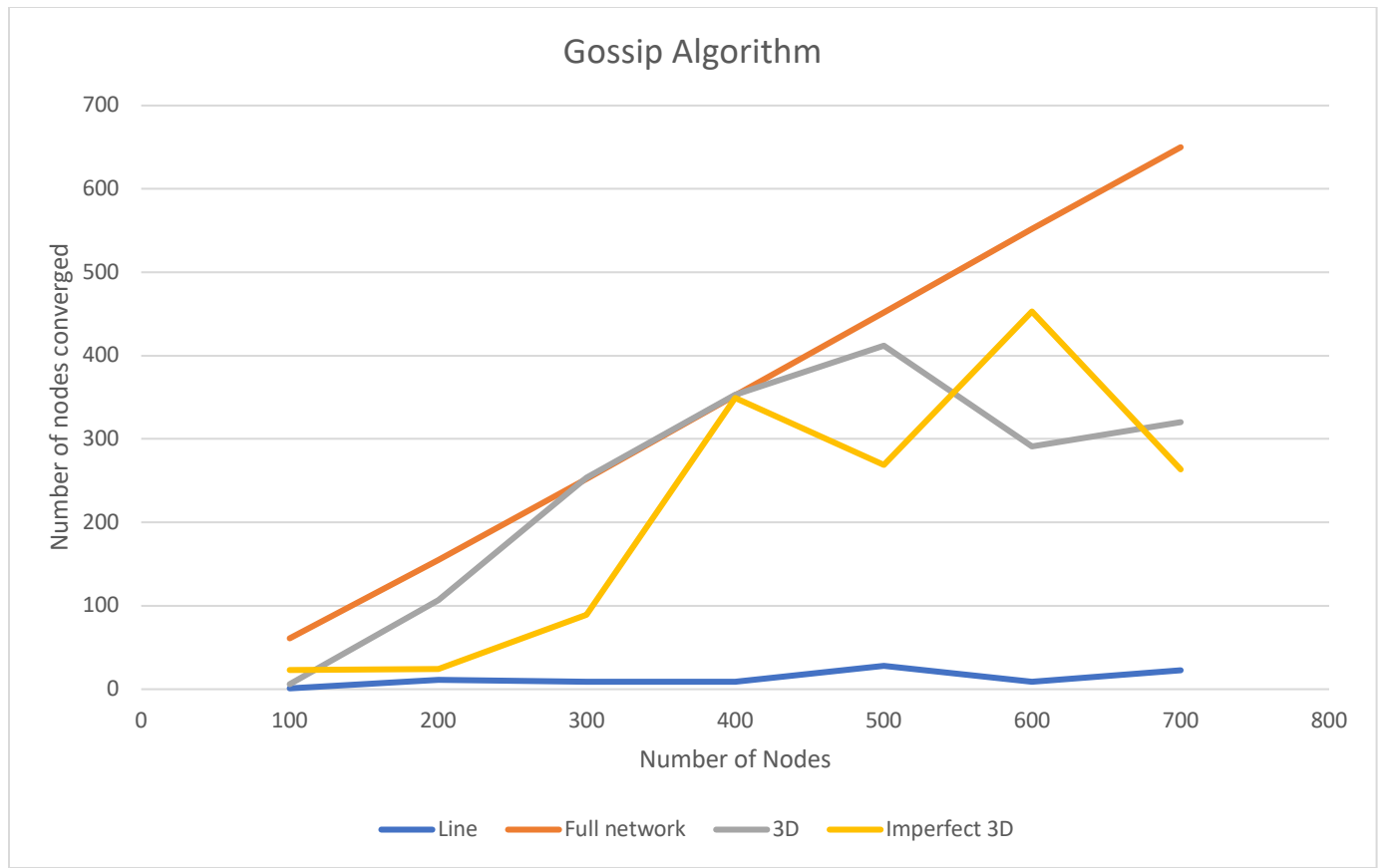


Figure 1: graph for number of nodes VS number of nodes converged while the number of dead nodes is 50