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Project 2 Gossip Simulator

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Instructions to run the program

1. Extract the zip file Raghavan_karlekar.zip.
2. Go the folder proj2.
3. Run the command- mix escript.build
4. After building, run the program by executing escript my_program numNodes topology algorithm.
5. For example – escript my_program 100 full gossip
6. The program will execute.

Note: If the topologies don't converge, terminate the program by pressing ctrl + c, and re-execute the program.

What is working:

Topologies:

1. Full: Every node is neighbor to every other node.
2. Line: Nodes form a queue. Each node has two neighbors except for the first and the last node.
3. Random 2D: Nodes are randomly placed at x, y co-ordinates on a 1x1 grid. Two nodes are connected if the distance between them is less than or equal to 0.1 units.
4. 3D Torus: Nodes are arranged in a three-dimensional grid with each node having six neighbors.
5. HoneyComb: Nodes are arranged in a hexagonal pattern resembling that of a honeycomb. Each node can have maximum of three neighbors.
6. Random HoneyComb: Same as HoneyComb but one other random neighbor is selected from the list of all nodes.

Convergence is achieved for all topologies for both algorithms.

Largest network for both algorithms:

	Gossip	Push-Sum
Full	600	500
Line	1200	1000

Random 2D	700	5000
3D Torus	6000	7000
Honeycomb	5000	6000
Random Honeycomb	5000	6000