Distributed Operating System Principles

PROJECT 2

Group Members:

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Project Specifications:

In the project we have implemented Gossip and Pushsum algorithms on the following topologies:

- Full
- Line
- Random 2D
- 3D Torus
- Honeycomb
- Honeycomb with random neighbour

Their graphs and respective analysis are included with the project in Report.pdf

<u>**Execution:**</u>

1. Extract the folder
2. Make it the current directory using *cd* in command line.
3. Run the command: *mix run lib/my_project2.ex numNodes topology algorithm*

Eg., mix run lib/my_project2.ex 1000 3dtorus gossip

Largest Network Managed:

GOSSIP: (*convergence time is in milliseconds***)**

- Full – 5000 nodes ; 35,390 ms
- Line – 2500 nodes; 161,094 ms
- Random 2D – 5000 nodes: 3625 ms
- 3D Torus – 10000 nodes; 9,094 ms
- Honeycomb – 5000 nodes; 73,953 ms
- Honeycomb with random neighbours – 5000 nodes; 86,219 ms

PUSHSUM: (_convergence time is in milliseconds_**)**

- Full – 2500 nodes ; 206,313 ms
- Line – 500 nodes; 482,782 ms
- Random 2D – 2500; 161,484 ms
- 3D Torus – 5000 nodes; 27,719 ms
- Honeycomb – 1500 nodes; 1,232,639 ms
- Honeycomb with random neighbours – 2500 nodes; 101,938 ms