Project 2 Gossip Simulator

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**What is working?**

We have implemented both the Gossip and Push-Sum algorithms for the below four topologies using Elixir Genserver processes.

 Full Network

 2D Grid

 Line

 Imperfect 2D Grid

**Full Network:**

To run Gossip algorithm using Full network topology the command is as follows:

Compile the project from the *project2* directory.

**$ *mix escript.build***

Run the project with the command

***$ ./project2 49 full gossip***

To run Push-Sum algorithm using Full network topology the command is as follows:

***$ ./project2 49 full pus-sum***

**2D Grid:**

To run Gossip algorithm using 2D network topology the command is as follows:

***$ ./project2 49 2D gossip***

To run Push-Sum algorithm using 2D network topology the command is as follows:

***$ ./project2 49 2D push-sum***

**Line:**

To run Gossip algorithm using Line network topology the command is as follows:

***$ ./project2 49 line gossip***

To run Push-Sum algorithm using Line network topology the command is as follows:

***$ ./project2 49 line push-sum***

**Imperfect 2D Grid:**

To run Gossip algorithm using Imperfect 2D Grid network topology the command is as follows:

***$ ./project2 49 2D gossip***

To run Push-Sum algorithm using Imperfect 2D Grid network topology the command is as follows:

***$ ./project2 49 2D push-sum***

What is the largest network you managed to deal with for each type of topology and algorithm?

**Gossip Algorithm:**

*Full Network:*

For nodes= 10000 we are getting the total time for Full network using Gossip algorithm as 530.562 seconds

Imperfect 2D Grid:

For nodes = 10000 we are getting the total time for imp2D using Gossip algorithm as 760.556 seconds

2D Grid:

For nodes= 4900 we are getting the total time for 2D using Gossip algorithm as 4500.426 seconds

Line:

For nodes= 4900 we are getting the total time for Line using Gossip algorithm as 5610.364 seconds

**Push-Sum Algorithm:**

Full Network :

For nodes= 10000 we are getting the total time for Full network using Gossip algorithm as 90.002 seconds

Imperfect 2D Grid :

For nodes = 10000 we are getting the total time for imp2D using Gossip algorithm as 350.80 seconds

2D Grid :

For nodes= 4900 we are getting the total time for 2D using Gossip algorithm as 1600.212 seconds

Line :

For nodes= 4900 we are getting the total time for Line using Gossip algorithm as 1746.66 seconds