1. Output

Below is the output when running the program on one machine, 4 peers:

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C:\Users\yschen\Documents\gitdir\umass_courses\ds\lab-1-balasubramanian-chen\src>
python node.py
\\\\\  *NEIGHBOR MAP*  /////
[False, True, False, True]
[True, False, True, True]
[False, True, False, True]
[True, True, True, False]

[Neighbor] Neighbors of peer 0: 1,3
[Neighbor] Neighbors of peer 1: 0,2,3
[Neighbor] Neighbors of peer 2: 1,3
[INIT] Peer 1 sells 6 number of Boar
[Neighbor] Neighbors of peer 3: 0,1,2
[INIT] Peer 2 sells 1 number of Boar
[INIT] Peer 3 sells 4 number of Boar
[INIT] Peer 0 plans to buy Salt
[INIT] Peer 3 plans to buy Salt
[LOOKUP propagate] Peer 1: (next) 2 <- 1-0 (path)
[LOOKUP propagate] Peer 0: (next) 1 <- 0-3 (path)
[LOOKUP propagate] Peer 1: (next) 3 <- 1-0 (path)
[LOOKUP propagate] Peer 2: (next) 3 <- 2-1-0 (path)
[LOOKUP propagate] Peer 3: (next) 2 <- 3-1-0 (path)
[LOOKUP propagate] Peer 1: (next) 2 <- 1-0-3 (path)
[LOOKUP propagate] Peer 1: (next) 0 <- 1-3 (path)
[LOOKUP propagate] Peer 3: (next) 1 <- 3-0 (path)
[LOOKUP propagate] Peer 1: (next) 2 <- 1-3 (path)
[LOOKUP propagate] Peer 3: (next) 2 <- 3-0 (path)
[LOOKUP propagate] Peer 1: (next) 2 <- 1-3-0 (path)
[LOOKUP propagate] Peer 2: (next) 1 <- 2-3-0 (path)
[LOOKUP propagate] Peer 2: (next) 1 <- 2-3 (path)
[INIT] Peer 0 plans to buy Salt
[LOOKUP propagate] Peer 1: (next) 0 <- 1-2-3 (path)
[LOOKUP propagate] Peer 1: (next) 2 <- 1-0 (path)
[INIT] Peer 3 plans to buy Fish
[LOOKUP propagate] Peer 1: (next) 3 <- 1-0 (path)
[LOOKUP propagate] Peer 2: (next) 3 <- 2-1-0 (path)
[LOOKUP propagate] Peer 3: (next) 1 <- 3-0 (path)
[LOOKUP propagate] Peer 3: (next) 2 <- 3-0 (path)
[LOOKUP propagate] Peer 0: (next) 1 <- 0-3 (path)
```

**** [PERFORMANCE] Average latency of peer 3: 0.807012 (sec/req) ****
[LOOKUP propagate] Peer 3: (next) 2 <- 3-1-0 (path)
**** [PERFORMANCE] Average latency of peer 1: 0.002915 (sec/req) ****
[LOOKUP propagate] Peer 1: (next) 2 <- 1-3-0 (path)
[LOOKUP propagate] Peer 2: (next) 1 <- 2-3-0 (path)
[LOOKUP propagate] Peer 1: (next) 2 <- 1-0-3 (path)
[LOOKUP propagate] Peer 1: (next) 0 <- 1-3 (path)
[LOOKUP propagate] Peer 1: (next) 2 <- 1-3 (path)
[INIT] Peer 0 plans to buy Fish
[LOOKUP propagate] Peer 2: (next) 1 <- 2-3 (path)
[LOOKUP propagate] Peer 1: (next) 2 <- 1-0 (path)
[LOOKUP propagate] Peer 1: (next) 3 <- 1-0 (path)
[LOOKUP propagate] Peer 1: (next) 0 <- 1-2-3 (path)
[LOOKUP propagate] Peer 2: (next) 3 <- 2-1-0 (path)
[LOOKUP propagate] Peer 3: (next) 2 <- 3-1-0 (path)
[LOOKUP propagate] Peer 3: (next) 1 <- 3-0 (path)
[LOOKUP propagate] Peer 3: (next) 2 <- 3-0 (path)
[INIT] Peer 3 plans to buy Salt
[LOOKUP propagate] Peer 1: (next) 2 <- 1-3-0 (path)
[LOOKUP propagate] Peer 2: (next) 1 <- 2-3-0 (path)
[LOOKUP propagate] Peer 0: (next) 1 <- 0-3 (path)
[INIT] Peer 0 plans to buy Salt
[LOOKUP propagate] Peer 1: (next) 2 <- 1-0-3 (path)
[LOOKUP propagate] Peer 1: (next) 0 <- 1-3 (path)
**** [PERFORMANCE] Average latency of peer 1: 0.003041 (sec/req) ****
[LOOKUP propagate] Peer 1: (next) 2 <- 1-3 (path)
[LOOKUP propagate] Peer 1: (next) 2 <- 1-0 (path)
[LOOKUP propagate] Peer 1: (next) 3 <- 1-0 (path)
**** [PERFORMANCE] Average latency of peer 0: 1.409174 (sec/req) ****
[LOOKUP propagate] Peer 2: (next) 1 <- 2-3 (path)
[LOOKUP propagate] Peer 3: (next) 2 <- 3-1-0 (path)
**** [PERFORMANCE] Average latency of peer 2: 0.001517 (sec/req) ****
[LOOKUP propagate] Peer 2: (next) 3 <- 2-1-0 (path)
**** [PERFORMANCE] Average latency of peer 3: 0.907086 (sec/req) ****
[LOOKUP propagate] Peer 3: (next) 1 <- 3-0 (path)