

Names-

Ekleen Kaur-94919717

COP 5615 Distributed Operating Systems Principles

Bonus Report

The Fault Tolerance of Nodes

To implement the bonus part we have randomly failed some amount of nodes to test for fault tolerance.

All failed nodes transfer the keys to the immediate next successor also the chords of the failed nodes are reconnected to the next successor.

- **DeadNodeFingerTableTransfer**-So when a node fails it transfers its finger table to the next node, this function returns a successor.
- **ReceiveFingerTableFromDeadNode**-To add the fingertable of the deleted node to the next immediate connection(successor)
- **DeadNodeKeyTransfer**-transfer the keys of the dead node
- **RecieveKeysFromDeadNode**-It receives the keys from the deleted node and appends it to the set of its own existing keys.

Results-

Command: dotnet fsi ChordFaultTolerance.fsx 10 2

Result Ratio:1.333333

Command: dotnet fsi ChordFaultTolerance.fsx 100 2

Result Ratio:3.616162

Command: dotnet fsi ChordFaultTolerance.fsx 100 3

Result Ratio:4.868687

Command: dotnet fsi ChordFaultTolerance.fsx 500 3

Result Ratio:3.767535

Command: dotnet fsi ChordFaultTolerance.fsx 700 3

Result Ratio:3.507868

Command: dotnet fsi ChordFaultTolerance.fsx 1000 3

Result Ratio:3.523524