BONUS PROJECT REPORT

PASTRY PROTOCOL

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Failure Models:

1) **Node dies**: To simulate this model we have created a function which kills some specified number of nodes. This number acts as our parameter that will control the failure model.

Description:
We have passed three parameters from command line

numNodes is the number of peers to create for the peer-to-peer system.

numRequests is the number of requests each peer will make per second.

Kill specifies the number of nodes to be killed from the network.

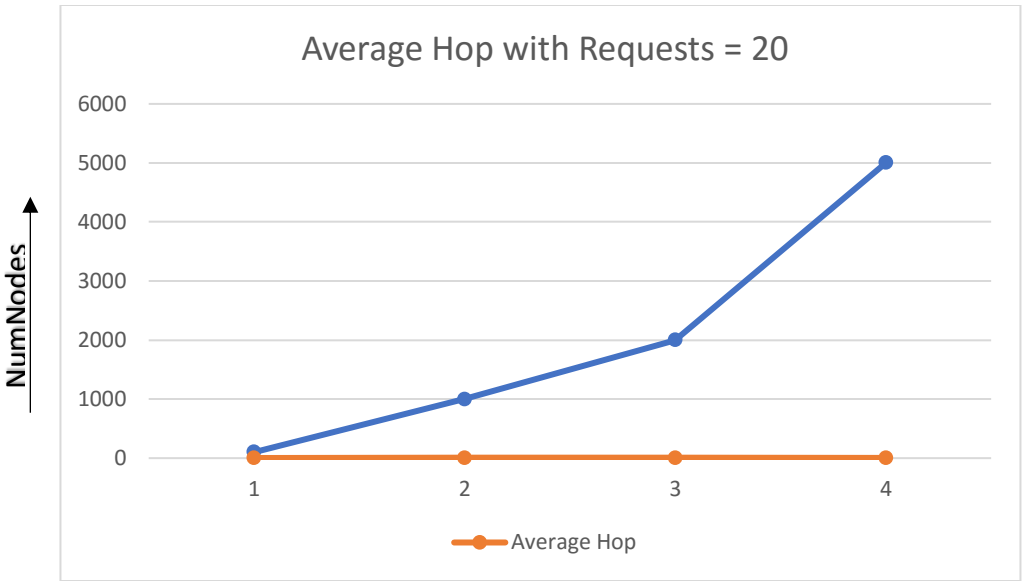
When a node is killed, it is removed from the routing table as well as the leaf set.

Observations:

The below table shows some of the observations:

We have checked the below by **killing 50 nodes** on different size of network with numRequests as 20. The below observations were made when the node failures occur but the routing table is not repaired. We can see that the average hop values increase as compared to the data when there was no failure so there is an impact on the quality of the route. The values are more near to the maximum number of hops required to route.

numNodes	numRequests	Average Hop
100	20	1.96
1000	20	2.91
2000	20	2.95
5000	20	3.83



The above graph shows the average hop when from different network size we kill 50 nodes.