1. **Group members**

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1. **How to run**

Steps: 1. Enter root folder (project3).

2.type commend as: mix run project.exs numNode numRequest

1. **What is working**

The goal of our project is to print the maximum number of hops (node connections) that must be traversed for all request for all nodes. We implement and test “route to node” function and “node insertion” function described in the paper.

1. Node insertion

1. Route to node

The aim of “route to node” function is finding the number of hops that one node must traversed to find another node. For a node that want to find another node, it checks the first level of its neighbor table. If there is a node that have same prefix with the starting node, it checks the second level of its neighbor table and find next nodes. Messages are forwarded across neighbor links to nodes whose nodeIDs are progressively closer until find the destination node. If a node cannot find a node that have same prefix at that level, it will find the other node in that level. If there is no node in that level, it will check next level in its neighbor table until max level. If there is still no node match the prefix, it will output an error.

1. **the largest network**

The largest number of nodes are 65536 theoretically. The largest number of nodes that we test are 4000.

The relationship between nodes number and time shown below (requests number is 10)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 |
| time | 3.229 | 9.576 | 21.319 | 39.318 | 61.617 | 84.455 | 115.993 | 152.384 |