

## **DISTRIBUTED OPERATING SYSTEMS PROJECT 3**

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This code implements the Pastry algorithm as described in the paper :

<http://rowstron.azurewebsites.net/PAST/pastry.pdf>.

The project first constructs the network along with the routing tables for the given input and then starts performing requests from each node.

### **How to run the code:**

Run the code through the command line with the following command:

"dotnet fsi --langversion:preview Pastry.fsx Arg1 Arg2"

Where:

Arg1: number of nodes

Arg2: number of requests

### **Output:**

The output will look like the following:

It will first indicate how much of the network has been built.

Then it starts sending out requests from each node n number of times.

At the end of the execution the average number of hops is printed.

Example:

```
dotnet fsi --langversion:preview PastryFinal.fsx 1000 10
```

```
Network Construction Initiated.
```

```
10 percent of network is constructed.
```

```
50 percent of network is constructed.
```

```
80 percent of network is constructed.
```

```
100 percent of the network has been built.
```

```
Processing Requests
```

```
1 requests perfomed
```

```
2 requests perfomed
```

```
3 requests perfomed
```

```
4 requests perfomed
```

```
5 requests perfomed
```

```
6 requests perfomed
```

```
7 requests perfomed
```

8 requests performed  
9 requests performed  
10 requests performed  
Requests processed  
Average Hop Size: 3.109700

### **Largest Network:**

Number of nodes : 100000  
Number of requests: 10

Output screenshot :

```
Darshans-MacBook-Pro:Project3 darshankakwani$ dotnet fsi --langversion:preview PastryFinal.fsx 100000 10
Real: 00:00:00.000, CPU: 00:00:00.000, GC gen0: 0, gen1: 0, gen2: 0
Network Construction Initiated.
10 percent of network is constructed.
50 percent of network is constructed.
80 percent of network is constructed.
100 percent of the network has been built.
Processing Requests
1 requests performed
2 requests performed
3 requests performed
4 requests performed
5 requests performed
6 requests performed
7 requests performed
8 requests performed
9 requests performed
10 requests performed
Requests processed
Average Hop Size: 4.680113
```