

P2P

This project implements the Chord protocol, a scalable peer-to-peer lookup service for internet applications, using the Pony programming language and the Actor Model. The implementation includes node and connection failure models to test the system's resilience.

- **Team Members:** Shrey Gupta and Yash Bhalla
- **Created 3 actor models:** Main, Chord and ChordNetwork – all working successfully
- **Largest Network:** 5000 Nodes
- **GitHub:** <https://github.com/yashbhalla/P2P>

```
Selector painting
Data prototypes
Data types
Function prototypes
Functions
Descriptors
Verifying
Writing ./P2P.o
Linking ./P2P
• (base) yashbhalla@MacBookPro P2P % ./P2P 5 10
Average number of hops: 3.08
• (base) yashbhalla@MacBookPro P2P % ./P2P 1000 100
Average number of hops: 499.273
• (base) yashbhalla@MacBookPro P2P % ./P2P 100 1000
Average number of hops: 50.4203
• (base) yashbhalla@MacBookPro P2P % ./P2P 5000 10
Average number of hops: 2500.15
```