Project 3: Chord Protocol implementation using Elixir

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Chord Protocol was implemented using Actor Model in Elixir utilizing the genServer/Supervisor-worker. We have implemented the distributed hash table based chord protocol that performs node join and routing mechanism as mentioned in the MIT paper.

Highlights:

1. Each peer is being added to the overlay network. After one peer is joined, next peer can join them to form a DHT.
2. Once all the peers are joined, the message delivery starts. We pass one request/second and this continues until number of requests for each node is equal to the user-entered numRequests.
3. We have used the SHA-1 hash function as mentioned in the MIT paper for chord protocol. Our Hash space is constant. It is limited by the integer value: 2^40.
4. Functions mentioned in the paper such as finding successor, finding predecessor, fixing fingers, finding closest preceding peer, creating, joining, notify, and stabilizing has been implemented.

Relevant Statistics: