

Gossip Protocol

A Quick Look

Zombies

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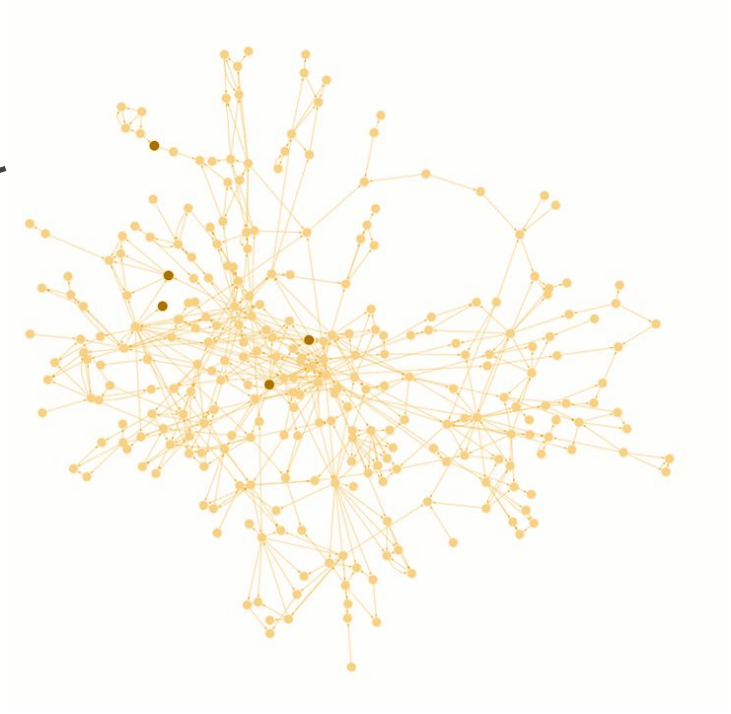
<https://mattbierbaum.github.io/zombies-usa/>

Real Life Applications

- Blockchain (Bitcoin)
- Internet Routing Protocols
- Distributed Systems

What is Gossip Protocol?

Communication protocol
used to share info
across networks



Connected Node: Basic Ideas

- Connection to nodes / network is irregular and not expected
- A node has a number of peers
- A node 'gossips' with its peers
- The gossip happens at set intervals, but the peers are chosen randomly
- Communication is redundant and peers can be shared the same information multiple times #FaultTolerance
- An empty node connecting to peers will receive the latest state

The Rules of Gossip Protocol

- Periodic communication
- State is expected to change
- Reliable communication is not assumed
- System contains redundancies

Demo: Message Client

- Add some print statements so we can see what's going on
- Need to implement 2 methods:
 - ``set_in_message_in_state`` - accepts a message and from port to store in the state at the current timestamp
 - ``update_state`` - accepts the message state in JSON format. Updates our messages if the passed in messages don't exist on our state