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Project 1 – Flooding and Neighbor Discovery Discussion Questions and Design Choices

Design choices:

For flooding:

1. I immediately kill the message off and do not rebroadcast after TTL drops to 0. Does not matter if it reached the node at TTL = 0.
2. I used a list to hold all the packages it got and uniquely identify the package by it destination, source, and protocol number. This means if the package is the same source and destination, but different protocol number, I will still save this package to my package list at each node and rebroadcast.

For neighbor discovery:

1. I made TTL = 1 when I initially ping at each node. This ping happens every time the timer fires off.
2. I also made source and destination equal to each other because logically, the destination for the ping back should be the source. I take advantage of this parity to identify neighbor discovery pings from regular pings and use TTL == 1 at all receivers to then reply back by decrementing TTL to 0 and changing source to the node it reached.
3. When TTL is == 0, I check that the protocol is a reply and destination is equal to the node it comes back to.
4. I also hash all nodes into a hashmap to keep a "list" of all the neighbors and iterate through the hashmap to print all the neighbors.