CSE461

Project 2: Routing
Packet Formats

- **Beacon Packet**
  - Same as Phase 1
  - ID = 42
  - Used for discovering neighbors
New Packet!

- **Generic Packet**

  - ID decides Broadcast, Ping, PingReply
  - TTL = Time-To-Live (default 10)
  - Seq: Source’s sequence number
  - MAC: Source’s MAC address
  - Payload Size: Size of Payload in bytes
  - Payload:
Flooding

- This is application-level flooding, not IP-broadcast
- To flood a packet, you send it to each of your neighbors, who in turn send it to theirs, and so on ...
- Neighbor discovery is NOT through flooding
Beacon
Flood
Flooding

- Remember to:
  - Decrement TTL, and drop packet if <= 0
  - Not send the same packet multiple times:
    - B receives the same packet from both A and C, it should be forwarded only once
Link State Routing

- LS packets are ‘flooded’ through the network
- Payload contents (on webpage)
- Compute the size of the payload, and set the payload size correctly
- Run Dijkstra’s algorithm to find the shortest path to each node
DHCP

- Pick a random IP in the 10.0.0.x subnet
- If you hear another node with the same IP, then lower MAC address wins: if your MAC is bigger, pick another IP
- Reflect the change in your beacon messages and link-state packets
Ping

- Use generic packet
- No Flooding
- If you receive a Ping packet:
  - Check if you are dest
    - If true, send Ping reply to source
    - Else lookup nextHop in routing table and forward the packet
  - Remember to decrement TTL