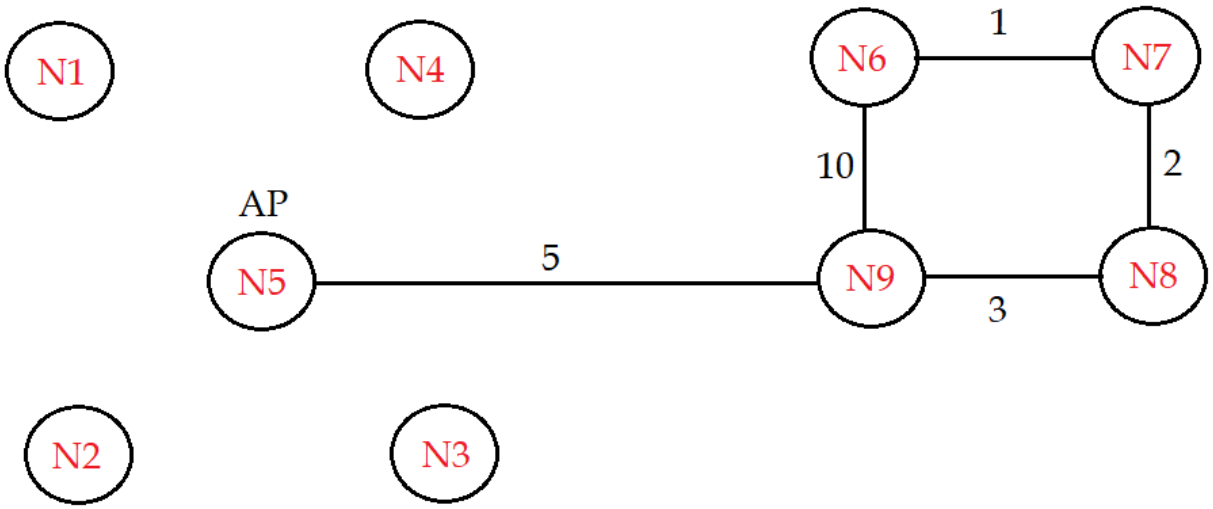
Problem Statement

Create the following fixed topology among all nodes using NS3. Nodes N1, N2, N3, N4 and N5 are connected in a wireless LAN network. Nodes N6, N7, N8, N9 are connected through point-to-point connection.



- Nodes N5, N6, N7, N8, N9 use distance vector routing protocol for routing and it is to be noted the edge weights are as given above.
- Nodes N1, N2, N3, N4, N5 use the AODV (Ad-hoc On-Demand Distance Vector Routing) protocol.
- Fix the initial position of all nodes and make the nodes N1, N2, N3 and N4 to move around node N5.
- Start sending UDP packets from node N7 to N1 at t = 1 secs. Bandwidth = 1.5Mbps and packet-size = 500 bytes.
- At t = 3 secs, print the routing table at each node from N1 to N5.
- At t = 5 secs, down the link between N7 and N8.
- At t = 7 secs, print the routing table at each node from N1 to N5.
- At t = 9 secs, down the link between N7 and N6.
- At t = 11 secs, print the routing table at each node from N1 to N5.
- At t = 13 secs, stop the UDP application and simulation.
- Generate trace-file and view all performance metrics using Tracemetrics.
- Generate pcap files of links N5-N9, N5-N1, N5-N3, N7-N8, N6-N7 and node N7. Analyze packet details using Wireshark.