Computer Networks Lab (CS 3272)

Assignment – 6

The aim of this assignment is to make you familiar with routing mechanisms in the network layer and understand the pseudocodes. Use the given pseudocodes to implement the routing mechanisms in C programming language and solve the following assignments:

1. **Link State Routing**

   Implement the Dijkstra's algorithm (LS routing) to find the shortest path tree and the forwarding table for node A in the given network. To find the complexity of Dijkstra's algorithm, find the number of searches we have to do to find the shortest path for a single node when the number of nodes is n.
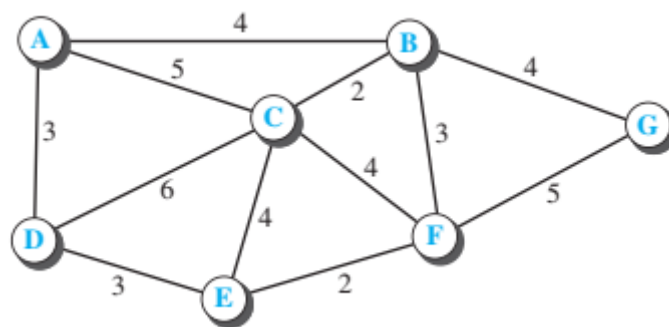
2. **Distance Vector Routing**

   Consider the network shown below, and assume that each node initially knows the cost of each of its neighbors. Implement the Bellman-Ford's algorithm (DV routing) and run simulation for a predefined time period. Output the distance-table entries for every node at regular intervals till the end of simulation. Check if convergence has been achieved or not. If not, increment the simulation duration and make successive attempts to achieve convergence.