Report Lab 4

(i) Distance vector routing decides the cheapest path for a packet to travel from one router to another. The algorithm is basically like following: First check every cost to the neighbors for the current node in question. To get the cost to other nodes that aren't neighbors to this node, we calculate by iterating through all the neighbors to see which total cost (current node → neighbor → destination node) is the lowest. We then proceed to set that value as cost for current node → destination node, and denote that the packets will pass through that neighbor that we will use. This neighbor can be seen in the "route" section of the Router output window. This algorithm is also used for neighbors, i.e. if current → neigh1 has cost 100, but current → neigh2 → neigh1 has cost 5, we will take the latter path, since it's cheaper although neigh1 is obviously a neighbor, although a more costly one.

(ii) We tested the algorithms by checking how legitimate the tables where after implementing the poison reverse technique, link updates and so on. For example, we checked that if the distance table has 999 as value from one node to another, that it also sets the cost for that rout in the distance vector to 999 as well as setting the route to "-".

(iii) Poison reverse may fail when two routers send information to the same receiver simultaneously or when a link or router gets disconnected in some way.

(iv) This can be solved by implementing split horizon, which basically helps preventing loops (count to infinity).

https://www.geeksforgeeks.org/distance-vector-routing-dvr-protocol/
https://en.wikipedia.org/wiki/Split_horizon_route_advertisement