Design Document

To represent the network topology I decided to use a linked list of node structures. Each node contains an ID, a vector to store it's immediate neighbors, a set of 3 vectors to represent the routing table and <dest, cost, nextHop> tuples (the first vector stores destinations, the second stores cost to the destination, and the third stores the nextHop to the destination), and two linked list heads: one to point to outgoing DV packets that the node has created, and one to point to incoming DV packets that the node has to process.

To represent a DV packet I decided to create a DV packet structure. Each packet contains a source node ID, a destination node ID, two vectors to represent the <destination, cost> pairs.

Representing packets as linked lists within the nodes made it simple to simulate the creating, sending, and processing of packets as it was just a matter of pointer manipulation to get the data where it needed to go.