PROJECT REPORT

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Design and Implementation details:

About the Distance Vector Routing Algorithm:
Distance Vector algorithm is a Link state algorithm that is iterative, asynchronous and distributed. Each node in the network receives the information on topology from one or more of its neighbors that are directly connected and then resultant calculation is distributed to its neighbors.

Implementation:
At each host, the program is being both a server and a client, by running with two different threads.
In one thread, server is always listening on new updates, and once it gets something new, it will update distance vector by updating cost or by adding more destination hosts to the table.
In the other thread, client sends out routing table information. For the first time, client reads the local host information which is the number of neighbors and cost to each neighbor from current host;

Let us consider 6 nodes as a, b, c, d, e and f with the same topology given in the problem statement; a.dat (similarly, the rest of nodes will be b.dat, c.dat, d.dat, e.dat, and f.dat) stores the details of all the nodes, it is directly connected and the respective costs. Each node should send out the routing information to its neighbours every 15 secs.

Project Environment:

The program has been written in Java language. In order to run the program, we need the Java runtime environment which can set up through JDK.

Steps to execute the program:

1) Open ‘n’ command prompts where ‘n’ is the number of nodes in the network topology. **n=6** in our example.
2) Compilation: javac DistanceVectorProtocolImplementation.java
3) Syntax for execution-----> java <java file name> <portnumber> <//.dat file>

- In first command prompt, type---> java DistanceVectorProtocolImplementation 2565 a.dat
- In second command prompt, type---> java DistanceVectorProtocolImplementation 2566 b.dat
- In third command prompt, type---> java DistanceVectorProtocolImplementation 2567 c.dat
- In fourth command prompt, type---> java DistanceVectorProtocolImplementation 2568 d.dat
- In fifth command prompt, type---> java DistanceVectorProtocolImplementation 2569 e.dat
- In sixth command prompt, type---> java DistanceVectorProtocolImplementation 2570 f.dat