CSC450 – Computer Networks WINTER 2019-20

Group assignment – Distance-vector algorithm **DUE DATE: 3/2/20**

In this assignment, you are to implement distance-vector routing algorithm applied on the given network topology.

Requirements:

1. First, your program has to read network topology from "topology.csv" file (provided on Moodle). In this file, the first row and the first column refer to the names of the nodes (x, y, z). Other cells show the cost of links between the row node and the column node.

   Your program has to take the name of the topology file as a command line argument.

   ```
   python dv_algorithm.py topology.csv
   ```

2. Next, your program has to calculate distance vectors for nodes in the network using distance-vector algorithm discussed in class. Final converged distance vector for each node has to be provided as an output.

   Sample run:

   ```
   at@at:~$ python dv_algorithm.py topology.csv
   Distance vector for node x: 0 2 3
   Distance vector for node y: 2 0 1
   Distance vector for node z: 3 1 0
   ```

3. Distance vector estimates must be calculated using Bellman-Ford equation.

4. Please, comment your code thoroughly, explaining the steps of the distance-vector algorithm and the overall flow of your program (e.g. parsing of input file, updating distance vectors, etc.) In addition, please, properly specify any sources you have used.

5. Create a "readme.pdf" with the name of each group member and the explanation of the responsibilities. In addition, specify Python version you have used and provide instructions on how to run your program.

6. Submit zipped folder with your Python source code and the readme.pdf file on Moodle. Only one submission per group required.