CMPSC 381
Data Communications and Networks
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Lab 8—Dijkstra Problem

Run the program `dij.py`, capturing the output into a text file, for 6 and 8 routers. By hand, verify the correctness of your answers; if they are wrong, re-run the program and make the necessary changes.

Comment out the line in the file that says "`#seed(12345)`", then run `dij.py` again for two different networks of size 7, capturing the output into a text file. Verify the correctness. **NOTE: if, by accident, the random graph is not connected, i.e., there are routers that are not reachable from other routers, re-run the program to get a connected graph.**

Design a 4-router graph with 6 edges (i.e., all possible pairs of distinct vertices are connected by an edge) and different weights on each edge so that, at each stage of Dijkstra's algorithm, a shorter path is found to some vertex than was known at the previous stage. Demonstrate this by showing the operation of the algorithm on your graph.