How to run:

Program Screenshots: routing3.py topology-1.csv

Then insert the source node you want, the program will do the rest

```
C:\Users\katie\Documents\CYEN\450\Project>routing2.py topology-2.csv
Please, provide the source node: x

Shortest path tree for node x:
xy, xyz
Costs of the least-cost paths for node x:
x:0, y:2, z:3

Distance vector for the node x: [0, 2, 3]
Distance vector for the node y: [2, 0, 1]
Distance vector for the node z: [3, 1, 0]

C:\Users\katie\Documents\CYEN\450\Project>routing2.py topology-2.csv
Please, provide the source node: z

Shortest path tree for node z:
zy, zyx
Costs of the least-cost paths for node z:
z:0, y:1, x:3

Distance vector for the node x: [0, 2, 3]
Distance vector for the node y: [2, 0, 1]
Distance vector for the node z: [3, 1, 0]
```

```
Please, provide the source node: u

Shortest path tree for node u:
uw, uwv, uwvy, uwvyz, ux
Costs of the least-cost paths for node u:
u:0, w:3, v:6, y:10, z:12, x:5

Distance vector for the node u: [0, 6, 3, 5, 10, 12]
Distance vector for the node v: [6, 0, 3, 7, 4, 6]
Distance vector for the node w: [3, 3, 0, 4, 7, 9]
Distance vector for the node x: [5, 7, 4, 0, 7, 9]
Distance vector for the node y: [10, 4, 7, 7, 0, 2]
Distance vector for the node z: [12, 6, 9, 9, 2, 0]

C:\Users\katie\Documents\CYEN\450\Project>routing2.py topology-1.csv
Please, provide the source node: x

Shortest path tree for node x:
xw, xu, xwv, xy, xz
Costs of the least-cost paths for node x:
x:0, w:4, u:5, v:7, y:7, z:9

Distance vector for the node u: [0, 6, 3, 5, 10, 12]
Distance vector for the node v: [6, 0, 3, 7, 4, 6]
Distance vector for the node w: [3, 3, 0, 4, 7, 9]
Distance vector for the node x: [5, 7, 4, 0, 7, 9]
Distance vector for the node y: [10, 4, 7, 7, 0, 2]
Distance vector for the node z: [12, 6, 9, 9, 2, 0]
```

Responsibilities:

Matt: Programming- Dijkstra's previous path checking and Distance-Vector 'update' function, fixing errors

Katie: Programming- Dijkstra's least cost path, fixing errors, research

Lauren: Programming- Distance-Vector Node class and reading from file, checking logic, fixing errors, research


All coding was done as a group, each member took lead on specified parts. We used discord's voice communication and shared screens to work together.