Name: Feedback

SA367 · Mathematical Models for Decision Making Spring 2022 · Uhan

Quiz 3 – 2/3/2022

Problem	Weight	Score
1	1	
Total		/ 10

Instructions. You have 15 minutes to complete this quiz. You may not use any other materials (e.g., notes, homework, website).

Show all your work. To receive full credit, your solutions must be completely correct, sufficiently justified, and easy to follow.

Problem 1. Describe the shortest path problem being solved by the code below. In particular:

- draw the directed graph (nodes and edges),
- specify the edge lengths, and
- specify the source and sink nodes.

```
import networkx as nx
import bellmanford as bf

G = nx.DiGraph()

G.add_node('banana')
G.add_node('pear')

for i in range(1, 6):
    G.add_node(i)

for i in range(1, 4):
    G.add_edge('banana', i, length=10 * i)

for i in range(3, 6):
    G.add_edge(i, 'pear', length=100 * i)

for i in range(1, 6):
    for j in range(1, 6):
        if j == i + 1:
            G.add_edge(i, j, length=1000)

length, nodes, negative_cycle = bf.bellman_ford(G, source='banana', target='pear', weight='length')
```

Many of you had the right idea, but translated `range(n)` and `range(start, stop)` incorrectly. See Lesson 2 for how these are defined. If you struggled with this problem, take a look at the solutions to Problem 1 in Lesson 4, assigned for homework, for a similar problem.