/\* Amir Yamini

\* Professor Schwartz

\* 12-07-2017

\* Project 3 - Graph

\*/

Instructor Testcase A

Dijkstra Shortest Paths

Graph: nVertices: 5 nEdges: 9

v= 0 [(0,1,1), (0,2,1)]

v= 1 [(1,0,2), (1,3,5)]

v= 2 [(2,0,7), (2,4,3)]

v= 3 [(3,2,6), (3,4,4)]

v= 4 [(4,1,3)]

Print shortest paths from start vertex = 1

Shortest Paths from vertex 1 to vertex

0: [1,0] Path Weight = 2

1: [1] Path Weight = 0

2: [1,0,2] Path Weight = 3

3: [1,3] Path Weight = 5

4: [1,0,2,4] Path Weight = 6

Graph is strongly connected

Process finished with exit code 0

5

0 1 1

1 0 2

2 0 7

3 2 6

3 4 4

1 3 5

4 1 3

0 2 1

2 4 3

Instructor Testcase B

Bellman Ford Shortest Paths

Graph: nVertices: 5 nEdges: 7

v= 0 [(0,1,2), (0,4,4)]

v= 1 [(1,2,-1)]

v= 2 [(2,0,3), (2,3,1)]

v= 3 [(3,1,2)]

v= 4 [(4,3,-3)]

Print shortest paths from start vertex = 0

Shortest Paths from vertex 0 to vertex

0: [0] Path Weight = 0

1: [0,1] Path Weight = 2

2: [0,1,2] Path Weight = 1

3: [0,4,3] Path Weight = 1

4: [0,4] Path Weight = 4

Process finished with exit code 0

5

0 1 2

2 0 3

1 2 -1

2 3 1

0 4 4

4 3 -3

3 1 2

Instructor Testcase C

BFS Shortest paths Shortest Paths

Graph: nVertices: 6 nEdges: 10

v= 0 [(0,1,1), (0,5,6)]

v= 1 [(1,2,1)]

v= 2 [(2,1,2), (2,4,1)]

v= 3 [(3,0,1), (3,4,1)]

v= 4 [(4,0,1), (4,5,4)]

v= 5 [(5,2,1)]

Print shortest paths from start vertex = 5

Shortest Paths from vertex 5 to vertex

0: [5,2,4,0] Path Weight = 3

1: [5,2,1] Path Weight = 2

2: [5,2] Path Weight = 1

3: [3] Path Weight = 2147483647

4: [5,2,4] Path Weight = 2

5: [5] Path Weight = 0

Process finished with exit code 0

6

3 0 1

3 4 1

4 0 1

4 5 4

0 1 1

0 5 6

5 2 1

1 2 1

2 1 2

2 4 1

Instructor Testcase D

Bellman Ford Shortest Paths

Graph: nVertices: 6 nEdges: 7

v= 0 [(0,5,-3)]

v= 1 [(1,2,2)]

v= 2 [(2,4,1), (2,0,1)]

v= 3 [(3,5,2)]

v= 4 [(4,0,-3)]

v= 5 [(5,1,1)]

Graph has a negative cycle

Graph is not strongly connected

Process finished with exit code 0

6

2 4 1

4 0 -3

3 5 2

5 1 1

0 5 -3

2 0 1

1 2 2