runfile('D:/Academic/MACS/AI/Assignments/search/search/autograder.py', wdir='D:/Academic/MACS/AI/Assignments/search/search')

Reloaded modules: grading, util, projectParams, pacman, game, layout, searchAgents, search, searchTestClasses, testClasses, textDisplay, testParser

Starting on 2-21 at 21:50:46

Question q1

===========

\*\*\* PASS: test\_cases\q1\graph\_backtrack.test

\*\*\* solution: ['1:A->C', '0:C->G']

\*\*\* expanded\_states: ['A', 'D', 'C']

\*\*\* PASS: test\_cases\q1\graph\_bfs\_vs\_dfs.test

\*\*\* solution: ['2:A->D', '0:D->G']

\*\*\* expanded\_states: ['A', 'D']

\*\*\* PASS: test\_cases\q1\graph\_infinite.test

\*\*\* solution: ['0:A->B', '1:B->C', '1:C->G']

\*\*\* expanded\_states: ['A', 'B', 'C']

\*\*\* PASS: test\_cases\q1\graph\_manypaths.test

\*\*\* solution: ['2:A->B2', '0:B2->C', '0:C->D', '2:D->E2', '0:E2->F', '0:F->G']

\*\*\* expanded\_states: ['A', 'B2', 'C', 'D', 'E2', 'F']

\*\*\* PASS: test\_cases\q1\pacman\_1.test

\*\*\* pacman layout: mediumMaze

\*\*\* solution length: 130

\*\*\* nodes expanded: 146

### Question q1: 3/3 ###

Question q2

===========

\*\*\* PASS: test\_cases\q2\graph\_backtrack.test

\*\*\* solution: ['1:A->C', '0:C->G']

\*\*\* expanded\_states: ['A', 'B', 'C', 'D']

\*\*\* PASS: test\_cases\q2\graph\_bfs\_vs\_dfs.test

\*\*\* solution: ['1:A->G']

\*\*\* expanded\_states: ['A', 'B']

\*\*\* PASS: test\_cases\q2\graph\_infinite.test

\*\*\* solution: ['0:A->B', '1:B->C', '1:C->G']

\*\*\* expanded\_states: ['A', 'B', 'C']

\*\*\* PASS: test\_cases\q2\graph\_manypaths.test

\*\*\* solution: ['1:A->C', '0:C->D', '1:D->F', '0:F->G']

\*\*\* expanded\_states: ['A', 'B1', 'C', 'B2', 'D', 'E1', 'F', 'E2']

\*\*\* PASS: test\_cases\q2\pacman\_1.test

\*\*\* pacman layout: mediumMaze

\*\*\* solution length: 68

\*\*\* nodes expanded: 269

### Question q2: 3/3 ###

Question q3

===========

\*\*\* PASS: test\_cases\q3\graph\_backtrack.test

\*\*\* solution: ['1:A->C', '0:C->G']

\*\*\* expanded\_states: ['A', 'B', 'C', 'D']

\*\*\* PASS: test\_cases\q3\graph\_bfs\_vs\_dfs.test

\*\*\* solution: ['1:A->G']

\*\*\* expanded\_states: ['A', 'B']

\*\*\* PASS: test\_cases\q3\graph\_infinite.test

\*\*\* solution: ['0:A->B', '1:B->C', '1:C->G']

\*\*\* expanded\_states: ['A', 'B', 'C']

\*\*\* PASS: test\_cases\q3\graph\_manypaths.test

\*\*\* solution: ['1:A->C', '0:C->D', '1:D->F', '0:F->G']

\*\*\* expanded\_states: ['A', 'B1', 'C', 'B2', 'D', 'E1', 'F', 'E2']

\*\*\* PASS: test\_cases\q3\ucs\_0\_graph.test

\*\*\* solution: ['Right', 'Down', 'Down']

\*\*\* expanded\_states: ['A', 'B', 'D', 'C', 'G']

\*\*\* PASS: test\_cases\q3\ucs\_1\_problemC.test

\*\*\* pacman layout: mediumMaze

\*\*\* solution length: 68

\*\*\* nodes expanded: 269

\*\*\* PASS: test\_cases\q3\ucs\_2\_problemE.test

\*\*\* pacman layout: mediumMaze

\*\*\* solution length: 74

\*\*\* nodes expanded: 260

\*\*\* PASS: test\_cases\q3\ucs\_3\_problemW.test

\*\*\* pacman layout: mediumMaze

\*\*\* solution length: 152

\*\*\* nodes expanded: 173

\*\*\* PASS: test\_cases\q3\ucs\_4\_testSearch.test

\*\*\* pacman layout: testSearch

\*\*\* solution length: 7

\*\*\* nodes expanded: 14

\*\*\* PASS: test\_cases\q3\ucs\_5\_goalAtDequeue.test

\*\*\* solution: ['1:A->B', '0:B->C', '0:C->G']

\*\*\* expanded\_states: ['A', 'B', 'C']

### Question q3: 3/3 ###

Question q4

===========

\*\*\* PASS: test\_cases\q4\astar\_0.test

\*\*\* solution: ['Right', 'Down', 'Down']

\*\*\* expanded\_states: ['A', 'B', 'D', 'C', 'G']

\*\*\* PASS: test\_cases\q4\astar\_1\_graph\_heuristic.test

\*\*\* solution: ['0', '0', '2']

\*\*\* expanded\_states: ['S', 'A', 'D', 'C']

\*\*\* PASS: test\_cases\q4\astar\_2\_manhattan.test

\*\*\* pacman layout: mediumMaze

\*\*\* solution length: 68

\*\*\* nodes expanded: 221

\*\*\* PASS: test\_cases\q4\astar\_3\_goalAtDequeue.test

\*\*\* solution: ['1:A->B', '0:B->C', '0:C->G']

\*\*\* expanded\_states: ['A', 'B', 'C']

\*\*\* PASS: test\_cases\q4\graph\_backtrack.test

\*\*\* solution: ['1:A->C', '0:C->G']

\*\*\* expanded\_states: ['A', 'B', 'C', 'D']

\*\*\* PASS: test\_cases\q4\graph\_manypaths.test

\*\*\* solution: ['1:A->C', '0:C->D', '1:D->F', '0:F->G']

\*\*\* expanded\_states: ['A', 'B1', 'C', 'B2', 'D', 'E1', 'F', 'E2']

### Question q4: 3/3 ###

Question q5

===========

\*\*\* PASS: test\_cases\q5\corner\_tiny\_corner.test

\*\*\* pacman layout: tinyCorner

\*\*\* solution length: 28

### Question q5: 3/3 ###

Question q6

===========

\*\*\* PASS: heuristic value less than true cost at start state

\*\*\* PASS: heuristic value less than true cost at start state

\*\*\* PASS: heuristic value less than true cost at start state

path: ['North', 'East', 'East', 'East', 'East', 'North', 'North', 'West', 'West', 'West', 'West', 'North', 'North', 'North', 'North', 'North', 'North', 'North', 'North', 'West', 'West', 'West', 'West', 'South', 'South', 'East', 'East', 'East', 'East', 'South', 'South', 'South', 'South', 'South', 'South', 'West', 'West', 'South', 'South', 'South', 'West', 'West', 'East', 'East', 'North', 'North', 'North', 'East', 'East', 'East', 'East', 'East', 'East', 'East', 'East', 'South', 'South', 'East', 'East', 'East', 'East', 'East', 'North', 'North', 'East', 'East', 'North', 'North', 'East', 'East', 'North', 'North', 'East', 'East', 'East', 'East', 'South', 'South', 'South', 'South', 'East', 'East', 'North', 'North', 'East', 'East', 'South', 'South', 'South', 'South', 'South', 'North', 'North', 'North', 'North', 'North', 'North', 'North', 'West', 'West', 'North', 'North', 'East', 'East', 'North', 'North']

path length: 106

\*\*\* FAIL: Heuristic resulted in expansion of 1475 nodes

### Question q6: 2/3 ###

Question q7

===========

\*\*\* PASS: test\_cases\q7\food\_heuristic\_1.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_10.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_11.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_12.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_13.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_14.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_15.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_16.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_17.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_2.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_3.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_4.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_5.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_6.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_7.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_8.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_9.test

\*\*\* PASS: test\_cases\q7\food\_heuristic\_grade\_tricky.test

\*\*\* expanded nodes: 4137

\*\*\* thresholds: [15000, 12000, 9000, 7000]

### Question q7: 5/4 ###

Question q8

===========

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_1.test

\*\*\* pacman layout: Test 1

\*\*\* solution length: 1

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_10.test

\*\*\* pacman layout: Test 10

\*\*\* solution length: 1

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_11.test

\*\*\* pacman layout: Test 11

\*\*\* solution length: 2

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_12.test

\*\*\* pacman layout: Test 12

\*\*\* solution length: 3

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_13.test

\*\*\* pacman layout: Test 13

\*\*\* solution length: 1

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_2.test

\*\*\* pacman layout: Test 2

\*\*\* solution length: 1

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_3.test

\*\*\* pacman layout: Test 3

\*\*\* solution length: 1

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_4.test

\*\*\* pacman layout: Test 4

\*\*\* solution length: 3

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_5.test

\*\*\* pacman layout: Test 5

\*\*\* solution length: 1

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_6.test

\*\*\* pacman layout: Test 6

\*\*\* solution length: 2

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_7.test

\*\*\* pacman layout: Test 7

\*\*\* solution length: 1

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_8.test

\*\*\* pacman layout: Test 8

\*\*\* solution length: 1

[SearchAgent] using function depthFirstSearch

[SearchAgent] using problem type PositionSearchProblem

\*\*\* PASS: test\_cases\q8\closest\_dot\_9.test

\*\*\* pacman layout: Test 9

\*\*\* solution length: 1

### Question q8: 3/3 ###

Finished at 21:50:47

Provisional grades

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Question q1: 3/3

Question q2: 3/3

Question q3: 3/3

Question q4: 3/3

Question q5: 3/3

Question q6: 2/3

Question q7: 5/4

Question q8: 3/3

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Total: 25/25

Your grades are NOT yet registered. To register your grades, make sure

to follow your instructor's guidelines to receive credit on your project.