Reference Answer and Evaluation Metrics for MP1

Part 1 Single-dot

OpenMaze: 49

MediumMaze: 105

BigMaze: 211

1.1 BFS_open (6 Points) **TIMEOUT:30s**

- Check State number: *Correct State Number(+2)*

- Check Path: *Reversed Path(+3) or True Path(+4)*

1.2 BFS_medium (6 Points) **TIMEOUT:30s**

- Check State number: *Correct State Number(+2)*

- Check Path: *Reversed Path(+3) or True Path(+4)*

1.3 BFS_big (6 Points) **TIMEOUT:30s**

- Check State number: *Correct State Number(+2)*

- Check Path: *Reversed Path(+3) or True Path(+4)*

1.4 Astar_open (6 Points) **TIMEOUT:30s**

- Check State number: *Smaller than 510**

- Check Continuity: *Continuous (+4)*

- Check Path: *Correct path and path length (+2)*

1.5 Astar_medium (6 Points) **TIMEOUT:30s**

- Check State number: *Smaller than 629**

- Check Continuity: *Continuous (+4)*

- Check Path: *Correct path and path length (+2)*

1.6 Astar_big (10 Points) **TIMEOUT:30s**

- Check State number: *Smaller than 605**

- Check Continuity: *Continuous (+4)*

- Check Path: *Correct path and path length (+2)*

- Time Check: *Less than 2s (+4)*

Part 2 Corner-dot

tinyCorners: 29

MediumCorners:107

BigCorners: 163

2.1 Astar_Corner_tiny (8 Points) **TIMEOUT:60s**

- Check State number: *Smaller than 250**

- Check Continuity and Objectives: *Continuous and all objectives reached (+4)*

- Check Path: *Correct path length (+4)*

2.2 Astar_Corner_medium (8 Points) **TIMEOUT:360s**

- Check State number: *Smaller than 1500**

- Check Continuity and Objectives: *Continuous and all objectives reached (+4)*

- Check Path: *Correct path length (+4)*

2.3 Astar_Corner_big (12 Points) **TIMEOUT:360s**

- Check State number: *Smaller than 5000**

- Check Continuity and Objectives: *Continuous and all objectives reached (+4)*

- Check Path: *Correct path length (+4)*

- Time Check: *Less than 2s (+4)*

Part 3 Multi-dot

tinySearch: 36

smallSearch:125

mediumSearch: 199

2.1 Astar_Search_tiny (8 Points) **TIMEOUT:480s**

- Check Continuity and Objectives: *Continuous and all objectives reached (+4)*

- Check Path: *Correct path length (+4)*

2.2 Astar_Search_small(8 Points) **TIMEOUT:480s**

- Check Continuity and Objectives: *Continuous and all objectives reached (+4)*

- Check Path: *Correct path length (+4)*

2.3 Astar_Search_medium (12 Points) **TIMEOUT:720s**

- Check Continuity and Objectives: *Continuous and all objectives reached (+4)*

- Check Path: *Correct path length (+4)*

- Time Check: *Less than 6 mins (+4)*

Notes:

- The reason we choose to check the state number for Astar first is that, it is fairly easy to obtain the correct answer (path length and path) using other methods like BFS, and the states will not be reasonable enough. We encouraged the students to design their own efficient heuristics for part 2 and part 3. For methods exceeding the state number we set, we regard maybe you have some implementation errors or use an inefficient heuristic, or use other methods instead of A*.

- Evaluating on the testing cases like openMaze is to test whether you have set up a Closed Set for A*. If you did not pass the openMaze, you may repeatedly explore the same states resulting in either an infinite loop or more states.

- Timeout is set up to make sure you still obtain scores if one of the tasks fails.

We will take the regrading requests until Wednesday, 12 Feb. 23:59pm CT.

You can request via:

(1) Sending email to me via yuqian2@illinois.edu

(2) Post a private request at piazza

(3) Apply for regrade at Gradescope.

Keep reaching out until I reply to you, otherwise I may ignore it by accident. The reasons can be but not limited to Timeout issues, code version change, or other reasonable causes of a lower score. I will cope with your requests as soon as possible.

We will keep improving the MP quality and making the evaluation errors fewer and fewer in the future.

Best

Your lovely TA: Yuqian Zhou