

# Quiz 0 Submission

A score of 3/4 or 4/4 is required to be considered to have "passed" a quiz. Please do not resubmit a quiz if you obtain a score of 3/4. You don't receive a final grade at the end of the course, so it will have no bearing on your certificate!

Your quiz will be graded and returned to you within a few minutes in most cases. However, it may take up to three weeks for your work to appear in your Gradebook. Do be patient, please!

Quizzes (which are submitted via Google Forms and not submit50) may not show up as submitted in your Gradebook until the scores have been imported, and even then will only show up if you have received a passing score.

Remember, you are limited to a maximum of EIGHT attempts at a quiz in a single calendar year. If you submit this assignment more than eight times, **all** of your submissions will be deleted, and you **will not be eligible to earn a certificate in CS50AI during this calendar year**. Take this assignment seriously! (Submissions from 28 December 2022 count towards 2023 eligibility.)

Attempts to circumvent this policy, if detected, will be treated as violations of the course's academic honesty policy and will result in permanent expulsion from the course.

ibagwai9@gmail.com [Switch account](#)



\* Required

Email \*

Your email

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Your answer



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Your answer

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Between depth first search (DFS) and breadth first search (BFS), which will \* 1 point  
find a shorter path through a maze?

- ☐ DFS will always find a shorter path than BFS
- ☐ BFS will always find a shorter path than DFS
- ☐ DFS will sometimes, but not always, find a shorter path than BFS
- ☐ BFS will sometimes, but not always, find a shorter path than DFS
- ☐ Both algorithms will always find paths of the same length



The grid world environment is a 12x12 grid. The start state 'A' is located at (1,1) and the goal state 'B' is located at (1,10). The grid is divided into three regions: a red region (A), a green region (B), and a yellow region (C). The red region (A) is a 2x2 area at the bottom left. The green region (B) is a 1x1 area at the top right. The yellow region (C) is a 10x10 area covering the rest of the grid. Obstacles (black cells) are located at (1,11), (2,11), (3,11), (4,11), (5,11), (6,11), (7,11), (8,11), (9,11), (10,11), (11,11), (12,11), (1,12), (2,12), (3,12), (4,12), (5,12), (6,12), (7,12), (8,12), (9,12), (10,12), (11,12), (12,12).



Of the four search algorithms discussed in lecture — depth-first search, breadth-first search, greedy best-first search with Manhattan distance heuristic, and A\* search with Manhattan distance heuristic — which one (or multiple, if multiple are possible) could be the algorithm used?

\* 1 point

- ☐ Could only be A\*
- ☐ Could only be greedy best-first search
- ☐ Could only be DFS
- ☐ Could only be BFS
- ☐ Could be either A\* or greedy best-first search
- ☐ Could be either DFS or BFS
- ☐ Could be any of the four algorithms
- ☐ Could not be any of the four algorithms

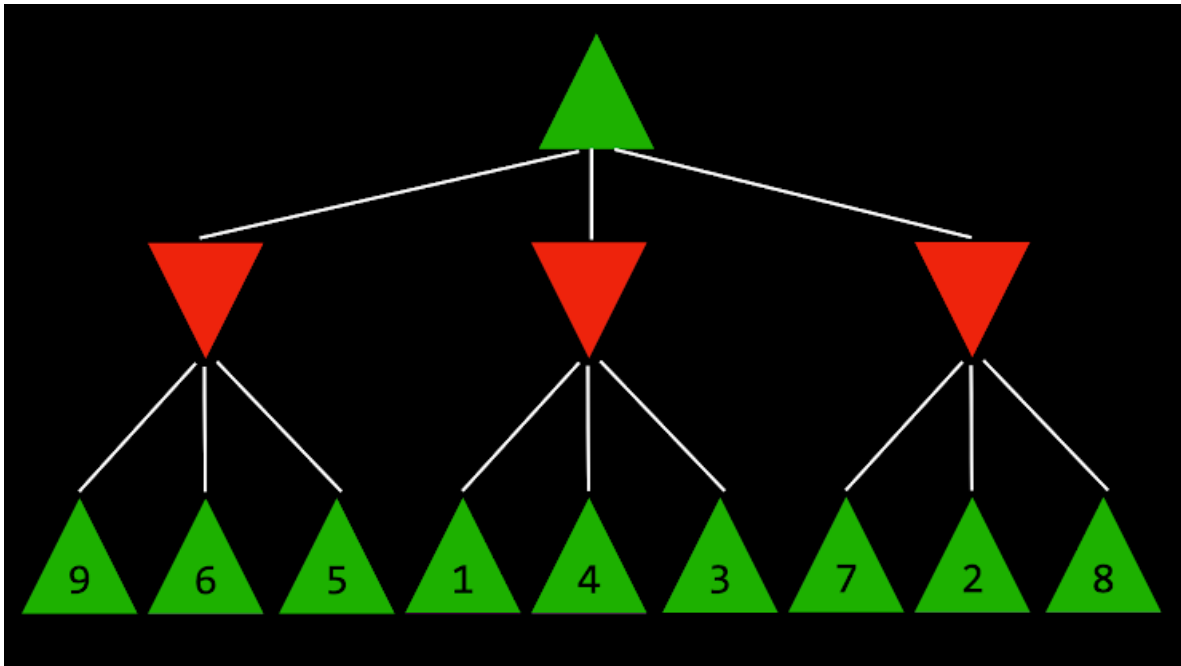
Why is depth-limited minimax sometimes preferable to minimax without a depth limit?

\* 1 point

- ☐ Depth-limited minimax can arrive at a decision more quickly because it explores fewer states
- ☐ Depth-limited minimax will achieve the same output as minimax without a depth limit, but can sometimes use less memory
- ☐ Depth-limited minimax can make a more optimal decision by not exploring states known to be suboptimal
- ☐ Depth-limited minimax is never preferable to minimax without a depth limit



The following question will ask you about the Minimax tree below, where the green up arrows indicate the MAX player and red down arrows indicate the MIN player. The leaf nodes are each labelled with their value.



What is the value of the root node? \*

1 point

- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5
- ☐ 6
- ☐ 7
- ☐ 8
- ☐ 9



Comments, if any

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