

Lesson 3:
A* Search

SEARCH

RESOURCES

CONCEPTS

1. Intro

2. Motion Planning

3. Maze

4. Maze 2

5. Coding the Shortest Path Algorithm

6. A* Search

7. Lesson Code Structure

8. CODE: Starting A* Search

9. CODE: Writing the A* Heuristic

10. Pass by Reference in C++

11. CODE: Adding Nodes to the Ope...

12. CODE: Initialize the Open Vector

13. CODE: Create a Comparison Fu...

14. CODE: Write a While Loop for the...

15. CODE: Check for Valid Neighbors

16. Constants

17. CODE: Expand the A* Search to ...

18. Arrays

19. CODE: Adding a Start and End to ...


20. Congratulations!!

21. How to Become More Proficient ...

CODE: Create a Comparison Function

SEND FEEDBACK

Create a Comparison Function



https://video.udacity-data.com/topher/2019/February/5c762715_12-create-a-comparison-function/12-create-a-comparison-function_720p.mp4

Before you can use the vector of open nodes to expand the A* search, you will first need to be able to sort the vector. Since the vector contains nodes `{x, y, g, h}` and there is no standard library function to sort these types of vectors, you will begin by writing a function which compares two nodes to determine their order.

This function is a helper function for the `CellSort()` function you will write later, so it is not shown on the code structure diagram.

To Complete This Exercise:

Write a function `bool Compare` that accepts two nodes of type `vector<int>` as arguments. It should return a boolean `true` if the f-value of the first argument is greater than the f-value of the second, and it should return `false` otherwise. Recall that the f-value is the sum of the cost and heuristic: `f = g + h`.

<+main.cppX

/> home> workspace

1.board

main.cpp

solution.cpp

test.cpp

1 * #include <iostream>

2 #include <iostream>

3 #include <iostream>

4 #include <string>

5 #include <vector>

6 using std::cout;

7 using std::ifstream;

8 using std::ofstream;

9 using std::string;

10 using std::vector;

11 using std::abs;

12

... using namespace std;

+BASHX

root@805343e2a8944:/home/workspace#

Menu

Expand

NEXT