Run Jerry, Run !

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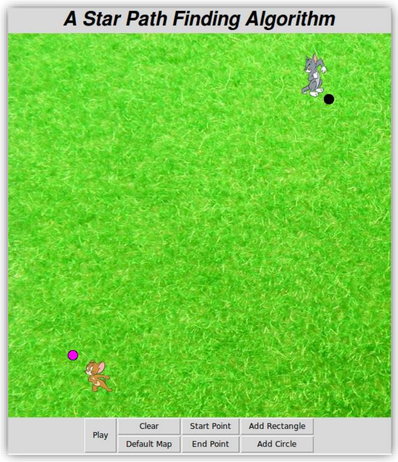
• Introduction

A* is a computer algorithm that is widely used in pathfinding and graph traversal, the process of plotting an efficiently directed path between multiple points, called nodes. We implemented A* algorithm to help Tom get the shortest path to Jerry, whereas he will have to get rid of many obstacles…

• Implementation process

We started by implementing A*. For having nice interface, we added GUI and tried to look it pretty. You can also explore the whole process, how the path
is really found, what places are visited and of course final result that is thin line showing Tom the shortest route to Jerry.



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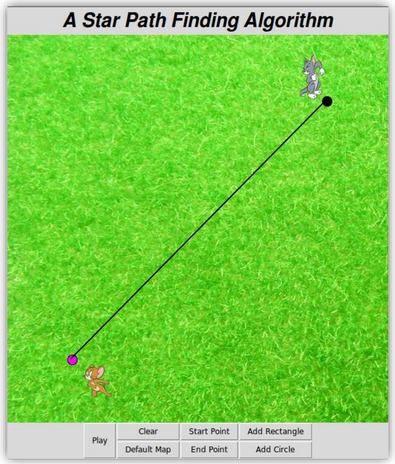
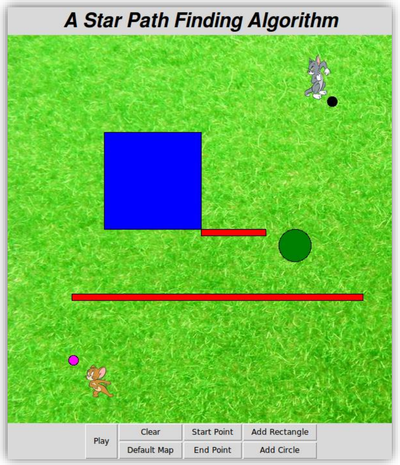


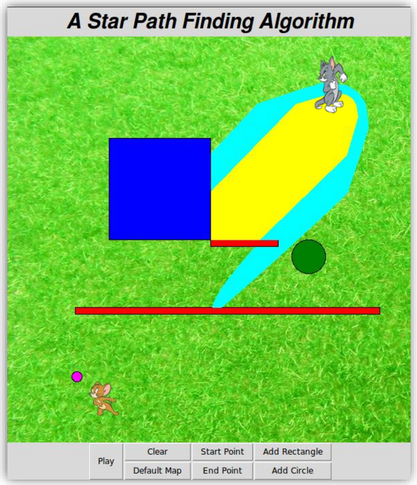
• Adding Obstacles

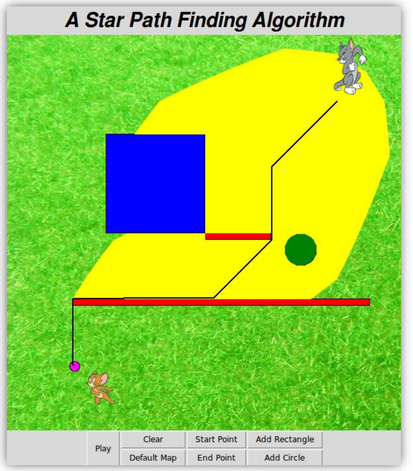
We have added some other features to make Tom's life harder. You can use our default map, where we already designed some obstacles, or you can design new world by adding new shapes like rectangles, circles, new start and end points.

• Results

In the first picture you see the initial state of the map. Second one shows two kind of areas:
blue area- all the points explored by the algorithm
yellow area- all the visited points by the algorithm
Black path- final Shortest path







• Conclusions

Implemented A* is workable, so Jerry should speed up, as Tom already knows how to find shortest route, by avoiding lot's of obstacles that are always bumped into him. You can play with different options and try to create new map. You will explore more from the Algorithm.

• Aknowledgements
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• Project repository
• https://github.com/simonwu53/Advanced-Algorithm-Project

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