

MPC-MAP Assignment No. 5 - Report

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Task 1



Figure 1 - Path planning algorithm A*

Discussion: The A* algorithm for finding a path from a starting position to a goal position has been implemented. If a solution exists, the algorithm finds the path without colliding with walls.

Task 2

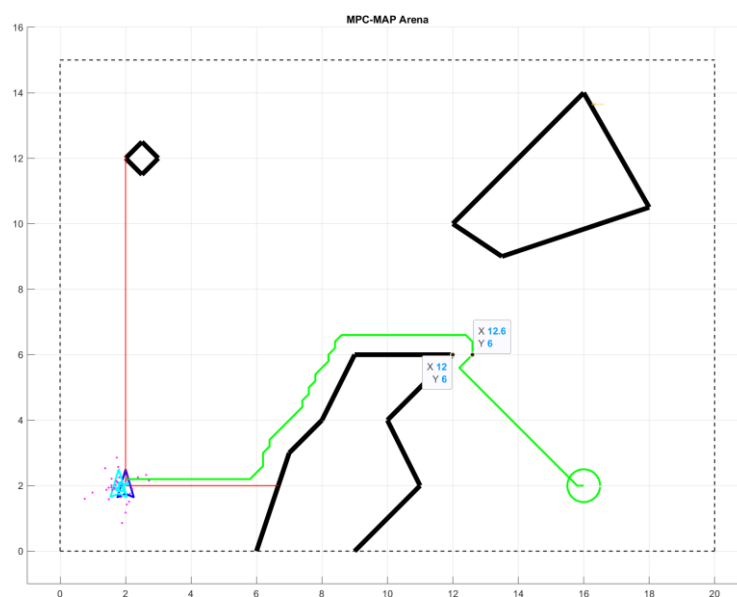


Figure 2 - Adjusted path planning algorithm A* to ensure a minimum distance from walls of 0.2 m

Discussion: The A* algorithm was modified to meet the minimum distance requirement of 0.2 m from the wall.

Task 3



Figure 3 - Using a smoothing algorithm

Discussion: The smoothing algorithm which was provided in the lectures was used. Increasing the alpha value ensures that the smoothed path will be more similar to the original path. Increasing the beta value ensures a greater smoothing of the path. The more iterations are used, the smoother the new path will be.