Assignment 1

For the assignment I took my inspiration from the official A\* Algorithm available on Wikipedia: [https://en.wikipedia.org/wiki/A\*\_search\_algorithm](https://en.wikipedia.org/wiki/A*_search_algorithm) .

The problem is quite easy because the environment is uniform, each cell has the same cost to visit there are only obstacles and free space. But the main difficulty was working with Matlab and choose the best data structure for each value.

I decided to use size 2 arrays to describe the coordinates of points and I chose matrix to describe the openSet, ClosedSet, gScore, fScore. It is easier because you can immediately get a value from 2 index and for our working scale (100\*100) it is not to memory expensive. However, for a larger project it will be better to implement lists instead of matrix to reduce the consummation of memory (hard on Matlab).

I am not a big fan of Matlab so if the next assignment is harder, I may use python instead If it’s allowed. I commented my code a lot so you can check on it, I don’t think I can add something that I didn’t detailed in the code.