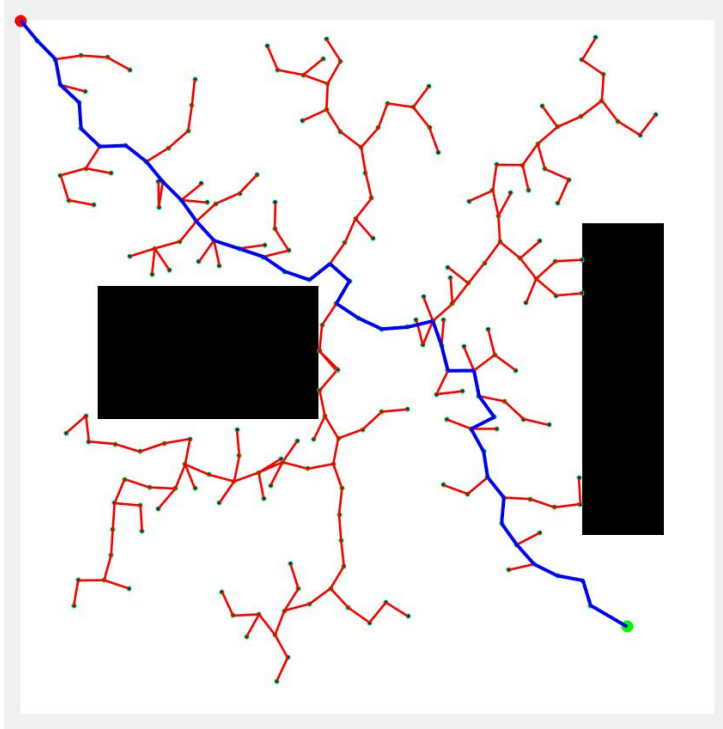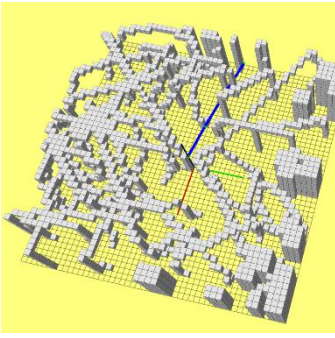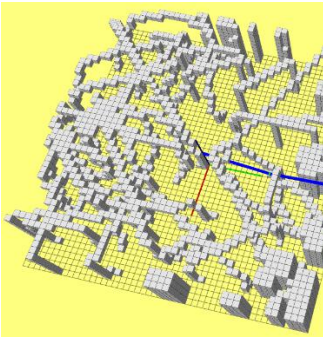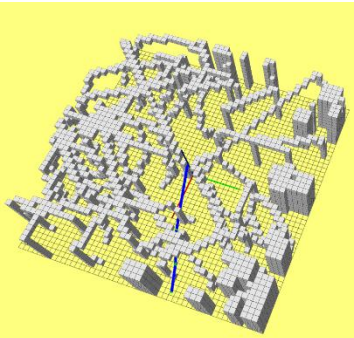# Intro

In this project, I implemented RRT in Matlab and RRT* in C++ with the ompl (The Open Motion Planning Library).

Simulation Results (3 cases)

·In Matlab:

·In C++ with ompl:

	Test case 1	Test case 2	Test case 3
Initial solution cost	5.18	5.77	5.88
Iterations to find an initial solution	27	80	198

New states	6464	5803	6278
Rewire options	3161426	2793363	3057397
Final solution cost	4.631	5.161	4.979

Analysis of RRT*

RRT* is an improved version of RRT. The key difference of it to RRT is the rewiring function. The rewiring function updates the new node's father node if necessary. RRT* is both probabilistically complete and probabilistically optimal. However, after finding an initial solution, it will still sample in the whole space. An enhanced version of it is informed RRT*.