This is a demo of how to map the indices generated by RRT navigation to the actual grid and then plot a trajectory.

We start by loading relevant data.

```
load('idx_matrix_new.mat') % measurement indices associated with each trajectory. The indices v
load('rxCordsstandard.mat') % measurement indices converted into x,y,z co-oridnates
load('mymap.mat') % binary occupancy grid
load('velocities_new.mat') % velocity for respective trajectory

NTrajs = 100; % total number of trajectories
NTimeSamps = 3e3; % total number of time samples. Each spaced 20 ms apart.

% showing the grid
figure()
show(map)
```


Binary Occupancy Grid
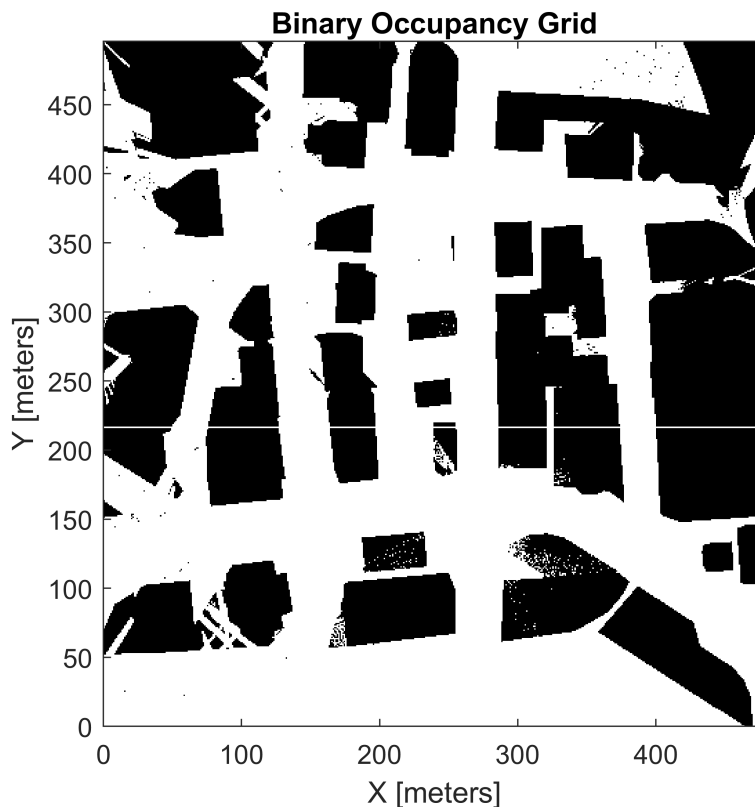
Choosing a random trajectory to plot

```
traj_chosen = randi([1 NTrajs])
```

traj_chosen = 15

Extracting the measurement indices of the chosen trajectory

```
idxes_of_chosen_traj = idxmatrix(traj_chosen,:);
```

```
size(idxes_of_chosen_traj)
```

```
ans = 1×2
        1        3000
```

Velocity for the current trajectory. Units are m/s

```
velocity_of_the_traj = vvec(traj_chosen)/2e-2
```

```
velocity_of_the_traj = 4.5935
```

Getting x-y co-ordinates from the measurement indices. Note that we only extract x and y co ordinates

```
true_cords_of_chosen_traj = rxcords(idxes_of_chosen_traj,1:2);
```

Plotting the trajectory on top of binary occupany grid

```
figure()
show(map)
hold on
scatter(true_cords_of_chosen_traj(:,1),true_cords_of_chosen_traj(:,2))
```