Control of Mobile Robots

Planning with Matlab

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Navigation Toolbox: RRT*

- RRT* has the same interface of RRT, you have to change the call to the planner

  planner = plannerRRTStar(space, stateValidator);

- But RRT* is an optimal planner, the planner properties are thus completely different

```
planner = plannerRRTStar(space, stateValidator);
planner.BallRadiusConstant = 100;
planner.ContinueAfterGoalReached = false;
planner.MaxIterations = 30000;
planner.MaxNumTreeNodes = 10000;
planner.MaxConnectionDistance = 0.1;
planner.GoalBias = 0.05;
planner.GoalReachedFcn = @isGoalReached;
```

Decide if the planner continues to optimize after the goal is reached

The ball radius used to determine the Near set is given by $r = \min\left(\gamma\left(\frac{\ln(n)}{n}\right)^{1/d}, \eta\right)$ where BallRadiusConstant is γ and MaxConnectionDistance is η

- You can now test to verify how properties can be ch
  solution

RRT* analysis