Homework 3

RRT * Algorithm:

- It is a sampling-based algorithm
- It has capability to rewire existing nodes
- It is probabilistically complete, i.e as the number of nodes reaches infinity there will be a path from start to goal.
- It can give us optimal results as the number of nodes reaches infinity.

Drawbacks:

- It takes time to compute results.
- It is memory and computationally intensive
- It is a complex algorithm

Final Table

1	**41.18**
2	**39.9**
3	**28.38**

Implementation

1. **How to run the code.**
    a. In the zip file uploaded on Canvas is a Python script with the name hw3.py. Run this Python script to execute the code. Ensure the input and coords files are in the same directory as the script.
    b. After the script is executed it should generate an output.txt file with the desired output.

2. **How to make a video.**
    a. I captured and saved all the plot figures to a PNG file and then stitched them to make a video using ffmpeg.
    b. I used the below-mentioned command to stitch the video.
    .\ffmpeg.exe -framerate 10 -i hw1_5_%d.png -c:v libx264 -r 30 -vf "scale=1280:720" HomeWork5.mp4