Project: Part 3

24-677 Special Topics: Modern Control - Theory and Design

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Due: Nov 16, 2023, 11:59 pm.

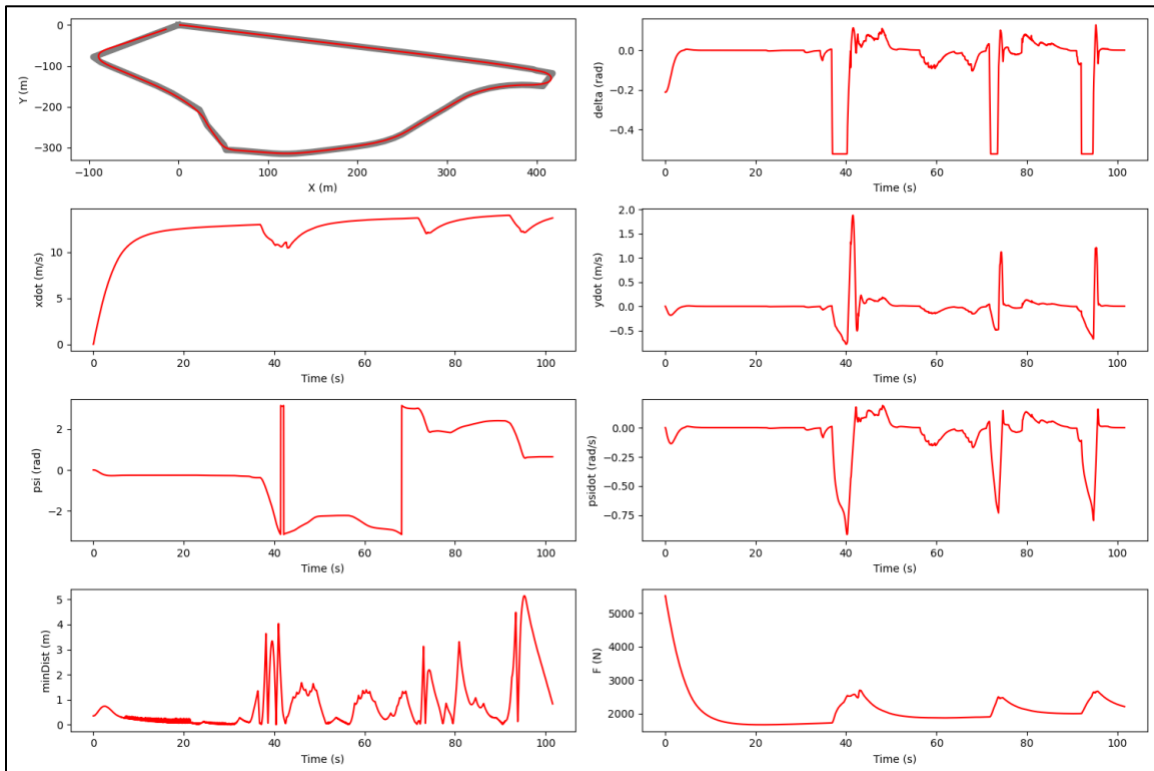## P3: Problems

Exercise 1

Figure 1. The final completion plot using my LQR controller.

Figure 2. The final score message from Webots simulation using my LQR controller.
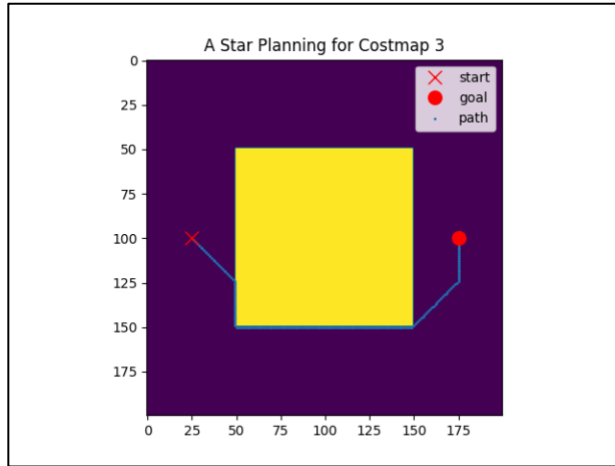
Exercise 2

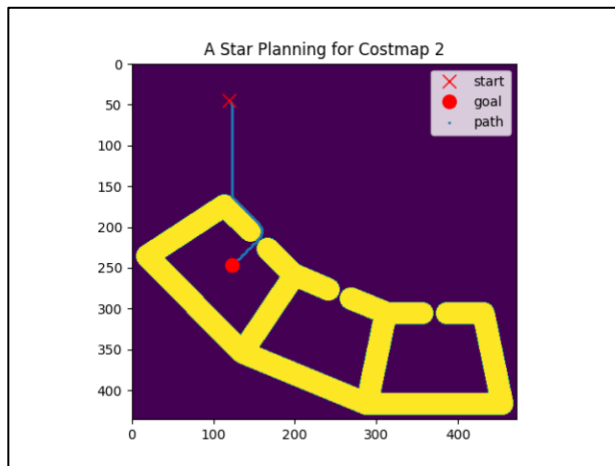*Figure 3. The path planning results from my Astar_script.py.*

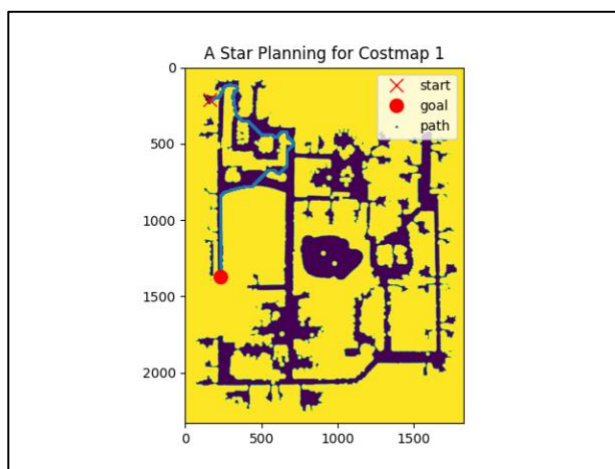*Figure 4. The path planning results from my Astar_script.py.*

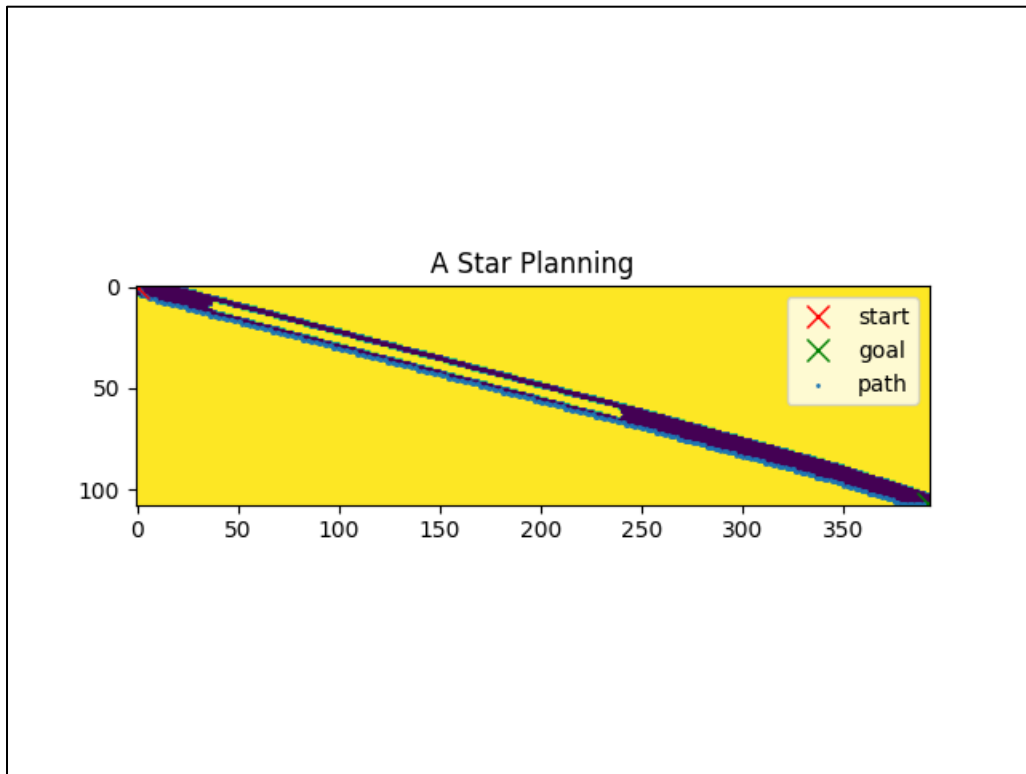*Figure 5. The path planning results from my Astar_script.py.*

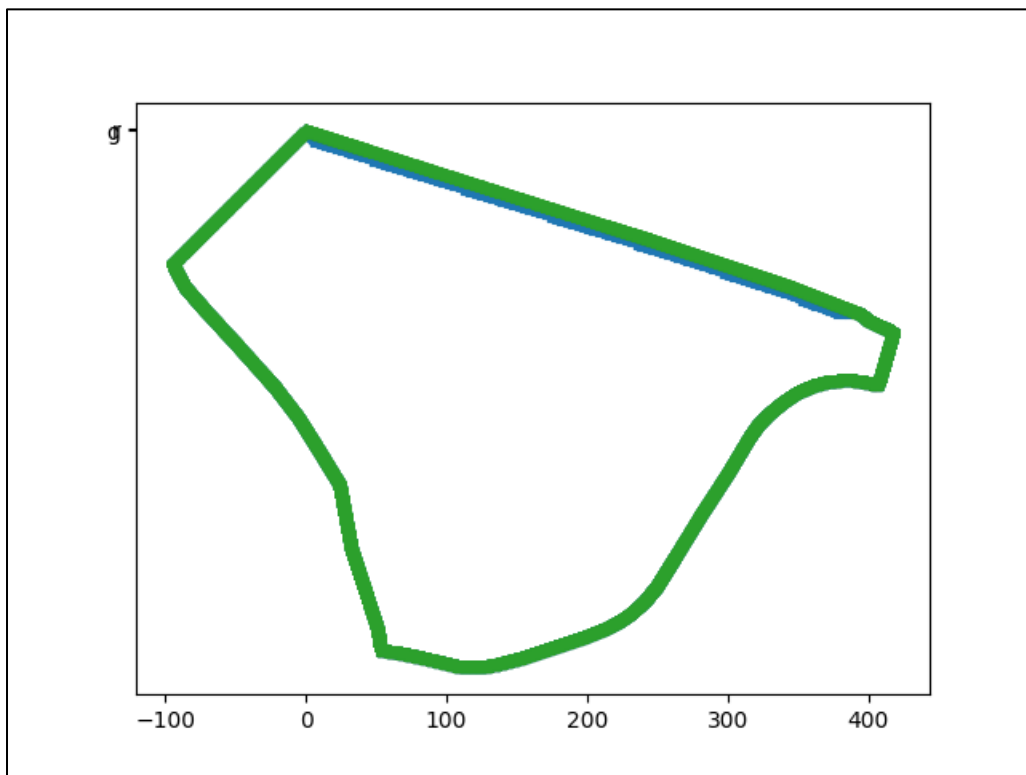*Figure 6. The path planning results from my Astar.py.*

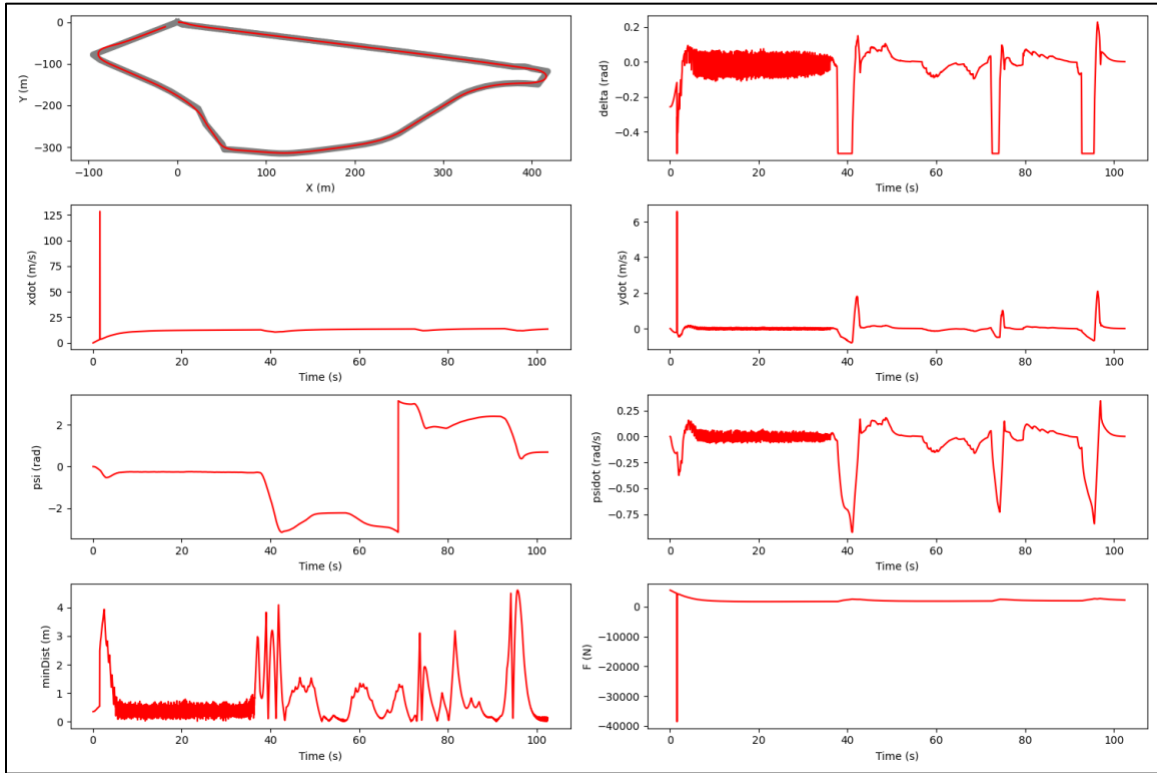*Figure 7. The path planning results from my Astar.py.*

Figure 8. The final completion plot using my A* algorithm & my LQR controller.


```
[[0 0 0 ... 1 1 1]
 [0 0 0 ... 1 1 1]
 [0 0 0 ... 1 1 1]
 ...
 [1 1 1 ... 0 0 0]
 [1 1 1 ... 0 0 0]
 [1 1 1 ... 0 0 0]]
map size (108, 393)
reach goal
path length 393
total steps:  102464
maxMinDist:  4.606402184992135
avgMinDist:  0.8091769190754369
INFO: 'main' controller exited successfully.
```

Figure 9. The final score message from Webots simulation using my A* algorithm & my LQR controller