



## PROJECT

## Implement Route Planner

A part of the Intro to Self-Driving Cars Program

## PROJECT REVIEW

## CODE REVIEW 5

## NOTES

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## Meets Specifications

Great job! Your code is very clear and easy to read. Also evidences a good understanding of the A\* search algorithm.

## Correctness

Running `test.py` shows "all tests pass".

Your code passes all tests!

Student's `shortest_path` method implements A\* search.

Your code evidences a good understanding of the A\* search algorithm!

The heuristic function used to estimate the distance between two intersections is guaranteed to return a distance which is less than or equal to the true path length between the intersections.

Good call choosing the straight line euclidean distance for the heuristic function.

## Choice and Usage of Data Structures

Code avoids obvious inappropriate use of lists and takes advantage of the performance improvement afforded by sets / dictionaries where appropriate. For example, a data structure like the "open\_set" on which membership checks are frequently performed (e.g. `if node in open_set`) should not be a list.

Great choice of data structures!

This item is a judgement call. Student code doesn't need to be perfect but it should avoid big performance degrading issues like...

...unnecessary duplication of lists

...looping through a large set or dictionary when a single constant-time lookup is possible

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