**Module 4: Option #1**

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Colorado State University Global

CSC510-1: Foundations of Artificial Intelligence

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This program uses the A\* search algorithm and is based on the traveling salesman problem. The search method used is admissible, but it is not complete because it does not visit all the nodes. We are using the A\* algorithm, which uses a combination of the cost of the path so far and the estimated cost of the goal to evaluate the nodes and determine the next one to expand. Since we are using the A\* algorithm, it uses the combination of cost and heuristic as an evaluation function. This project is not space efficient due to the large number of states, because of this, it is not guaranteed to be optimal since it is a heuristic search algorithm, however, the A\* algorithm guarantees that the solution found is optimal if the heuristic is admissible and consistent.

**Reference**

Fransen, K., & Van Eekelen, J. (2021). Efficient path planning for automated guided vehicles using A\* (Astar) algorithm incorporating turning costs in search heuristic. International Journal of Industrial Engineering Computations, 8(1), 1-10.