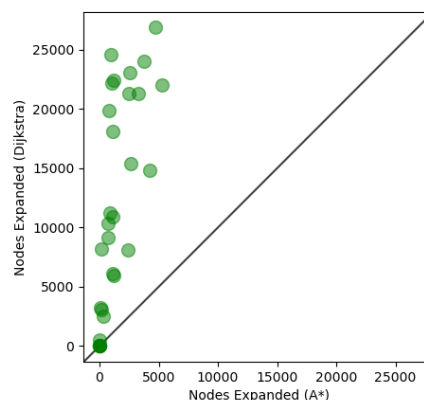
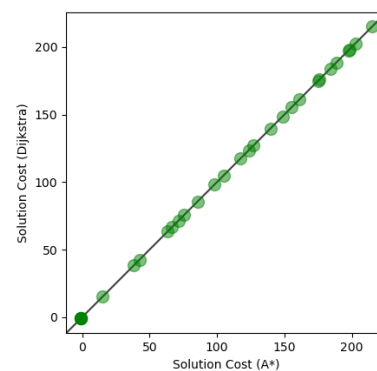
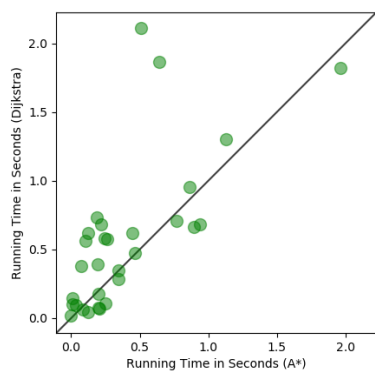


CMPUT 366 Assignment 1 Results

For the initial heuristic, the node expanded graph for A* vs Dijkstra's algorithm produces an output as expected from the algorithm. We get a higher space complexity for Dijkstra's, in comparison with A*, due to not revisiting the nodes already seen in the map. When we compare this to the run time graph, it leans a bit more towards the axis for Dijkstra's as well, for with A*, we are trying to get the optimal solution that solves the graph with a lower cost. This is implemented with a heuristic, as calculated by the `h_score` variable in the code. The solution cost graph for both algorithms is constant as both algorithms solve the solution set, albeit under different times and memory usage.



When we change the multiplicative factor in the heuristic for A*. We get an overall more “efficient” runtime for A* in comparison with the original heuristic, where only in the very worst case both algorithms run at the same time. The nodes expanded to explore are also reduced, and the graph favours A* more rather than Dijkstra’s, when compared to the initial graph.

