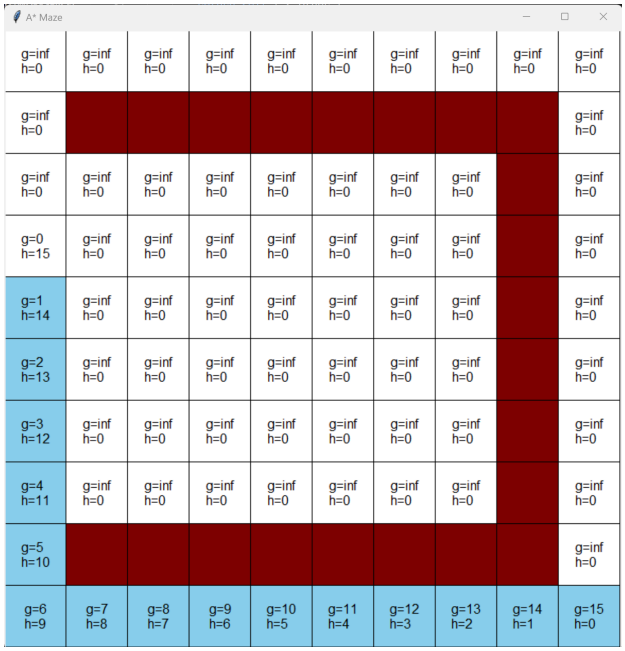
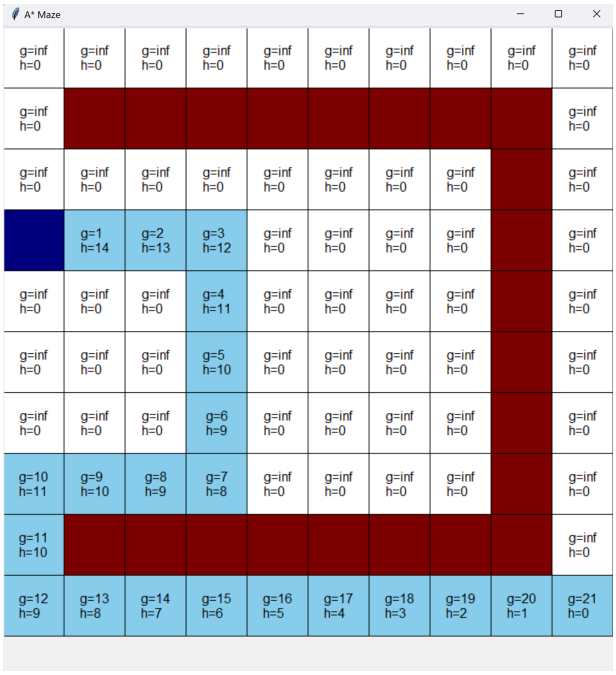
Luke McGinley

[Q1] A*

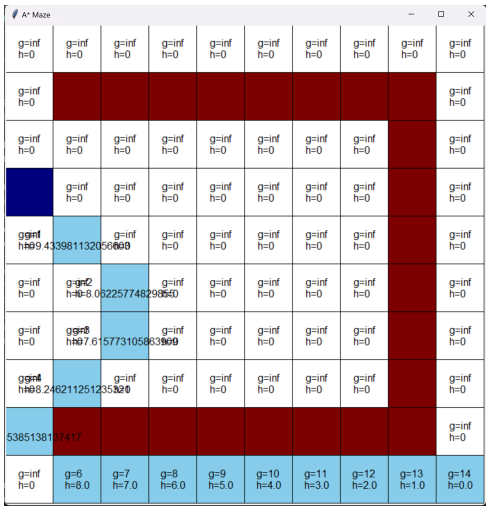


Greedy Best-First Search



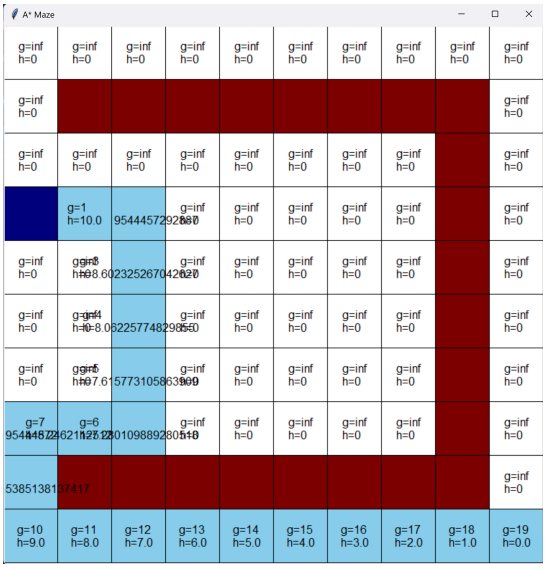
- Here we can observe that the path taken by the agent in A* search tends to be the shortest path from the start to the goal, considering both the actual cost incurred so far (g(n)) and the estimated remaining cost (h(n)). The Greedy Best-first search always expands the node that is closest to the goal according to the heuristic function, without considering the actual path cost.

[Q2]



A* using Euclidean Distance Heuristic

the path taken by the algorithm tends to follow a route that minimizes the total estimated cost, which includes both the actual path length (g-value) and the estimated remaining distance to the goal (h-value)



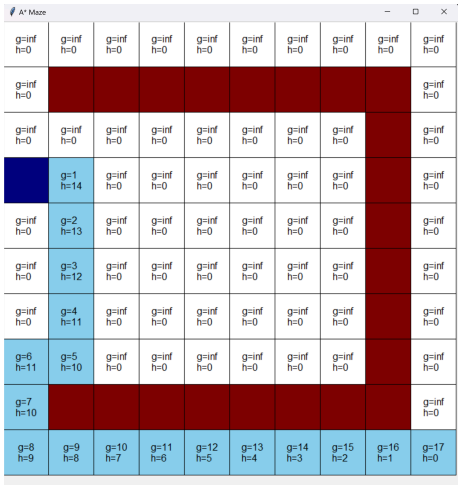
Greedy Best-First With Euclidean

GBFS prioritizes cells based solely on their heuristic values (h-values), without considering the actual cost to reach each cell (g-values). This means that the algorithm always selects the cell that appears to be closest to the goal, regardless of the actual path cost.

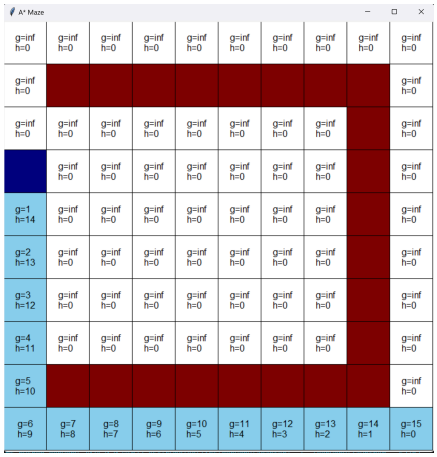
[Q3]

Alpha	Beta	Observation
1	2	The path moved over a row before moving down and continuing the path
2	1	The path did not change
2	3	The path did not change

Alpha 1 Beta 2



Alpha 2 Beta 1



Alpha 2 Beta 3