**Part2:**

**Q: Repeated Forward A\* needs to break ties to decide which cell to expand next if**

**several cells have the same smallest f-value. It can either break ties in favor of cells with smaller g-values or in favor of cells with larger g-values. Implement and compare both versions of Repeated Forward A\* with respect to the number of expanded cells. Explain your observations in detail, that is, explain what you observed and give a reason for the observation.**

Frequently while the agent is traversing the gridworld, the next potential cells share the smallest *f-*value; as a result, the option between choosing to favor cells with larger or lesser *g*-values can significantly change the agent's path to the goal state.

The *g*-value for each cell is the distance between itself and the agent’s start state, and when the agent opts to break ties toward cells nearer to the beginning of the current path, it typically expands to cells with larger *h*-values that are farther from the goal state than the other least *g*-value options. This results in expanding to more cells and subsequently longer traversals on average compared to favoring cells with smaller *g*-values, which results in more “aggressive” searches that find a distant goal state faster.