Assignment 2

What are the two main differences between the starter code's A* implementation (for use in CBS) and an A* implementation for single agent pathfinding? One sentence is enough to describe each difference.

1) ***Decentralized Planning:*** In single agent A* implementation, the program operates in a centralized manner wherein the algorithm finds the optimal path based on a heuristic and cost function. On the other hand, in A* implementation in CBS, each agent independently plans its path and conflicts are iteratively resolved through negotiation. The overall planning is decentralized.

2) ***Conflict Resolution:*** In single agent A* there are no conflicts with other agents since there is only one agent. However, in CBS, after the initial paths have been planned for each agent, conflicts need to be detected and resolved iteratively by adjusting the paths of the conflicting agents until all conflicts are resolved.