
Fall 2025

CS5368 Intelligent
Systems

Assignment
1 Report

First Name	Scott
Last Name	Weeden
Student ID	R12041454
Due date	October 3 rd , 2025 (before the class for 001 and by the end of the day for D01)

Please answer the following questions and submit them through Canvas. Be sure to submit it to the Assignment 1 report submission. DO NOT write the report by hand and submit a scanned version. Just write the answers in a Word document and submit it. Both Word and PDF submissions are accepted.

Basic Questions:

1. What is your implementation strategy for DFS? Explain.
Depth-First Search is a stack-based graph search
2. What is your implementation strategy for BFS? Explain.
3. What is your implementation strategy for UFS? Explain.
Priority-Queue with each path weighted after first visit
4. What is your implementation strategy for A*? Explain.
Minimal spanning tree.
5. Explain your implementation strategy for the CornersProblem. What is your state representation? A four binary tuple with each one flipped once visited
6. What is your heuristics for the CornersProblem? How did you implement it?
Minimal spanning tree

Advanced Questions:

1. Based on your implementation of DFS, what happens if you fail to push all successors to the fringe (see GetSuccessors)?
2. Does BFS give fewer actions to reach the goal compared to DFS? Explain.
3. **Manypath:** You have expanded some paths in all search algorithms, which of these algorithms has the fewer expansion, and why?
4. Explain how the implementation of A* differs from UCS.

5. **Node expansion:** How many nodes were expanded in Question 7?