

AI Lab Assignments

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Lab Task - 1

We divide the lab task in following phases:

Phase A: Select a domain of your choice. Select the state (node) representation such that you should be able to represent your domain as a network diagram where the nodes are all the states that can be achieved from the initial state (S), and the edges represent allowed transitions (moves) between them. Design and implement domain specific *MoveGen()* and *GoalTest()* in Python.

Phase B: Simulate breadth-first search, depth-first search and DFID in the state space.

Phase C: Compare the above search methods on two accounts:

1. Length of the path (from the initial state to the goal state) that each algorithm finds
2. Number of states explored (*visited*) during the search. (They should be able to appreciate that the length of the path and the number of visited states both are two different things). Also, an analysis of whether or not the result depend on the order in which the neighbors of each node are added into the list should be done.

Phase A duration *2 Lab hours* and Phase B, C duration *2 Lab hours*.