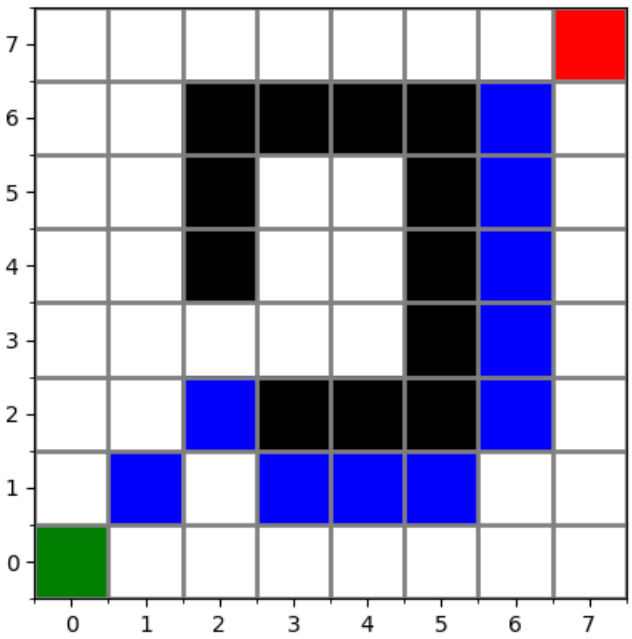
CSN-261 L9 REPORT

Anupam Kumar Singh
18114009
O1

Dated: 30/10/2019

PROBLEM STATEMENT 1:
Objective:
Solve rat in a maze problem using A* algorithm in Python 3. Given a maze along with the source and destination, find the shortest path that the rat must traverse to reach the destination.
Algo's:
Dijkstra's, A* algorithm, different distances like 1.Manhattan Distance 2. Diagonal Distance 3. Euclidean Distance.

```
Enter source coordinates separated by a space : 0 0
Enter destination coordinates separated by a space : 7 7
Steps : 11
(0,0)->(1,1)->(2,2)->(3,1)->(4,1)->(5,1)->(6,2)->(6,3)->(6,4)->(6,5)->(6
,6)->(7,7)
```



PROBLEM STATEMENT 2:
Objective:
1) Given a Directed Graph identify if the graph is a DAG (Directed Acyclic Graph) or not? If yes, then print the Topological sorting for given DAG.

Algo's Discuss:
DAG, Topological sort.

```
Topological Sorting :
4,5,2,3,1,0
```

```
thefox@thebunker:~/Desktop/CSN261_Assign/csn261_assign9/ques2
$ python3 ques2.py L9_P2_input.gpickle
Topological Sorting :
4,5,2,3,1,0
```