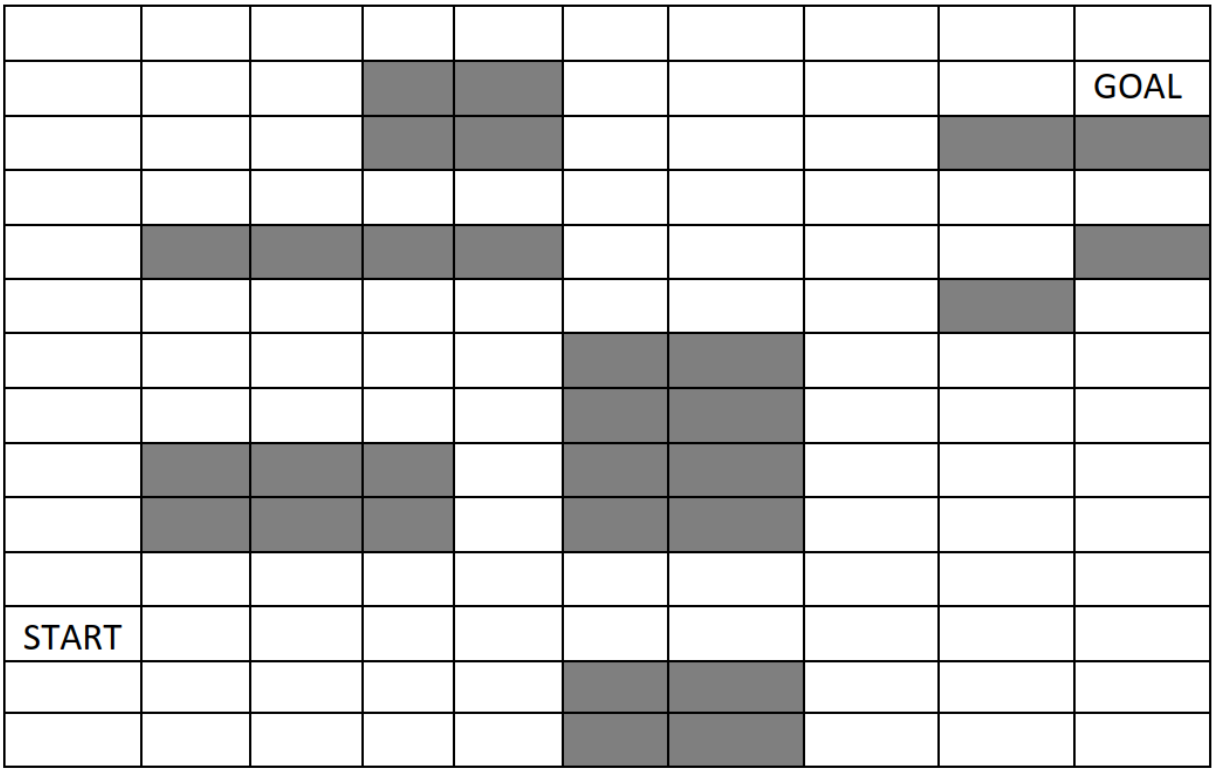
Problem

Design a robot navigation system, which is able to conduct blind searches to find its path from start to goal state. As input, the system will take a description of the maize stored as a text file. The maize is a 2x2 grid with obstacles inside it. An example of such a maize is given below:



The obstacles are filled rectangles of unknown dimensions and can be found anywhere in the maize. The robot cannot be in those cells. There are 3 actions allowed. Up one cell (cost is 1), right one cell (cost is 3), diagonally up towards the right (cost is 2). The system should output:

1. The complete path if goal is found otherwise show path's followed by algorithm to search for goal
2. The sequence of actions performed to reach the goal from start
3. The total cost of the path
4. A grid which shows the path followed. You do not need graphics for this output. The grid can be made textually using 1 for obstacles, 0 for empty cells and '*' for path followed

FORMAT OF INPUT FILE

dimensions of the grid (line one TotalCols x TotalRows)
start coordinates (line two)
goal coordinates (line three)
the grid itself (one line per row). There will be a zero for no obstacle and one for an obstacle. As an example of the above grid please see grid.txt. The (0,0) coordinate is the bottom left cell.