

## Mid-Term Extra Credit

### ITS 265

1. (10 pts extra credit for mid-term) Use the Lab 3 Python program, Problem 2 where you had used a depth-first search algorithm to plan a path to a goal in a maze (maze-in2 on Brightspace) and modify it as follows:
  - a. Create a separate Python program that uses breath-first search (BFS) to plan a path to a goal. Write or adapt code for a BFS goal plan (BFS code not included in assignment).
  - b. Create a separate Python program that uses A\* to plan a path to a goal. Write or adapt code for an A\* algorithm.
  - c. Compare the performance of your original depth-first search, and the new breath-first search, and A\* algorithms in planning and executing a goal. Use six different goal positions throughout the maze (some close to the starting position and others deep in the maze) to see how the algorithms perform. Create a table that shows the results and write a narrative explaining the results.
  - d. Submit the BFS and A\* code along with your analysis to Brightspace.