Lab 4
Game Search Trees
ITS 265

1. Use the Python code provided for a tic-tac-toe game and modify it as follows:
    a. Provide a menu to pick options on how to play the game. The options should be:
        i. Two human players.
        ii. Two computer players.
        iii. Human against computer.
        iv. Human against computer on a 5x5 grid.
    b. Modify the Python code for two human players (player1 and player2) to be able to interactively, via the console, enter their moves – computer playing against you. After each move print out the board position until the game is done.
    c. Modify the Python code to allow two computers (bot1 and bot2) to play each other – this should always result in a draw. After each move by each bot, display the board state and prompt to the console "Make next move (Y/N)?". If yes, have the next bot make the move and print out the board at that point. If no, exit the game. The bots should use the minimax algorithm to calculate their best moves against each other.
    d. Modify the Python code to allow a human to play the computer (human player against bot) with the human starting first. The example program has the computer (bot) starting first.
    e. Modify the Python code to allow a 4x4 or 5x5 grid to be used with the human starting first (whoever starts first draws an X on the screen).
2. Provide screen shots verifying the program works for each of the scenarios. Submit the code and screen shots in a zip file to Brightspace. You can work in teams of 2 students to complete this assignment.