CSE 5120 Homework Assignment 3 – Fall 2021

Instructor: Dr. Kerstin Voigt

Total number of points: 15

In the tic-tac-toe game program provided in file NxN_tictactoe.py, ***replace the naïve response by player O via function random_O(self) with a new T3 member function maximin_O(self).*** The new function will apply "maximin" reasoning (the counterpart of "minimax" reasoning from the viewpoint of player X) each time the program (opponent player O) makes a move.

Define new member functions using the notes from the previous lecture; our notes, possibly with some debugging, ought to provide us with the all the maximin(self) functions will need to do.

Do not forget to replace, in member function play(self), the call to random_O with a call to the new maximin_O function.

This assignment is meant to have us try out and correct as necessary the particular implementation ideas that were developed in the lecture. Any submitted code that deviates greatly from the approach taken in NxN_tictactoe.py and the class notes will <u>not</u> count in fulfillment of this assignment.

Test by playing one 3x3, one 4x4, and 5x5 game of tic-tac-toe.

Submit by Thursday, 10/13, by 11:59 pm: Via Blackboard portal: (1) A copy of your file modified file NxN_tictactoe.py, (2) Screenshots that show the first 4 and last 4 moves in a 5x5 game you have played with the program. In case your program does not run, submit for items (1) and a screenshot that shows the attempt to run the program and error messages.

Also, please adhere to the following naming rules when submitting your files.

File naming: For ease of identification of your submitted work, make sure that you adhere to the following **file naming convention:** for each file XYZ.py, or screenshot that you submit, name the file

Lastname_Firstname_####_XYZ.py(.<any other>)

where #### are the last four digits of your student id, and XYX is replaced with the name of yur file. **Your work may not be graded if you do not adhere to this naming convention.**