Project 3: Tic-Tac-Toe AI

CIS 222, Spring 2021

Mr. Petcaugh

Directions: Complete the challenge described below by using your knowledge of 2D Arrays in the Java programming language. For this project, you will just submit your single Java file.

Challenge Description:

Students will write artificial intelligence to play Tic-Tac-Toe against a human player. The instructor has provided you with several Java classes to play a game of Tic-Tac-Toe in the console. You need to first understand how the code works, and then complete the following modifications:

Q.1: Understand what the current code is doing, each step of the way. (fill code with comments)

Q.2: Randomize which player is 'X' and which is 'O' at the start of each match.

Q.3: Randomize which player goes first.

Q.4: Output the name of the player that wins the game, at the end of the while loop.

Q.5: Determine if someone has won the game (there is no good shortcut to this…you need to loop through all possible win conditions)

Q.6: Create the TURN method for the AIplayer. **This is the most involved piece of the assignment.** You need to have the AI examine the current board, and determine which move they should play next. In class, you will be writing a randomized TURN method that you can use to play against before you submit your code.

Grading

This assignment is worth 50 pts. Points will be deducted for any of the following reasons:

a. Comments/code/output are missing
b. Submission does not always work as intended
c. Instructor needs to modify your code for it to run without errors
d. Losing to a randomized AIplayer (this will be executed 40 times)
e. Missing a section. [Largest percentage of the points are given for Q6]