Lab 2 - Adversarial

Subject: Fundamentals of Artificial Intelligence

1. Introduction

- In this project, students research and implement the adversarial searching algorithm.
- In addition, students implement an application (tic-tac-toe problem) and apply the adversarial technique to solve that tic-tac-toe.

2. Requirement

- Individual project.
- Programming language: Python.
- Timeline: 2 weeks.
- Final product: student_id.zip or student_id.rar, includes:
    - Code folder: include every coding files.
    - Report folder: include file report.pdf
        - Student's information.
        - Introduce about the algorithm.
            - Describe the idea of that algorithm.
            - Completeness.
            - Time/space complexity.
        - Link demo application (YouTube or Google drive or One drive).
- Evaluation:
    - Implement: 70%.
    - Report: 30%.
- Every cheat/copy/lie will be punished with a course score of 0.
- For any question/problem, you can post on the Zalo group or email to vunguyenthai73@gmail.com

3. Problem

- Students implement a tic-tac-toe game (Vietnamese: trò chơi caro). For simplicity, students just need to implement 3x3, 5x5 and 7x7 maps. Student will control player 1, Computer will control player 2 (and vice versa).
- **Students choose any adversarial search. Using that adversarial search to find the optimal path, which will help the Computer to win this game.**
- Students must implement the interface of tic-tac-toe game. Note:
    - You can use pygame or tkinter (python library), those libraries are so easy to learn and use.
    - The main purpose of this project is learning Adversarial search, please do not focus on application or interface (just easy to look are enough).