

## Turn-based board game and AI

### Description:

In this assignment, your goal is to construct an artificial opponent intelligent enough to win over a human player. The points to consider:

- Build a board game (e.g. Checkers, Chess, 4 in a line or Reversi (i.e. Othello)) where a player will play against a computer. You can choose any other board game of your interest with my approval [[A list of board games](#)]
- Both the player and the computer will take turns.
- You will use minimax and/or alpha-beta pruning algorithm that will provide AI for the computer. Adding extra intelligence is also permitted.
- The computer's strength at games comes from:
  - How deep you can search.
  - How well you can evaluate a board position. So construct your own `Evaluate ()` function to estimate the goodness of a given board.
- The rules and valid moves certainly depend on the chosen board game.
- You can use any language of your preference. Both 2D and 3D board layout are equally accepted.

### Grading Alert:

1. GUI – 20%
2. Evolution function – 20%
3. Minimax function – 30%
4. Alpha-beta pruning – 20%
5. Report – 10%

### Submission instructions:

1. In this assignment, you can work in a group of TWO.
  2. A short report (pdf) about your level and goal: explaining your game rules, AI (such as the evaluation function, heuristics, etc.) and other relevant information.
  3. You must mention the other team member's name, if there is any. Only one submission per team.
  4. All resources and code to run your submission. Include a help file, if necessary.
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