

**CSE 212: Computer Programming Lab**

**Lab 12 – Artificial Intelligent Opponent For Board Games**

**Objectives**

1. Learn about the minmax search algorithm
2. Use Minmax algorithm to build simple artificial intelligent opponent for Tic-tac-toe and Connect 4.

**Part I – Practice**

Use the supplied files to implement the minmax search algorithm and use it to implement the artificial intelligent opponent of:

* TIC-TAC-TOE
* Connect Four

**Part II – Questions**

1. Add unit tests to tic-tac-toe to ensure that the properties legal\_moves, is\_win, and is\_draw work correctly.
2. Create minimax unit tests for Connect Four.
3. The code in tictactoe\_ai.py and connectfour\_ai.py is almost identical. Refactor

it into two methods that can be used for either game.