Assignment 0

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For this assignment we had to develop a Connect 4 game with an AI that would be difficult to beat using a minimax tree with alpha beta pruning. To do this, we had to develop a static evaluator that would provide the computer player with enough info to make informed plays. This document will describe my static evaluator used in my Connect 4 game.

First, the highest priority is filtering out moves that cannot be made, these include moves to rows that are full, so these game boards aren’t created cutting down the tree size. After that the biggest priority is WINNING! If a move would lead us down the road to a guaranteed victory we need to take it. The next priority is to prevent the human player from winning. To do this we need to analyze potential connections that may lead up to a possible Connect 4. Once we have identified these threats it is imperative to play in such a manner to block this move. Lastly, we are looking for uncluttered columns to play on if we aren’t currently looking to build up a potential connect 4.

The strengths of my evaluator lie in its ability to stop all connect 4’s that are isolated threats. It also plays very aggressively forcing the human player to react to its threats as well. However, against an opponent who makes multiple threats against the computer player, my evaluator is weak and will not respond correctly to the threat. Therefore crafty players will be able to exploit this weakness to achieve victory.

1. Strengths
   1. Aggressive Game Play
   2. Ability to stop isolated attacks quickly
   3. No remorse
2. Weaknesses
   1. Multi-threats
   2. Random gameplay