

Lab 3 - MiniMax

Aidan Schneider

CS 2400 031

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1. Depth of 2: 4, 3, 5, 7
2. The reason that a series of moves works at one depth but not at a deeper depth is because the MAX part of the tree is not able to consider all possible moves that the other player can make. At a depth of two, the MAX player may only consider a few possible moves, and so the highest utility that it finds may not be the highest possible utility. If the algorithm searches another ply deep, then it will be able to consider more possible moves, and so it may find a higher utility value. Also, with additional MIN plys, the algorithm is able to consider more possible responses that the MAX player can make, and so it can weed out any misleading MAX states that wouldn't work due to the other player doing something to upset MAX's plan.
3. The AI was probably trying to play 4, 7, 5 in order to force a win. The reason it would do this at level 3 is because the third ply is a MAX ply, and for MAX, picking the state that forces a win for MAX has the highest utility. Since there is no MIN row after this, the AI could not see that the player was setting up a win of their own, and so the AI ignored it in favor of forcing a win.