Alex Tan Artificial Intelligence

Lines of Action 5/6/16

The programming language used was C++ with Visual Studio 2015. When using an older compiler, it might be necessary to change the platform toolset to an older one. All the files are included, so it can just be copied and run the solution.

The program runs from main.cpp which calls upon Game.cpp and Game.h to actually play the game. Game.h includes the header files and class instantiation of public and private variables for the Game class. Game.cpp includes the function. Main.cpp calls upon functions in Game.cpp to do all the work. Game.cpp includes functions to creating the game, board, choosing players, making a move, calculating a move for the AI, and more. The game is object oriented. The alpha-beta search uses recursion to check for a game winning move with an evaluation function that’s the cutoff of approximately 7 seconds due to stack overflow issues. The cutoff is based on the distance between the pieces and the max distance. It calculates the max distance and then weighs it negatively because a lower max distance is desired. It is then summed with the depth, desiring one that would be closer to terminal state.

The game’s size can be changed by altering the size of the rows and found globals found in Game.h and the number of pieces in Game.cpp. This allows the game to be played for 5x5 or 6x6.