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Final Project Presentation: Checkers

The goal of this project will be to implement a program that will allow a user to play checkers against the computer. We will be creating the program that will play against the user. Checkers is a popular game played on an 8 x 8 checkerboard between two people. Each player attempts to take all of the other player's pieces by hopping over them with one of his or her own pieces. This project is worth the effort as it will further our understanding of adversarial search and the end product will serve as a source of entertainment. There are already many existing checkers-playing AI programs as there are electronic checkers games with a computer opponent. As a result, our program will not be the first of its kind, but it will be a new endeavor for us.

Our program will use adversarial search and a minimax tree to find the optimal next move. The search space will be quite big as it has a large branching factor (all the possible moves for the player) and a large depth (since checkers games may last a long time). We are not sure if we will be able to search the entire search space, so we will consider techniques to prune the tree in some way such as alpha-beta pruning. We will be programming entirely in Java, and we will use the Swing library for our GUI.

Plan

11/28/16 - Project proposal

12/5/16 - Initial board representation and implementation of rules

12/9/16 - Working computer opponent using adversarial search

12/13/16 - Finish GUI

12/16/16 - Final report and code submission