CSE473 Project #1

Due May 3rd 2002 at 9:30 AM

1 Overview

The first project is to implement an agent that will play a game of checkers. You should work in groups of two, and there will be a tournament after the due date. The "prize" for the first three teams will be bonus points in the amount of 5%, 2.5%, and 1%.

Email will@cs.washington with your group name and members by April 17th.

You must turn in a hardcopy of your code with a short writeup described below. We may ask you for a demo and/or oral presentation of the project.

2 Features

Your program must have the following features.

1. Written in C, C++, Java, or Lisp
2. User interface to play a game with your agent
3. Follows rules at http://www.toysave.co.uk/rules/checkers1.htm
4. Minimax game tree search to determine next move
5. Alpha-beta pruning
6. Move determination time should be at most 30×10^9 divided by the clock speed of the CPU (e.g., for a 1GHz CPU it should be at most 30 seconds).
7. Clean separation of the specifics of Checkers from minimax game tree search with alpha-beta cuts.

3 Writeup

The writeup should be less than two pages. Include a description of your architecture, approach (such as details of your heuristic function and how you implemented time-limited searches), extra features, bugs, and any problems you had. In addition, make clear which parts were done by which group member.

4 Hints

- Make the standard game tree search work correctly first before implementing alpha-beta pruning.
- Use a simple game (such as tic-tac-toe) to debug your game playing agent before adding more complicated game logic (Checkers).
- Make it work before any optimizations.

5 Tournament

Every tournament match will be composed of two games. Both teams will have an opportunity to make the first move. If there is a tie, play again until one team wins both games. One crash is allowed for each program. Every match should take place on machines of comparable power.

The matches will be set up after April 17th.