Gebze Technical University
Department of Computer Engineering
CSE 481/603
Artificial Intelligence
Spring 2016
Homework # 2

Search
Due date Apr 26th 2016

Game Search

Due date Apr 20th 2015

In this homework, we will convert the simpified game of go (SGG) into adverserial search. Write a program that will do the following

1. Ask the board size
2. Ask the user to mark blocked cells first
3. Ask the maximum depth of the mix-max search
4. Ask if alpha-beta pruning will be used or not.
5. Ask which player will play first. (A or B) A is user, B is computer
6. Which evaluaiton function to use (you should have at least 2)

The game will start, the player A (user) will play against the player B (computer). For each turn, the user will click the board position and the computer will move its piece. The goal of the game is to mark most number of cells at the end of the game.

For each move, you will report numbers on

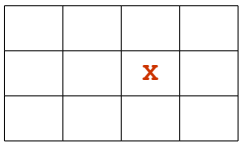
- The nodes expanded
- The number of nodes pruned (for alpha-beta pruning)
- The results of the evaluation functions.

In your homework report, you will include

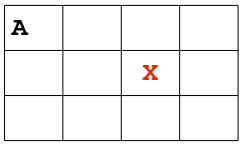
- All steps of your algorithm design,
- Your evaluation functions
- The performance gain with the alpha-beta pruning
- The performance comparison of the evaluaiton functions.

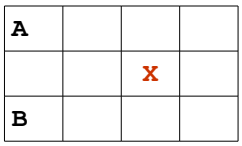
Here is a sample run of the program

```
What is the board size?
3 x 4
What is the maxiumu depth? 5
Alpha-beta: yes
Fill the blocked cells
```

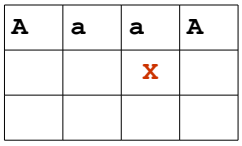


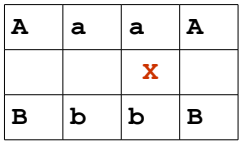
```
Which player will start?
A

Make your move
```



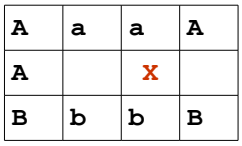


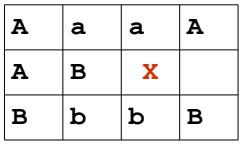
```
Make your move
```



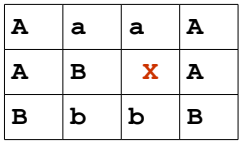


```
Make your move
```





```
Make your move
```



```
Player A wins
Expanded nodes: ..., Pruned nodes:....
Other information
...
```

Notes

- Submit your HW through moodle
- Your HW will include your code, the HW report
- You will demo your program after the class.
- You are not allowed to use somebody elses HW1.
- In your demo, you are not allowed to compile your code, make changes in your code, or use any development environment during the demo. You will either click on an icon to run your demo or type the executable file name at the command line.