Homework 5
Due: Oct 8, 2014 - 2pm

Instructions for submitting programs
The beginning of the program should contain comments with your name. You should submit .zip folder[*] on blackboard with following items.

1. All source code.
2. A readme file: explaining how to compile and run the program.
3. A pdf file explaining initial state and the result you got after running your code. Let's take 3 test cases(initial board configuration)

* - Name of folder should be your netID

Problem:

This past week we developed a game program for Tic Tac Toe using min max algorithm as given in book. In this assignment, you will turn that into an implementation of minimax search, that employs alpha beta pruning to limit the number of nodes expanded. Your goal is to write a program that discusses the effect on exploring the game tree using this method (in any initial board configuration). You have to think in advance about the purpose of alpha beta pruning, what results you would expect to see from using it and how you might measure those results in your particular implementation. In order to do this, you will need to first convert the code of your minimax search using utility function at the terminal nodes. From there, develop a cutoff function and an evaluation function. Feel free to implement and test your code for different configurations as needed.

At the end , be sure to collect the data necessary (e.g. number of nodes expanded in min max and with alpha beta pruning)

Your pdf report should also include the comparison of number of nodes expanded by both algorithms .

Initial state:

-	X	-
-	O	-
-	-	-

Input **for this case will be given** as a string " b X b b O b b b b " where "b" represents a blank tile .
Your program will return a value. Let's say player 1(X) moves first.

Programming Languages:

You can use C, C++ or Java.

Online Code Repository

You can use AIMA Code if you want.

http://aima.cs.berkeley.edu/code.html

https://code.google.com/p/aima-java/downloads/list