Artificial Intelligence Lab
Lab 5 Manual

[Submit your source file only
Name your file like this "regno1_regno2_lab4.cpp/py/c/java"]
***Report to me when you've completed any checkpoint*

Task:

Let's say we are going to play tic-tac-toe against one opponent. This tic-tac-toe is slightly different from the traditional one and contains weighted slots to move. Your main target is to **win with the maximum** possible collected utility.

The board is like below, shown along with the weights:

4	2	4
2	8	2
4	2	4

The utility function is given as

$$U(n) = your\ maximum\ value\ of\ elements - opponent's\ maximum\ value\ of\ elements$$
$$where,\ n\ is\ a\ terminal\ node\ and\ value\ depicts\ positional\ value\ assuming\ base\ 2$$

Let the terminal node is as below

X	O	X
O	X	O
O	X	X

We calculate the U(n) = {(2^2)*4+(2^1)*8+(2^0)*4} - {(2^1)*4+(2^0)*2}

Checkpoint 1: 60%

Perform a minimax search to play the game when you are to give the first move

Checkpoint 2: 30%

Perform alpha-beta pruning on your implemented algorithm of Checkpoint 1

Checkpoint 3: 10%

Compare Checkpoint 1 & 2 with respect to execution count/ node visit count with actual values for your case.