Read Me File:

How to Read your file:

1. Run the ttt.py file.
2. Enter the coordinates of the board. The first value is the row value, the 2nd value is the column value. Enter these values one after the other.

Output 1

C:\Users\Sanyukta\Anaconda3\python.exe C:/Users/Sanyukta/PycharmProjects/AI\_HW2\_version2/ttt.py

//Here, the player gives the coordinate inputs. First comes the row value and then comes the column value.

Player, Enter your move:

0

0

//Now the Opponent plays

Opponent Plays

//The number of nodes generated after iterating the minmax algorithm and alpha beta pruning for every move is displayed.

Number of Nodes generated in MIN MAX: 8232

Number of Nodes generated in ALPHA BETA PRUNING: 749

Number of Nodes generated in MIN MAX: 7584

Number of Nodes generated in ALPHA BETA PRUNING: 641

Number of Nodes generated in MIN MAX: 8232

Number of Nodes generated in ALPHA BETA PRUNING: 336

Number of Nodes generated in MIN MAX: 7332

Number of Nodes generated in ALPHA BETA PRUNING: 844

Number of Nodes generated in MIN MAX: 6380

Number of Nodes generated in ALPHA BETA PRUNING: 365

Number of Nodes generated in MIN MAX: 7584

Number of Nodes generated in ALPHA BETA PRUNING: 335

Number of Nodes generated in MIN MAX: 6380

Number of Nodes generated in ALPHA BETA PRUNING: 381

Number of Nodes generated in MIN MAX: 7980

Number of Nodes generated in ALPHA BETA PRUNING: 438

//The optimal coordinates are displayed, which gives the opponent's location. Both by minmax and alpha beta pruning, the coordinates are the same.

The optimal coordinates for Min Max is: 1 1

The optimal coordinates for aplha beta pruning is: 1 1

//The board is displayed, after every move of the players

---BOARD---

['X', 'null', 'null']

['null', 'O', 'null']

['null', 'null', 'null']

//Now, again the player enters its moves and this is repeated until the game is over

Player, Enter your move:

0

2

Opponent Plays

Number of Nodes generated in MIN MAX: 206

Number of Nodes generated in ALPHA BETA PRUNING: 101

Number of Nodes generated in MIN MAX: 137

Number of Nodes generated in ALPHA BETA PRUNING: 34

Number of Nodes generated in MIN MAX: 137

Number of Nodes generated in ALPHA BETA PRUNING: 36

Number of Nodes generated in MIN MAX: 174

Number of Nodes generated in ALPHA BETA PRUNING: 40

Number of Nodes generated in MIN MAX: 98

Number of Nodes generated in ALPHA BETA PRUNING: 10

Number of Nodes generated in MIN MAX: 174

Number of Nodes generated in ALPHA BETA PRUNING: 42

The optimal coordinates for Min Max is: 0 1

The optimal coordinates for aplha beta pruning is: 0 1

---BOARD---

['X', 'O', 'X']

['null', 'O', 'null']

['null', 'null', 'null']

Player, Enter your move:

1

0

Opponent Plays

Number of Nodes generated in MIN MAX: 11

Number of Nodes generated in ALPHA BETA PRUNING: 8

Number of Nodes generated in MIN MAX: 14

Number of Nodes generated in ALPHA BETA PRUNING: 13

Number of Nodes generated in MIN MAX: 1

Number of Nodes generated in ALPHA BETA PRUNING: 1

Number of Nodes generated in MIN MAX: 11

Number of Nodes generated in ALPHA BETA PRUNING: 9

The optimal coordinates for Min Max is: 2 1

The optimal coordinates for aplha beta pruning is: 2 1

---BOARD---

['X', 'O', 'X']

['X', 'O', 'null']

['null', 'O', 'null']

Opponent is the Winner!!!

Process finished with exit code 0