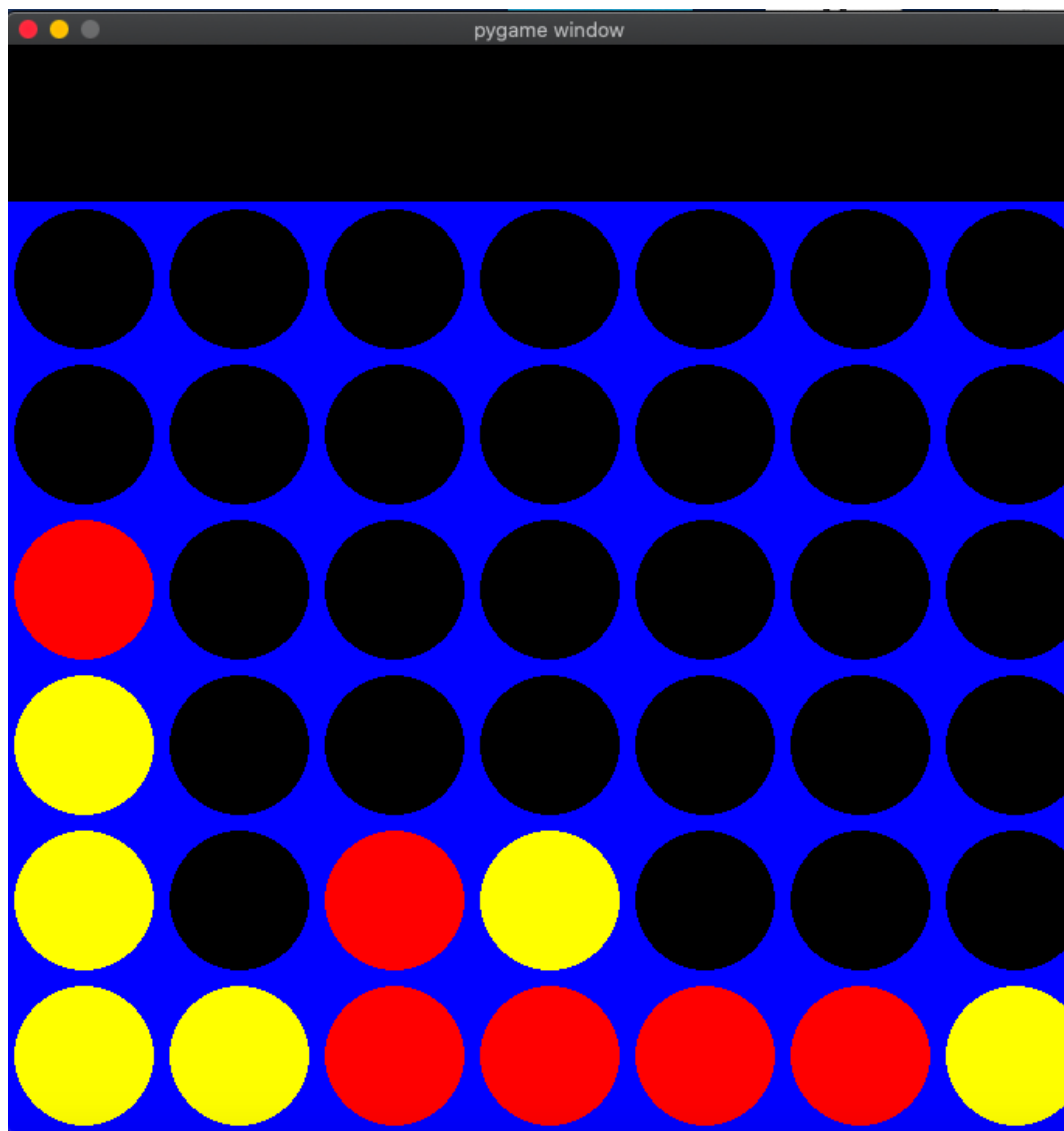


[Year]

Connect Four

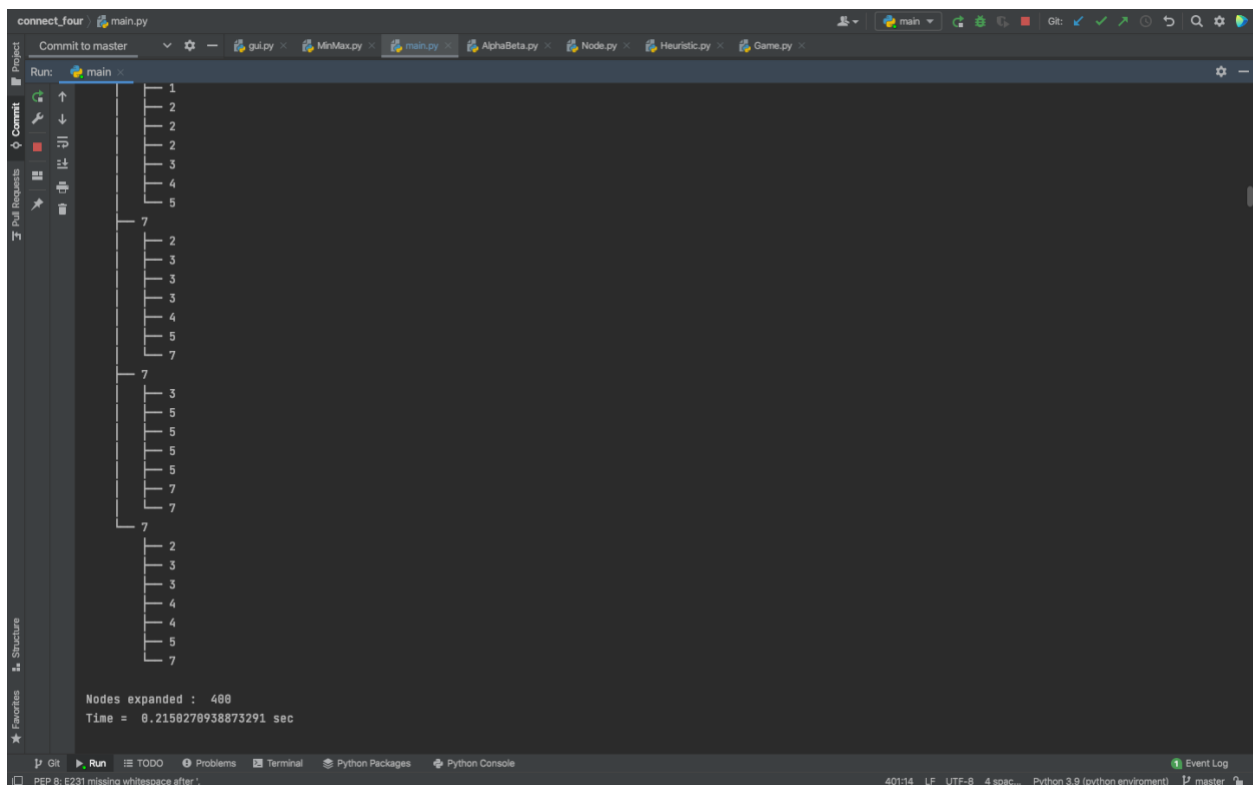
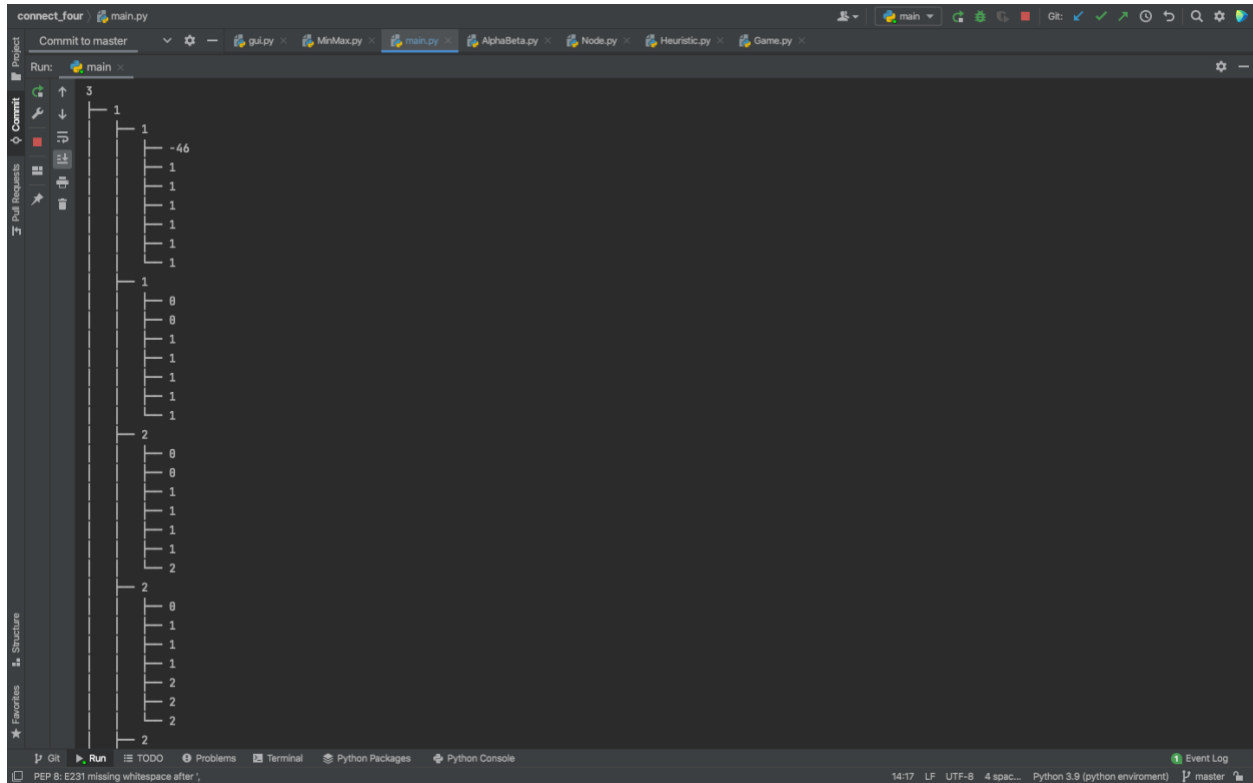
YOUSSEF HASSAN 6259

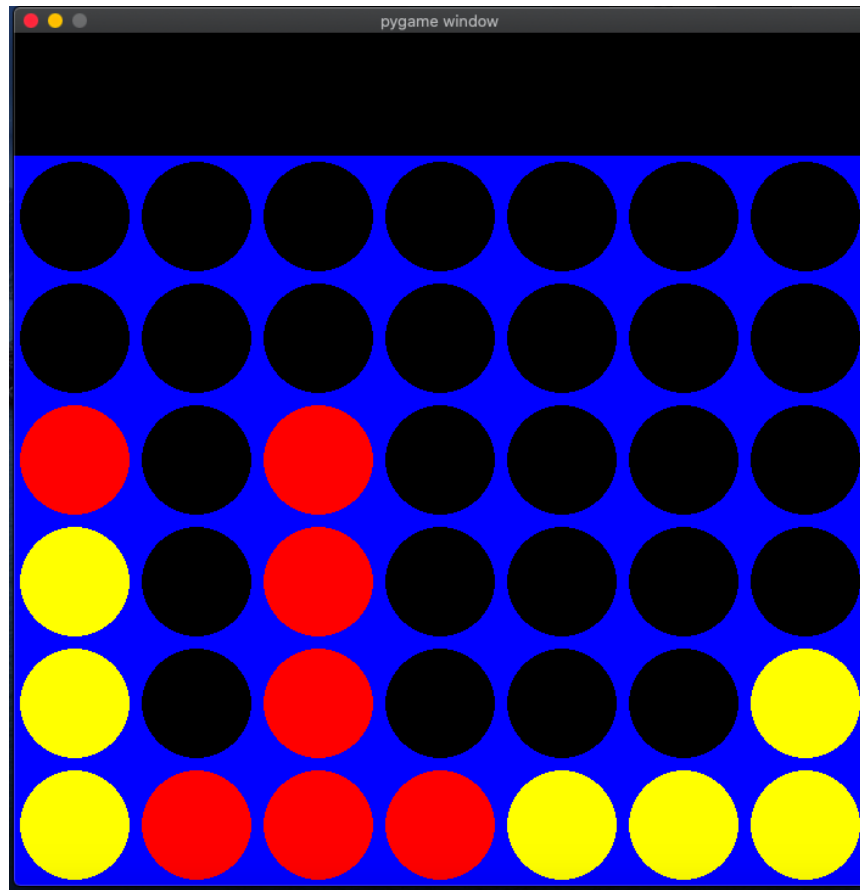
NOUR ELDIN HAZEM 6261



Algorithm: minmax without pruning, Number of levels=3

Part of tree , number of nodes expanded and time





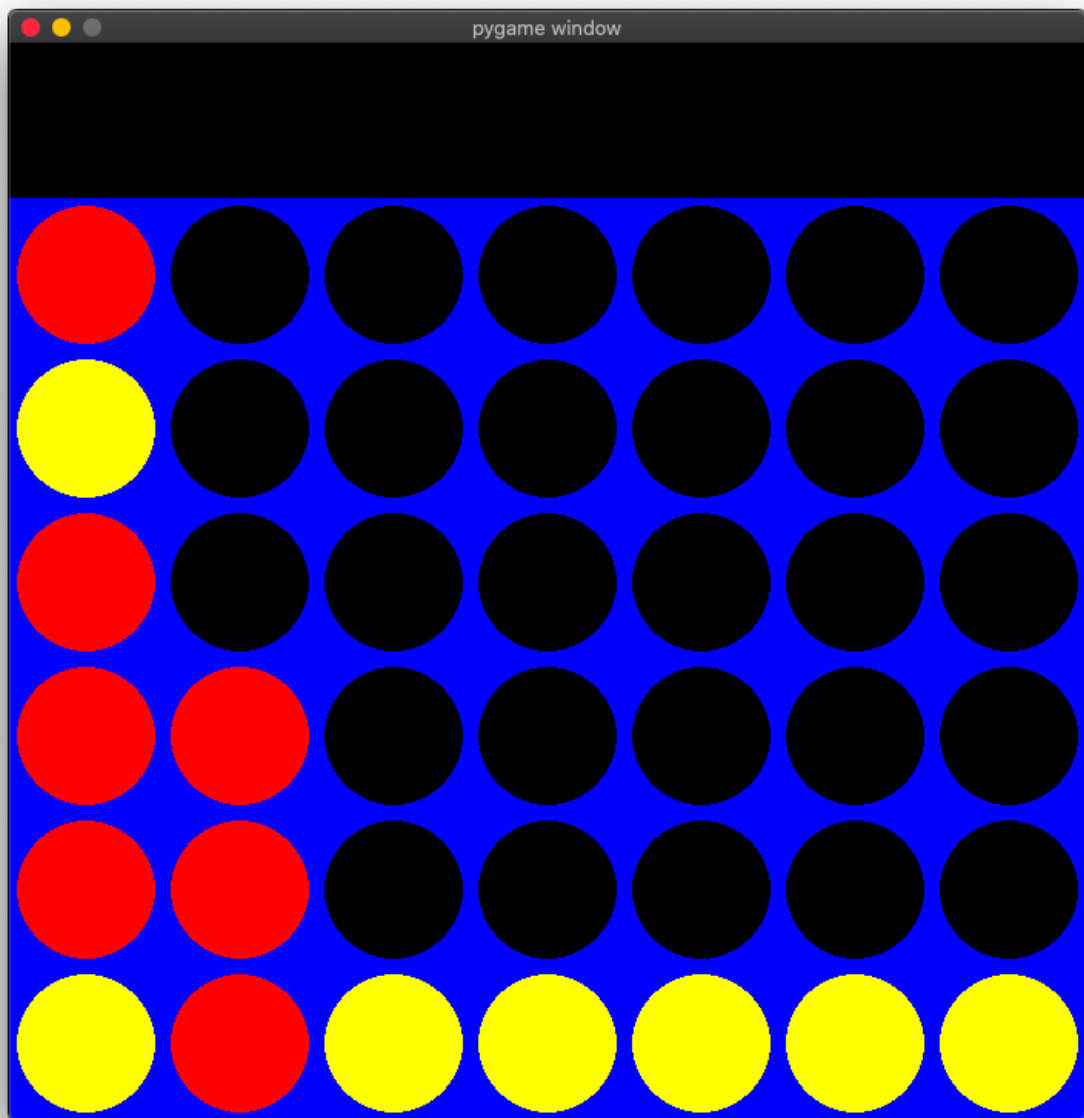
Algorithm: minmax pruning, Number of levels=3

Part of tree , number of nodes expanded and time

The image displays two screenshots of a Python IDE (likely PyCharm) showing the execution of a game tree search for Connect Four. The IDE interface includes a top toolbar with icons for Run, Debug, and other functions, and a bottom status bar showing file encoding and environment details.

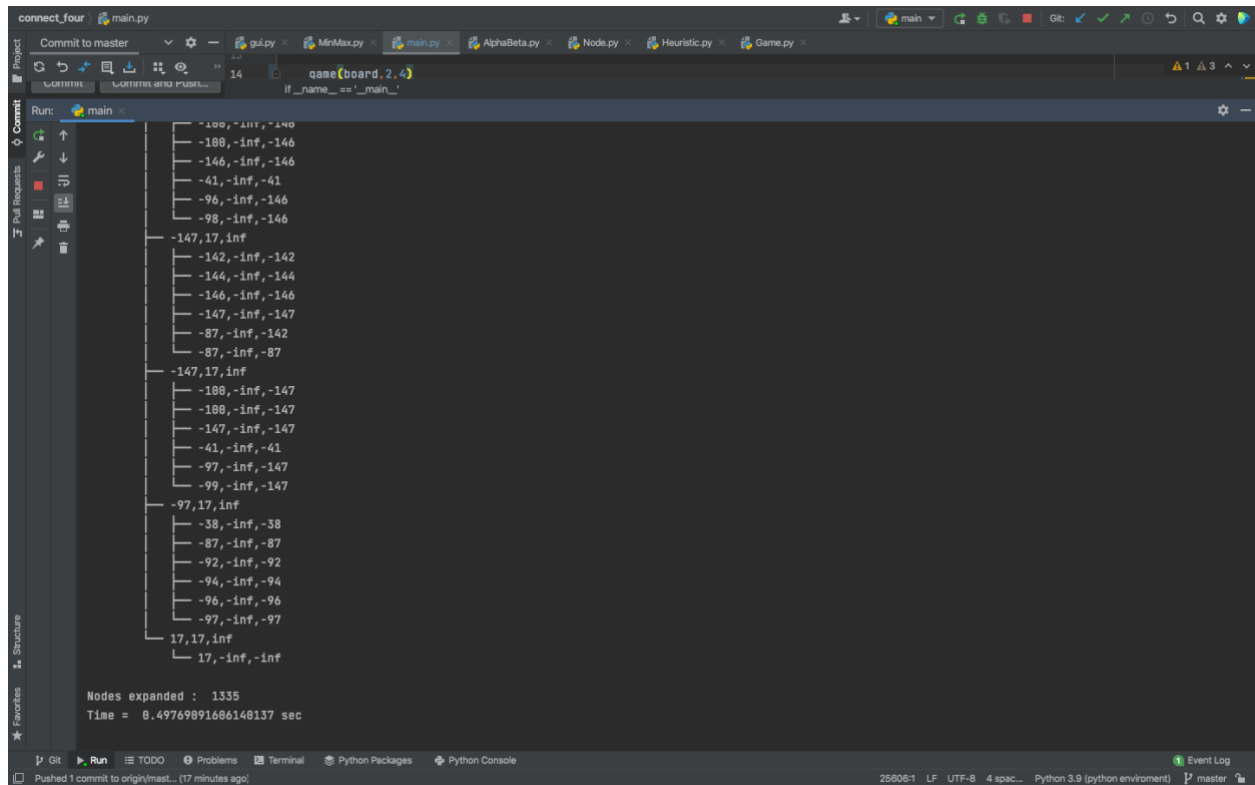
Top Screenshot: The main window shows a tree structure representing a game state. The root node is labeled "1,3,inf". It branches into several child nodes, including "2,3,inf", "2,5,inf", "3,3,inf", "4,5,inf", and "5,5,inf". The tree continues to expand, showing various game states with numerical values and "inf" (infinity). At the bottom of the tree, the text "Nodes expanded : 352" and "Time = 0.12391018867492676 sec" is displayed.

Bottom Screenshot: This screenshot shows a more detailed view of the tree structure. The root node is "3,3,inf", which branches into "1,1,inf" and "1,3,inf". The "1,1,inf" node further branches into "1,-inf,-inf", which then branches into a series of nodes with values like "-46,-46,inf", "1,1,inf", and "1,1,inf". The "1,3,inf" node branches into "1,-inf,1", which then branches into "0,3,inf", "1,3,inf", and "1,3,inf". The tree continues to expand, showing various game states with numerical values and "inf".



Algorithm: minmax pruning, Number of levels=4

Part of tree , number of nodes expanded and time

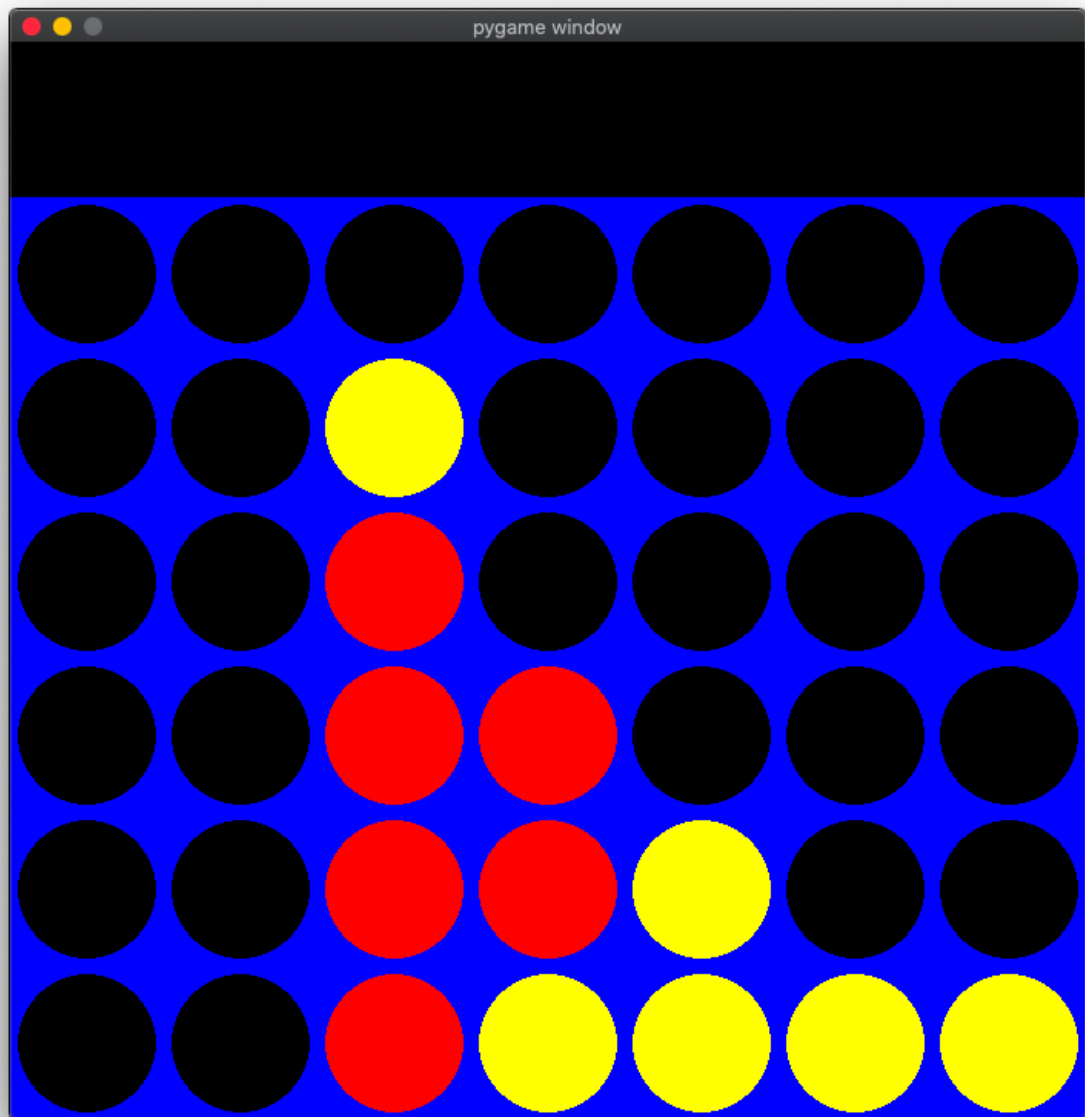


```
connect_four main.py
Commit to master
14 game(board.2.4)
if __name__ == '__main__':

-100,-inf,-140
-100,-inf,-146
-146,-inf,-146
-41,-inf,-41
-96,-inf,-146
-98,-inf,-146
-147,17,inf
-142,-inf,-142
-144,-inf,-144
-146,-inf,-146
-147,-inf,-147
-87,-inf,-142
-87,-inf,-87
-147,17,inf
-100,-inf,-147
-100,-inf,-147
-147,-inf,-147
-41,-inf,-41
-97,-inf,-147
-99,-inf,-147
-97,17,inf
-38,-inf,-38
-87,-inf,-87
-92,-inf,-92
-94,-inf,-94
-96,-inf,-96
-97,-inf,-97
17,17,inf
17,-inf,-inf

Nodes expanded : 1335
Time = 0.49769891686148137 sec
```

Pushed 1 commit to origin/master... (17 minutes ago) 25606:1 LF UTF-8 4 spac... Python 3.9 (python environment) master



Algorithm: minmax without pruning, Number of levels=4

Part of tree , number of nodes expanded and time

