Artificial Intelligence - Methods and Applications - 5DV181

Othello

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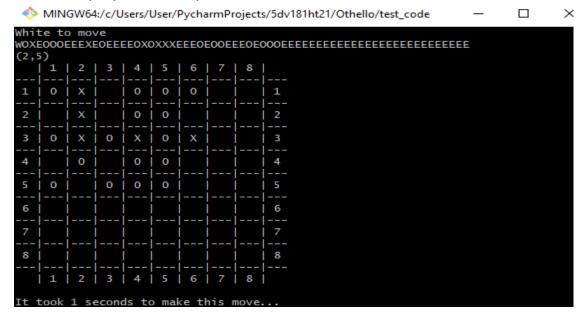
1. I work in windows and use "bash" command window to run and see the output of "Othello" program. I work on python. To run my code I use both "test_code" and "Python" scripts file. I use time limit 5. Under "test_code" directory I run the below command:

./othellostart ./othello_naive ../Python/othello.sh 5

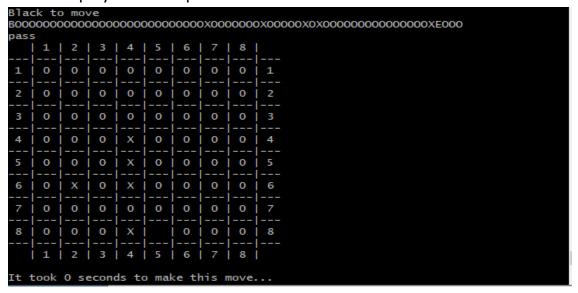
At python I work for "Black" player. Here othellostart and othello_naive are from test_code and othello.sh is python script file.

- 2. At Othello.py file I use a flag "play". It is staying "True" until player is finished. If the player is not done othello store the moves in a list and print the moves using "print_move()". If the list is empty it prints "pass" and the flag is turn to "False". I follow this procedure and no moves are missing for players.
 - I check both computer player and human player. At alpha beta algorithm the search depth is fixed 7.
 - I check the values of alpha beta with child. So here no node is missing.
- 3. I use the provided "CountingEvaluator". Here "white_square" and black_square" both were initially 0 and it is increamenting by 1.
- 4. At my work I don't mention any time. I mention time on run command. When othello takes too much to complete run I use "Ctrl+C" button to terminate.
- 5. For make_move() I use row, col, clone(),__is_own_square(). I check the all position north, south, east, north_west, north_east, south_east and south_west. I update players own row column according to the position.

6. For white player the output is:



For black player the output is:



For 10s the final output is:

```
MINGW64:/c/Users/User/PycharmProjects/5dv181ht21/Othello/test_code
                                                                                                  \times
           0
                 0
                            0
                            0
                                            0
                0
                      0
                            0
                                 0
                                      0
                                            0
           0
                      0
                            0
                                            0
                                                 8
                 0
                                 0
   took O seconds to make this move...
Results for ./othello_naive vs. ../Python/othello.sh:
White won with 56 points
Average time for white: 0.4 s (max: 1 s)
Average time for black: 0.5 s (max:
```

There is no noticiable difference for different time.

- 7. I took huge time for Othello.py file. It was difficult for me to understand what will go on with Othello.py file. The make_move() was easy as I follow the __is_move() procedure. My another difficult point is to run the file. At running time I get too much error. After all it was really effective work.
- 8. My code has "TypoError". I can't shortout this typoerror. This is the big limitation of my work.
- 9. References: http://dhconnelly.com/paip-python/docs/paip/othello.html http://www.cse.uaa.alaska.edu/~afkjm/csce211/handouts/othello.pdf and several github repos.