

Strategic player for Caterpillars' game of Dagor framework

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Rules (from <https://arielortiz.info/s202213/tc2038/dagor/index.html>)

Pieces and board: This game is played on a rectangular board of n rows by m columns, where $4 \leq n \leq 10$, $4 \leq m \leq 10$. Initially each player occupies a location on the board (the head of the caterpillar), determined according to random way.

To Roll: Each player controls a caterpillar that grows rapidly from their head. During a player's turn, he must select a contiguous empty location in which his caterpillar's head can grow. The caterpillar can grow towards the location above, below, left or right, but not diagonally. It is possible to grow by leaving one edge of the board and reaching its corresponding opposite location.

To Win: A player wins when their opponent no longer has a location to grow on.

On the board, the first player uses the symbol B (white) for the head and b for the rest of the body. The second player uses the symbol N (black) for the head and n for the rest of the body.

Remember the classes were made on Python language.

Implementation

There are already an Interactive Player (input from keyboard) and a Random Player (choose with no logic), so we made our own class that uses a heuristic function to analyze its best shots with a minimax function.

Here you can see the result of 1 game of our strategic class vs the random:

```

  0  1  2  3  4  5  6  7  8  9
0  |  | b | b | N | b | b | b |  |
  ---+---+---+---+---+---+---+---+
1  n | n | n | n | n | b | b | b |  |
  ---+---+---+---+---+---+---+---+
2  n | n | n | n |  |  | n | n | n | n
  ---+---+---+---+---+---+---+---+
3  |  |  | n |  |  |  |  |  | n
  ---+---+---+---+---+---+---+---+
4  |  | n | n |  |  |  |  | n | n
  ---+---+---+---+---+---+---+---+
5  |  | n | n | n | n | n | n | n |
  ---+---+---+---+---+---+---+---+
6  |  |  | b | b | b | b | n | n |
  ---+---+---+---+---+---+---+---+
7  |  |  | b | b | b | b | b |  |
  ---+---+---+---+---+---+---+---+
8  |  | B | b | b | b | b | b |  |
  ---+---+---+---+---+---+---+---+
9  |  | b | b | b | b | b | b |  |

>>>>> GANADOR: Equipo 10 (alias 'B') [JugadorOrugasEquipo10] <<<<<<<
```

Here you can see the result of 100 games with a delta max (time limit for each shot) of 2 seconds:

RESUMEN DEL ENCUENTRO

Juegos jugados: 100

Juegos ganados por Equipo 10 (alias 'B') [JugadorOrugasEquipo10]: 78

Juegos ganados por RandomBoy (alias 'N') [JugadorOrugasAleatorio]: 22

Juegos empatados: 0
