Kuncheng Feng CSC 466 Presentation

Al vs Al

## Abstract

A new function "getStatistics" is created in the "Main.l" file, it let the user choose which two AIs are going to play against each other, and for how many iterations, it then reports the results.

## Code

```
(defun getStatistics(&aux n1 n2 iterations player1 player2 winner b1 b2 s1
s2 v1 v2 draw)
    (dotimes (n (length *AIs*))
    (setf n1 (read))
    (setf n2 (read))
    (format t "Enter the number of iterations: ")
    (setf iterations (read))
    (setf draw 0)
    (dotimes (n iterations)
        (setf b1 (newBoard 10 10))
        (setf b2 (newBoard 10 10))
```

```
(setf s1 (generateShips))
    (setf s2 (generateShips))
    (setf player1 (createPlayer n1 b1 b2 s1))
    (setf player2 (createPlayer n2 b2 b1 s2))
    (playerPlaceShips player1)
    (playerPlaceShips player2)
    (setf winner (takeTurn player1 player2))
        ((equal winner player1)
           (setf v1 (+ v1 1))
        ((equal winner player2)
           (setf v2 (+ v2 1))
            (setf draw (+ draw 1))
(format t "Player 1 (~A) victories: ~A~%" (player-name player1) v1)
(format t "Player 2 (~A) victories: ~A~%" (player-name player2) v2)
(format t "Draws: ~A~%" draw)
```

## Demo

For this demo, I have two "RandomPlayer" Als go against each other for 300 rounds, they are pretty even. The statistics of other players will be displayed when presenting them.

<pre>[1]&gt; (load "Main.l")</pre>
;; Loading file Main.l
;; Loading file Cell.l
;; Loaded file Cell.l
;; Loading file Row.l
;; Loaded file Row.l
;; Loading file Board.l
;; Loaded file Board.l
;; Loading file Ship.l
;; Loaded file Ship.l
;; Loading file Location.l
;; Loaded file Location.l
;; Loading file HumanPlayer.l
;; Loaded file HumanPlayer.l
;; Loading file RandomPlayer.l
;; Loaded file RandomPlayer.l
;; Loading file RandomPlayerPlus.l
;; Loaded file RandomPlayerPlus.l
;; Loading file RandomPlayerPlusPlus.l
;; Loaded file RandomPlayerPlusPlus.l
;; Loading file TierListPlayer.l
;; Loaded file TierListPlayer.l
;; Loaded file Main.l
Т
<pre>[2]&gt; (getStatistics)</pre>
Available AIs:
1 - RANDOMPLAYER
2 - RANDOMPLAYERPLUS
3 - RANDOMPLAYERPLUSPLUS
4 - TIERLISTPLAYER
Enter a corresponding number to choose AI 1: 1
Enter a corresponding number to choose AI 2: 1
Enter the number of iterations: 100

```
100 games played:
Player 1 (RANDOMPLAYER) victories: 50
Player 2 (RANDOMPLAYER) victories: 50
Draws: 0
NIL
[3]> (getStatistics)
Available AIs:
1 - RANDOMPLAYER
2 - RANDOMPLAYERPLUS
3 - RANDOMPLAYERPLUSPLUS
4 - TIERLISTPLAYER
Enter a corresponding number to choose AI 1: 1
Enter a corresponding number to choose AI 2: 1
Enter the number of iterations: 100
100 games played:
Player 1 (RANDOMPLAYER) victories: 55
Player 2 (RANDOMPLAYER) victories: 45
Draws: 0
NIL
[4]> (getStatistics)
Available AIs:
1 - RANDOMPLAYER
2 - RANDOMPLAYERPLUS
3 - RANDOMPLAYERPLUSPLUS
4 - TIERLISTPLAYER
Enter a corresponding number to choose AI 1: 1
Enter a corresponding number to choose AI 2: 1
Enter the number of iterations: 100
100 games played:
Player 1 (RANDOMPLAYER) victories: 44
Player 2 (RANDOMPLAYER) victories: 56
Draws: 0
NIL
[5]>
```