

Connect 4 Terminal Game Documentation

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February 14, 2019

1 Board Class

This class is the board, and where all the interaction will flow through. It has the following variables:

- cells: a 2d array of integers representing the current game state (6x7)
- turn: dictates which player's turn it is
- characters: a dictionary for characters corresponding to an integer (0-2)

The Class has the following methods:

```
displayPlayer() # returns formatted of information of the current
                 player's turn and their token character
displayBoard() # prints out a graphical representation of the board
getBoard()    # returns the cells
changeTurn()  # alternates the turn between 1 and 2
getTurn()     # returns the current turn
play()        # takes as input the index of column and plays
isFull()      # returns true if board is full
restart()     # resets the board for a new game
checkWin()    # checks for possible win by calling the following three
                 methods:
rowWin()      # horizontal
colWin()      # vertical
diagWin()     # both diagonal directions
colNotFull()  # return a list of column indexes which are not full
```

2 HumanPlayer Class

This class is an actual human player. The Class has the following methods:

```
getInput() # asks for a play from the player and will only accept a  
valid response. Will ask again if necessary.
```

3 DumbBot Class

This class is the computer player, with a random algorithm. It has the following variables:

- difficulty: how smart or dumb this computer will play

The Class has the following methods:

```
getPlay() # tries to pick the best possible move
```

4 SmartBot Class

This class is the computer player, with a minmax algorithm. It has no variables.

The Class has the following method:

```
getPlay() # picks a random move from a list of valid moves
```