

Connect 4 Terminal Game Documentation

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1 Cell Class

This class is simply a cell on a connect 4 board where a token would be. It can only have 3 values:

- 0: empty
- 1: player 1's token
- 2: player 2's token

The Class has the following methods:

```
getState() # returns the integer value of the cell
printState() # returns a character representation of the cell: _, X, O
changeState() # changes the value of the cell only if it's has the
               value of 0 when called
```

2 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 cells (7x6)
- turn: dictates which player's turn it is
- players: a list of length 2 which stores the player objects

The Class has the following methods:

```

getBoard() # prints out a graphical representation of the board
changeTurn() # alternates the turn between 1 and 2
play() # takes as input the index of column and plays
checkWin() # checks for possible win by calling the following four
    methods:
rowWin() # horizontal
colWin() # vertical
diagWin1() # \
diagWin2() # /
restart() # resets the board for a new game

```

3 HumanPlayer Class

This class is an actual human player. It has the following variables:

- can't think of a necessary variable atm

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.

```

4 ComputerPlayer Class

This class is an actual human player. It has the following variables:

- difficulty: how smart or dumb this computer will play

The Class has the following methods:

```

getPlayDumb() # will play randomly
getPlaySmart() # takes an integer as input to decide how far to search
    with a minmax algorithm

```