Project 3

CS 1411.001

Due at 11:59 PM on 4/30/2012

Late submissions will not be graded

Write and submit the program described below. The program should include the following:

- Use functions where it makes sense.
- Repeating code should be in a function.
- Functions should never be longer than my screen.
- Meaningful variable, function names, and file names.
- Comments
    - All of the comments described in previous assignments
    - I should never have to read your code to know what a function does
    - If you find a piece of code online and it isn't something standard (i.e. something you could find in your text book or I've shown you in lab) then it requires a description of what it does and why. If you don't know what a piece of code does, don't use it!
- Output to the screen should be easy to read and understand.
- Your programs should not crash regardless of what the user enters or if files get moved. It should exit out properly.

Project 3 will be to create a program that simulates variation on the game Connect 4. The new rules will be described in detail below. The ways that the game is similar to the original Connect 4:

- There are two players. One person has red chips and the other player has black chips.
- Each player can only 'drop' one of their pieces per turn.
- The goal of the game is to connect four of your pieces in a row. This means four vertically, horizontally, or diagonally equals a win for that player.

The differences are the following:

- The players drop their pieces on a 10 by 10 grid.

- In a normal game of Connect 4, all pieces are dropped from the top of the grid and fall down to the bottom. Instead, we'll be using a variation known as Zero Gravity. In this variation, a player can 'drop' a piece from any side.
- When a player drops a piece, it will move to the other side until it hits another piece, a block, or the other side. Pieces cannot fall off the board.
- You cannot drop a piece in a given row or column if on the side of the row or column, there is already a piece. (i.e. you can't push pieces over to fit yours)
- There will be randomly generated blocks. These blocks take the place of where a piece can go on the board. These blocks cannot move and will stop a dropped piece from continuing to move.
- The players will be able to decide how many blocks to place on the board, as long as the amount is less than 25. Note: More blocks makes the game harder to win.

Your program should report who wins or if the game is a tie. A tie can result from two cases:

1. All available squares on the board have been filled.

2. There are no more valid moves to make.

Case two steams from the blocks and the players being able to play from four different directions.

Note: Red and black pieces are hard to show, since to change color in python you are required to load an external module. That being said, you may use whatever symbols or characters you'd like for the pieces and blocks. This also includes the use of ASCII symbols.

I attached a executable file of this program to play with and familiarize yourself with how the game is suppose to work since just reading the rules can get a little confusing.

You are not required to mimic my screen output or take input in the way I did. As long as the user(s) can follow the on screen instructions anything is fine.

Submit the assignment to blackboard with the following name:

eraidername_proj3.py for the assignment

Replacing eraidername with your own eraider username.