COW – Lite Bright

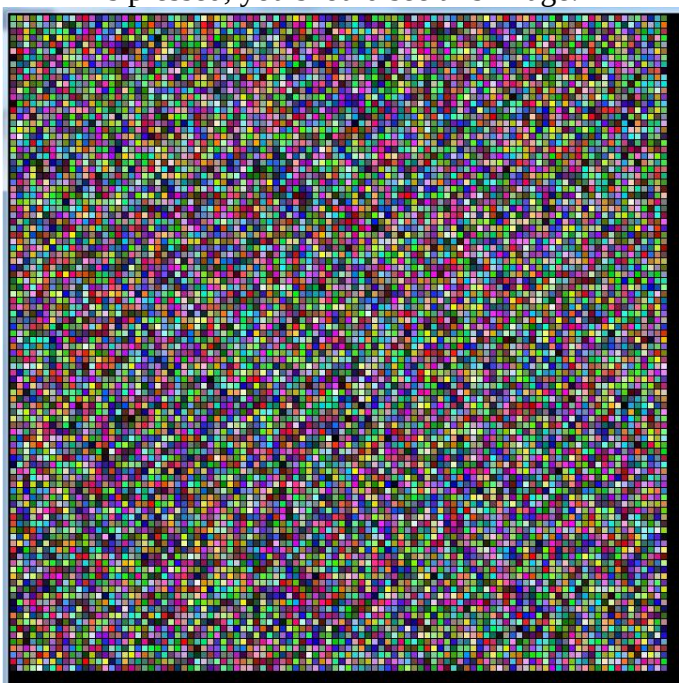
Level 1

Program the following methods of the Board class:

Name: `allOn`
Input: nothing
Output: nothing
Action: turns all of the lights on. The colors should remain unchanged.

Name: `allOff`
Input: nothing
Output: nothing
Action: turns all of the lights off. The colors should remain unchanged.

Name: `random`
Input: nothing
Output: nothing
Action: turns all the lights on and sets the color of each light to a random value. When the test button is pressed, you should see this image:



Name: `drawHorizontalLine`
Input: `int x, int y, int dis`
Output: nothing
Action: draws a line from (x, y) to directly to the right. The number of lights turned on should be equal to dis. Keep in mind that the indexes start at 0 and end at 99 and the default Color is blue.

Name: `drawVerticalLine`
Input: `int x, int y, int dis`
Output: nothing
Action: draws a line from (x, y) to directly downward. The number of lights turned on should be equal to dis. Keep in mind that the indexes start at 0 and end at 99 and the default Color is blue.

Level 2

Name: `drawRect`
Input: `int x, int y, int width, int height`
Output: nothing
Action: draws a box so that location (x, y) is in the upper left hand corner. The width and height of the box are passed into the method. Keep in mind that the indexes start at 0 and end at 99 and the default Color is blue.

Name: `fillBox`
Input: `int x, int y, int width, int height`
Output: nothing
Action: draws a filled in box so that location (x, y) is in the upper left hand corner. The width and height of the box are passed into the method. Keep in mind that the indexes start at 0 and end at 99 and the default Color is blue.

Name: `drawRightDiagonal`
Input: `int x, int y, int dis`
Output: nothing
Action: draws a line down and to the right from (x, y). The number of lights turned on should be equal to dis. Keep in mind that the indexes start at 0 and end at 99 and the default Color is blue.

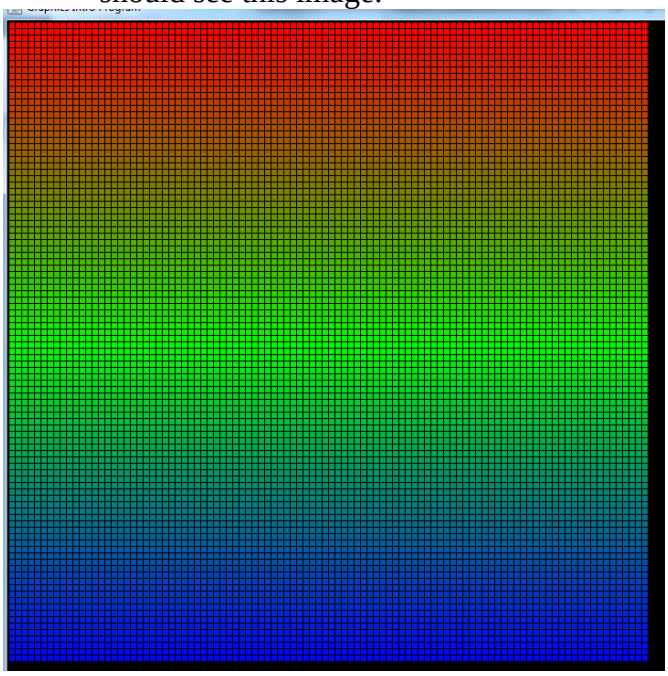
Name: `drawLeftDiagonal`
Input: `int x, int y, int dis`
Output: nothing
Action: draws a line down and to the left from (x, y). The number of lights turned on should be equal to dis. Keep in mind that the indexes start at 0 and end at 99 and the default Color is blue.

Name: `drawInitials`
Input: nothing
Output: nothing
Action: draws your initials to the screen using the draw line methods. They should be at least two colors.

Name: `drawLandScape`
Input: nothing
Output: nothing
Action: draw a picture using your other methods

Level 3

Name: `drawRainbowLines`
Input: nothing
Output: nothing
Action: turns all the lights on and sets rows so that they are filled with a rainbow color pattern. It should transition from red to green and then to blue. When the test button is pressed, you should see this image:



Name: `lighten`
Input: nothing
Output: nothing
Action: it should change all the color values of each light so that they are 5 points higher. So if a light has a Color value of (100, 150, 200) then the new values should be (105, 155, 205). If it goes above the max value then set it back to the max value.

Name: `darken`
Input: nothing
Output: nothing
Action: it should change all the color values of each light so that they are 5 points lower. So if a light has a Color value of (100, 150, 200) then the new values should be (95, 145, 195). If it goes below the min value then set it back to the min value.

Name: `negative`
Input: nothing
Output: nothing
Action: it should change all the color values of each light so that they are the opposite. So if a light has a Color value of (0, 0, 255) then the new values should be (255, 255, 0).

Level 4

Name: `shiftRight`
Input: nothing
Output: nothing
Action: it should shift all of the lights to the right by one. Those lights on the far right edge should be moved to the far left edge.

Name: `shiftLeft`
Input: nothing
Output: nothing
Action: it should shift all of the lights to the left by one. Those lights on the far left edge should be moved to the far right edge.

Name: `shiftUp`
Input: nothing
Output: nothing
Action: it should shift all of the lights up by one. Those lights at the top edge should be moved to the bottom edge.

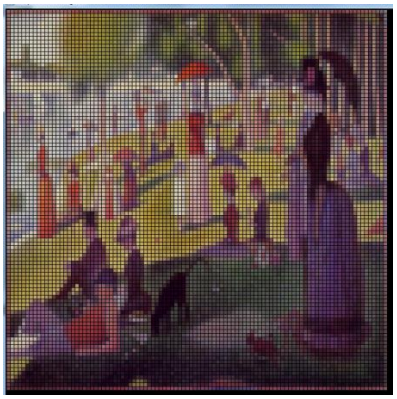
Name: `shiftDown`
Input: nothing
Output: nothing
Action: it should shift all of the lights down by one. Those lights at the bottom edge should be moved to the top edge.

Level 5

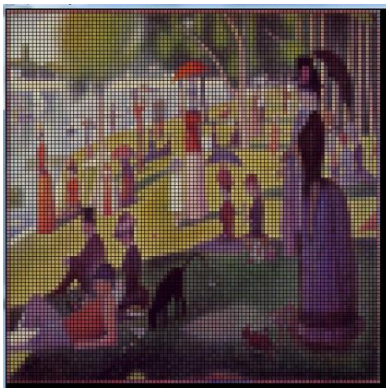
Name: `flipHorizontally`
Input: nothing
Output: nothing
Action: it should take the image and flip in horizontally like so:

 becomes 

Name: `flipVertically`
Input: nothing
Output: nothing
Action: it should take the image and flip in vertically like so:

 becomes 

Name: `rotate`
Input: nothing
Output: nothing
Action: it should take the image and rotate it 90 degrees like so:

 becomes 

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Level 6

Name: `fillOval`
Input: `int x, int y, int width, int height`
Output: nothing
Action: draws an oval so that location (x, y) is in the upper right hand corner. The width and height of the box are passed into the method. Keep in mind that the indexes start at 0 and end at 99 and the default Color is blue.

Name: `areaFill`
Input: `Color theColor, int x, int y`
Output: nothing
Action: changes the color of the pixel at the given location and all adjoining pixels that had the same color as the original pixel chosen. ***Hint – create a helper recursive method!***