

Class Exercise

Starting with this code and the image rock0.jpg:

```
import javax.swing.JFrame;
import java.awt.Graphics;
import java.awt.Color;
import java.awt.image.BufferedImage;
import java.io.File;
import javax.imageio.ImageIO;
import java.util.Scanner;
import java.io.IOException;

public class ShowImage extends JFrame
{
    private static BufferedImage image = null;
    public void paint(Graphics g)
    {
        super.paint(g);
        // Draw the image we loaded on the screen
        g.drawImage(image, 5, 30, null);
    }

    public ShowImage()
    {
        setSize(810, 645);
        setDefaultCloseOperation(EXIT_ON_CLOSE);
        setVisible(true);
    }

    public static void main(String[] args)
    {
        ShowImage window = new ShowImage();
        try
        {
            File input = new File("rock0.jpg");
            image = ImageIO.read(input);
        }
        catch (IOException e)
        {
            System.out.println(e);
        }

        window.repaint(); // Forces paint to be called again
    }
}
```

1. Get the color of pixel 14,124 (it is black). When the user enters "1" go through all pixels in the image and change the color of any pixel with a distance less than 20 from the pixel at (14,124). When the user enters "q" then quit.
2. Modify the program so pressing "2" reverts the image to its original colors (i.e. turns off red pixels).
3. Repeat steps 1/2 for the whitish pixel at 100,76, turning the pixels green using "3" and "4"