USEME for the *IMAGEINE* image-processing program
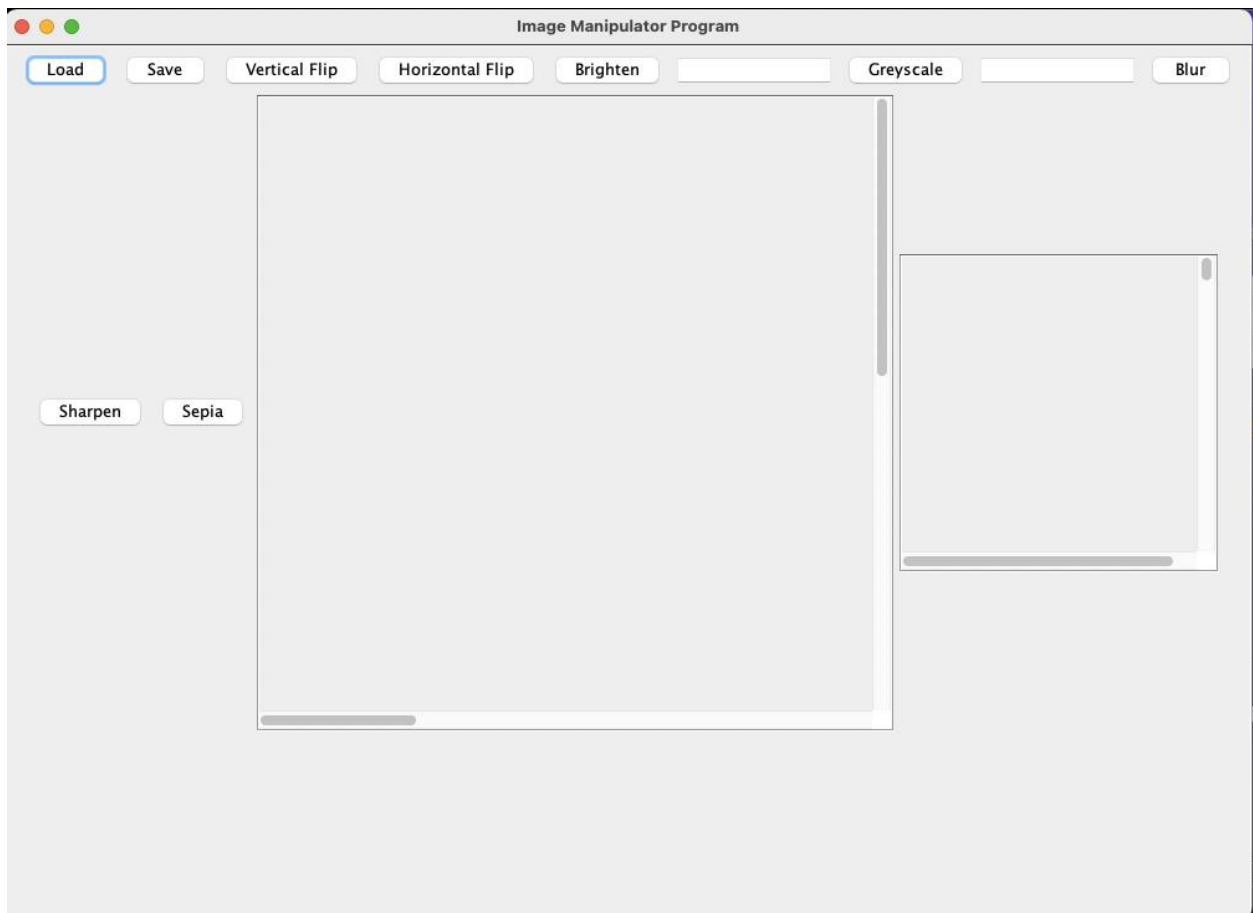
Table of Contents

Starting the program

1. Using terminal/command prompt, navigate to the project's res folder.

   a.

2. Run the program's jar file using the following command:

   a.

3. The GUI should now pop up, and the program is ready for use!
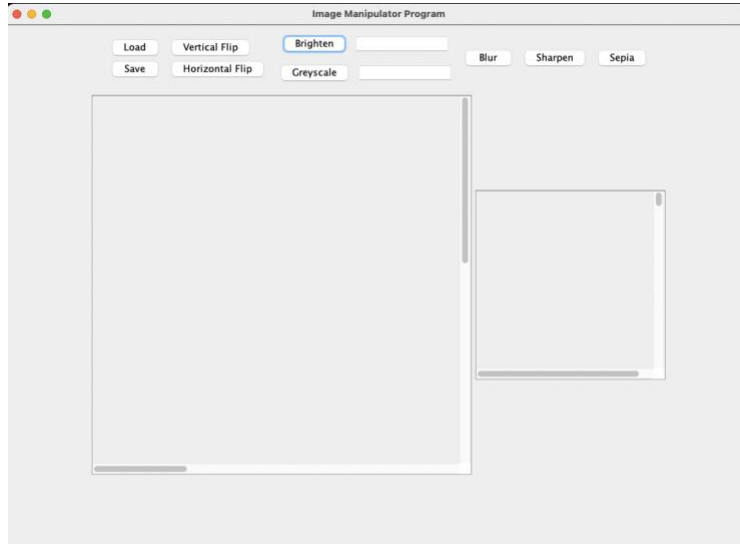
   a.

**Operations supported by the program**
- Notes:
  - Before any commands aside load, an image-file must be loaded first.
  - You can apply multiple operations onto the current image (I.e., you don't need to re-load an image for each operation if working on the same image).
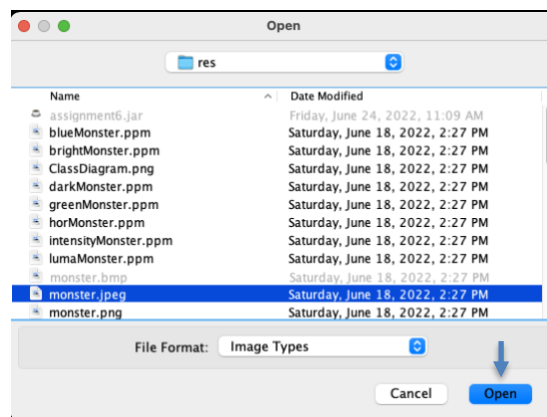
1. Loading an Image
   a. To load a file, click the "Load" button on the top left of the program.
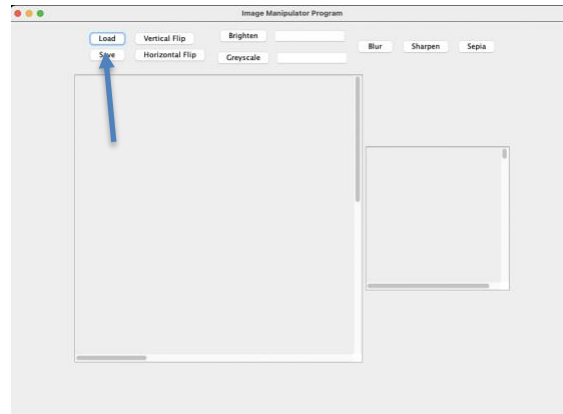
   i.
   b. Another window should pop up which will allow you to choose an image to load/supply into the program.
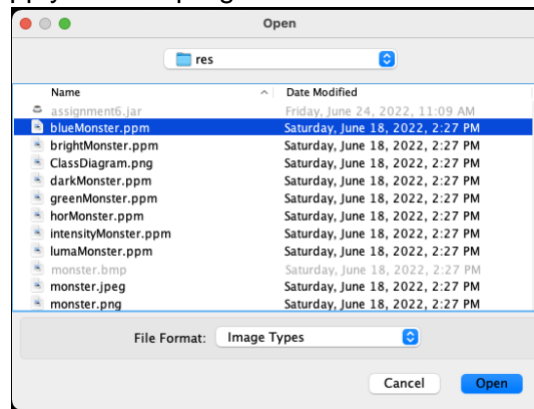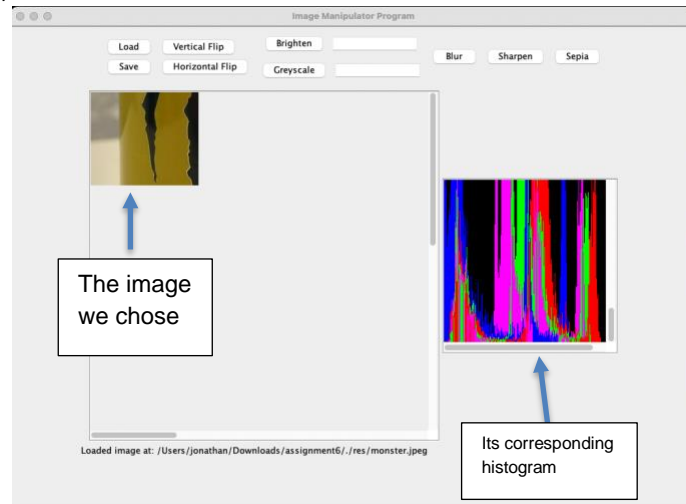

   i.
   c. Choose a file by clicking once on it. Then, click open to load the image into the program.


   i.

d. The image you chose should now be loaded along with a histogram denoting the frequency of pixel-intensities for each channel of the pixel (Red, Green, and Blue) along with their average intensity (average of all three red, green, and blue values).
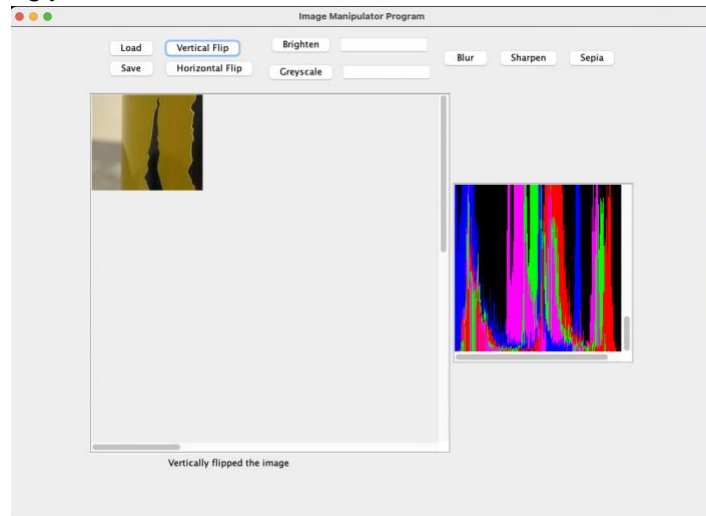

i.

2. <u>Vertically Flipping an Image</u>
    a. Once an image has been loaded, to vertically flip the image, click the "Vertical Flip" button that is located to the right of the "Load" button.
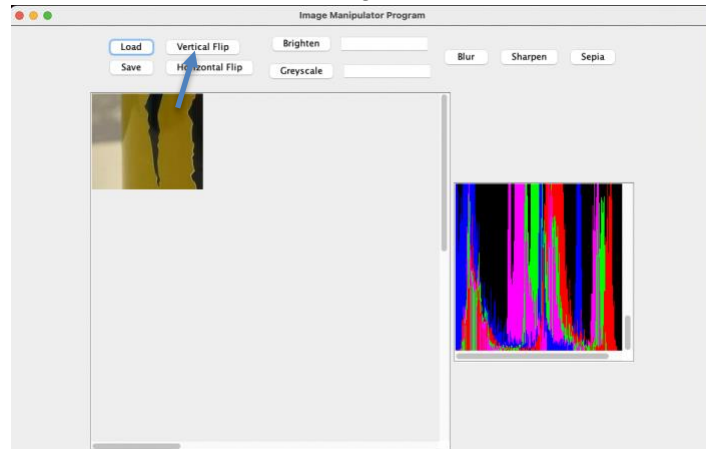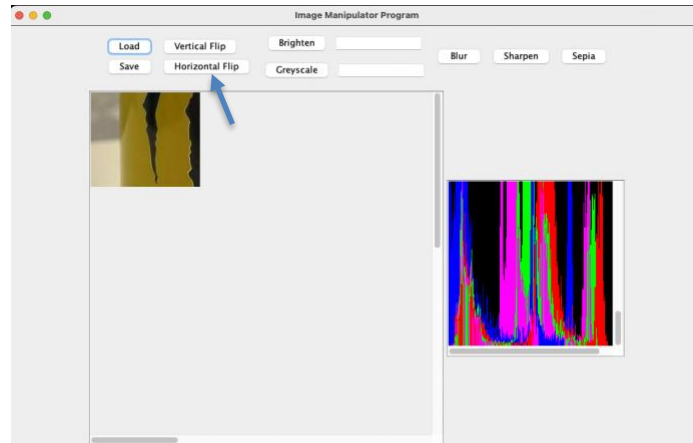
        i.

    b. Your image should now be vertically flipped, and the histogram updated accordingly!

        i.
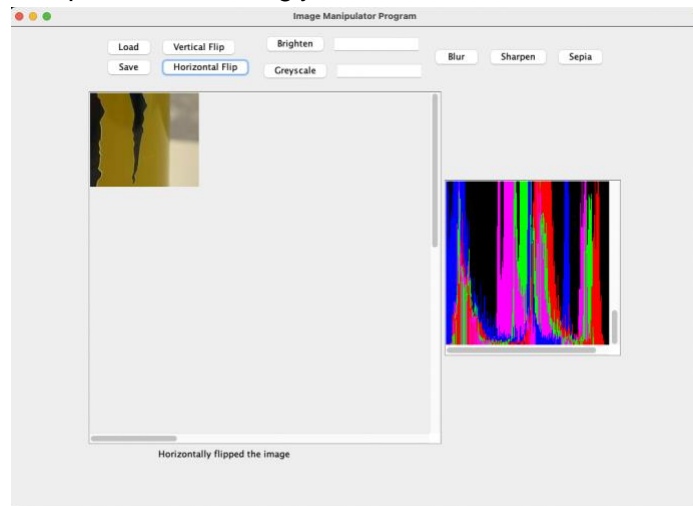

3. Horizontally Flipping an Image
    a. Once an image has been loaded, to horizontally flip the image, click the "Horizontal Flip" button that is located below the "Vertical Flip" button.

        i.
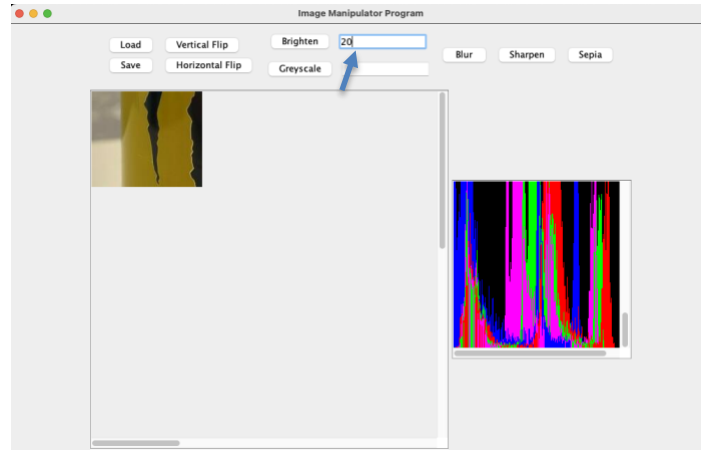   b. Once you click the button, your image should now be horizontally flipped, and the histogram updated accordingly!

   i.

4. Brighten
   a. Once an image is loaded, to brighten the image, enter the increment you wish to brighten the image by in the text box that is located to the right of the "Brighten" button. In the first example below, the increment of "20" has been chosen indicating that each pixel of the image will be increased by 20.

      i.
   b. To apply the brighten, click the "Brighten" button beside the "Vertical Flip" button.
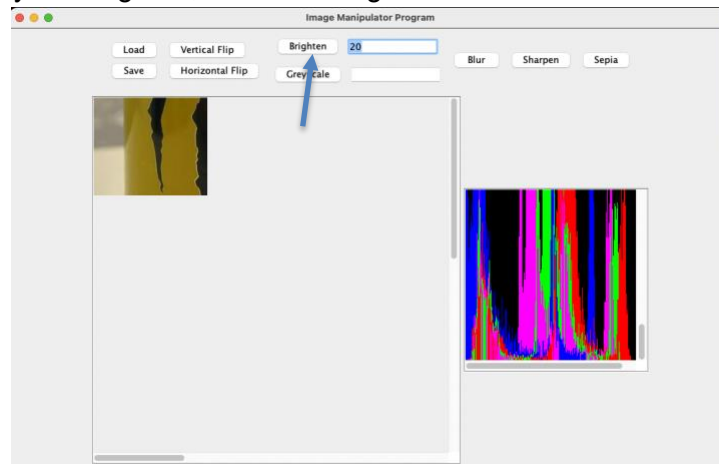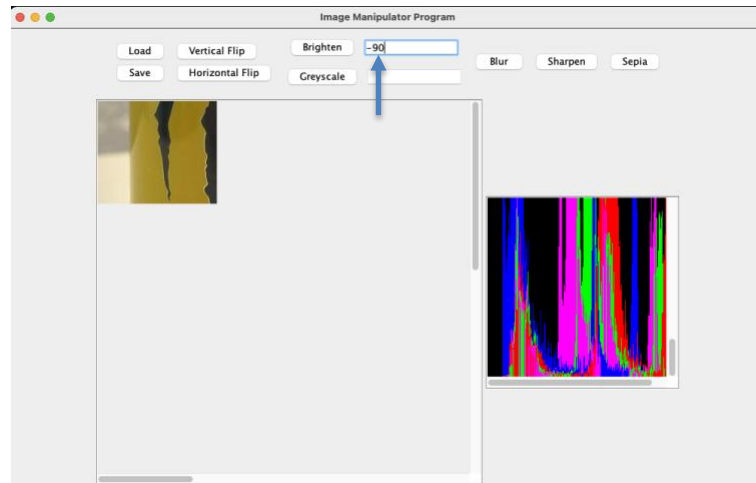

      i.
   c. Your image should now be brightened by the increment, and the histogram updated accordingly!
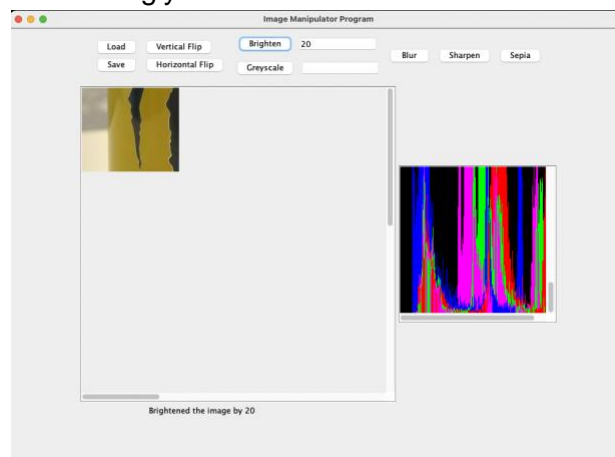
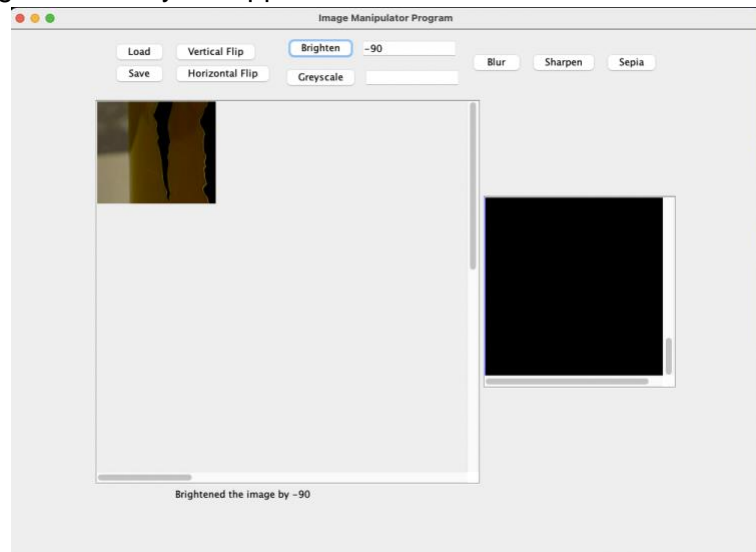   i.

d. To dim the image, supply a negative value in the text box instead. In this example, we used the value '-90'.

i.

e. Once the "Brighten" button has been pressed, your picture should be dimmed by the negative value you supplied in the textbox.


i.

5. Greyscale
    a. Once an image is loaded, to greyscale an image, enter a component in the text box that's beside the "Greyscale" button. The components currently supported are one of: "red", "green", "blue", "value", "intensity", or "luma". To further read about each component, please refer to our README.
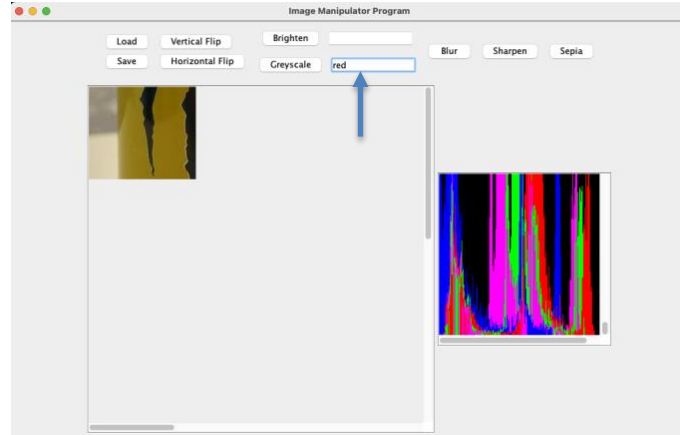
        i.
    b. To apply the greyscale, click the "Greyscale" button that is located to the right of the "Horizontal Flip" button.
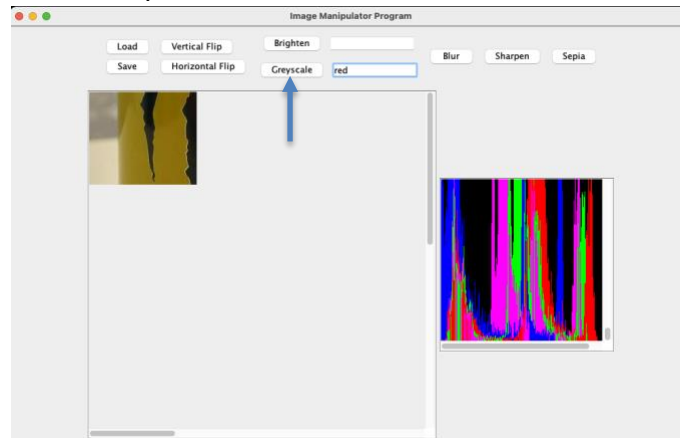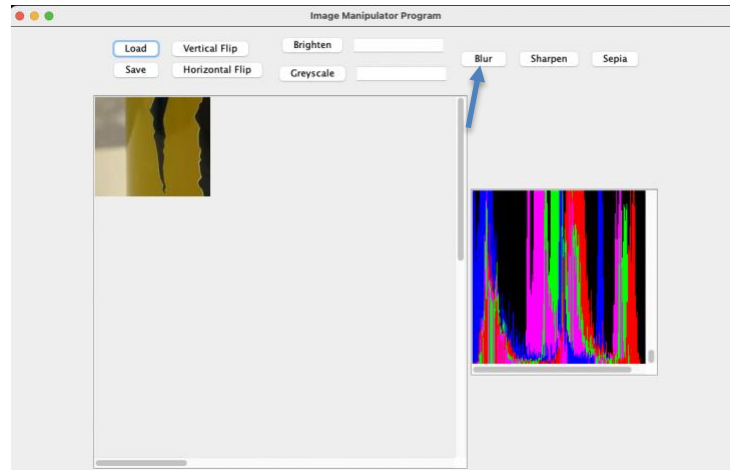

        i.
    c. After the button has been clicked, the image is now greyscaled by the component, and the histogram updated accordingly.
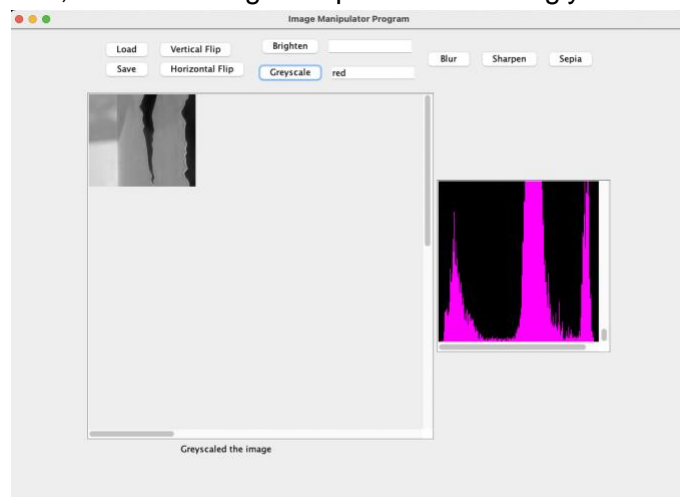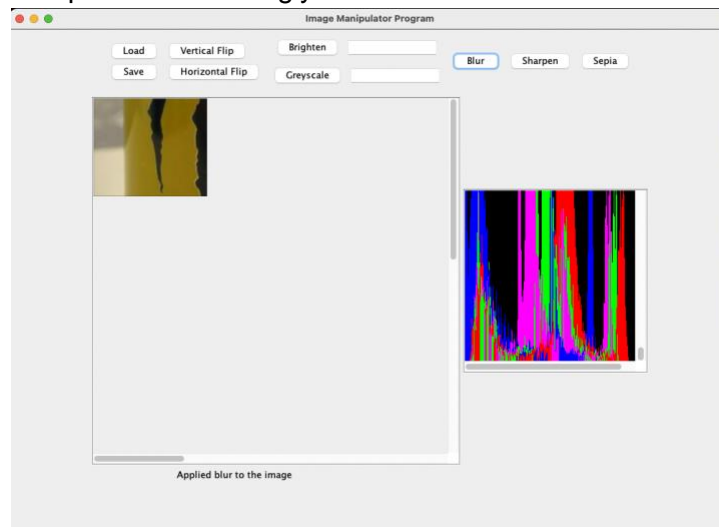

        i.

6. Blur
   a. Once an image has been loaded to the program, to blur the image, click the "Blur" button located on the left of the "Sharpen" button.
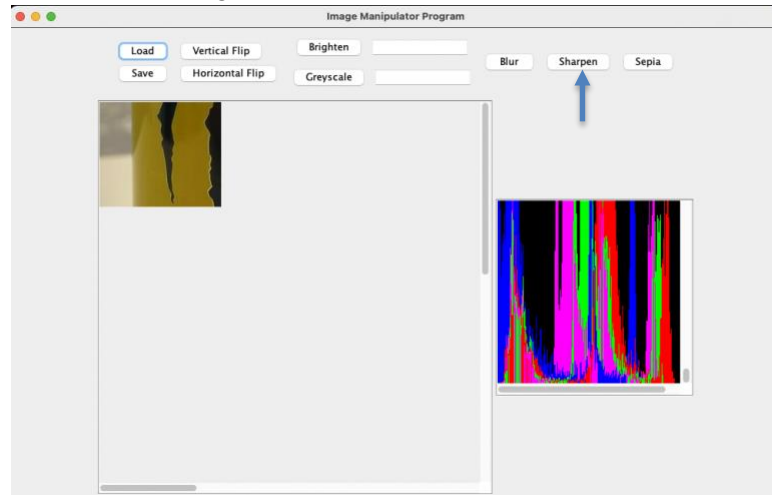

   i.

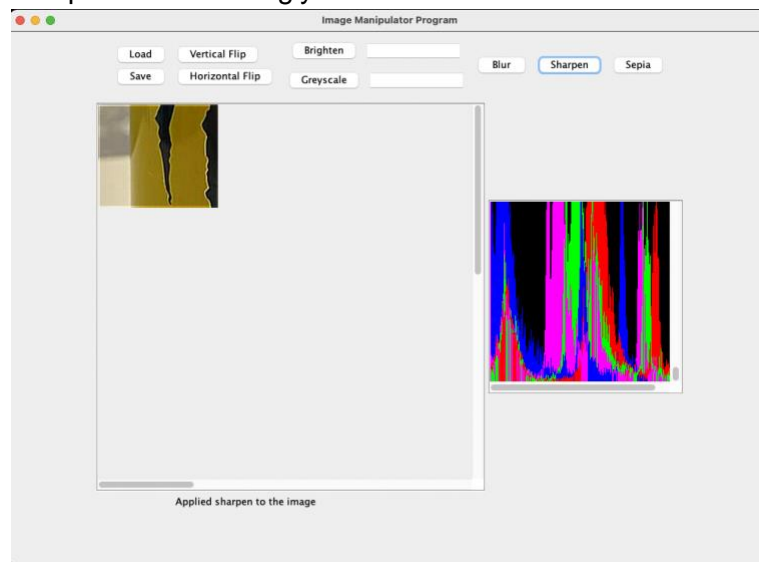   b. After the button has been clicked, the image should be blurred, and the histogram updated accordingly!

   i.

7. Sharpen
   a. Once an image has been loaded, to sharpen the image, click the "Sharpen" button located on the right of the "Blur" button.
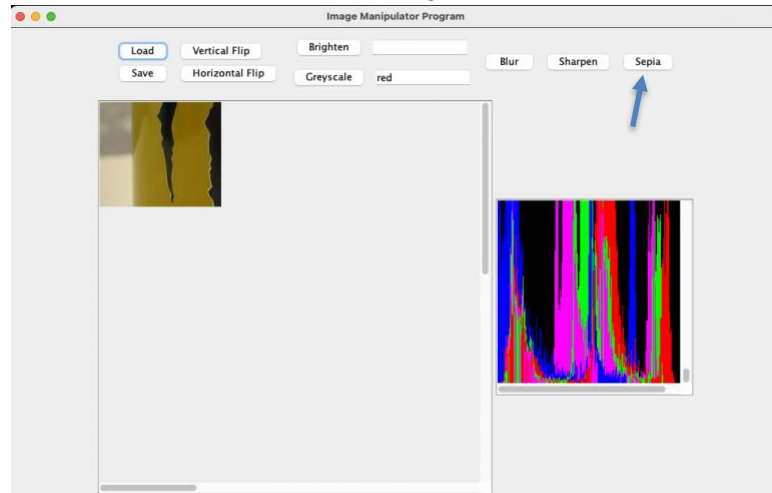

   i.
   b. After you have clicked the button, the image should now be sharpened, and the histogram updated accordingly!

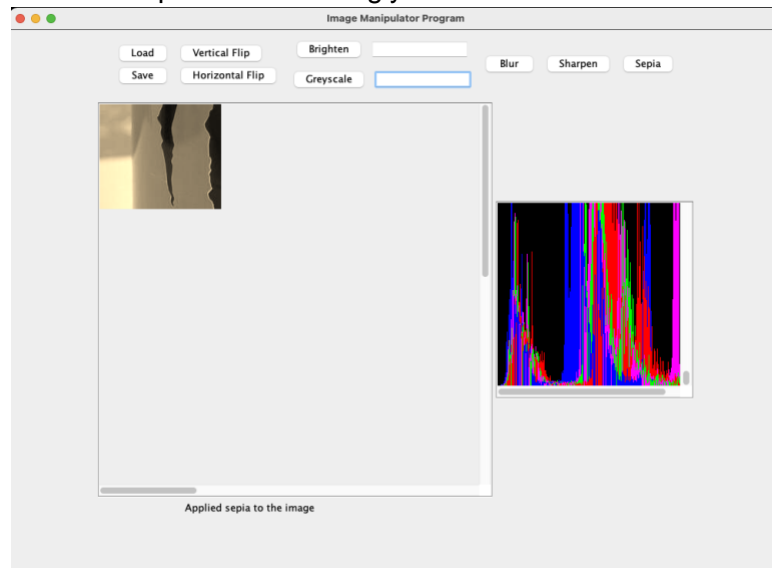

   i.

8. Sepia
    a. After an image has been loaded onto the program, to apply sepia onto the image, click the "Sepia" button located to the right of the "Sharpen" button.
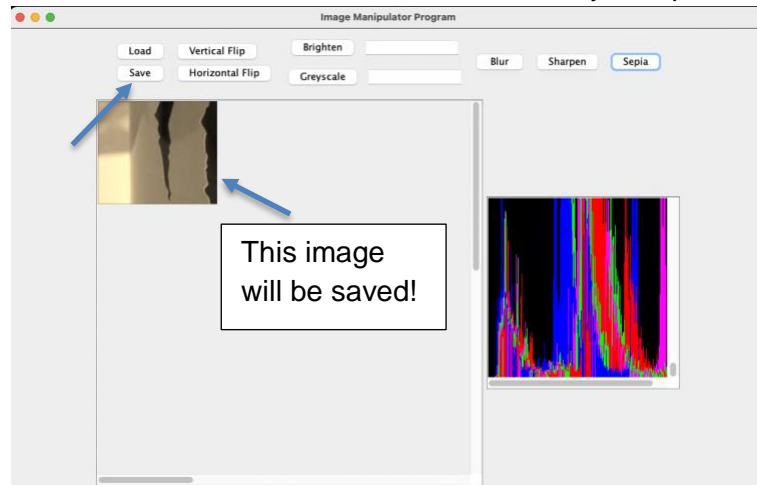
        i.

    b. Once the button has been clicked, the image will have sepia applied on it and the histogram will be updated accordingly!
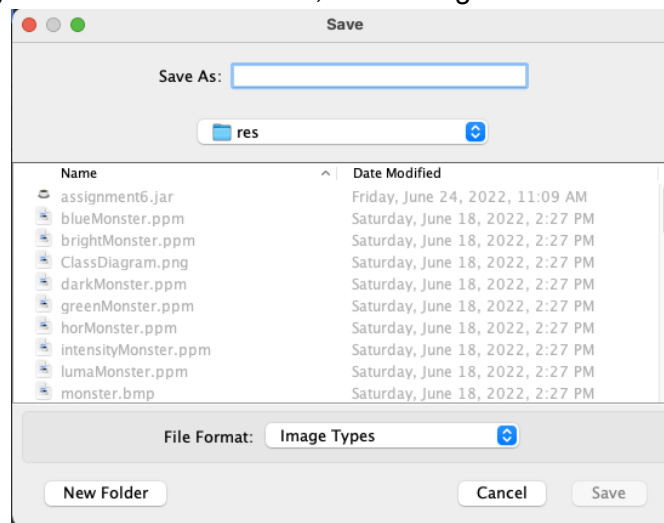
        i.

9. Save
   a. To save an image, click the "Save" button that is located below the "Load" button. This operation will save whatever image you're currently working on (if you have operated on it, then it will save the latest iteration of your operations).


      i.
   b. Once you've clicked the button, a file navigator window will pop up.
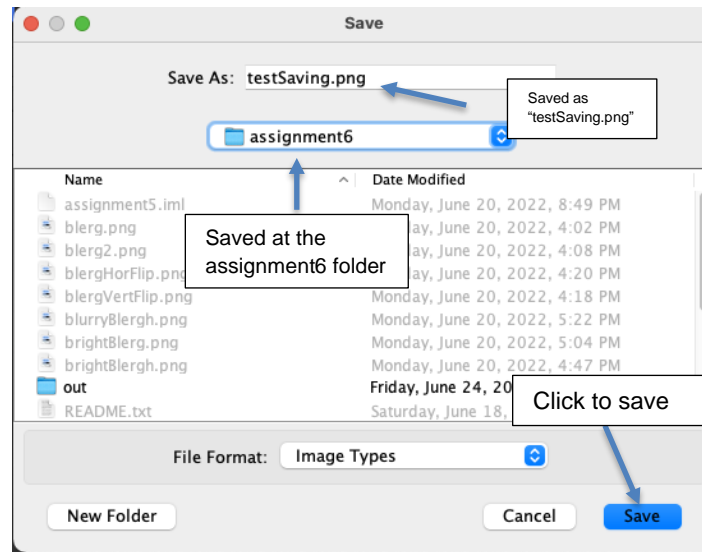

      i.
   c. Enter the name for the file along with the image-type it will be saved as (e.g. .jpeg, .png, . ppm, etc.) in the text box to the right of "Save As: ". Don't forget to include a '.' before the file-type!
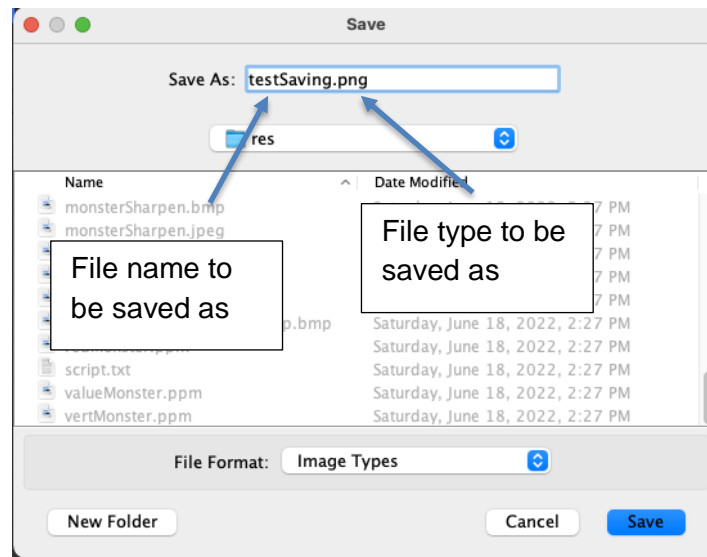
i.

d. You can also choose the directory to which you want the image to be saved at by clicking on the drop down menu below the "Save As: " text box.
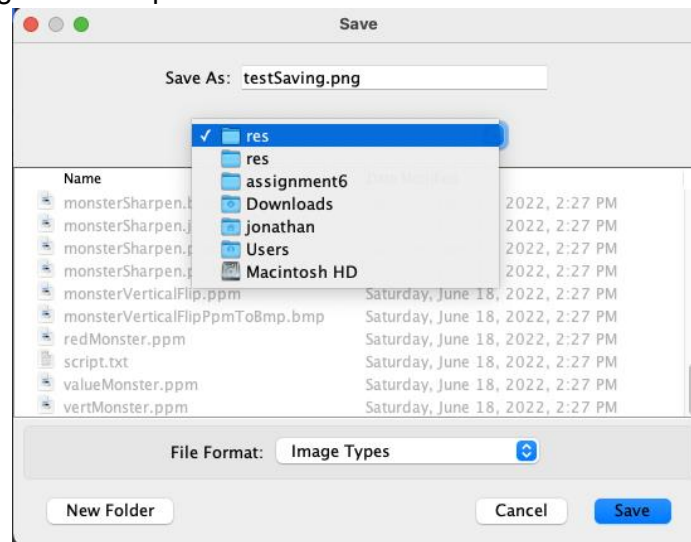
i.

e. Choose a directory, and then click on the "Save" button on the bottom right of the window to save the file into that location. In the example below, the file will be saved as "testSaving.png" in the "assignment6" folder.

i.

f. The image should now be saved!