Image Filter Program Documentation

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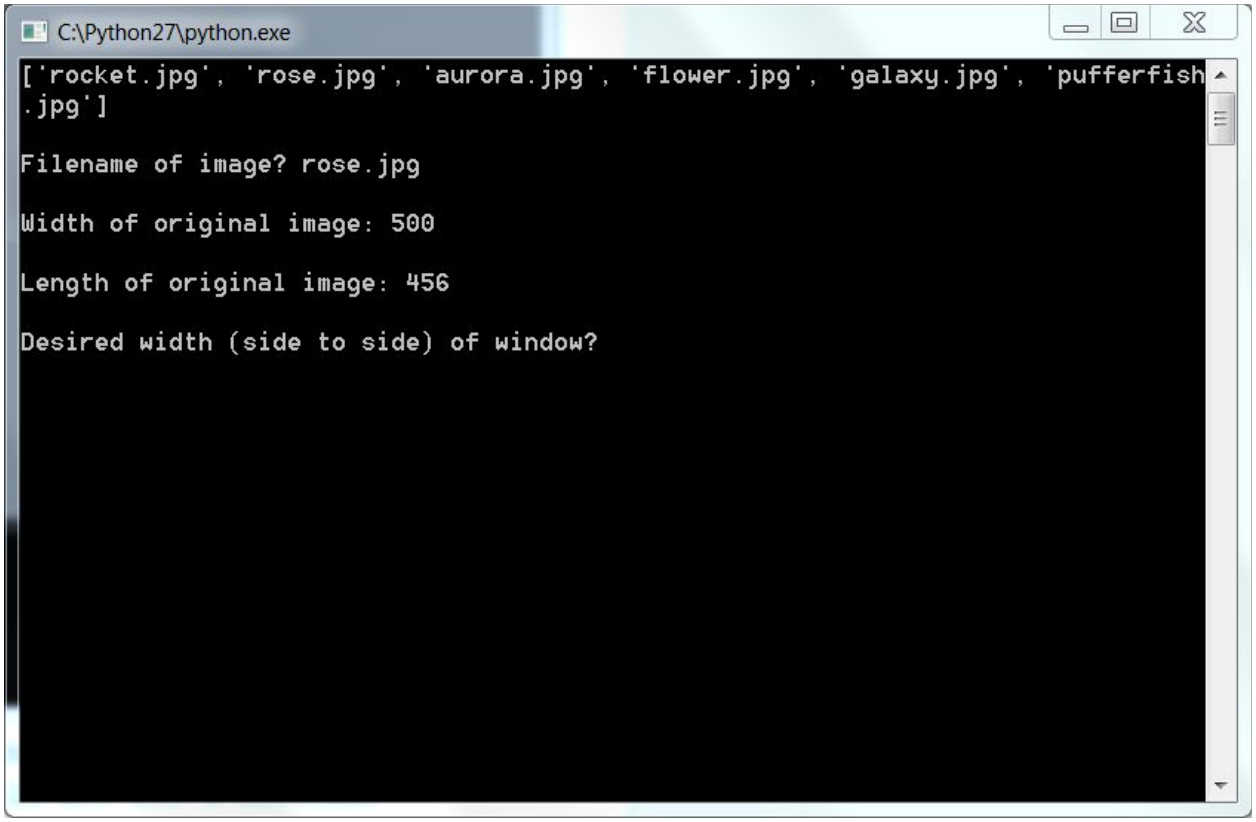
Before starting the Image Filtering Program, please make sure of a few things:

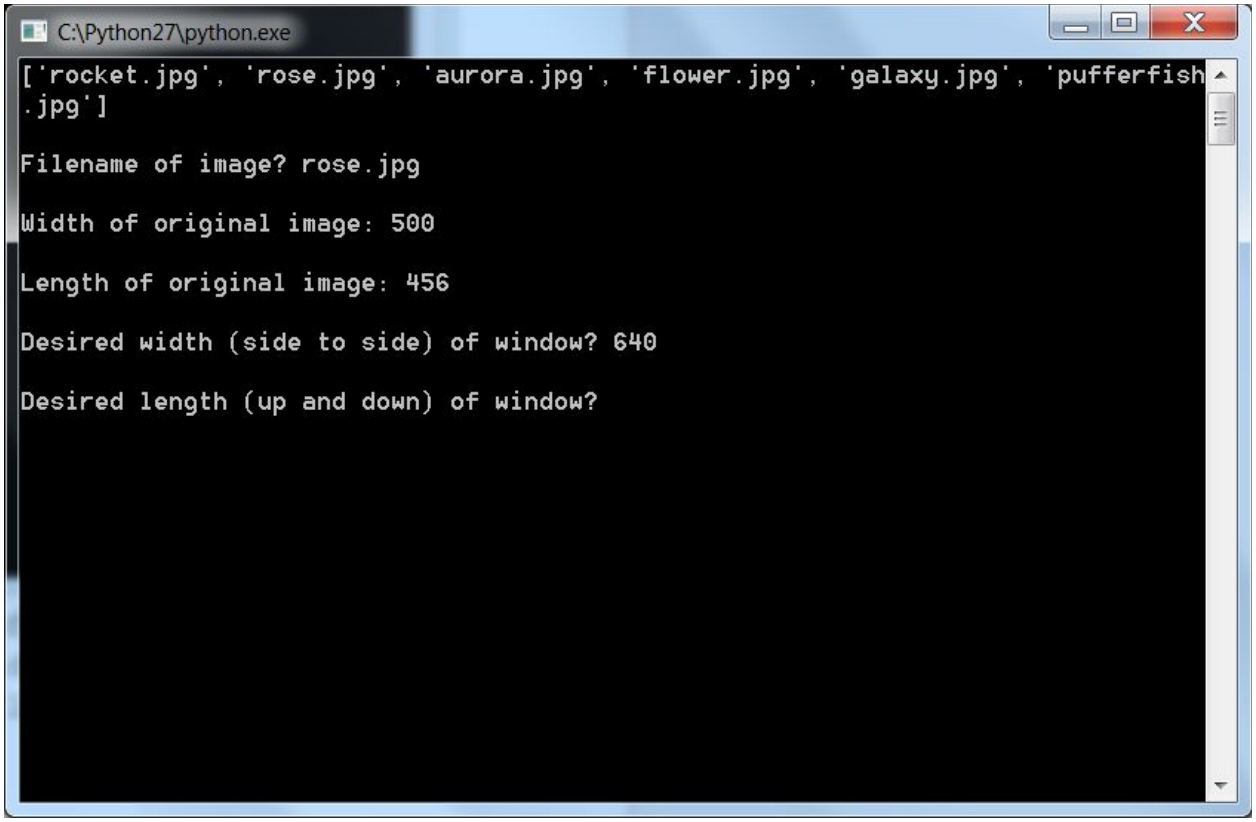
- Your images are in the same directory as the program.
- OpenCV is installed. (https://opencv.org/)
- Numpy is installed. (http://www.numpy.org/)
- Python 2.7.13 is installed.
- You are on a Windows PC.

Run the program and follow these steps to filter an image.

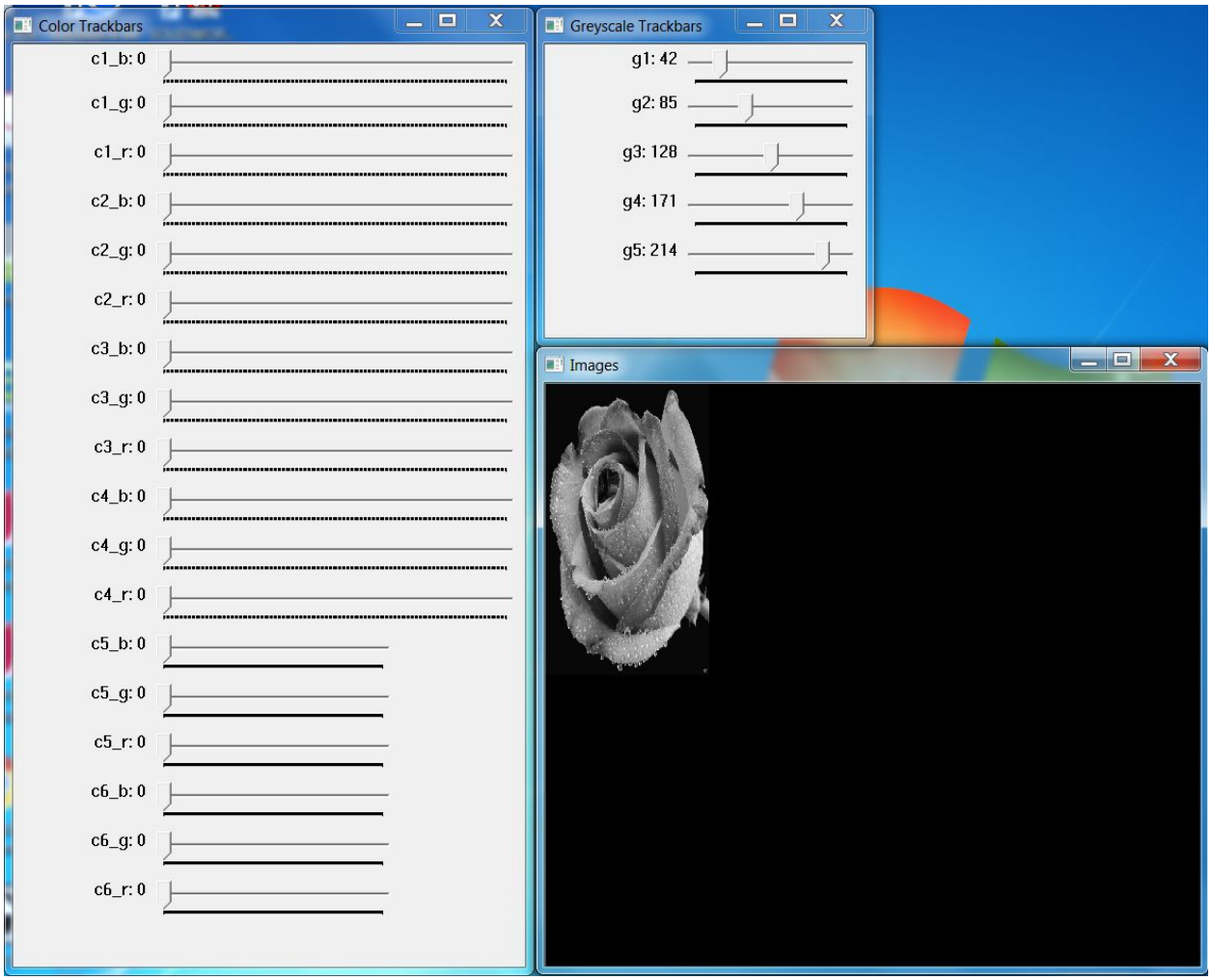
You will come to a console screen like this. A list of available .jpg and .png files will be shown. It will ask for a filename from the list. Type in the desired image, with the file extension and no quotes.



In the background you may see some windows open with grey in them. Ignore them for now and go back to the console. It will then show the width and length of the image file you selected. It will ask for the desired width for the window. Don't worry, you can resize it manually like a normal window if you don't like the resolution. Type in the width now.

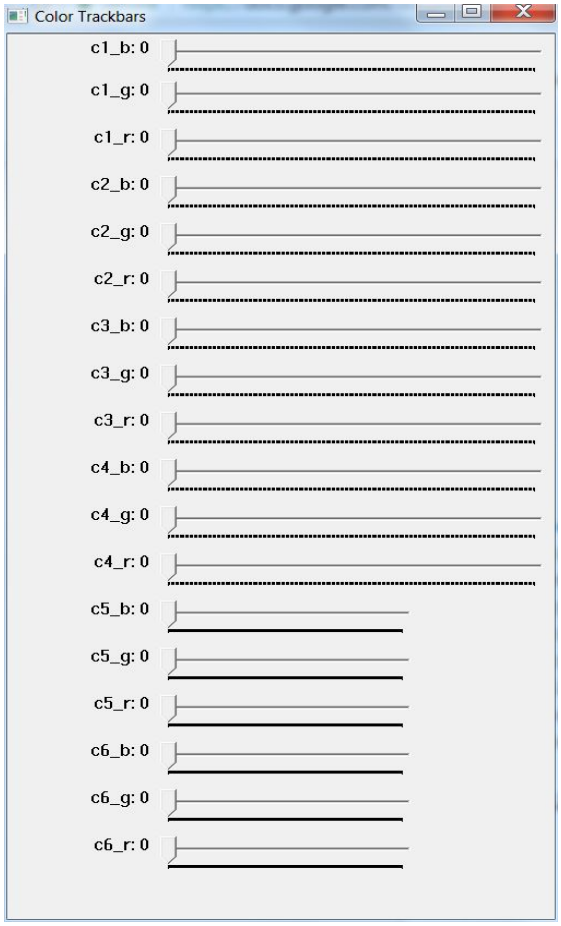


Like the previous step, it will then ask for the desired length of the window. Type it in.



Most likely behind your open windows, these three windows will be shown. **DO NOT** close the console window. It is required to be open for the program to work. On the left is the window for the color trackbars. On the top right is the window for the greyscale trackbars. On the bottom right is the window displaying your greyscale image(top left), filtered image(bottom left), and color masks. The greyscale trackbars are set to their default values.

How to operate the color trackbars



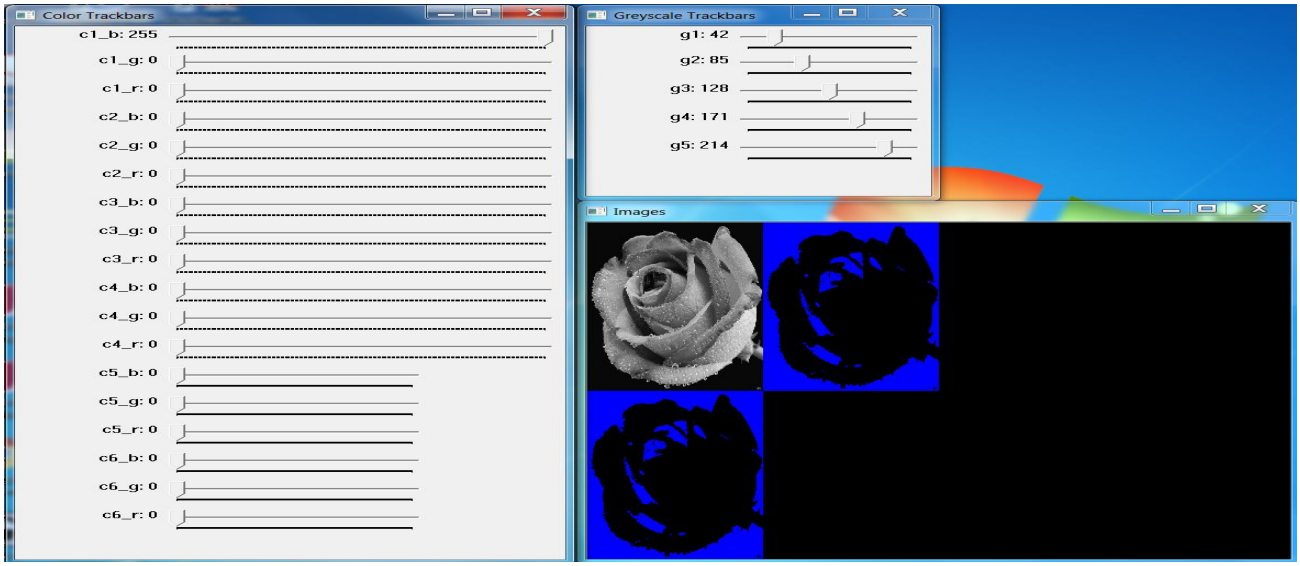
Each trackbar is labeled with a specific naming scheme:

c1_b: 0 -

- c = Stands for color
- 1 = Color mask label
- b = B,G, or R for that color
- 0 = Current value

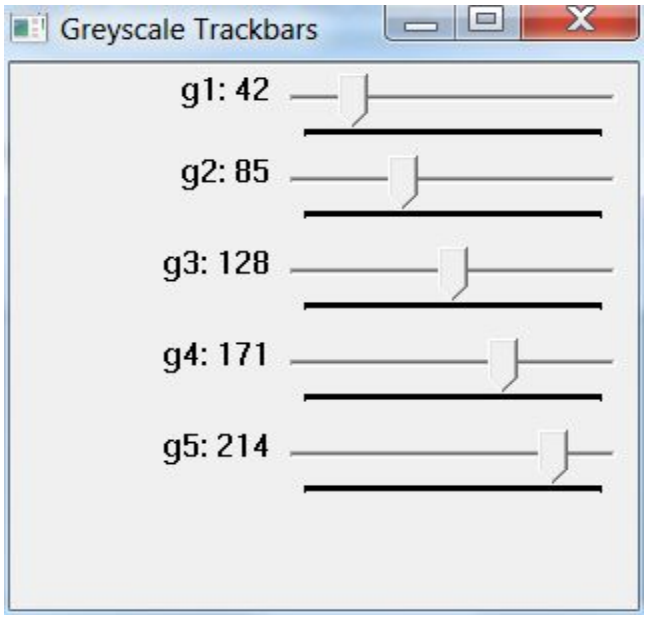
You may know of a color having RGB values. This works the same way but reversed into BGR. Moving a slider causes that specific value for that specific color to change.

For example, changing c1_b from 0 to 255 will make Color Mask 1 blue:



Use these trackbars to change your colors as desired.

How to operate the greyscale trackbars



Each trackbar is also labeled with a specific naming scheme:

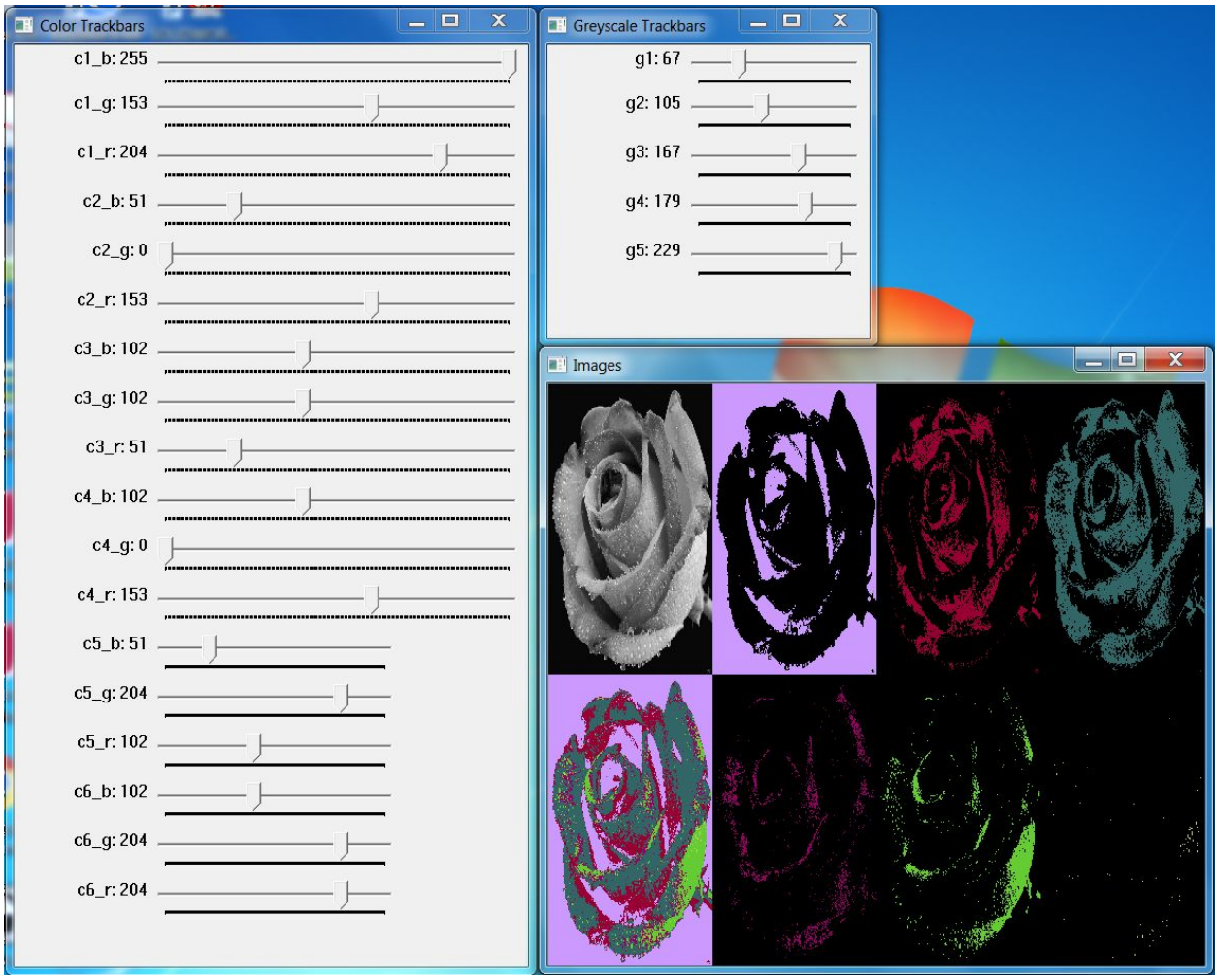
g1: 42 -
g = Stands for greyscale
1 = Threshold label
42 = Current value

Moving these sliders will change the ranges for each color mask.

For example, keeping c1_b at 255, changing g1 from 42 to 17 will cause the mask to have a smaller range for its color (blue):

Use these trackbars to change your greyscale thresholds as desired.

After changing the color and greyscale trackbars how you wish, you will end with a screen similar to this:



At this point, if you are satisfied with your filtered image, press the ‘S’ key to save both the greyscale and filtered image to the directory that the program is in. It will be labeled appropriately. If you wish to quit the program without saving, press the ‘Esc’ key to quit and not save any images.

Thank you for using my program to filter and color different images. I hope it was useful in your endeavours.