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2d: The red monochrome is a bit brighter and sharper than the green monochrome, which makes sense because it's a picture of the Grand Canyon. I would expect an algorithm to work better on the red monochrome because it is a sharper image, with more contrast overall.

4a: green channel min for image 1 is 0, max is 237

Code:

```
//to get the green channel
```

```
green_channel = img_1[:, :, 1].copy()
```

```
//to get the min and max
```

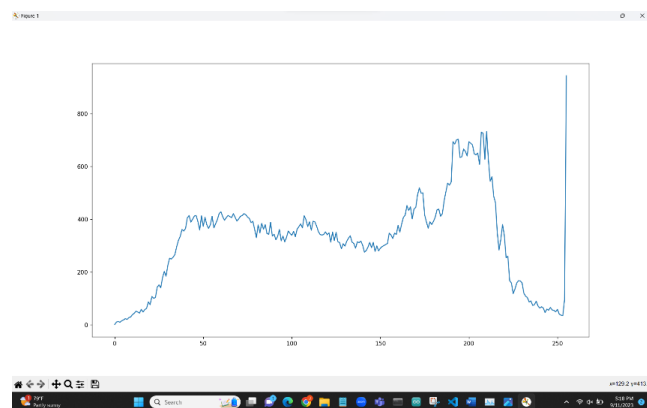
```
minVal_img1_green = np.amin(img1_green)
```

```
maxVal_img1_green = np.amax(img1_green)
```

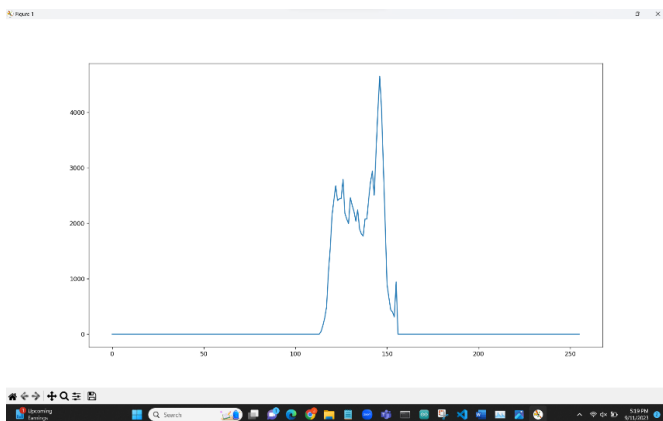
4b: an image histogram shows the concentration of pixels of a certain intensity.

4d: the histogram from part c is far more concentrated around values between 110 and 155, whereas the first histogram had a wider distribution across the possible values

(ps0-4-b-1)



(ps0-4-d-1)



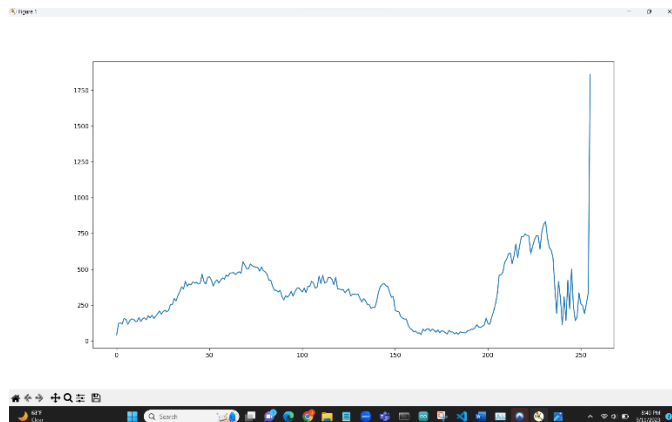
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4f: most of the time negative pixels are set to black, as they fall below the 0-255 scale\

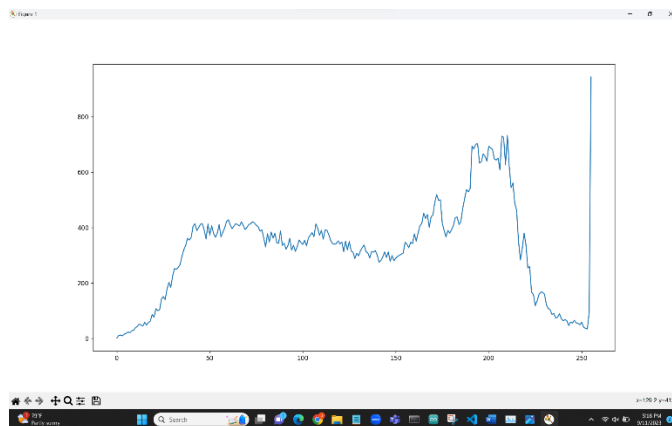
5a: I ended up using a sigma of 25. I'm not sure if that is high, but I wasn't able to notice any visible noise in the image until sigma reached that level

5b: the histogram of noisy image is far less continuous than the original image. The peaks are now much higher than the valleys (pictured: original vs noisy)

(ps0-5-b-1)



(ps0-4-b-1)



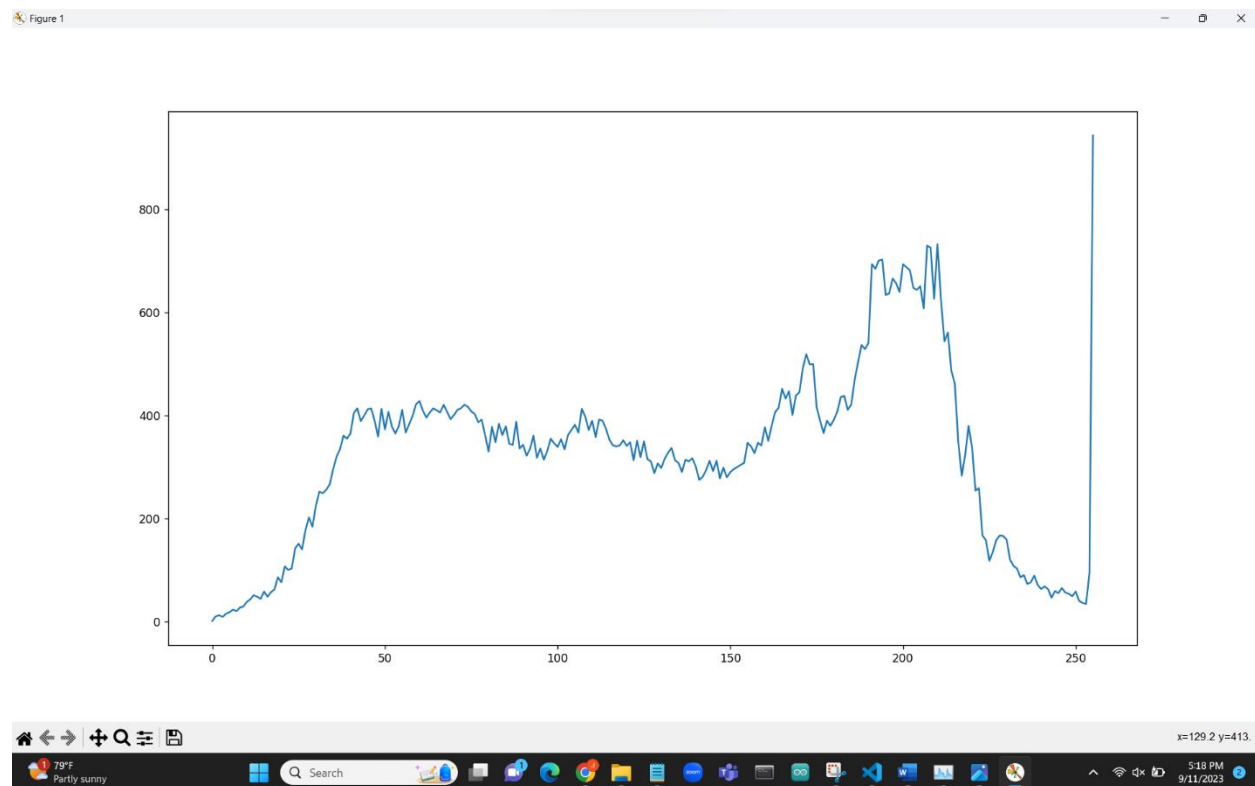
5d: The image with noise in the green channel looked much better, and far less noticeably noisy with the same sigma. I believe this is because the original image was mainly red and blue values, as it is a picture of the Grand Canyon at sunset. So adding noise to an image with little green isn't as noticeable as adding the same amount of noise to an image with a blue sky and purple tones.

5e: the output image looks a bit better but not by much, I feel like that might just be because of the smaller amount of pixels in the image. As far as the histograms go, they are wildly different, two very different shapes (pictured: old vs new histogram)

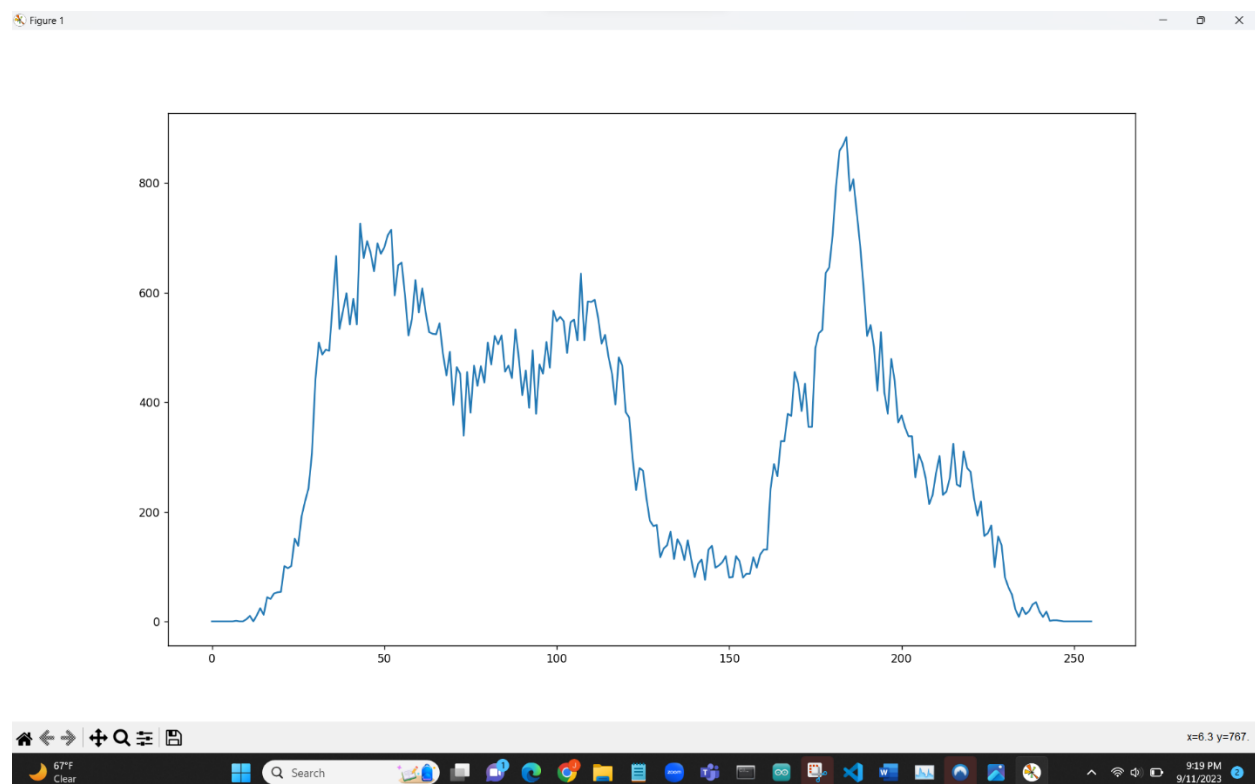
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(ps0-4-b-1)



(ps0-5-e-2)



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5f: the output image from the Gaussian filter is much blurrier, but you can actually tell that some form of correction was done in it. The histogram is also much smoother, and has a similar shape to the median filter histogram (pictured: filtered image and new histogram) Overall I would argue that the Gaussian filter is better by a wide margin.

(pso-5-f-1)



(ps0-5-f-2)

