Assignment 2 – Image Processing Report

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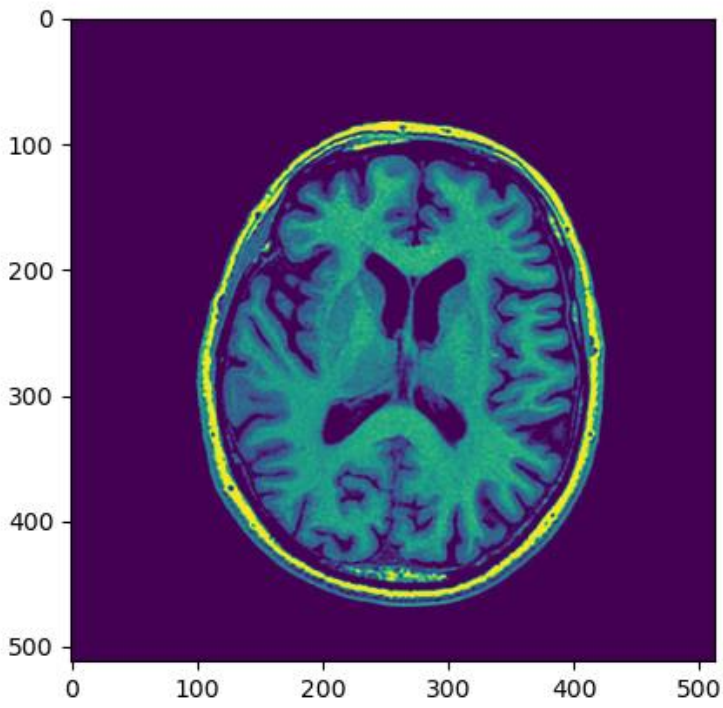
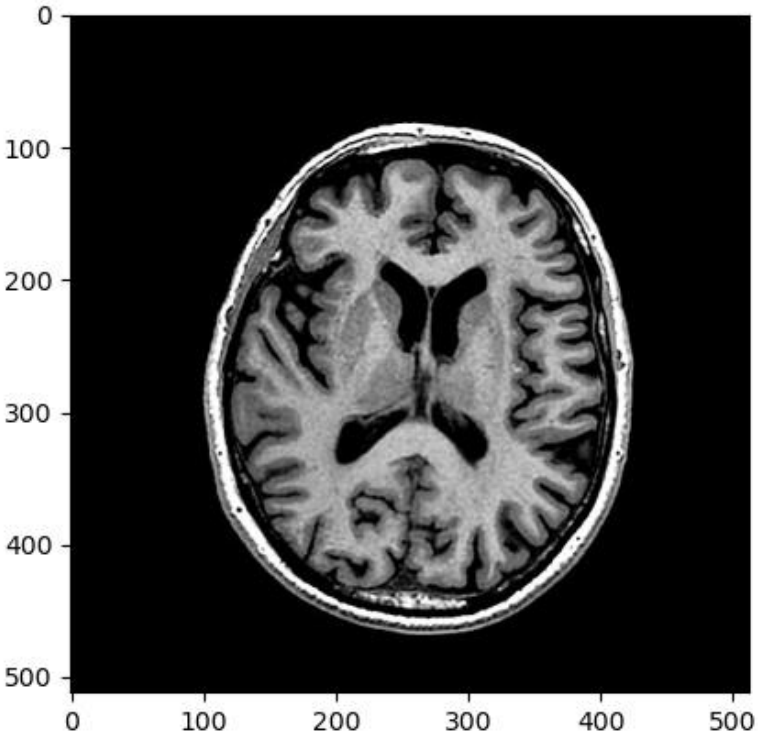
GitHub repository link: https://github.com/randomtanuser/IITGn-BIM/blob/main/Assignments/Assignment2

Code	*Outcome*
1. Reading the Image *import matplotlib.pyplot as plt* *from scipy import misc,ndimage* *brain=plt.imread("Brain.jpg")* *plt.imshow(brain)* *plt.show()*	
2. Dimensions of the image *brain.shape*	`>>> brain.shape` `(512, 512)`

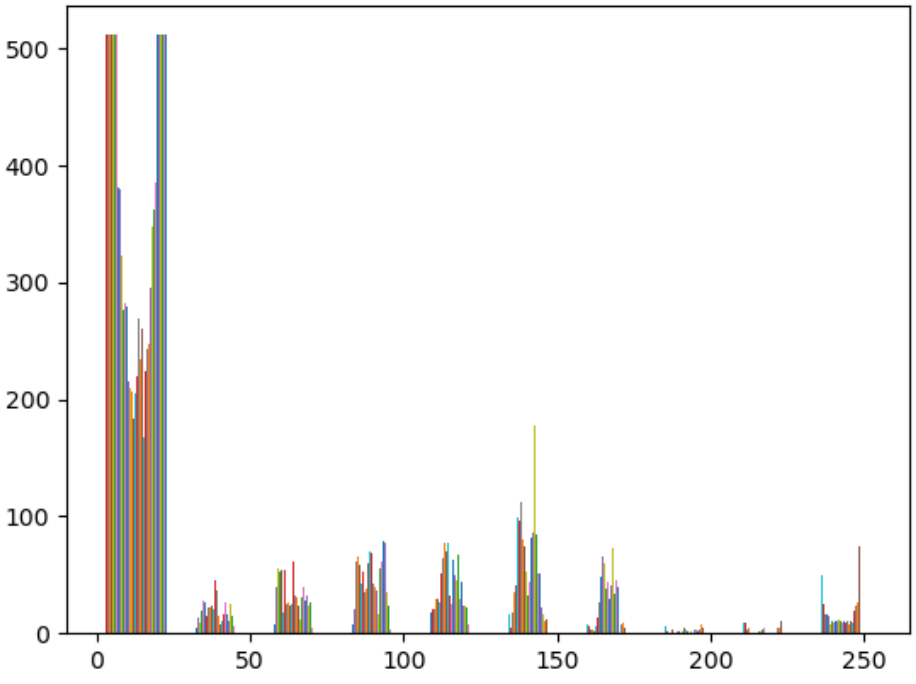
3. Grey scale image

plt.imshow(brain,cmap='Greys_r')
plt.show()



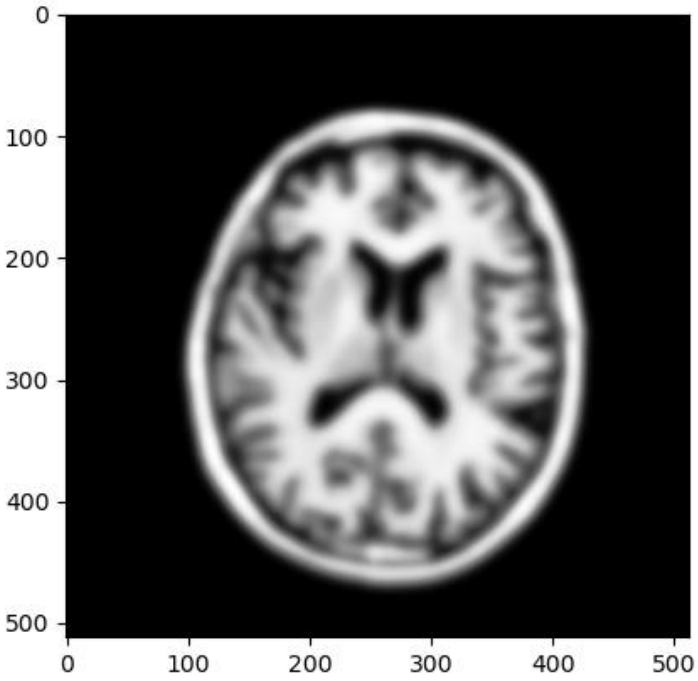
4. Histogram

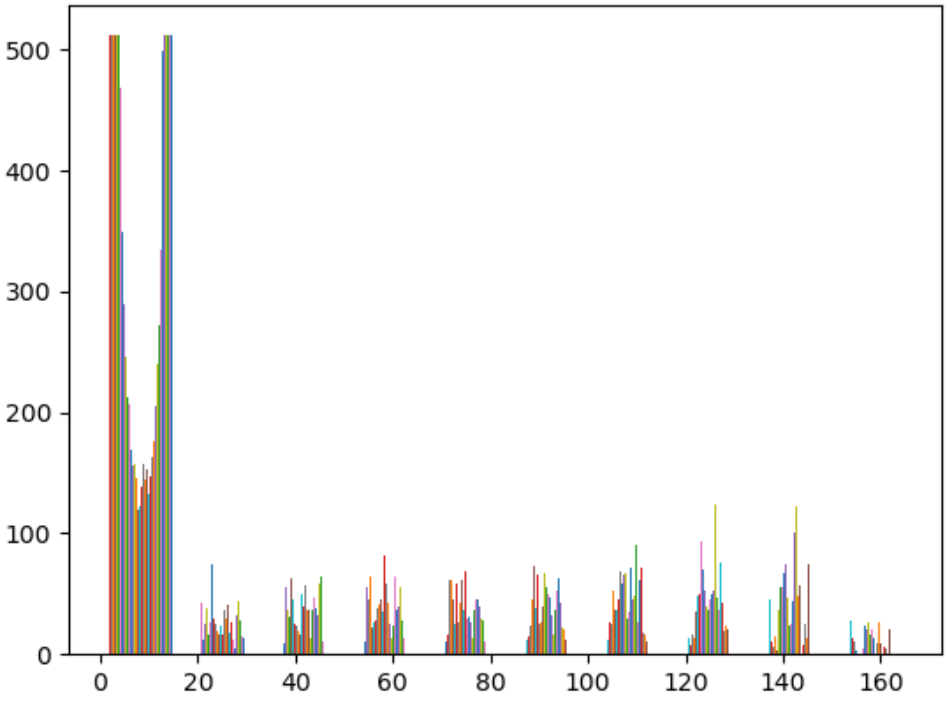
plt.hist(brain, bins=10)
plt.show()



5. Sigma 5 gaussian filter and Histogram

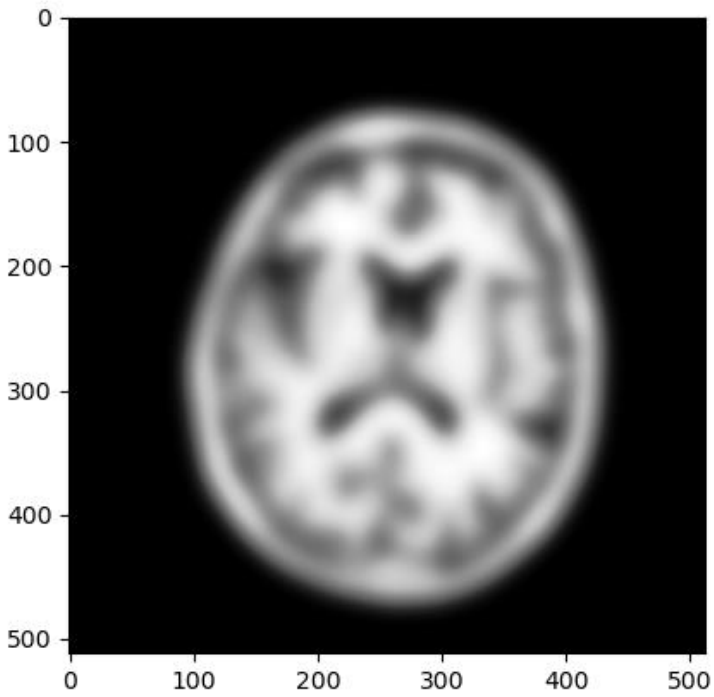
brain_sigma5=ndimage.gaussian_filter(brain, sigma=5)
plt.imshow(brain_sigma5, cmap='Greys_r')
plt.show()
plt.hist(brain_sigma5, bins=10)
plt.show()

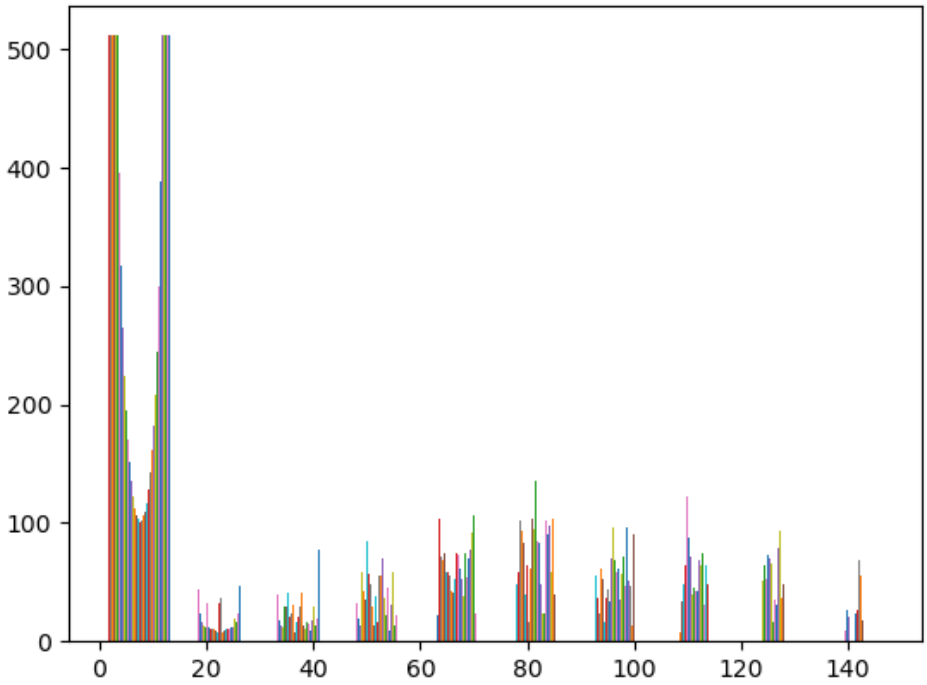




6. Sigma 10 gaussian filter and Histogram

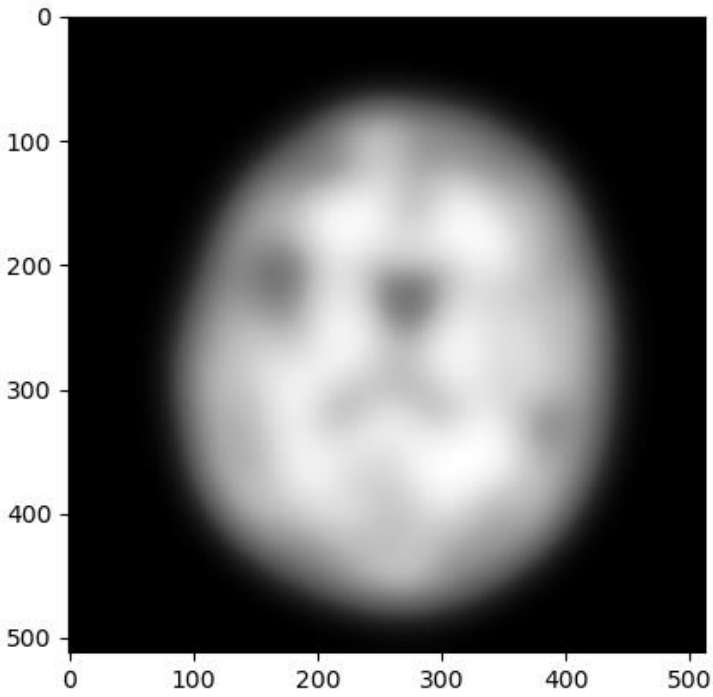
brain_sigma10=ndimage.gaussian_filter(brain, sigma=10)
plt.imshow(brain_sigma10, cmap='Greys_r')
plt.show()
plt.hist(brain_sigma10, bins=10)
plt.show()

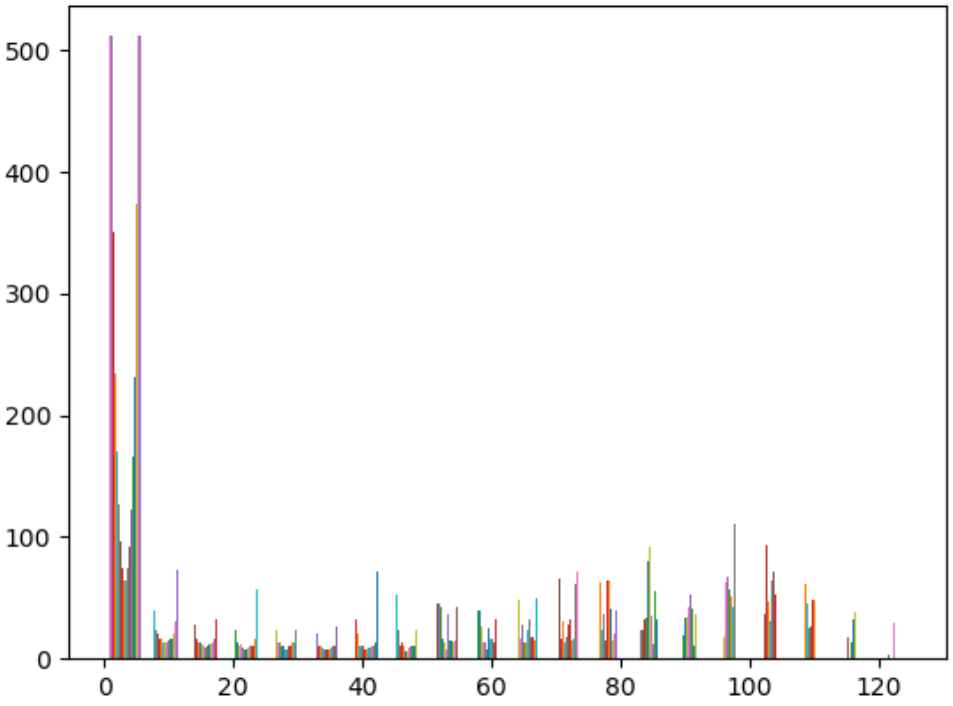




7. Sigma 20 gaussian filter and Histogram

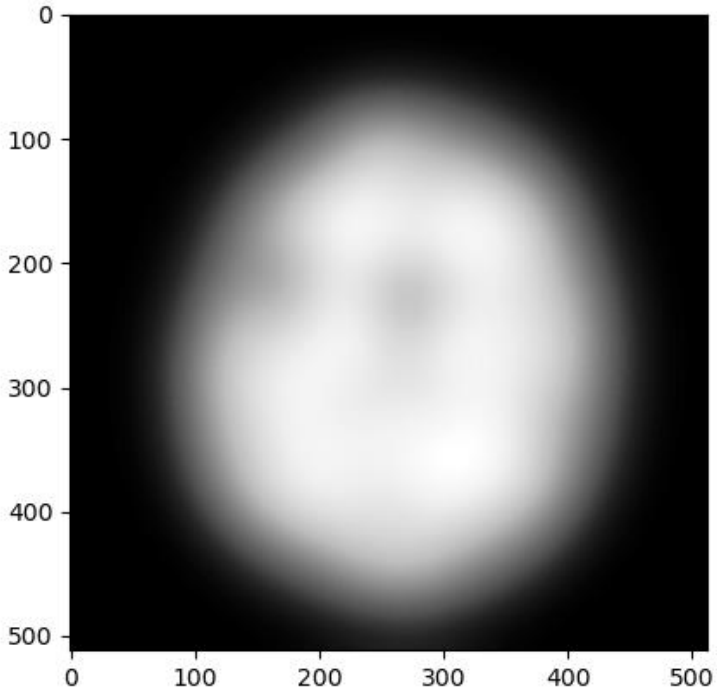
brain_sigma20=ndimage.gaussian_filter(brain, sigma=20)
plt.imshow(brain_sigma20, cmap='Greys_r')
plt.show()
plt.hist(brain_sigma20, bins=10)
plt.show()

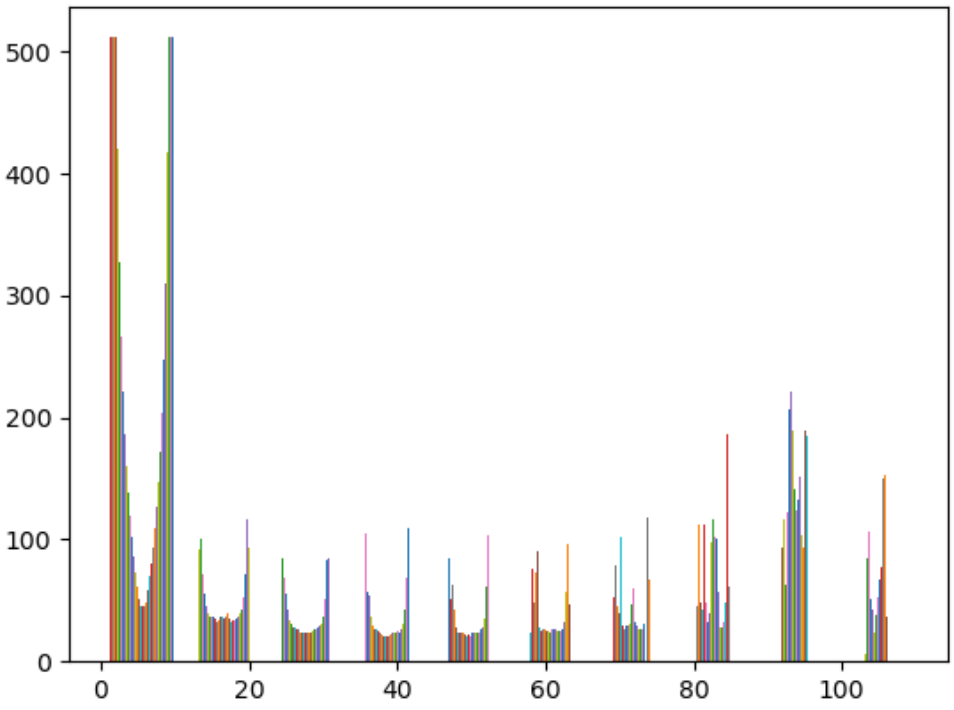




8. Sigma 30 gaussian filter and Histogram

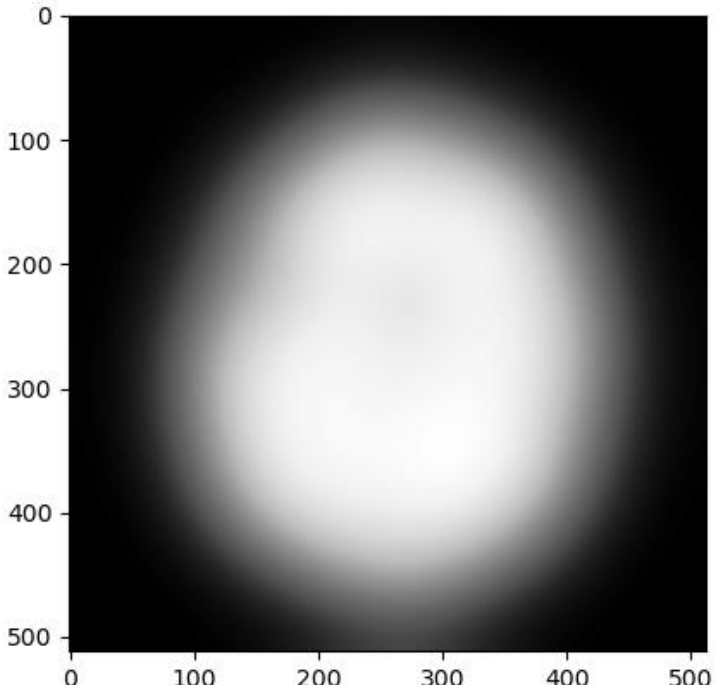
brain_sigma30=ndimage.gaussian_filter(brain, sigma=30)
plt.imshow(brain_sigma30, cmap='Greys_r')
plt.show()
plt.hist(brain_sigma30, bins=10)
plt.show()

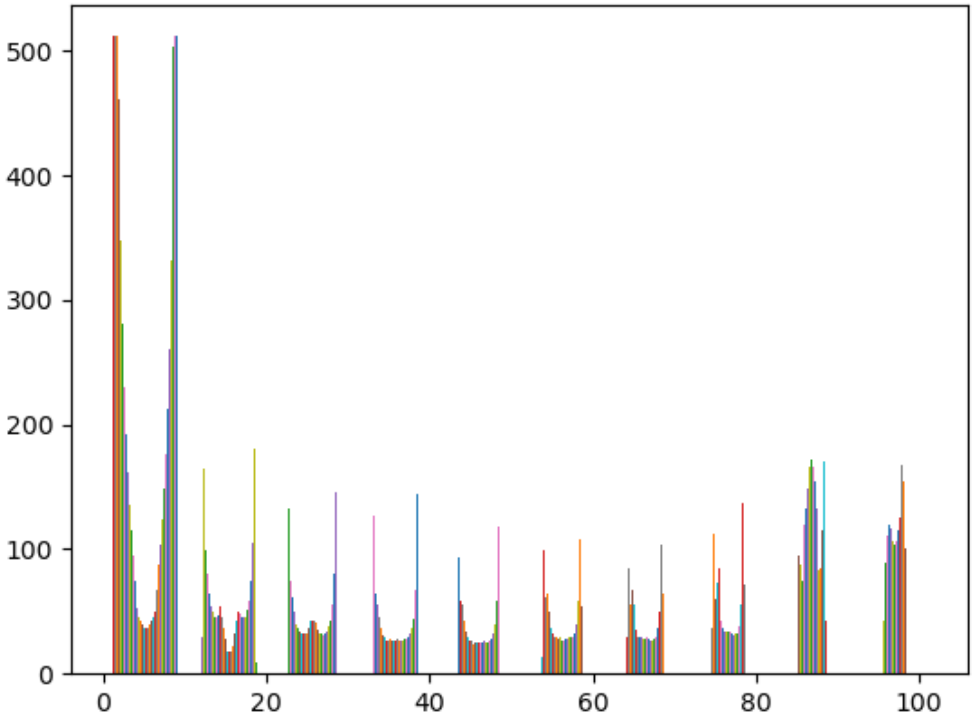




9. Sigma 40 gaussian filter and Histogram

brain_sigma40=ndimage.gaussian_filter(brain, sigma=40)
plt.imshow(brain_sigma40, cmap='Greys_r')
plt.show()
plt.hist(brain_sigma40, bins=10)
plt.show()





10. Sigma 50 gaussian filter and Histogram

brain_sigma50=ndimage.gaussian_filter(brain, sigma=50)
plt.imshow(brain_sigma50, cmap='Greys_r')
plt.show()
plt.hist(brain_sigma50, bins=10)
plt.show()