

```
In [19]: import pandas as pd  
import numpy as np  
import matplotlib.pyplot as plt
```

```
In [ ]:
```

```
In [20]: from PIL import Image
```

```
In [21]: img=Image.open(r"C:\Users\HP\Downloads\rose.jpg")  
img
```

```
Out[21]:
```



```
In [22]: type(img)
```

Out[22]: PIL.JpegImagePlugin.JpegImageFile

In [23]: `type(img)`

Out[23]: PIL.JpegImagePlugin.JpegImageFile

In [24]: `rose=np.asarray(img)`
`rose`

```

Out[24]: array([[[ 1,  4,  0],
                  [ 4,  7,  0],
                  [ 6,  9,  2],
                  ...,
                  [ 1,  1,  3],
                  [ 3,  3,  5],
                  [ 5,  5,  7]],

                [[ 2,  5,  0],
                  [ 4,  7,  0],
                  [ 6,  9,  2],
                  ...,
                  [ 1,  1,  3],
                  [ 2,  2,  4],
                  [ 4,  4,  6]],

                [[ 2,  5,  0],
                  [ 4,  7,  0],
                  [ 5,  8,  1],
                  ...,
                  [ 1,  1,  1],
                  [ 1,  1,  1],
                  [ 2,  2,  2]],

                ...,

                [[ 7, 15,  4],
                  [ 7, 15,  4],
                  [ 7, 15,  4],
                  ...,
                  [ 4,  4,  2],
                  [ 6,  6,  4],
                  [ 8,  8,  6]],

                [[ 9, 17,  6],
                  [ 9, 17,  6],
                  [ 9, 17,  6],
                  ...,
                  [ 5,  5,  3],
                  [ 4,  4,  2],
                  [ 4,  4,  2]],

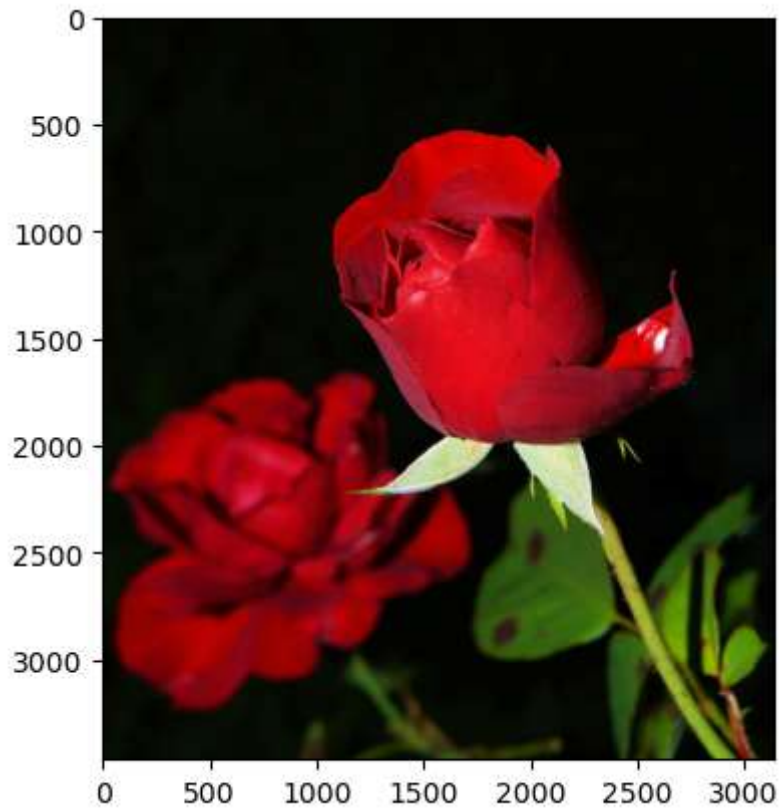
                [[ 9, 17,  6],
                  [ 9, 17,  6],
                  [ 9, 17,  6],
                  ...,
                  [ 5,  5,  3],
                  [ 4,  4,  2],
                  [ 4,  4,  2]]], dtype=uint8)

```

```

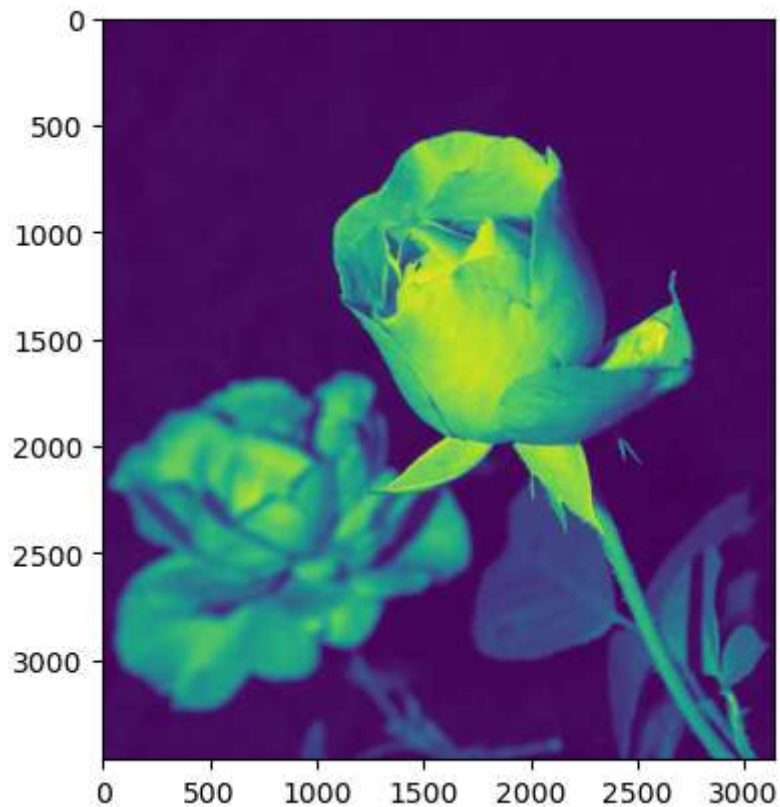
In [25]: plt.imshow(rose)
plt.show()

```

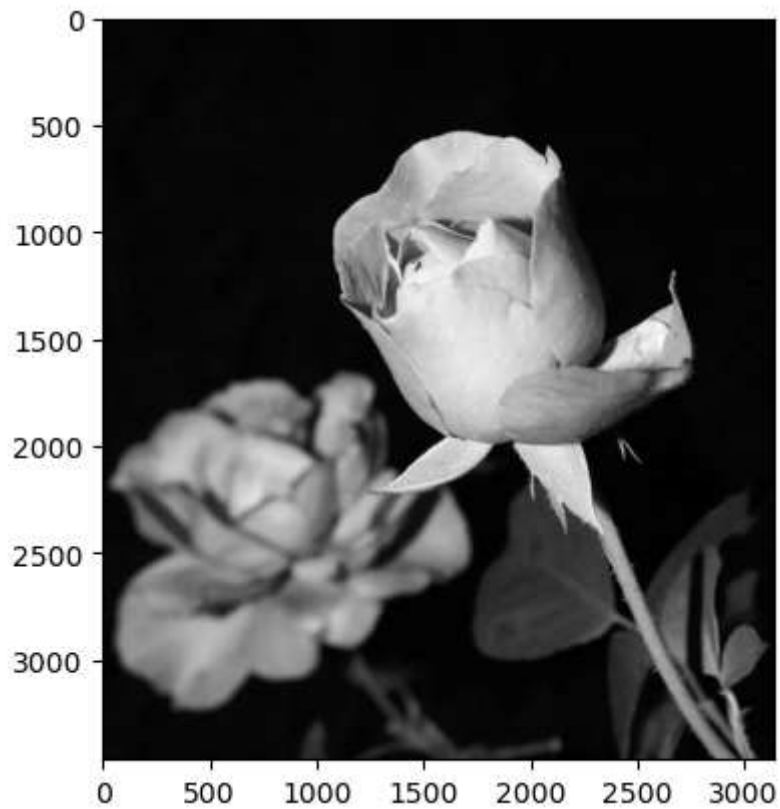


```
In [27]: plt.imshow(rose[:, :, 0])
```

```
Out[27]: <matplotlib.image.AxesImage at 0x1f27b55e490>
```

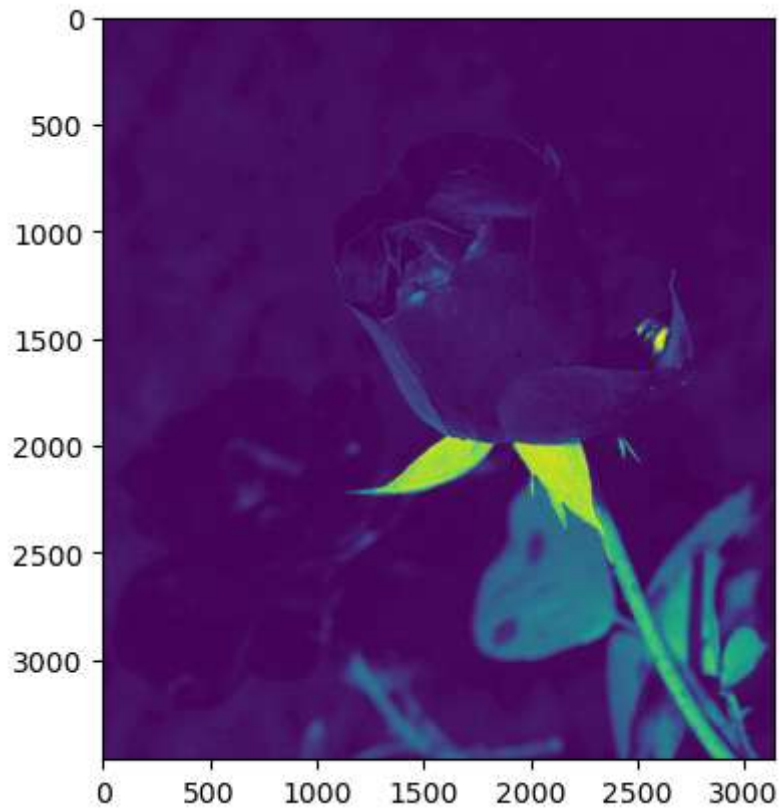


```
In [34]: plt.imshow(rose[:, :, 0], cmap='gray')  
plt.show()
```



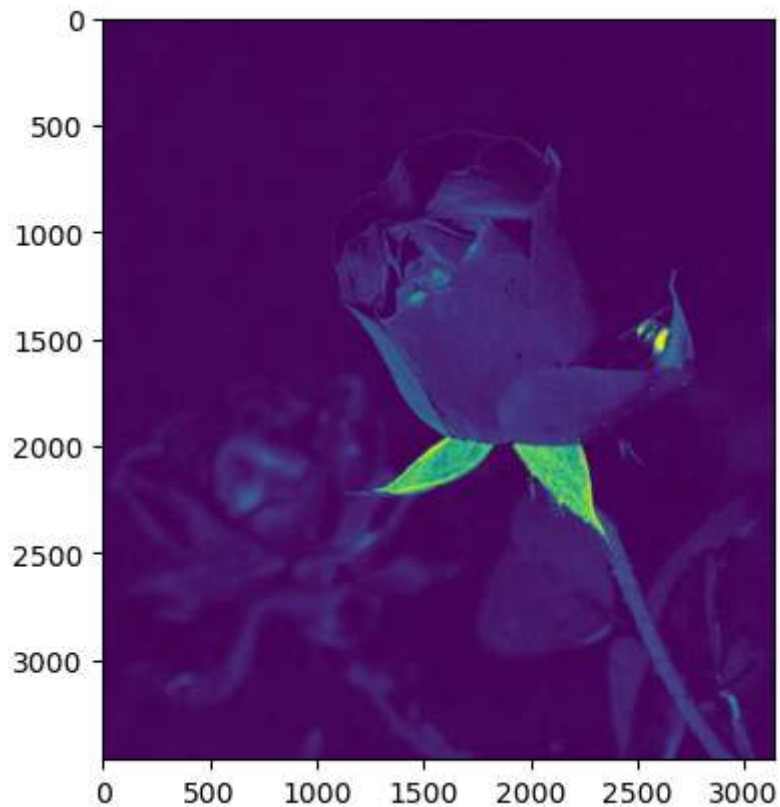
```
In [30]: plt.imshow(rose[:, :, 1])
```

```
Out[30]: <matplotlib.image.AxesImage at 0x1f20b00cf50>
```



```
In [31]: plt.imshow(rose[:, :, 2])
```

```
Out[31]: <matplotlib.image.AxesImage at 0x1f20b03bc50>
```

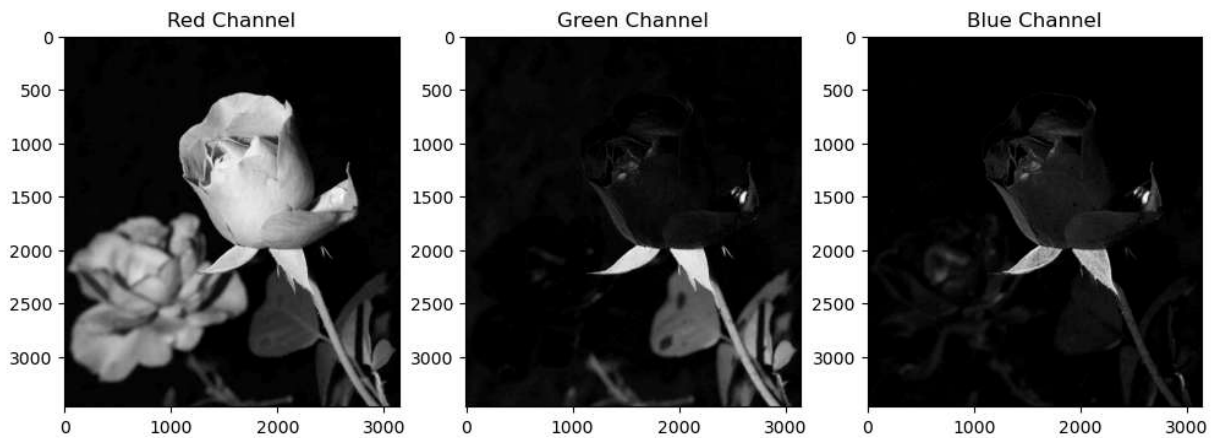



```
In [36]: fig, axes = plt.subplots(1, 3, figsize=(12, 4))
axes[0].imshow(rose[:, :, 0], cmap="gray")
axes[0].set_title("Red Channel")

# Green channel
axes[1].imshow(rose[:, :, 1], cmap="gray")
axes[1].set_title("Green Channel")

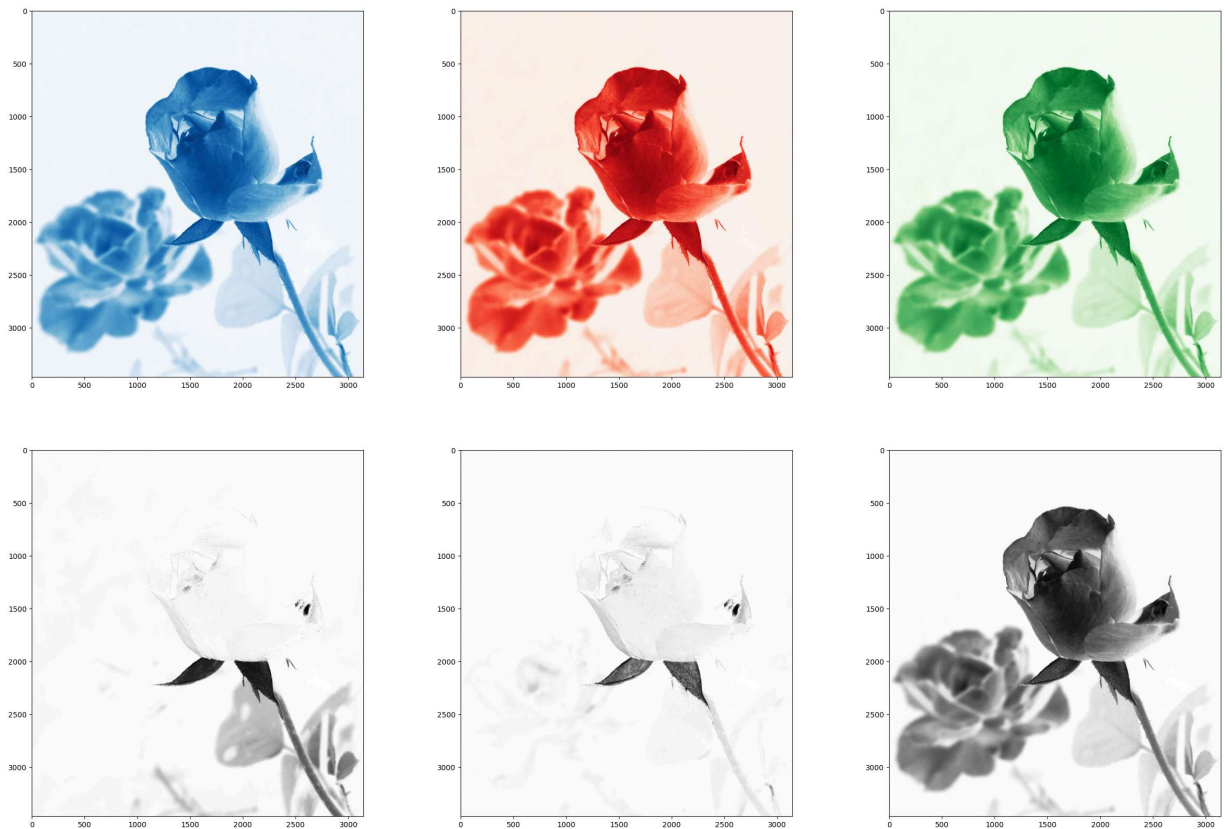
# Blue channel
axes[2].imshow(rose[:, :, 2], cmap="gray")
axes[2].set_title("Blue Channel")

plt.show()
```



```
In [59]: fig, axes = plt.subplots(2, 3, figsize=(30,20)) #subplot()--for making the differe
axes = axes.flatten() #flatten the 2D array into 3D

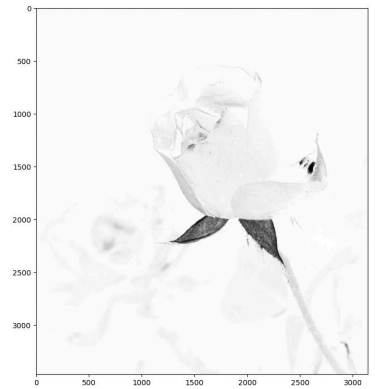
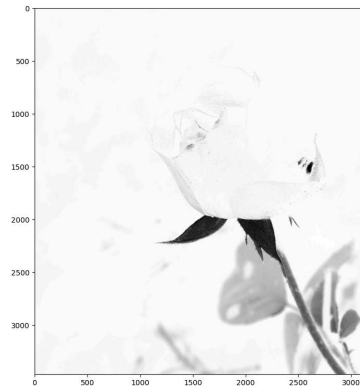
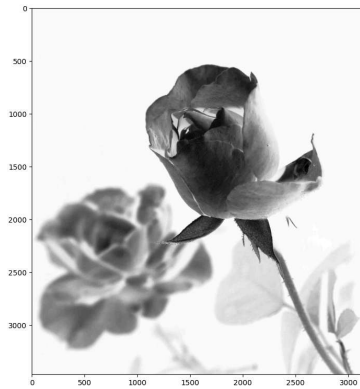
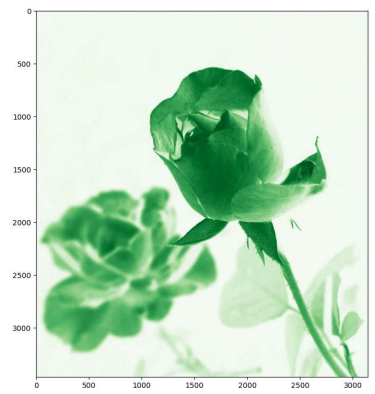
axes[0].imshow(rose[:, :, 0], cmap='Blues')
axes[1].imshow(rose[:, :, 0], cmap='Reds')
axes[2].imshow(rose[:, :, 0], cmap='Greens')
axes[3].imshow(rose[:, :, 1], cmap='Greys')
axes[4].imshow(rose[:, :, 2], cmap='Greys')
axes[5].imshow(rose[:, :, -3], cmap='Greys')
plt.show()
```



In [51]: *#This is another method for plotting fig "WITHOUT FLATTENING"*

```
fig, axes = plt.subplots(2, 3, figsize=(30,20))

axes[0,0].imshow(rose[:, :, 0], cmap='Blues')
axes[0,1].imshow(rose[:, :, 0], cmap='Reds')
axes[0,2].imshow(rose[:, :, 0], cmap='Greens')
axes[1,0].imshow(rose[:, :, 0], cmap='Greys')
axes[1,1].imshow(rose[:, :, 1], cmap='Greys')
axes[1,2].imshow(rose[:, :, 2], cmap='Greys')
plt.show()
```

In []: