

```
In [12]: import numpy as np
```

```
In [13]: ones_arr = np.ones((5,5))  
ones_arr
```

```
Out[13]: array([[1., 1., 1., 1., 1.],  
                [1., 1., 1., 1., 1.],  
                [1., 1., 1., 1., 1.],  
                [1., 1., 1., 1., 1.],  
                [1., 1., 1., 1., 1.]])
```

```
In [14]: ones_arr = np.ones((5,5), dtype = int)  
ones_arr
```

```
Out[14]: array([[1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1]])
```

```
In [15]: zeros_arr = np.zeros((3,3), dtype = int)  
zeros_arr
```

```
Out[15]: array([[0, 0, 0],  
                [0, 0, 0],  
                [0, 0, 0]])
```

```
In [16]: ones_arr
```

```
Out[16]: array([[1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1]])
```

```
In [17]: ones_arr * 255
```

```
Out[17]: array([[255, 255, 255, 255, 255],  
                [255, 255, 255, 255, 255],  
                [255, 255, 255, 255, 255],  
                [255, 255, 255, 255, 255],  
                [255, 255, 255, 255, 255]])
```

```
In [18]: zeros_arr
```

```
Out[18]: array([[0, 0, 0],  
                [0, 0, 0],  
                [0, 0, 0]])
```

```
In [19]: ones_arr
```

```
Out[19]: array([[1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1],  
                [1, 1, 1, 1, 1]])
```

```
In [20]: import matplotlib.pyplot as plt
```

```
In [21]: %matplotlib inline
```

```
In [22]: from PIL import Image    #python imaging library
```

```
In [23]: Flower_img = Image.open(r'C:\Users\ankus\Downloads\Flower.jpg')  
Flower_img
```

Out[23]:



```
In [24]: Hibiscus_img = Image.open(r'C:\Users\ankus\Downloads\Hibiscus.webp')  
Hibiscus_img
```

Out[24]:



```
In [25]: type(Flower_img)
```

Out[25]: PIL.JpegImagePlugin.JpegImageFile

```
In [26]: Flower_arr = np.asarray(Flower_img)
Flower_arr
```

```
Out[26]: array([[16, 45, 59],
                [20, 49, 63],
                [22, 51, 65],
                ...,
                [39, 86, 18],
                [40, 87, 19],
                [40, 87, 19]],

           [[14, 43, 57],
            [17, 46, 60],
            [20, 49, 63],
            ...,
            [39, 86, 18],
            [41, 88, 20],
            [41, 88, 20]],

           [[11, 40, 54],
            [14, 43, 57],
            [17, 46, 60],
            ...,
            [38, 85, 17],
            [46, 93, 25],
            [46, 93, 25]],

           ...,

           [[ 0, 30, 32],
            [ 0, 29, 31],
            [ 0, 29, 31],
            ...,
            [ 7, 57, 22],
            [ 4, 54, 19],
            [ 6, 56, 21]],

           [[ 2, 33, 35],
            [ 1, 32, 34],
            [ 0, 31, 33],
            ...,
            [ 6, 56, 21],
            [10, 60, 25],
            [12, 62, 27]],

           [[ 5, 36, 38],
            [ 4, 35, 37],
            [ 2, 33, 35],
            ...,
            [ 4, 54, 19],
            [13, 63, 28],
            [15, 65, 30]]], dtype=uint8)
```

```
In [27]: type(Flower_arr)
```

Out[27]: numpy.ndarray

```
In [28]: Flower_arr.shape
```

```
Out[28]: (4032, 5674, 3)
```

```
In [33]: plt.imshow(Flower_arr)  
plt.show()
```



```
In [30]: Flower_red = Flower_arr.copy()  
Flower_red
```

```

Out[30]: array([[16, 45, 59],
               [20, 49, 63],
               [22, 51, 65],
               ...,
               [39, 86, 18],
               [40, 87, 19],
               [40, 87, 19]],

            [[14, 43, 57],
             [17, 46, 60],
             [20, 49, 63],
             ...,
             [39, 86, 18],
             [41, 88, 20],
             [41, 88, 20]],

            [[11, 40, 54],
             [14, 43, 57],
             [17, 46, 60],
             ...,
             [38, 85, 17],
             [46, 93, 25],
             [46, 93, 25]],

            ...,

            [[ 0, 30, 32],
             [ 0, 29, 31],
             [ 0, 29, 31],
             ...,
             [ 7, 57, 22],
             [ 4, 54, 19],
             [ 6, 56, 21]],

            [[ 2, 33, 35],
             [ 1, 32, 34],
             [ 0, 31, 33],
             ...,
             [ 6, 56, 21],
             [10, 60, 25],
             [12, 62, 27]],

            [[ 5, 36, 38],
             [ 4, 35, 37],
             [ 2, 33, 35],
             ...,
             [ 4, 54, 19],
             [13, 63, 28],
             [15, 65, 30]]], dtype=uint8)

```

```
In [31]: Flower_arr == Flower_red
```

```

Out[31]: array([[ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True],
               ...,
               [ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True]],

              [[ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True],
               ...,
               [ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True]],

              [[ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True],
               ...,
               [ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True]],

              ...,

              [[ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True],
               ...,
               [ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True]],

              [[ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True],
               ...,
               [ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True]],

              [[ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True],
               ...,
               [ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True]]])

```

```

In [35]: plt.imshow(Flower_red)
         plt.show()

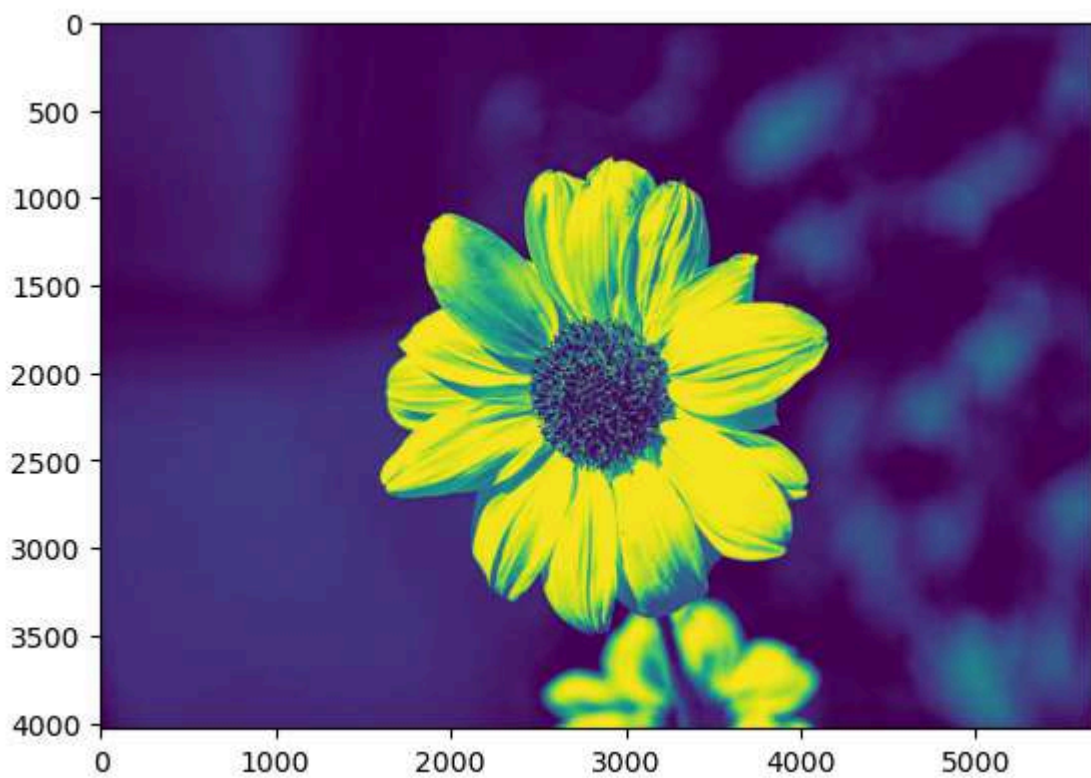
```



```
In [36]: Flower_red.shape
```

```
Out[36]: (4032, 5674, 3)
```

```
In [40]: plt.imshow(Flower_red[:, :, 0])    # R G B  
plt.show()
```

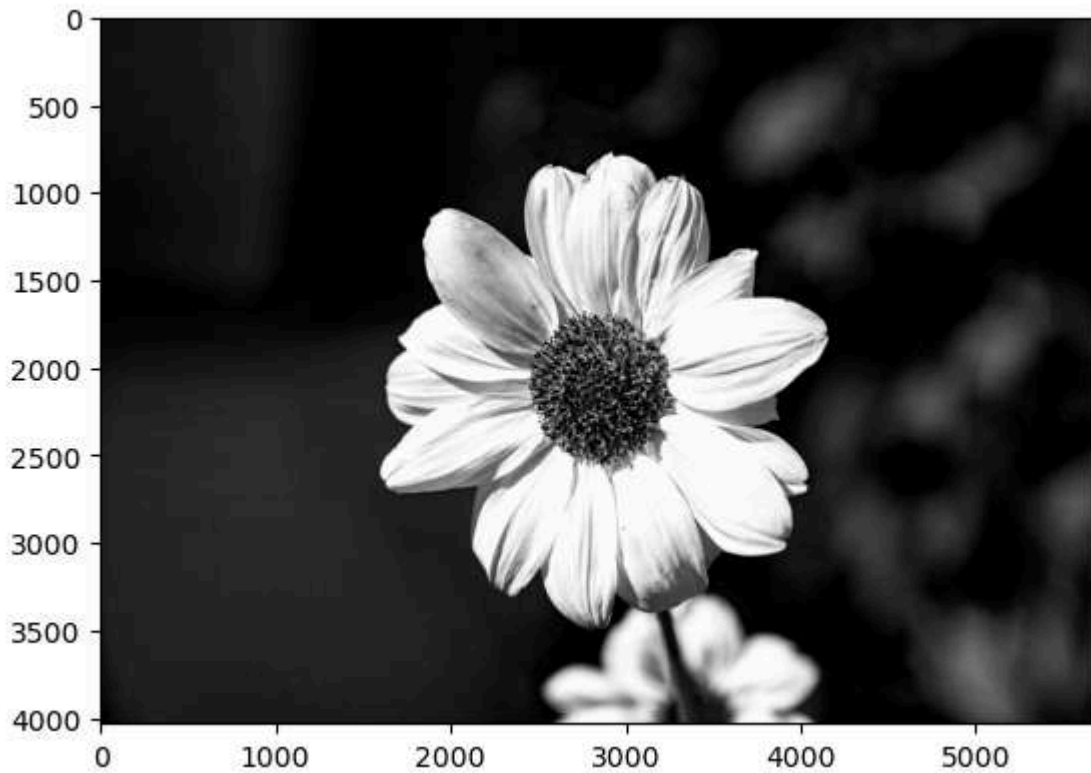


```
In [41]: Flower_red[:, :, 0]
```



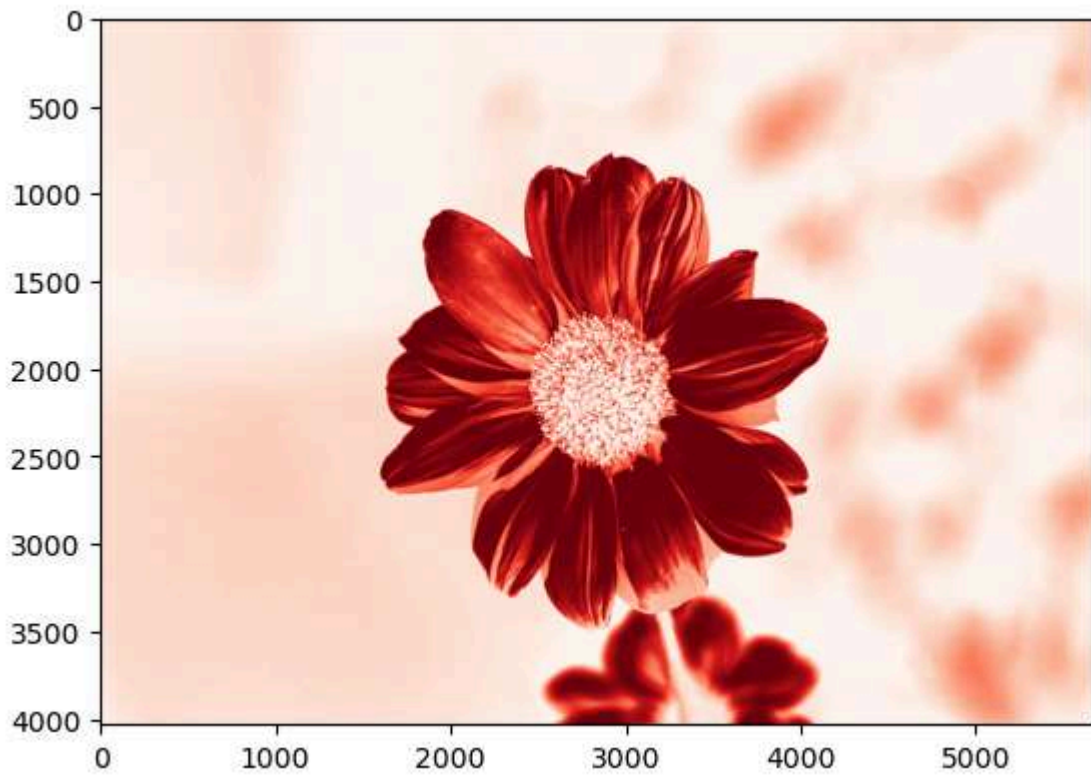
```
Out[41]: array([[16, 20, 22, ..., 39, 40, 40],
               [14, 17, 20, ..., 39, 41, 41],
               [11, 14, 17, ..., 38, 46, 46],
               ...,
               [ 0,  0,  0, ...,  7,  4,  6],
               [ 2,  1,  0, ...,  6, 10, 12],
               [ 5,  4,  2, ...,  4, 13, 15]], dtype=uint8)
```

```
In [43]: plt.imshow(Flower_red[:, :, 0] , cmap = 'gray')
plt.show()
```

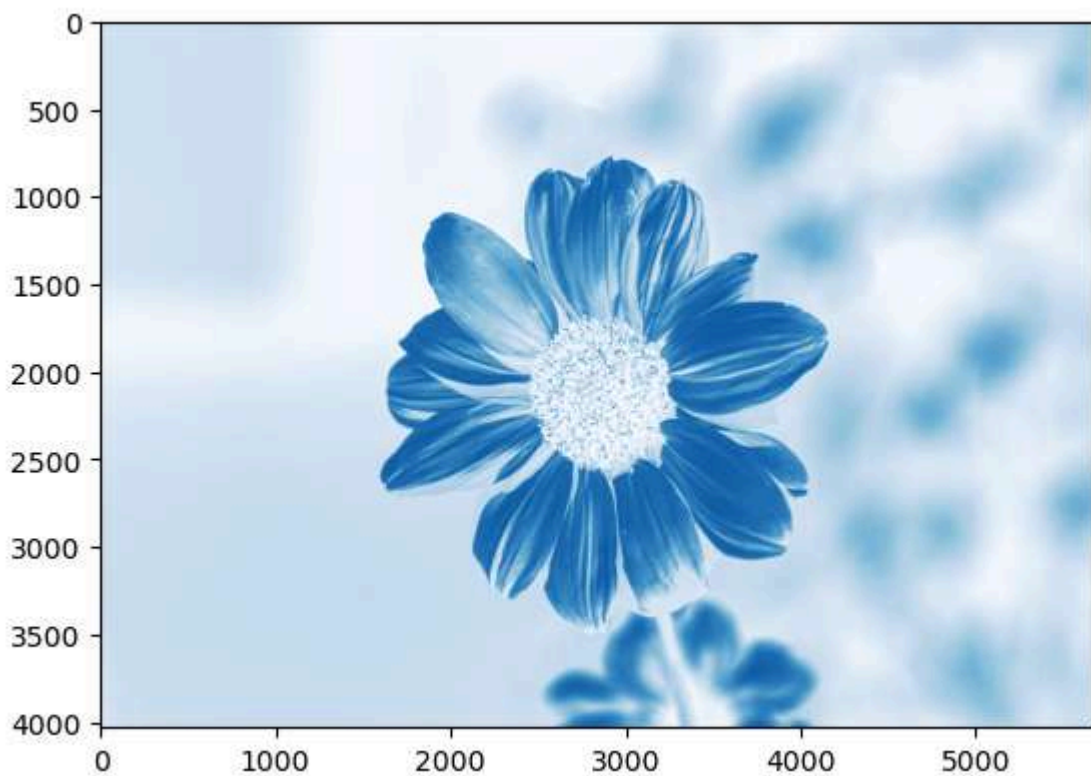


```
In [46]: plt.imshow(Flower_red[:, :, 0] , cmap = 'Reds')
plt.show()
```

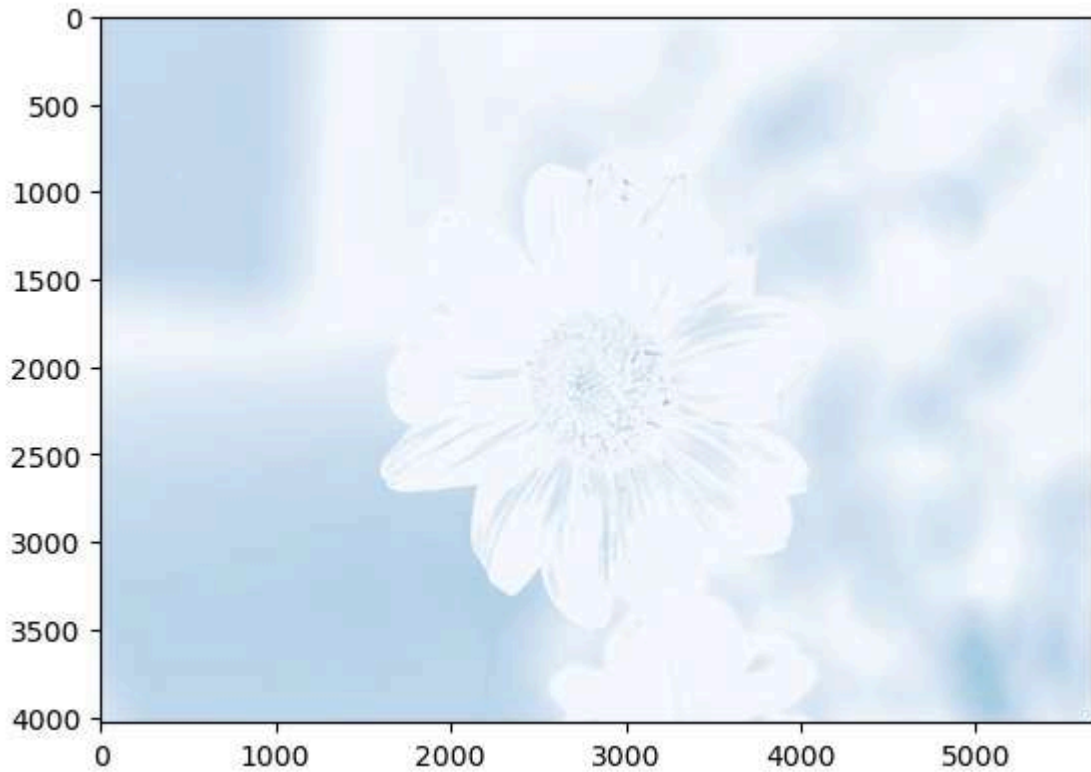




```
In [47]: plt.imshow(Flower_red[:, :, 1] , cmap = 'Blues')  
plt.show()
```



```
In [49]: plt.imshow(Flower_red[:, :, 2] , cmap = 'Blues')  
plt.show()
```



```
In [50]: Flower_red[:, :, 0]
```

```
Out[50]: array([[16, 20, 22, ..., 39, 40, 40],
                [14, 17, 20, ..., 39, 41, 41],
                [11, 14, 17, ..., 38, 46, 46],
                ...,
                [ 0,  0,  0, ...,  7,  4,  6],
                [ 2,  1,  0, ...,  6, 10, 12],
                [ 5,  4,  2, ...,  4, 13, 15]], dtype=uint8)
```

```
In [51]: Flower_red[:, :, 1]
```

```
Out[51]: array([[45, 49, 51, ..., 86, 87, 87],
                [43, 46, 49, ..., 86, 88, 88],
                [40, 43, 46, ..., 85, 93, 93],
                ...,
                [30, 29, 29, ..., 57, 54, 56],
                [33, 32, 31, ..., 56, 60, 62],
                [36, 35, 33, ..., 54, 63, 65]], dtype=uint8)
```

```
In [52]: Flower_red[:, :, 2]
```

```
Out[52]: array([[59, 63, 65, ..., 18, 19, 19],
                [57, 60, 63, ..., 18, 20, 20],
                [54, 57, 60, ..., 17, 25, 25],
                ...,
                [32, 31, 31, ..., 22, 19, 21],
                [35, 34, 33, ..., 21, 25, 27],
                [38, 37, 35, ..., 19, 28, 30]], dtype=uint8)
```

```
In [55]: Flower_red[:, :, 1] = 0
         Flower_red[:, :, 1]
```

```
Out[55]: array([[0, 0, 0, ..., 0, 0, 0],
                [0, 0, 0, ..., 0, 0, 0],
                [0, 0, 0, ..., 0, 0, 0],
                ...,
                [0, 0, 0, ..., 0, 0, 0],
                [0, 0, 0, ..., 0, 0, 0],
                [0, 0, 0, ..., 0, 0, 0]], dtype=uint8)
```

```
In [56]: plt.imshow(Flower_red)
plt.show()
```



```
In [57]: Flower_red[:, :, 2] = 0
Flower_red[:, :, 2]
```

```
Out[57]: array([[0, 0, 0, ..., 0, 0, 0],
                [0, 0, 0, ..., 0, 0, 0],
                [0, 0, 0, ..., 0, 0, 0],
                ...,
                [0, 0, 0, ..., 0, 0, 0],
                [0, 0, 0, ..., 0, 0, 0],
                [0, 0, 0, ..., 0, 0, 0]], dtype=uint8)
```

```
In [58]: plt.imshow(Flower_red)
plt.show()
```



In [60]: Flower\_arr

```

Out[60]: array([[16, 45, 59],
               [20, 49, 63],
               [22, 51, 65],
               ...,
               [39, 86, 18],
               [40, 87, 19],
               [40, 87, 19]],

            [[14, 43, 57],
             [17, 46, 60],
             [20, 49, 63],
             ...,
             [39, 86, 18],
             [41, 88, 20],
             [41, 88, 20]],

            [[11, 40, 54],
             [14, 43, 57],
             [17, 46, 60],
             ...,
             [38, 85, 17],
             [46, 93, 25],
             [46, 93, 25]],

            ...,

            [[ 0, 30, 32],
             [ 0, 29, 31],
             [ 0, 29, 31],
             ...,
             [ 7, 57, 22],
             [ 4, 54, 19],
             [ 6, 56, 21]],

            [[ 2, 33, 35],
             [ 1, 32, 34],
             [ 0, 31, 33],
             ...,
             [ 6, 56, 21],
             [10, 60, 25],
             [12, 62, 27]],

            [[ 5, 36, 38],
             [ 4, 35, 37],
             [ 2, 33, 35],
             ...,
             [ 4, 54, 19],
             [13, 63, 28],
             [15, 65, 30]]], dtype=uint8)

```

```
In [61]: Flower_img
```

Out[61]:



```
In [62]: arr1 = np.asarray(Flower_img)
```

```
In [63]: type(arr1)
```

```
Out[63]: numpy.ndarray
```

```
In [64]: arr1.shape
```

```
Out[64]: (4032, 5674, 3)
```

```
In [66]: plt.imshow(arr1)  
plt.show()
```



```
In [67]: Flower_img1 = arr1.copy()
```

```
In [68]: Flower_img1[:, :, 0] = 0
```

```
In [69]: plt.imshow(Flower_img1)  
plt.show()
```



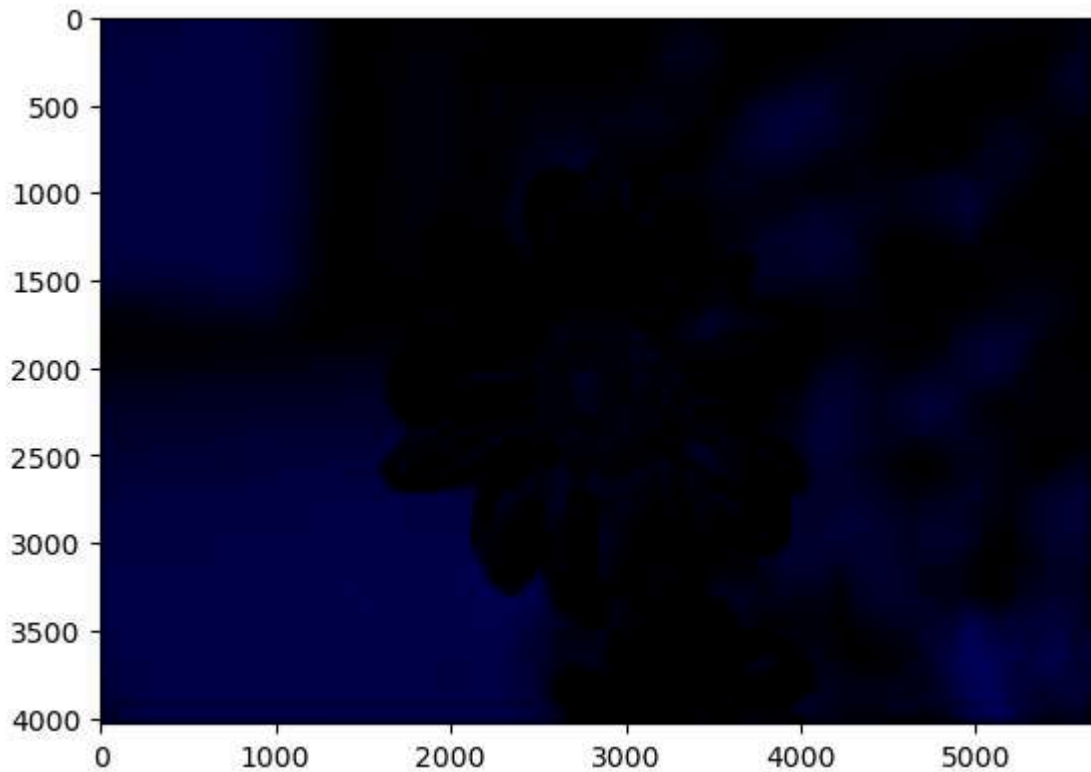
```
In [70]: Flower_img1[:, :, 1]
```



```
Out[70]: array([[45, 49, 51, ..., 86, 87, 87],
               [43, 46, 49, ..., 86, 88, 88],
               [40, 43, 46, ..., 85, 93, 93],
               ...,
               [30, 29, 29, ..., 57, 54, 56],
               [33, 32, 31, ..., 56, 60, 62],
               [36, 35, 33, ..., 54, 63, 65]], dtype=uint8)
```

```
In [71]: Flower_img1[:, :, 1] = 0
```

```
In [72]: plt.imshow(Flower_img1)
plt.show()
```



```
In [ ]:
```