

```
In [11]: import numpy as np
```

```
In [13]: ones_arr = np.ones((3,3))
```

```
In [15]: ones_arr
```

```
Out[15]: array([[1., 1., 1.],  
                 [1., 1., 1.],  
                 [1., 1., 1.]])
```

```
In [17]: ones_arr=np.ones((5,5),dtype=int)
```

```
In [19]: ones_arr*255
```

```
Out[19]: 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 [21]: import matplotlib.pyplot as plt
```

```
In [22]: %matplotlib inline
```

```
In [25]: from PIL import Image
```

```
In [27]: car_img =Image.open(r'C:\Users\Appala nithin\OneDrive\Pictures\Documents\NITHIN\LAP
```

```
In [29]: car_img
```

```
Out[29]:
```



```
In [30]: type(car_img)
```

```
Out[30]: PIL.JpegImagePlugin.JpegImageFile
```

```
In [33]: car_img = np.asarray(car_img)
car_img
```

```
Out[33]: array([[[176, 221, 227],  
                 [174, 219, 225],  
                 [173, 218, 224],  
                 ...,  
                 [174, 221, 227],  
                 [176, 223, 229],  
                 [178, 225, 231]],  
  
                [[176, 221, 227],  
                 [174, 219, 225],  
                 [174, 219, 225],  
                 ...,  
                 [174, 221, 227],  
                 [176, 223, 229],  
                 [177, 224, 230]],  
  
                [[176, 221, 227],  
                 [175, 220, 226],  
                 [174, 219, 225],  
                 ...,  
                 [175, 222, 228],  
                 [176, 223, 229],  
                 [176, 223, 229]],  
  
                ...,  
  
                [[ 18,  18,  20],  
                 [ 18,  18,  20],  
                 [ 67,  67,  67],  
                 ...,  
                 [ 46,  98,  60],  
                 [ 43,  95,  57],  
                 [  2,  57,  18]],  
  
                [[ 23,  24,  26],  
                 [ 11,  12,  14],  
                 [ 67,  69,  68],  
                 ...,  
                 [ 51, 101,  63],  
                 [ 54, 106,  67],  
                 [ 19,  71,  32]],  
  
                [[  0,   0,   2],  
                 [ 35,  36,  38],  
                 [ 58,  60,  59],  
                 ...,  
                 [ 34,  84,  46],  
                 [ 40,  92,  53],  
                 [ 20,  72,  33]]], dtype=uint8)
```

```
In [35]: type(car_img)
```

```
Out[35]: numpy.ndarray
```

```
In [37]: plt.imshow(car_img)
```

```
Out[37]: <matplotlib.image.AxesImage at 0x1f585de1c70>
```



```
In [38]: car_img.shape
```

```
Out[38]: (1200, 1920, 3)
```

```
In [41]: car_red =car_img.copy()
```

```
In [43]: car_red
```

```
Out[43]: array([[[176, 221, 227],  
                 [174, 219, 225],  
                 [173, 218, 224],  
                 ...,  
                 [174, 221, 227],  
                 [176, 223, 229],  
                 [178, 225, 231]],  
  
                [[176, 221, 227],  
                 [174, 219, 225],  
                 [174, 219, 225],  
                 ...,  
                 [174, 221, 227],  
                 [176, 223, 229],  
                 [177, 224, 230]],  
  
                [[176, 221, 227],  
                 [175, 220, 226],  
                 [174, 219, 225],  
                 ...,  
                 [175, 222, 228],  
                 [176, 223, 229],  
                 [176, 223, 229]],  
  
                ...,  
  
                [[ 18,  18,  20],  
                 [ 18,  18,  20],  
                 [ 67,  67,  67],  
                 ...,  
                 [ 46,  98,  60],  
                 [ 43,  95,  57],  
                 [  2,  57,  18]],  
  
                [[ 23,  24,  26],  
                 [ 11,  12,  14],  
                 [ 67,  69,  68],  
                 ...,  
                 [ 51, 101,  63],  
                 [ 54, 106,  67],  
                 [ 19,  71,  32]],  
  
                [[  0,   0,   2],  
                 [ 35,  36,  38],  
                 [ 58,  60,  59],  
                 ...,  
                 [ 34,  84,  46],  
                 [ 40,  92,  53],  
                 [ 20,  72,  33]]], dtype=uint8)
```

```
In [45]: car_img==car_red
```

```
Out[45]: 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 [48]: plt.imshow(car_red)
```

```
Out[48]: <matplotlib.image.AxesImage at 0x1f585e22330>
```

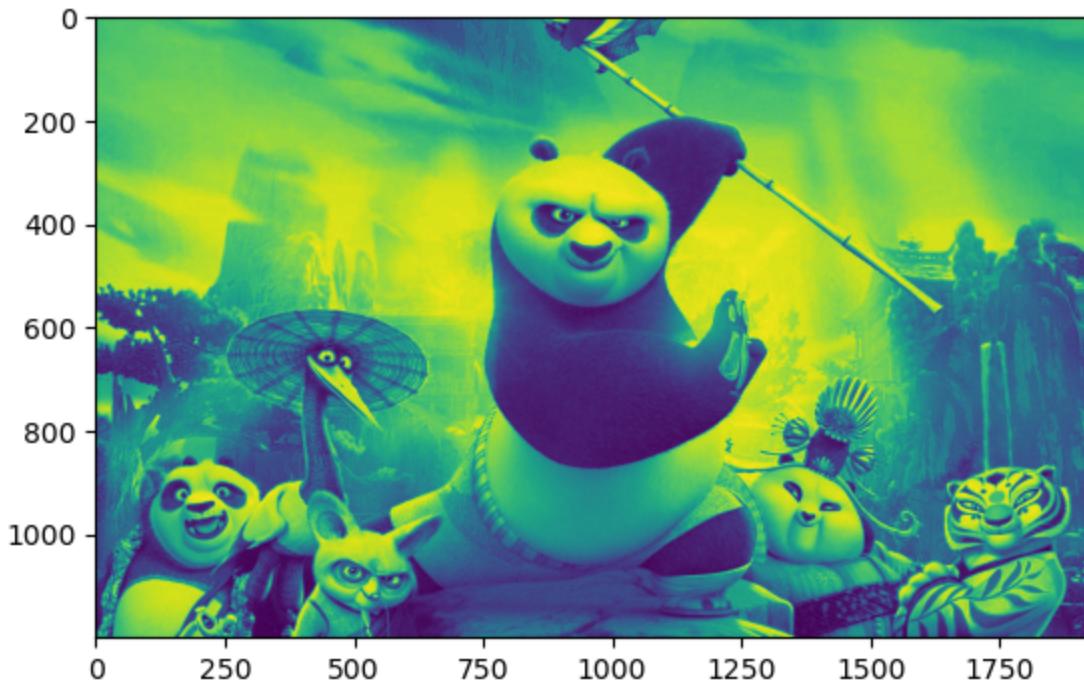


```
In [50]: car_red.shape
```

```
Out[50]: (1200, 1920, 3)
```

```
In [54]: # RGB  
plt.imshow(car_red[:, :, 0])
```

```
Out[54]: <matplotlib.image.AxesImage at 0x1f5892822a0>
```

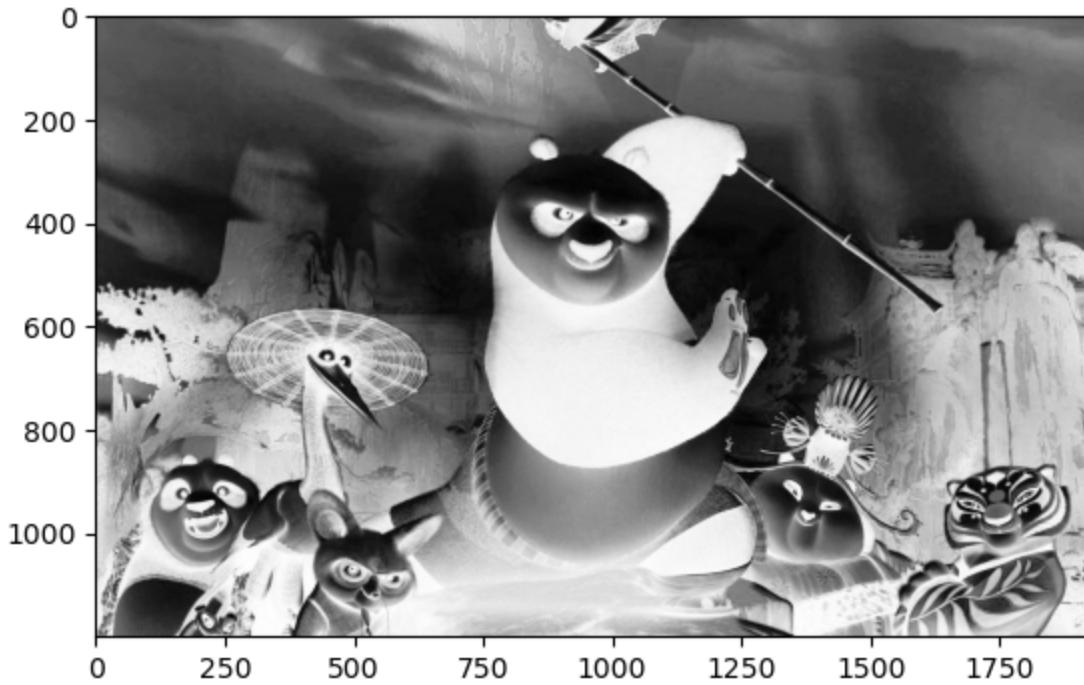


```
In [56]: car_red[:, :, 0]
```

```
Out[56]: array([[176, 174, 173, ..., 174, 176, 178],  
                 [176, 174, 174, ..., 174, 176, 177],  
                 [176, 175, 174, ..., 175, 176, 176],  
                 ...,  
                 [ 18,  18,  67, ...,  46,  43,   2],  
                 [ 23,  11,  67, ...,  51,  54,  19],  
                 [  0,  35,  58, ...,  34,  40,  20]], dtype=uint8)
```

```
In [58]: plt.imshow(car_red[:, :, 0], cmap='Greys')
```

```
Out[58]: <matplotlib.image.AxesImage at 0x1f58932c5f0>
```



```
In [60]: plt.imshow(car_red[:, :, 1], cmap='grey')
```

```
Out[60]: <matplotlib.image.AxesImage at 0x1f589379370>
```



```
In [62]: plt.imshow(car_red[:, :, 2], cmap='grey')
```

```
Out[62]: <matplotlib.image.AxesImage at 0x1f589379e20>
```



```
In [64]: car_red[:, :, 0]
```

```
Out[64]: array([[176, 174, 173, ..., 174, 176, 178],  
                 [176, 174, 174, ..., 174, 176, 177],  
                 [176, 175, 174, ..., 175, 176, 176],  
                 ...,  
                 [ 18,  18,  67, ...,  46,  43,   2],  
                 [ 23,  11,  67, ...,  51,  54,  19],  
                 [  0,  35,  58, ...,  34,  40,  20]], dtype=uint8)
```

```
In [66]: car_red[:, :, 1]
```

```
Out[66]: array([[221, 219, 218, ..., 221, 223, 225],  
                 [221, 219, 219, ..., 221, 223, 224],  
                 [221, 220, 219, ..., 222, 223, 223],  
                 ...,  
                 [ 18,  18,  67, ...,  98,  95,  57],  
                 [ 24,  12,  69, ..., 101, 106,  71],  
                 [  0,  36,  60, ...,  84,  92,  72]], dtype=uint8)
```

```
In [68]: car_red[:, :, 2]
```

```
Out[68]: array([[227, 225, 224, ..., 227, 229, 231],  
                 [227, 225, 225, ..., 227, 229, 230],  
                 [227, 226, 225, ..., 228, 229, 229],  
                 ...,  
                 [ 20,  20,  67, ...,  60,  57,  18],  
                 [ 26,  14,  68, ...,  63,  67,  32],  
                 [  2,  38,  59, ...,  46,  53,  33]], dtype=uint8)
```

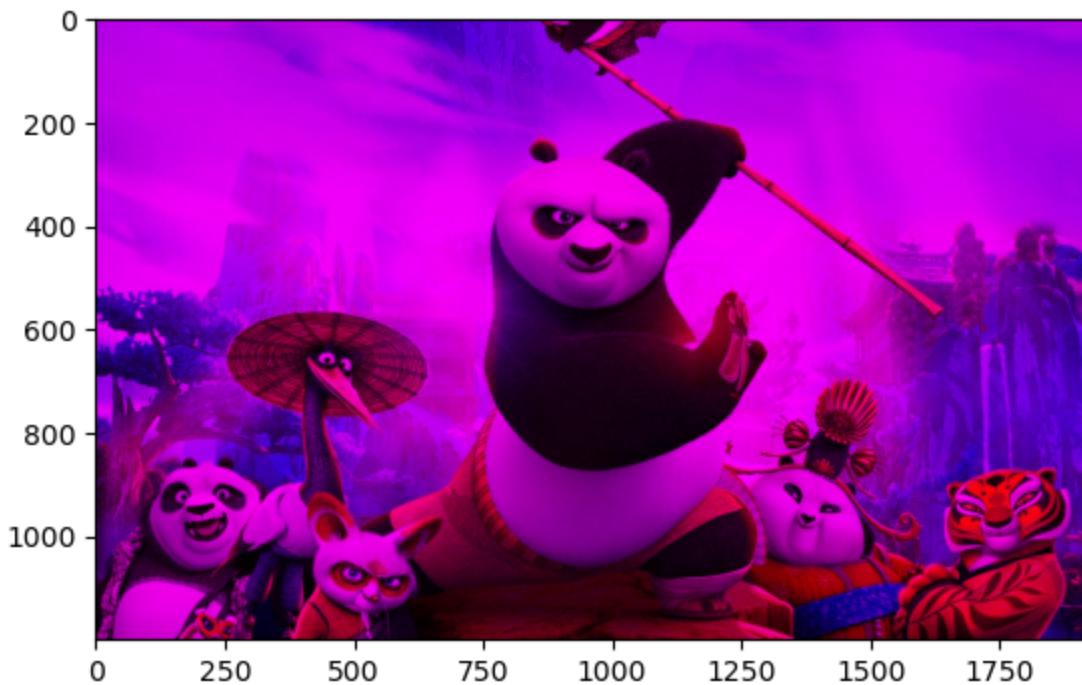
```
In [72]: car_red[:, :, 1] = 0
```

```
In [74]: car_red[:, :, 1]
```

```
Out[74]: 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 [76]: plt.imshow(car_red)
```

```
Out[76]: <matplotlib.image.AxesImage at 0x1f58a7e10a0>
```



```
In [78]: car_red[:, :, 2]
```

```
Out[78]: array([[227, 225, 224, ..., 227, 229, 231],  
                 [227, 225, 225, ..., 227, 229, 230],  
                 [227, 226, 225, ..., 228, 229, 229],  
                 ...,  
                 [ 20,  20,  67, ...,  60,  57,  18],  
                 [ 26,  14,  68, ...,  63,  67,  32],  
                 [ 2,  38,  59, ...,  46,  53,  33]], dtype=uint8)
```

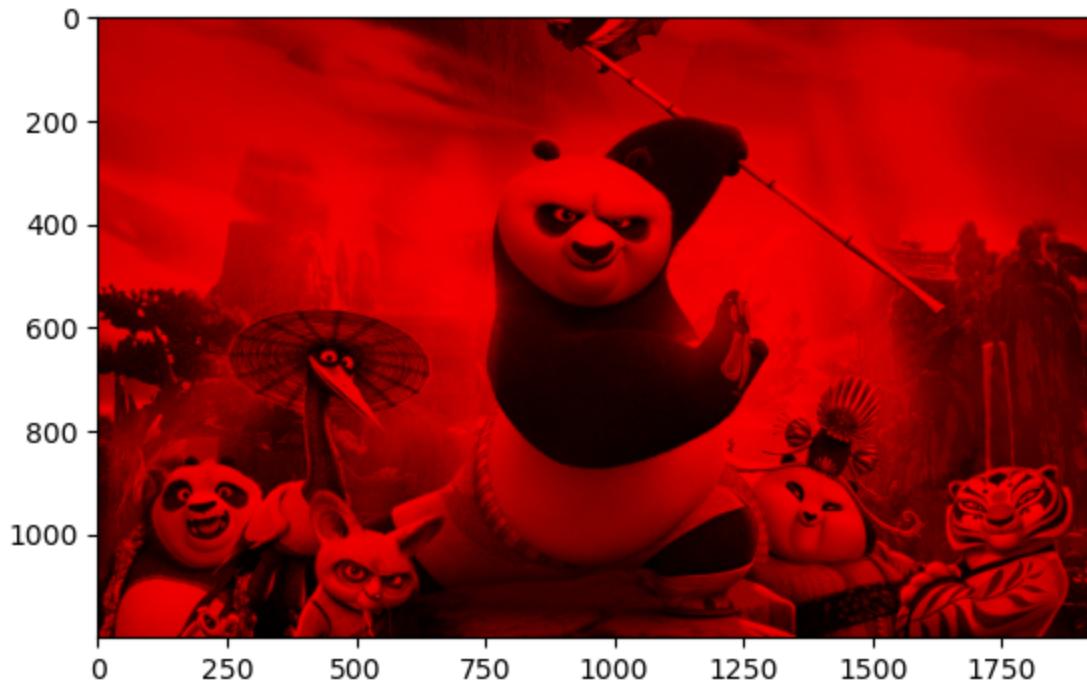
```
In [80]: car_red[:, :, 2]=0
```

```
In [82]: car_red[:, :, 2]
```

```
Out[82]: 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 [84]: plt.imshow(car_red)
```

```
Out[84]: <matplotlib.image.AxesImage at 0x1f58773a330>
```



```
In [86]: car_img
```

```
Out[86]: array([[[176, 221, 227],  
                 [174, 219, 225],  
                 [173, 218, 224],  
                 ...,  
                 [174, 221, 227],  
                 [176, 223, 229],  
                 [178, 225, 231]],  
  
                [[176, 221, 227],  
                 [174, 219, 225],  
                 [174, 219, 225],  
                 ...,  
                 [174, 221, 227],  
                 [176, 223, 229],  
                 [177, 224, 230]],  
  
                [[176, 221, 227],  
                 [175, 220, 226],  
                 [174, 219, 225],  
                 ...,  
                 [175, 222, 228],  
                 [176, 223, 229],  
                 [176, 223, 229]],  
  
                ...,  
  
                [[ 18,  18,  20],  
                 [ 18,  18,  20],  
                 [ 67,  67,  67],  
                 ...,  
                 [ 46,  98,  60],  
                 [ 43,  95,  57],  
                 [  2,  57,  18]],  
  
                [[ 23,  24,  26],  
                 [ 11,  12,  14],  
                 [ 67,  69,  68],  
                 ...,  
                 [ 51, 101,  63],  
                 [ 54, 106,  67],  
                 [ 19,  71,  32]],  
  
                [[  0,   0,   2],  
                 [ 35,  36,  38],  
                 [ 58,  60,  59],  
                 ...,  
                 [ 34,  84,  46],  
                 [ 40,  92,  53],  
                 [ 20,  72,  33]]], dtype=uint8)
```

```
In [88]: car_red
```

```
Out[88]: array([[[176,  0,  0],
   [174,  0,  0],
   [173,  0,  0],
   ...,
   [174,  0,  0],
   [176,  0,  0],
   [178,  0,  0]],

   [[176,  0,  0],
   [174,  0,  0],
   [174,  0,  0],
   ...,
   [174,  0,  0],
   [176,  0,  0],
   [177,  0,  0]],

   [[176,  0,  0],
   [175,  0,  0],
   [174,  0,  0],
   ...,
   [175,  0,  0],
   [176,  0,  0],
   [176,  0,  0]],

   ...,

   [[ 18,  0,  0],
   [ 18,  0,  0],
   [ 67,  0,  0],
   ...,
   [ 46,  0,  0],
   [ 43,  0,  0],
   [  2,  0,  0]],

   [[ 23,  0,  0],
   [ 11,  0,  0],
   [ 67,  0,  0],
   ...,
   [ 51,  0,  0],
   [ 54,  0,  0],
   [ 19,  0,  0]],

   [[  0,  0,  0],
   [ 35,  0,  0],
   [ 58,  0,  0],
   ...,
   [ 34,  0,  0],
   [ 40,  0,  0],
   [ 20,  0,  0]]], dtype=uint8)
```

```
In [90]: arr1=np.asarray(car_img)
```

```
In [92]: type(arr1)
```

```
Out[92]: numpy.ndarray
```

```
In [94]: arr1.shape
```

```
Out[94]: (1200, 1920, 3)
```

```
In [96]: plt.imshow(arr1)
```

```
Out[96]: <matplotlib.image.AxesImage at 0x1f58a7fef90>
```



```
In [98]: car_img1=arr1.copy()
```

```
In [102... car_img[:, :, 0]=0
```

```
-----  
ValueError  
Cell In[102], line 1  
----> 1 car_img[:, :, 0]=0
```

```
Traceback (most recent call last)
```

```
ValueError: assignment destination is read-only
```

```
In [104... plt.imshow(car_img1)
```

```
Out[104... <matplotlib.image.AxesImage at 0x1f587752c00>
```



```
In [106... car_img1[:, :, 1]
```

```
Out[106... array([[221, 219, 218, ..., 221, 223, 225],
       [221, 219, 219, ..., 221, 223, 224],
       [221, 220, 219, ..., 222, 223, 223],
       ...,
       [ 18,  18,  67, ...,  98,  95,  57],
       [ 24,  12,  69, ..., 101, 106,  71],
       [  0,  36,  60, ...,  84,  92,  72]], dtype=uint8)
```

```
In [108... car_img1[:, :, 1] = 0
```

```
In [110... plt.imshow(car_img1)
```

```
Out[110... <matplotlib.image.AxesImage at 0x1f5877b7f80>
```



In []: