

```
import numpy as np
ones_arr = np.ones((5,5),dtype=int)
ones_arr
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]])
ones_arr * 255
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]])
import matplotlib.pyplot as plt
from PIL import Image # python imaging library
vijay = Image.open(r'C:\Apps\7VDFT\Vijay.jpg')
vijay
```



```
scuba_img = Image.open(r'D:\Naresh\Images\scuba.jpg')
scuba_img
```



```
type(scuba_img)
PIL.JpegImagePlugin.JpegImageFile
```

```
scuba_arr = np.asarray(scuba_img)
scuba_arr
```

```
array([[ 19,    9,   34],
       [ 14,    4,   31],
       [ 35,   27,   40],
       ...,
       [  0, 102, 164],
       [  0,  98, 159],
       [  0,  95, 156]],
       [[ 19,    9,   17],
       [ 17,    7,   16],
       [ 33,   24,   25],
       ...,
       [  0, 102, 164],
       [  0,  98, 159],
       [  0,  95, 156]],
       [[ 34,   27,    9],
       [ 19,   12,    0],
       [ 25,   18,    0],
       ...,
       [  0, 102, 164],
       [  0,  99, 159],
       [  0,  95, 156]],
       ...,
       [[  0,  99, 159],
       [  0,  95, 156]]],
      dtype=int32)
```

```
[[ 52,  47,  43],
 [ 12,   7,   1],
 [ 13,   8,   2],
 ...,
 [ 11,  50,  67],
 [  2,  45,  61],
 [  9,  55,  71]],

[[ 64,  60,  51],
 [ 35,  31,  22],
 [ 13,   9,   0],
 ...,
 [ 29,  71,  87],
 [ 22,  68,  83],
 [ 28,  77,  92]],

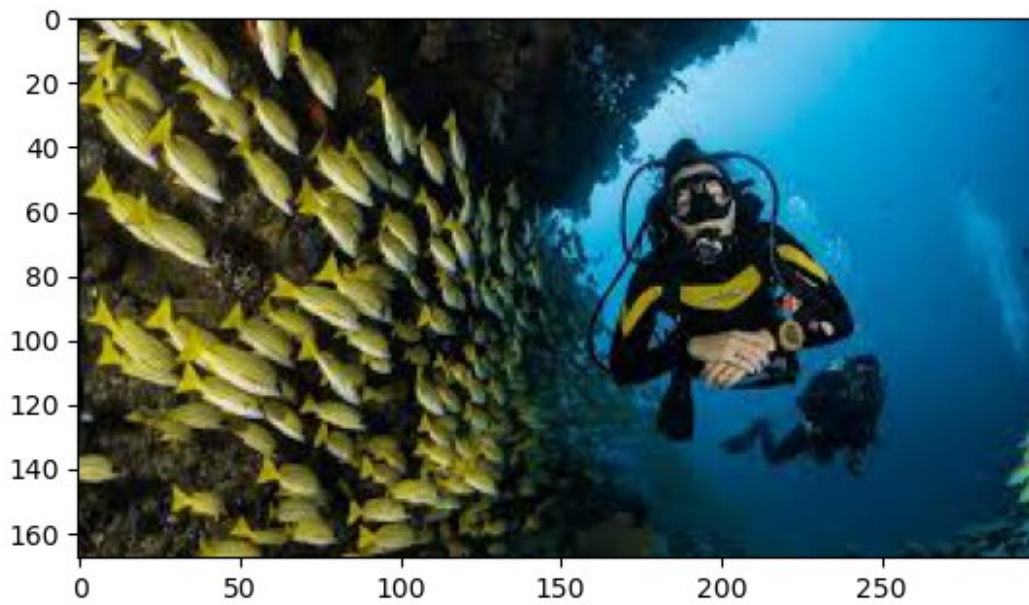
[[ 78,  74,  62],
 [ 41,  37,  25],
 [ 39,  35,  23],
 ...,
 [  7,  55,  69],
 [ 15,  67,  80],
 [ 32,  88, 101]]], dtype=uint8)
```

```
type(scuba_arr)
```

```
numpy.ndarray
```

```
plt.imshow(scuba_arr)
```

```
<matplotlib.image.AxesImage at 0x18c0a7bd7f0>
```



```
scuba_arr.shape
```

```
(168, 300, 3)
```

```
scuba_red = scuba_arr.copy()
```

```
scuba_red
```

```
array([[ [ 19,  9, 34],  
        [ 14,  4, 31],  
        [ 35, 27, 40],  
        ...,  
        [  0, 102, 164],  
        [  0, 98, 159],  
        [  0, 95, 156]],  
       [[ [ 19,  9, 17],  
        [ 17,  7, 16],  
        [ 33, 24, 25],  
        ...,  
        [  0, 102, 164],  
        [  0, 98, 159],  
        [  0, 95, 156]],  
       [[ [ 34, 27,  9],  
        [ 19, 12,  0],  
        [ 25, 18,  0],  
        ...,  
        [  0, 102, 164],  
        [  0, 99, 159],  
        [  0, 95, 156]],
```

```

...,
[[ 52, 47, 43],
 [ 12, 7, 1],
 [ 13, 8, 2],
 ...,
 [ 11, 50, 67],
 [ 2, 45, 61],
 [ 9, 55, 71]],

[[ 64, 60, 51],
 [ 35, 31, 22],
 [ 13, 9, 0],
 ...,
 [ 29, 71, 87],
 [ 22, 68, 83],
 [ 28, 77, 92]],

[[ 78, 74, 62],
 [ 41, 37, 25],
 [ 39, 35, 23],
 ...,
 [ 7, 55, 69],
 [ 15, 67, 80],
 [ 32, 88, 101]]], dtype=uint8)

```

```
scuba_arr==scuba_red
```

```

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]],

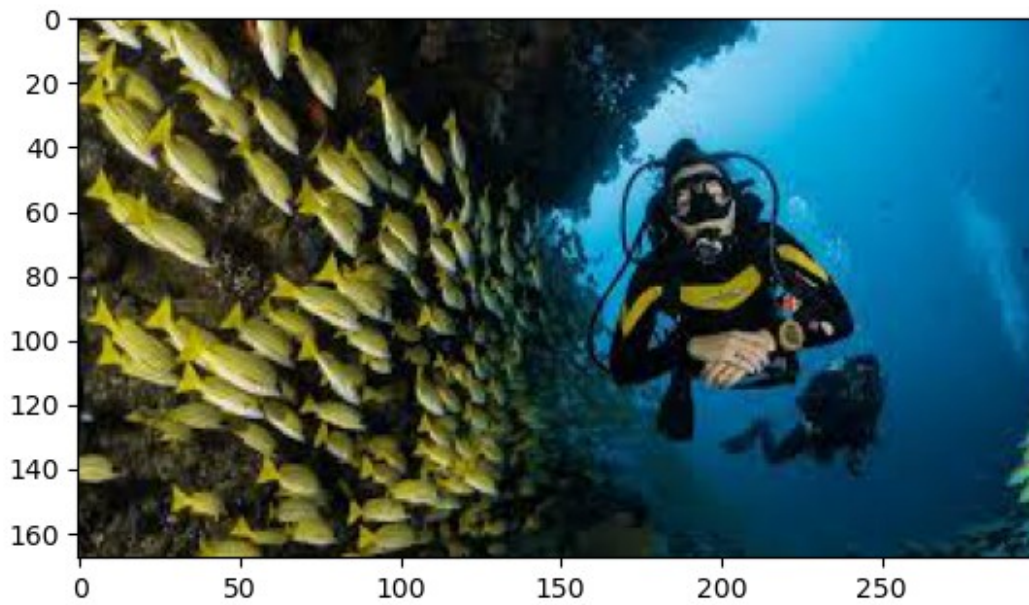
    [[ True,  True,  True],
     [ True,  True,  True],
     [ True,  True,  True],
     ...,
     [ True,  True,  True],
     [ True,  True,  True],
     [ True,  True,  True]],

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

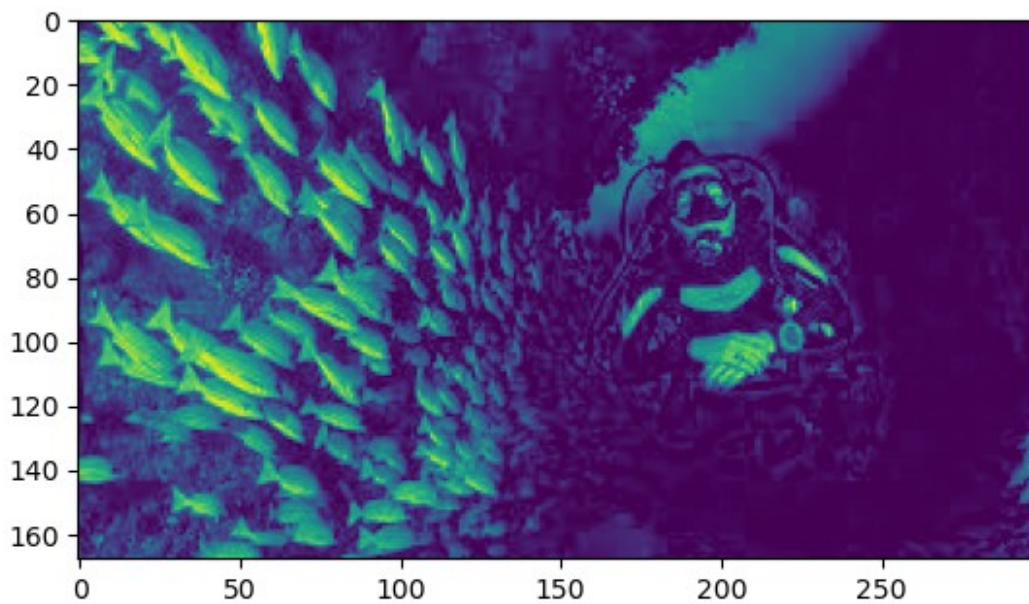
plt.imshow(scuba_red)
<matplotlib.image.AxesImage at 0x18c0cd2fd70>

```





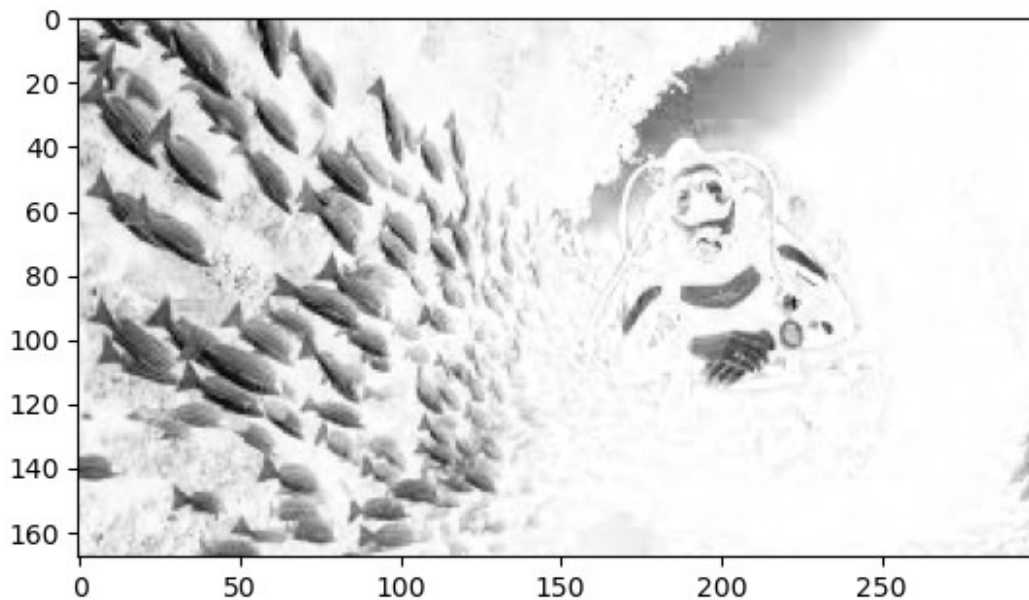
```
plt.imshow(scuba_red[:, :, 0])
<matplotlib.image.AxesImage at 0x18c0d5c62d0>
```



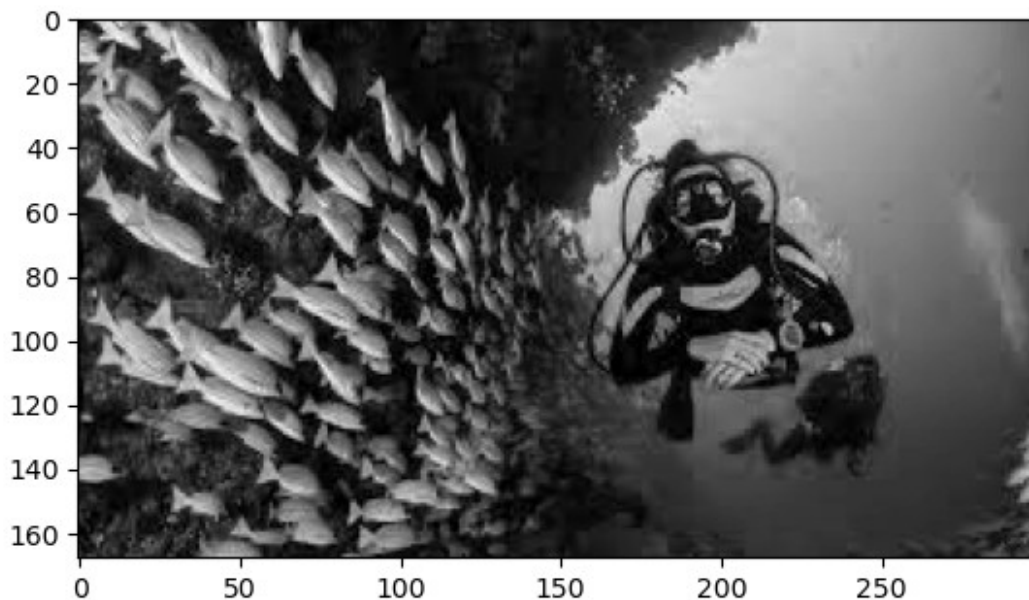
```
scuba_red[:, :, 0]
array([[19, 14, 35, ..., 0, 0, 0],
       [19, 17, 33, ..., 0, 0, 0],
       [34, 19, 25, ..., 0, 0, 0],
       ...,
       [52, 12, 13, ..., 11, 2, 9],
```



```
[64, 35, 13, ..., 29, 22, 28],  
[78, 41, 39, ..., 7, 15, 32]], dtype=uint8)  
plt.imshow(scuba_red[:, :, 0], cmap='Greys')  
<matplotlib.image.AxesImage at 0x18c0d5f1e20>
```



```
plt.imshow(scuba_red[:, :, 1], cmap='grey')  
<matplotlib.image.AxesImage at 0x18c0d61a5d0>
```



```
plt.imshow(scuba_red[:, :, 1], cmap='YlGn')  
<matplotlib.image.AxesImage at 0x18c0d6693d0>
```

