

project-2-1

October 17, 2024

1 Resume Project 1

```
[2]: import numpy as np
```

```
[3]: # 2D channel -Black and White  
# 3D channel-RBG  
# image--pixel
```

```
[4]: once_arrang=np.ones((5,5),dtype=int)
```

```
[5]: once_arrang
```

```
[5]: 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]])
```

```
[6]: once_arrang*255
```

```
[6]: 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]])
```

```
[7]: import matplotlib.pyplot as plt
```

```
[ ]:
```

```
[8]: from PIL import Image # PIL-python image lib
```

```
[9]: image1=Image.open(r"C:\Users\HP\OneDrive\Pictures\Saved Pictures\network.jpg")
```

```
[10]: image1
```

```
[10]:
```



```
[11]: type(image1)
```

```
[11]: PIL.JpegImagePlugin.JpegImageFile
```

```
[12]: Image_array=np.asarray(image1)    # image to array and array to image
```

```
[13]: Image_array    # Every image made with 1 to 255 pixel range
```

```
[13]: array([[226, 216, 191],
            [228, 216, 190],
            [231, 215, 190],
            ...,
            [110, 201, 196],
            [ 62, 153, 148],
            [ 67, 158, 153]],

           [[232, 221, 193],
            [228, 214, 187],
            [228, 210, 186],
            ...,
            [100, 191, 186],
            [101, 192, 187],
            [ 58, 149, 144]],
```

```

[[233, 218, 189],
 [231, 216, 187],
 [233, 216, 190],
 ...,
 [ 64, 155, 150],
 [107, 198, 193],
 [ 91, 182, 177]],

...,

[[ 24,  0,  5],
 [ 27,  7,  8],
 [ 20,  7,  0],
 ...,
 [  0,  0,  0],
 [  0,  0,  0],
 [  0,  0,  0]],

[[ 23,  5,  3],
 [ 20,  2,  0],
 [ 19,  4,  0],
 ...,
 [  0,  0,  0],
 [  0,  0,  0],
 [  0,  0,  0]],

[[ 34, 16, 14],
 [ 34, 16, 14],
 [ 33, 18, 13],
 ...,
 [ 13, 13, 13],
 [ 13, 13, 13],
 [ 13, 13, 13]]], dtype=uint8)

```

```
[14]: type(Image_array)
```

```
[14]: numpy.ndarray
```

```
[15]: Image_array.shape      # height, and width, and channel
```

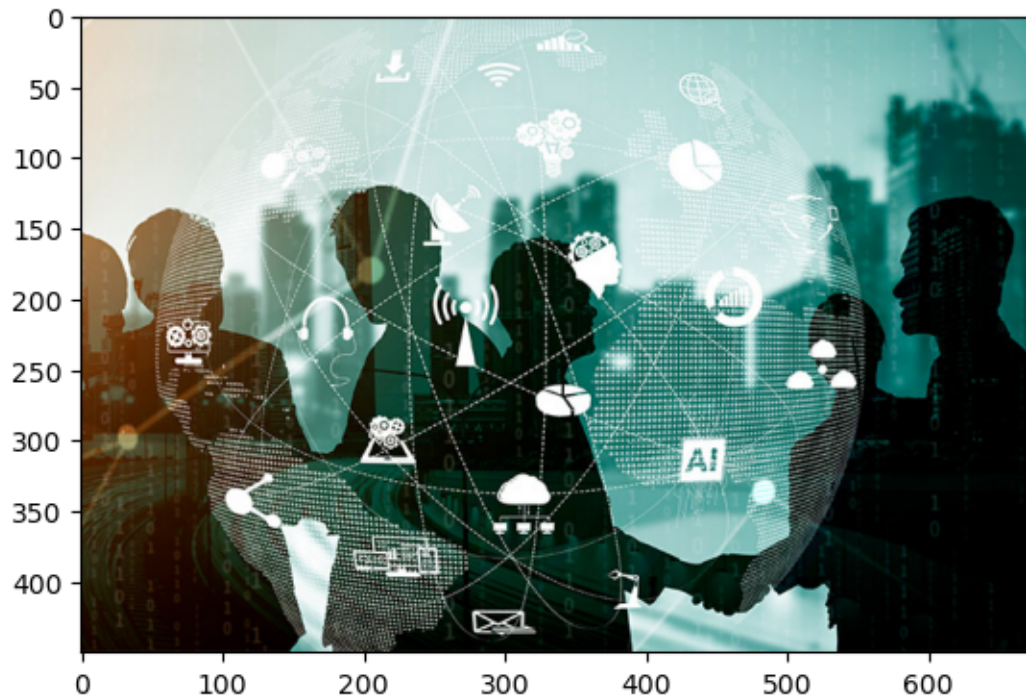
```
[15]: (450, 675, 3)
```

```
[16]: np.ndim(Image_array)
```

```
[16]: 3
```

```
[17]: plt.imshow(Image_array)
```

```
[17]: <matplotlib.image.AxesImage at 0x24d0736b390>
```



```
[18]: network =Image_array.copy()
```

```
[19]: network == Image_array
```

```
[19]: 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]],

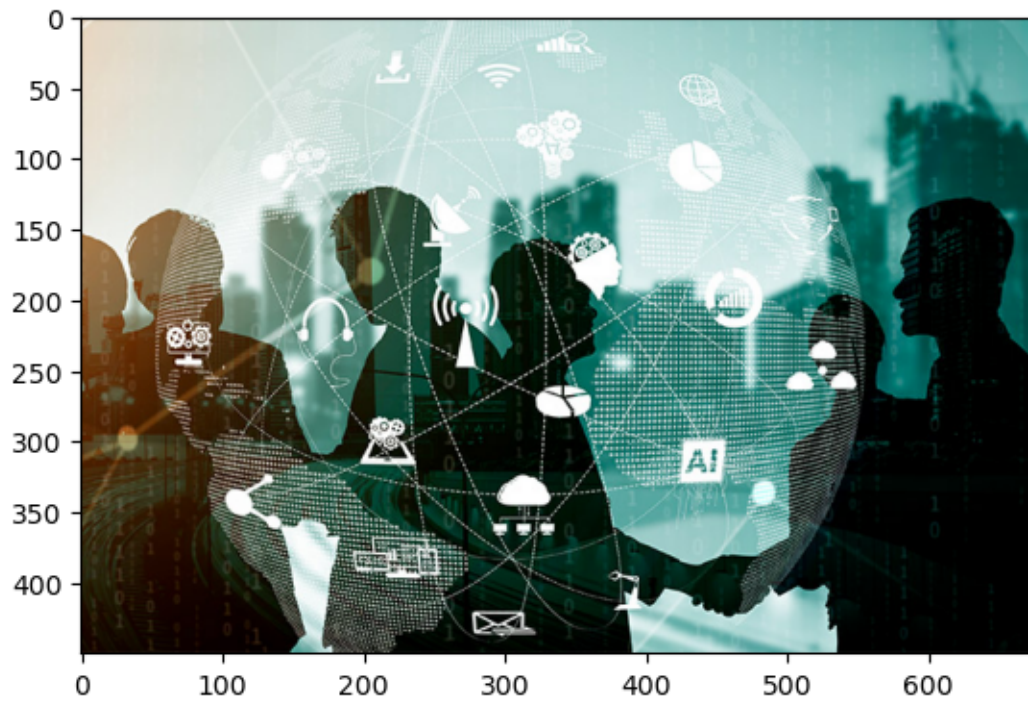
[[ True,  True,  True],
 [ True,  True,  True],
 [ True,  True,  True],
 ...,
 [ True,  True,  True],
 [ True,  True,  True],
 [ True,  True,  True]],

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

```

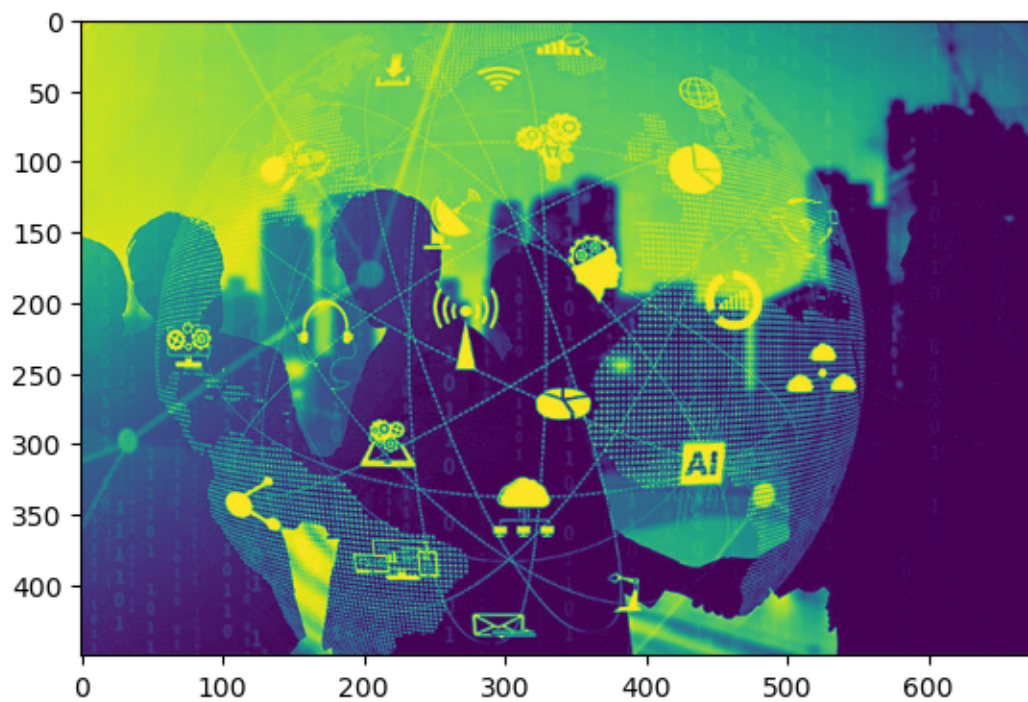
```
[20]: plt.imshow(Image_array)
```

```
[20]: <matplotlib.image.AxesImage at 0x24d074f5150>
```



```
[21]: plt.imshow(Image_array[:, :, 0])
```

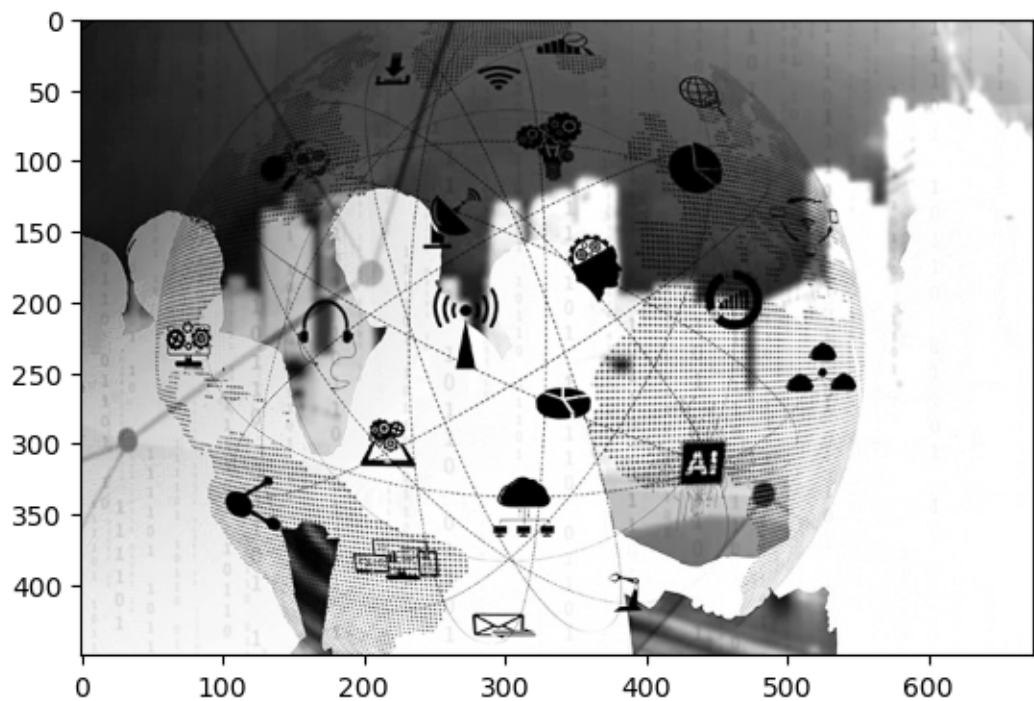
```
[21]: <matplotlib.image.AxesImage at 0x24d0759c790>
```




```
# Color map = cmap
```

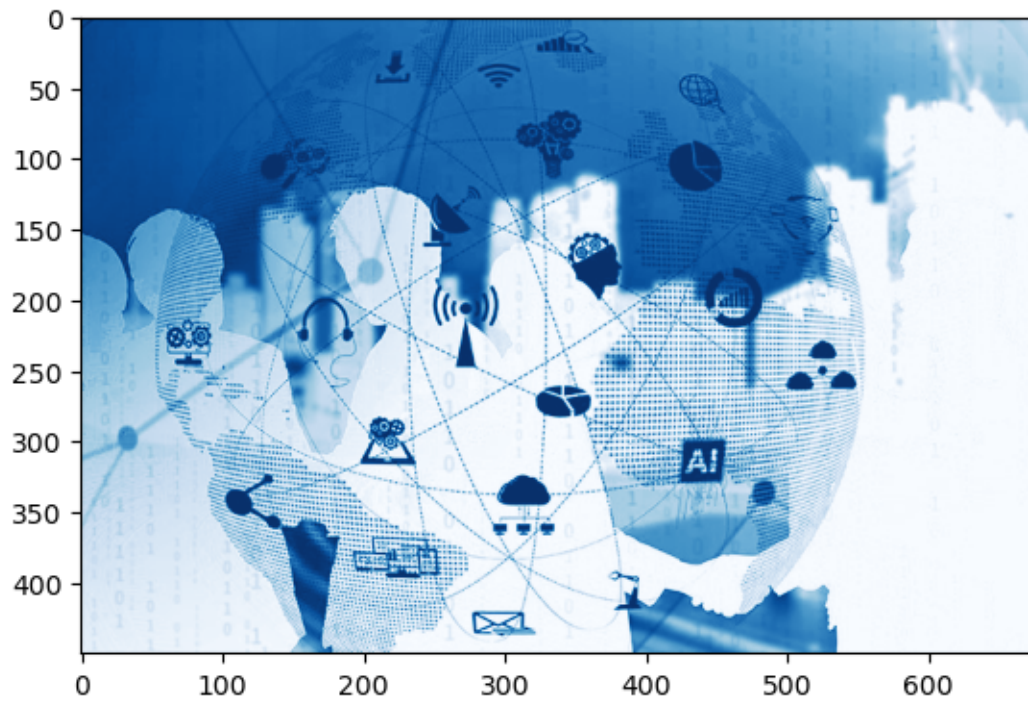
```
plt.imshow(Image_array[:, :, 0], cmap='Greys')
```

```
[23]: <matplotlib.image.AxesImage at 0x24d072d5150>
```



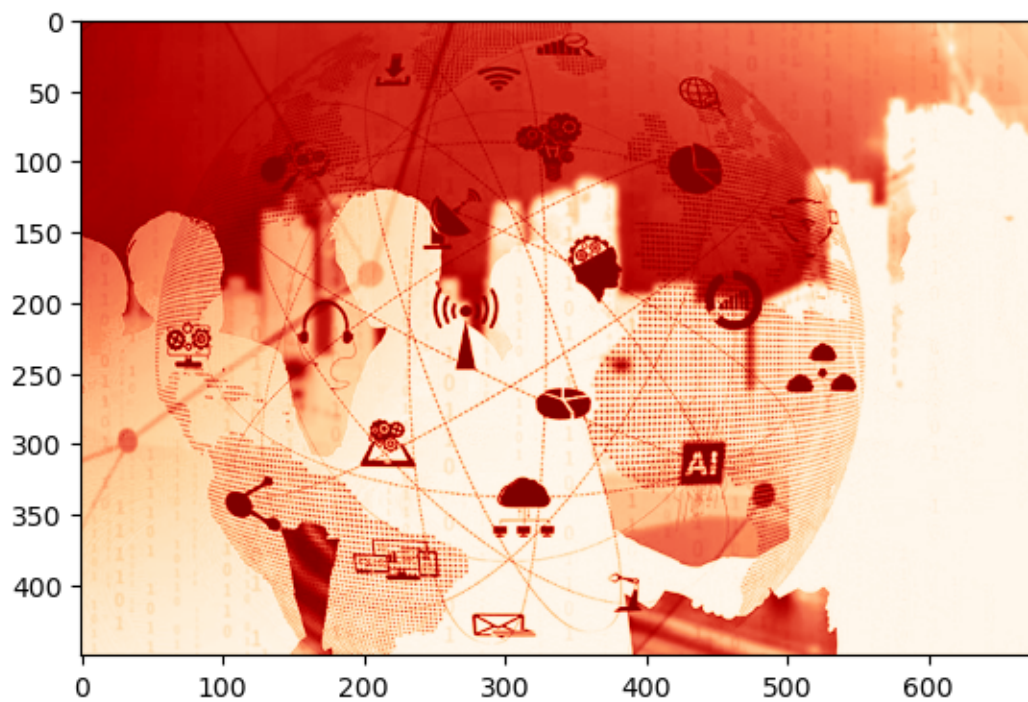
```
plt.imshow(Image_array[:, :, 0], cmap='Blues')
```

```
[24]: <matplotlib.image.AxesImage at 0x24d07f03e50>
```



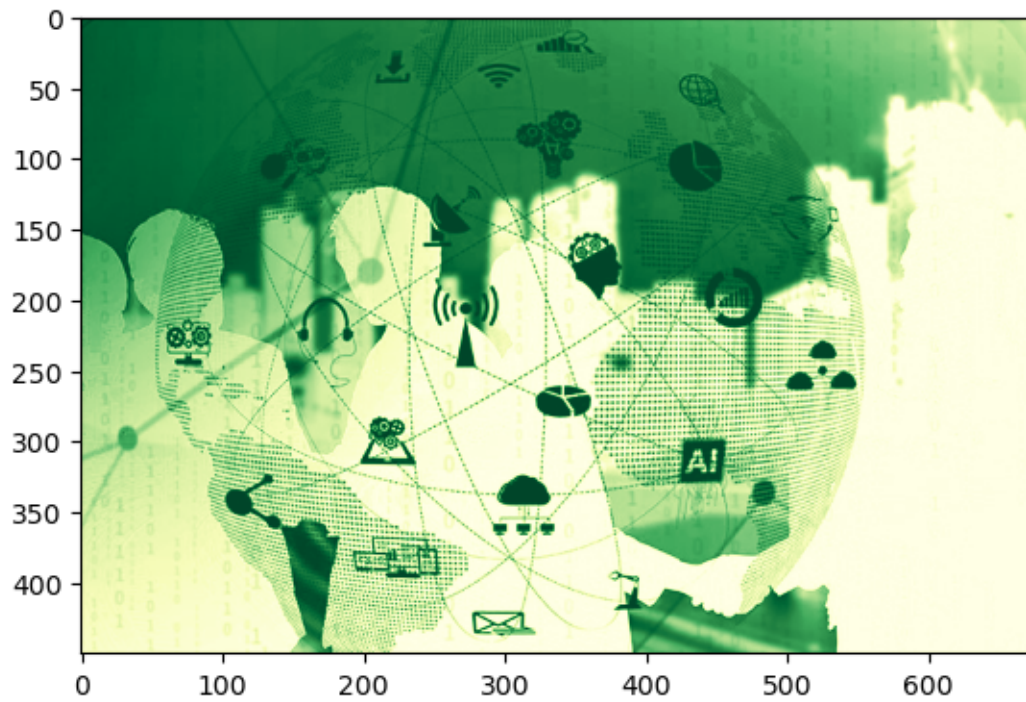
```
[25]: plt.imshow(Image_array[:, :, 0], cmap='OrRd')
```

```
[25]: <matplotlib.image.AxesImage at 0x24d08fadb90>
```



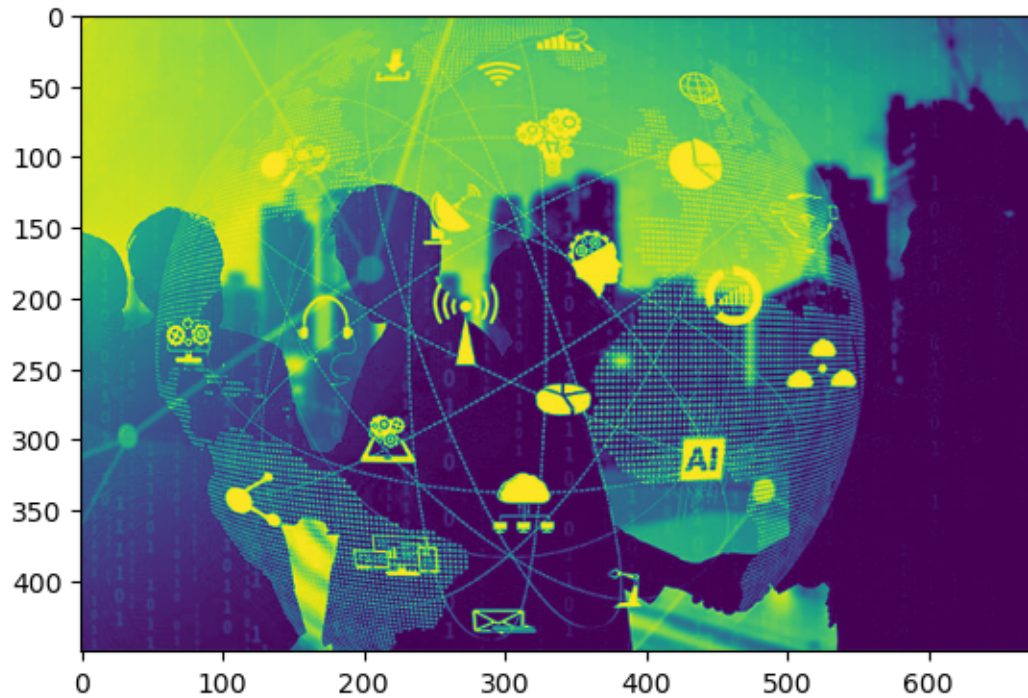

```
plt.imshow(Image_array[:, :, 0], cmap='YlGn')
```

```
[26]: <matplotlib.image.AxesImage at 0x24d09096dd0>
```



```
plt.imshow(Image_array[:, :, 0])
```

```
[27]: <matplotlib.image.AxesImage at 0x24d090f8b50>
```



```
[28]: # open cv lib
```

```
[30]: Image_array[:, :, 1]
```

```
[30]: array([[216, 216, 215, ..., 201, 153, 158],
           [221, 214, 210, ..., 191, 192, 149],
           [218, 216, 216, ..., 155, 198, 182],
           ...,
           [ 0,  7,  7, ...,  0,  0,  0],
           [ 5,  2,  4, ...,  0,  0,  0],
           [16, 16, 18, ..., 13, 13, 13]], dtype=uint8)
```

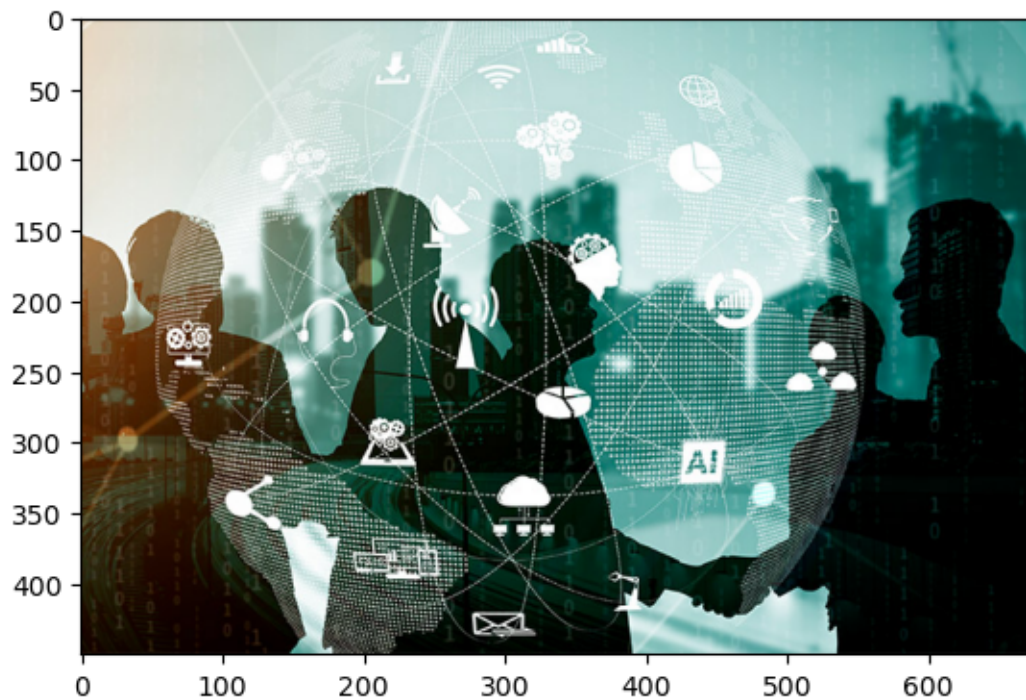
```
[ ]: # 10 to 14 leave 5 days leave
```

```
[32]: Image_array[:, :, 1]
```

```
[32]: array([[216, 216, 215, ..., 201, 153, 158],
           [221, 214, 210, ..., 191, 192, 149],
           [218, 216, 216, ..., 155, 198, 182],
           ...,
           [ 0,  7,  7, ...,  0,  0,  0],
           [ 5,  2,  4, ...,  0,  0,  0],
           [16, 16, 18, ..., 13, 13, 13]], dtype=uint8)
```

```
[37]: plt.imshow(Image_array)
```

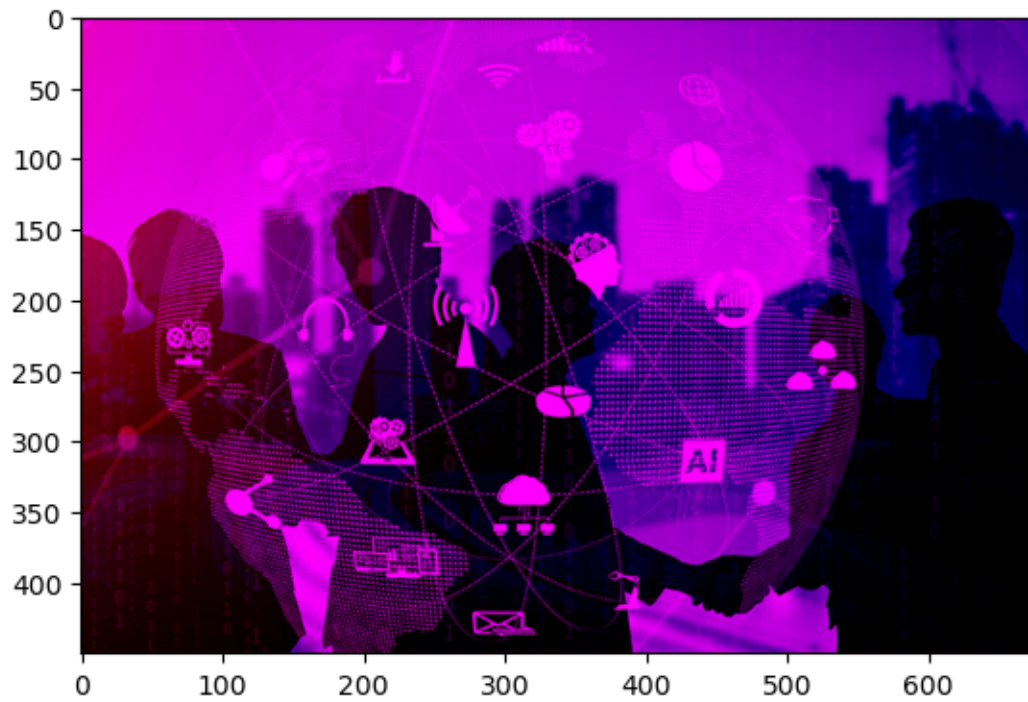
```
[37]: <matplotlib.image.AxesImage at 0x24d09d5e2d0>
```



```
[43]: Image_array_copy = Image_array.copy()  
Image_array_copy[:, :, 1] = 0
```

```
[47]: plt.imshow(Image_array_copy)
```

```
[47]: <matplotlib.image.AxesImage at 0x24d09d10790>
```



```
[51]: Image_array_copy[:, :, 0] = 0
```

```
[53]: plt.imshow(Image_array_copy)
```

```
[53]: <matplotlib.image.AxesImage at 0x24d09f75390>
```

