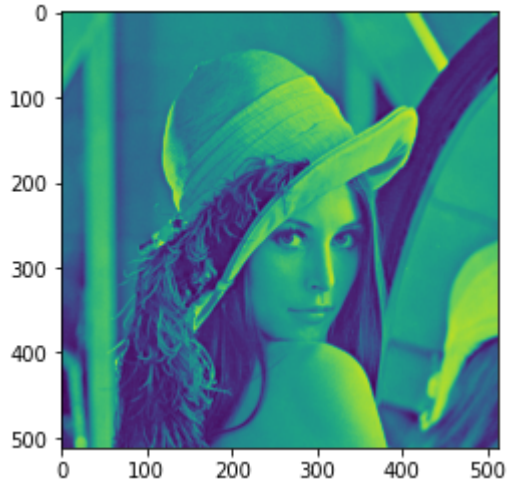
```
import numpy as np
import matplotlib.image as img
import matplotlib.pyplot as plt
import cv2


from google.colab import drive
drive.mount('/content/drive')
image=cv2.imread("/content/drive/My Drive/Lenna.png",cv2.IMREAD_GRAYSCALE)
plt.imshow(image)
```

```
Drive already mounted at /content/drive; to attempt to forcibly remount, call drive.mour
<matplotlib.image.AxesImage at 0x7f2ed6c18fd0>
```




```
print(image.shape)
```

```
(512, 512)
```

```
row ,col = image.shape
#convert each integer pixel value of given image to a bit pixel value of 8-bits
def intToBitArray(image) :
    list = []
    for i in range(row):
        for j in range(col):
             list.append(np.binary_repr(image[i][j],width=8))
    return list


imgIn1D = intToBitArray(image)



def bitplane(bitImgVal,img1D ):
```

```
    bitList = [int(i[bitImgVal]) for i in img1D]
    return bitList
eightbitimg = np.array(bitplane(0, imgIn1D)) * 128 #2^(n-1)
sevenbitimg = np.array(bitplane(1,imgIn1D)) * 64



eight = np.reshape(eightbitimg,(row,col))
seven = np.reshape(sevenbitimg,(row,col))



plt.subplot(241),plt.imshow(eight),plt.title("eight")
plt.subplot(242),plt.imshow(seven),plt.title("seven")
```

```
(<matplotlib.axes._subplots.AxesSubplot at 0x7f2ed433d358>,
 <matplotlib.image.AxesImage at 0x7f2ed430d048>,
 Text(0.5, 1.0, 'seven'))
```