In [1]:
```python
import numpy as np
```

In [3]:
```python
ones_arr=np.ones((5,5))
```

In [4]:
```python
ones_arr
```

Out[4]:
```
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 [6]:
```python
ones_arr=np.ones((5,5),dtype=int)
```

In [7]:
```python
ones_arr
```

Out[7]:
```
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 [9]:
```python
zeros_arr=np.zeros((3,3),dtype=int)
zeros_arr
```

Out[9]:
```
array([[0, 0, 0],
       [0, 0, 0],
       [0, 0, 0]])
```

In [10]:
```python
ones_arr
```

Out[10]:
```
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 [11]:
```python
ones_arr*255
```

Out[11]:
```
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 [12]:
```python
zeros_arr
```

Out[12]:
```
array([[0, 0, 0],
       [0, 0, 0],
       [0, 0, 0]])
```

In [13]:
```python
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]:
```python
import matplotlib.pyplot as plt
```

In [15]:
```python
# all the graph/images keep inside the graph
```

In [16]:
```python
%matplotlib inline
```

In [17]:
```python
from PIL import Image
```

In [18]:
```python
Rose=Image.open(r"C:\Users\admin\Desktop/Rose.jpg")
Rose
```

Out[18]:

In [19]:
```python
# now we check the array format of the above image
```

In [20]:
```python
type(Rose)
```

Out[20]:   PIL.JpegImagePlugin.JpegImageFile

In [21]:
```python
Rose_arr=np.asarray(Rose)
print(Rose_arr)
```

```
[[[255 255 255]
  [255 255 255]
  [255 255 255]
  ...
  [255 255 255]
  [255 255 255]
  [255 255 255]]

 [[255 255 255]
  [255 255 255]
  [255 255 255]
  ...
  [255 255 255]
  [255 255 255]
  [255 255 255]]

 [[255 255 255]
  [255 255 255]
  [255 255 255]
  ...
  [255 255 255]
  [255 255 255]
  [255 255 255]]

 ...

 [[255 255 255]
  [255 255 255]
  [255 255 255]
  ...
  [255 255 255]
  [255 255 255]
  [255 255 255]]

 [[255 255 255]
  [255 255 255]
  [255 255 255]
  ...
  [255 255 255]
  [255 255 255]
  [255 255 255]]

 [[255 255 255]
  [255 255 255]
  [255 255 255]
  ...
  [255 255 255]
  [255 255 255]
  [255 255 255]]]
```
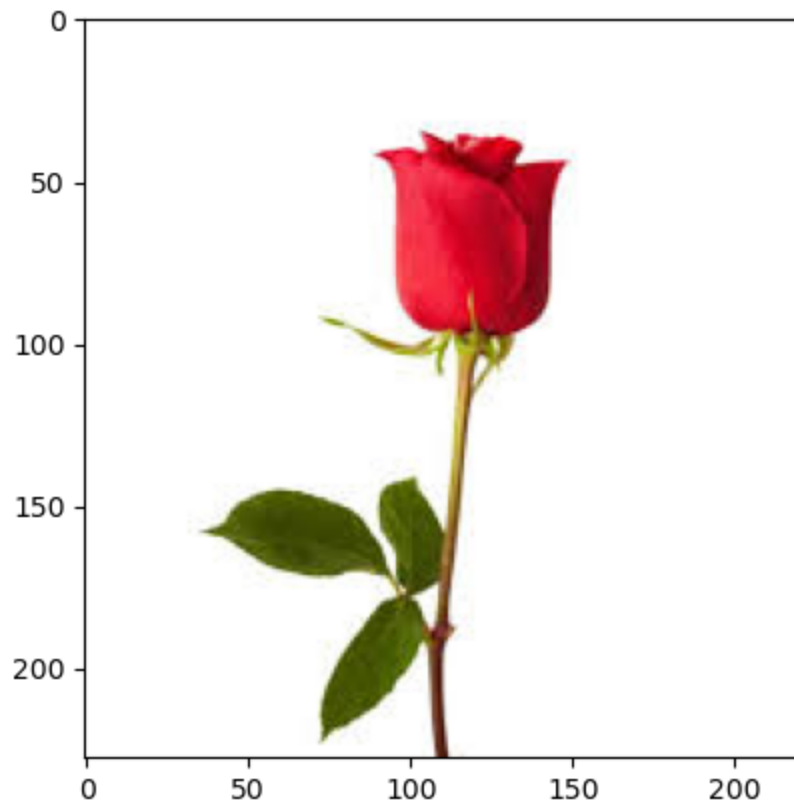
```python
In [22]:  plt.imshow(Rose_arr)
          plt.show()
```

In [23]:
```python
Rose_red=Rose_arr.copy()
```

In [24]:
```python
Rose_red
plt.show()
```

In [27]:
```python
print(Rose_arr==Rose_red)
```

```
[[[ True   True   True]
  [ True   True   True]
  [ True   True   True]
  ...
  [ True   True   True]
  [ True   True   True]
  [ True   True   True]]

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

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

 ...

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

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

 [[ True   True   True]
  [ True   True   True]
  [ True   True   True]
  ...
  [ True   True   True]
  [ True   True   True]
  [ True   True   True]]]
```
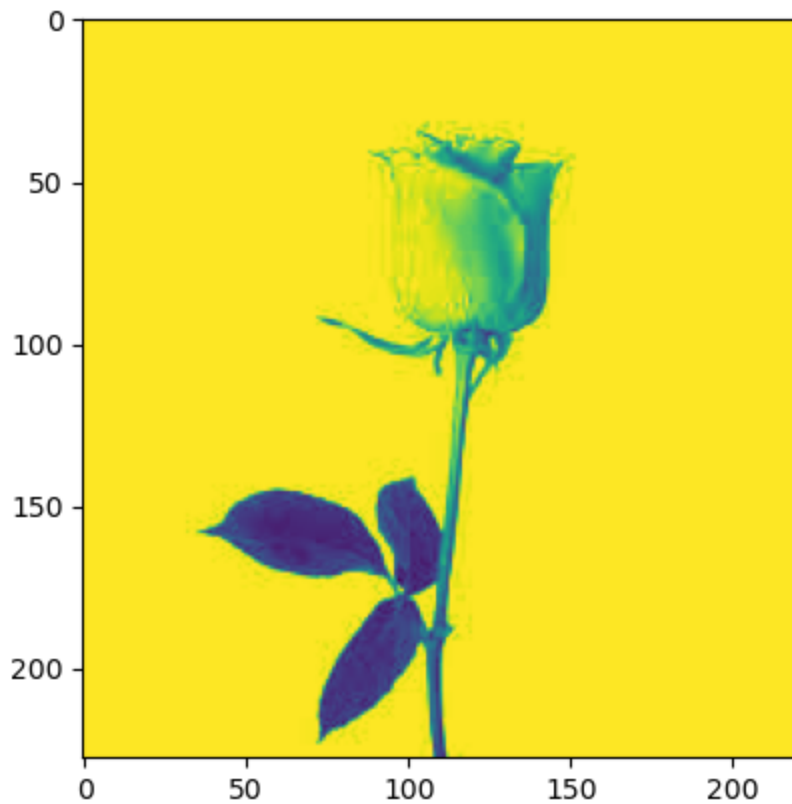
In [28]: `Rose_red.shape`

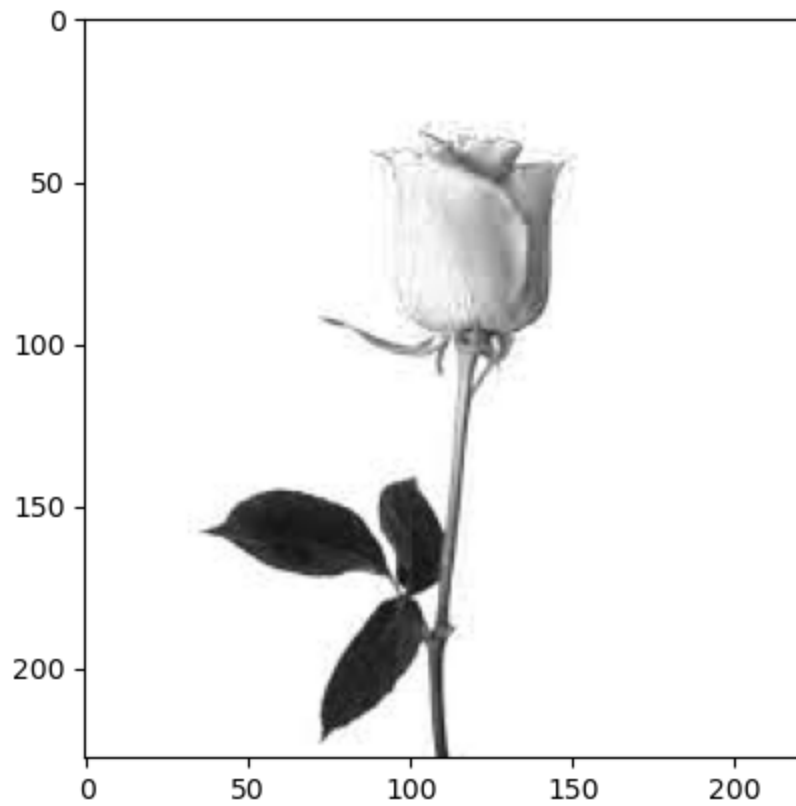Out[28]: (228, 221, 3)
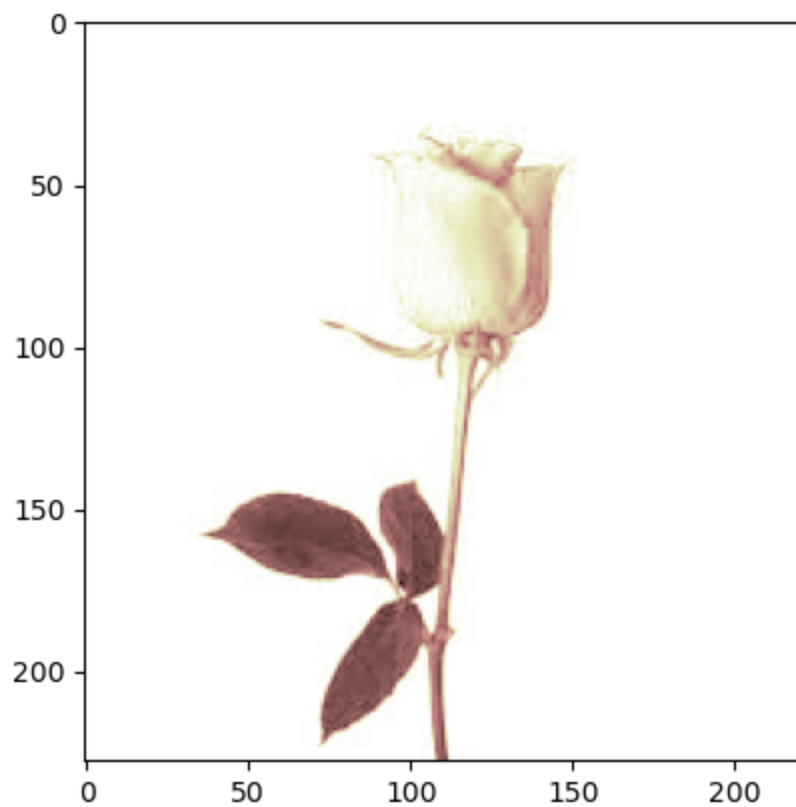
In [30]: `plt.imshow(Rose_red[:,:,0])`

```
plt.show()
```


In [32]: `print(Rose_red[:,:,0])`

```
[[255 255 255 ... 255 255 255]
 [255 255 255 ... 255 255 255]
 [255 255 255 ... 255 255 255]
 ...
 [255 255 255 ... 255 255 255]
 [255 255 255 ... 255 255 255]
 [255 255 255 ... 255 255 255]]
```

In [33]: `plt.imshow(Rose_red[:,:,0],cmap='gray')`
`plt.show()`

In [34]:
```python
plt.imshow(Rose_red[:,:,0],cmap='pink')
plt.show()
```
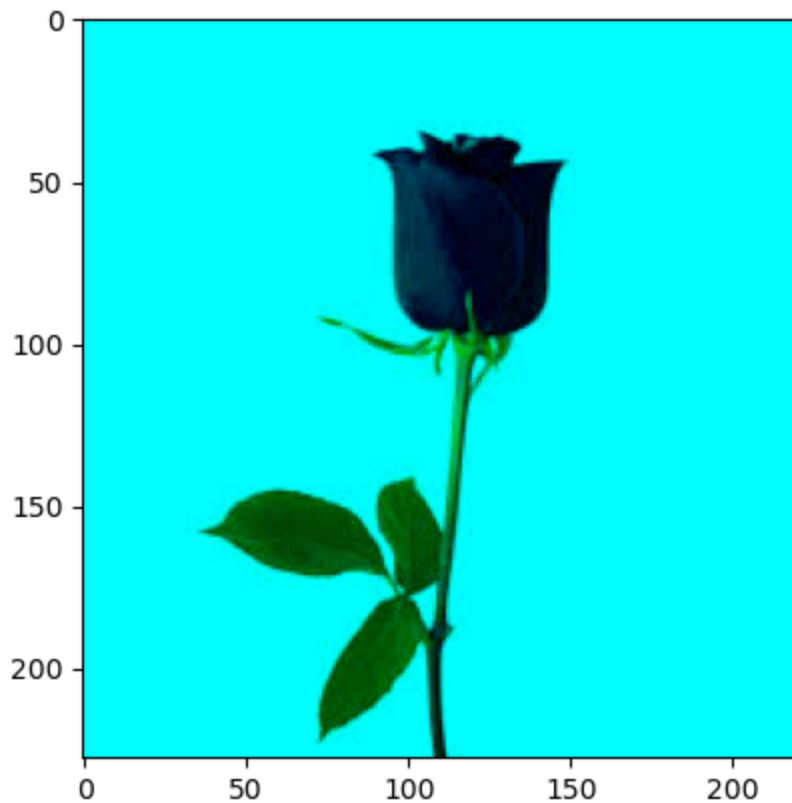

In [38]:
```python
Rose_red[:,:,0]=0
```

In [39]: `Rose_red[:,:,0]`

Out[39]:
```
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 [40]:
```
plt.imshow(Rose_red)
plt.show()
```


In [41]:
```
Rose_red[:,:,2]=0
Rose_red[:,:,2]
```

Out[41]:
```
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 [42]: `Rose_arr`

```
Out[42]:  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, 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, 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],
                   [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, 255, 255],
                   [255, 255, 255],
                   [255, 255, 255]]], dtype=uint8)
```

```
In [43]:  Rose
```

Out[43]:

In [44]:
```python
arr1=np.asarray(Rose)
arr1
```

Out[44]: 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, 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, 255],
                  [255, 255, 255]],

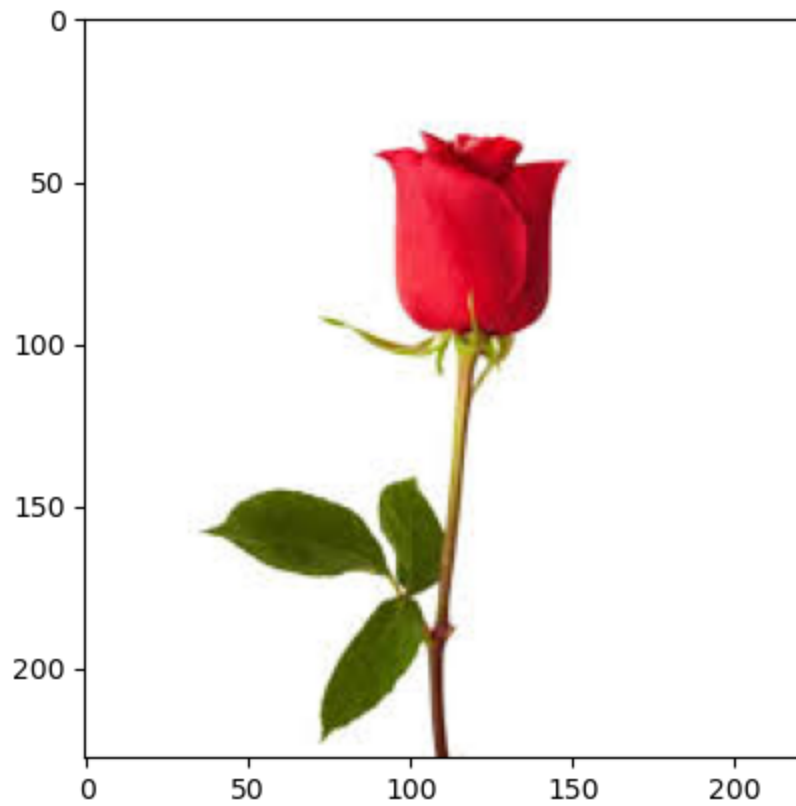   ...,

                 [[255, 255, 255],
                  [255, 255, 255],
                  [255, 255, 255],
                  ...,
                  [255, 255, 255],
                  [255, 255, 255],
                  [255, 255, 255]],

                 [[255, 255, 255],
                  [255, 255, 255],
                  [255, 255, 255],
                  ...,
                  [255, 255, 255],
                  [255, 255, 255],
                  [255, 255, 255]],

                 [[255, 255, 255],
                  [255, 255, 255],
                  [255, 255, 255],
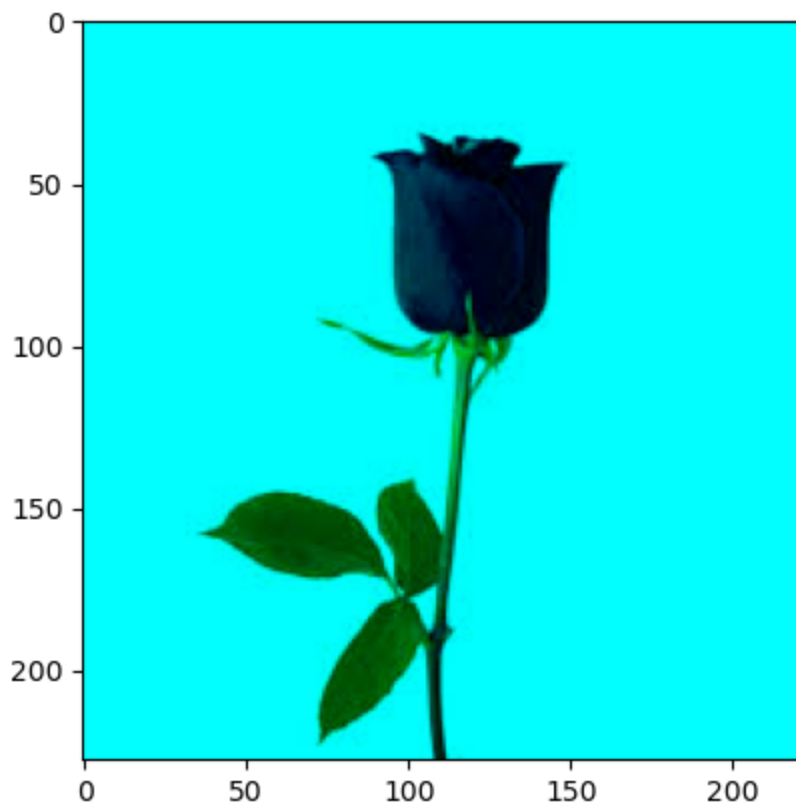   ...,
                  [255, 255, 255],
                  [255, 255, 255],
                  [255, 255, 255]]], dtype=uint8)

In [45]:
```python
plt.imshow(arr1)
plt.show()
```

In [48]:
```python
Rose_img1=arr1.copy()
```

In [50]:
```python
Rose_img1[:,:,0]=0
```

In [51]:
```python
plt.imshow(Rose_img1)
plt.show()
```

```
In [52]:   Rose_img1[:,:,1]
```

```
Out[52]:   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, 255, 255, ..., 255, 255, 255],
                  [255, 255, 255, ..., 255, 255, 255]], dtype=uint8)
```

```
In [53]:   Rose_img1[:,:,1]
```

```
Out[53]:   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, 255, 255, ..., 255, 255, 255],
                  [255, 255, 255, ..., 255, 255, 255]], dtype=uint8)
```

```
In [54]:   Rose_img1[:,:,1]=0
```

```
In [55]:   plt.imshow(Rose_img1)
           plt.show()
```