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

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

In [7]:
```
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]:
```
ones_arr*225
```

Out[9]:
```
array([[225, 225, 225, 225, 225],
       [225, 225, 225, 225, 225],
       [225, 225, 225, 225, 225],
       [225, 225, 225, 225, 225],
       [225, 225, 225, 225, 225]])
```

In [11]:
```
import matplotlib.pyplot as plt
```

In [13]:
```
from PIL import Image
```

In [15]:
```
horse_img=Image.open(r'C:\Users\LENOVO\Desktop\horse.jpeg')
horse_img
```

Out[15]:

In [19]:
```
type(horse_img)
```

Out[19]: PIL.JpegImagePlugin.JpegImageFile

In [21]:
```
horse_arr=np.asarray(horse_img)
horse_img
```

Out[21]:

In [23]:
```
horse_arr=np.asarray(horse_img)
horse_arr
```

Out[23]:
```
array([[[15, 19, 30],
        [15, 19, 30],
        [15, 19, 30],
        ...,
        [26, 41, 38],
        [23, 38, 35],
        [19, 34, 31]],

       [[15, 19, 30],
        [15, 19, 30],
        [14, 18, 29],
        ...,
        [28, 43, 40],
        [25, 40, 37],
        [21, 36, 33]],

       [[15, 19, 30],
        [14, 18, 29],
        [14, 18, 29],
        ...,
        [26, 41, 38],
        [23, 38, 35],
        [20, 35, 32]],

       ...,

       [[46, 42, 31],
        [32, 28, 17],
        [35, 31, 20],
        ...,
        [26, 40, 40],
        [24, 36, 36],
        [19, 31, 31]],

       [[41, 44, 37],
        [31, 34, 27],
        [37, 38, 32],
        ...,
        [17, 31, 31],
        [18, 30, 30],
        [16, 28, 28]],

       [[42, 47, 41],
        [31, 36, 30],
        [27, 32, 26],
        ...,
        [15, 29, 29],
        [18, 30, 30],
        [19, 31, 31]]], dtype=uint8)
```

In [25]:
```
type(horse_arr)
```

Out[25]:
```
numpy.ndarray
```

In [27]:
```
plt.imshow(horse_arr)  #plt.show(horse_arr) new os
```

Out[27]: <matplotlib.image.AxesImage at 0x1ec8fa92c00>

In [29]:
```
horse_arr.shape
```

Out[29]: (1500, 2251, 3)

In [31]:
```
horse_red=horse_arr.copy()
```

In [33]:
```
horse_red
```

Out[33]:
```
array([[[15, 19, 30],
        [15, 19, 30],
        [15, 19, 30],
        ...,
        [26, 41, 38],
        [23, 38, 35],
        [19, 34, 31]],

       [[15, 19, 30],
        [15, 19, 30],
        [14, 18, 29],
        ...,
        [28, 43, 40],
        [25, 40, 37],
        [21, 36, 33]],

       [[15, 19, 30],
        [14, 18, 29],
        [14, 18, 29],
        ...,
        [26, 41, 38],
        [23, 38, 35],
        [20, 35, 32]],

       ...,

       [[46, 42, 31],
        [32, 28, 17],
        [35, 31, 20],
        ...,
        [26, 40, 40],
        [24, 36, 36],
        [19, 31, 31]],

       [[41, 44, 37],
        [31, 34, 27],
        [37, 38, 32],
        ...,
        [17, 31, 31],
        [18, 30, 30],
        [16, 28, 28]],

       [[42, 47, 41],
        [31, 36, 30],
        [27, 32, 26],
        ...,
        [15, 29, 29],
        [18, 30, 30],
        [19, 31, 31]]], dtype=uint8)
```

In [35]:
```
horse_arr==horse_red
```

Out[35]:
```
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 [37]:
```
plt.imshow(horse_red)
```

Out[37]:
```
<matplotlib.image.AxesImage at 0x1ec944e7980>
```

In [41]:
```
horse_red.shape
```

Out[41]:
```
(1500, 2251, 3)
```

In [43]:
```
# R G B
plt.imshow(horse_red[:,:,0])
```

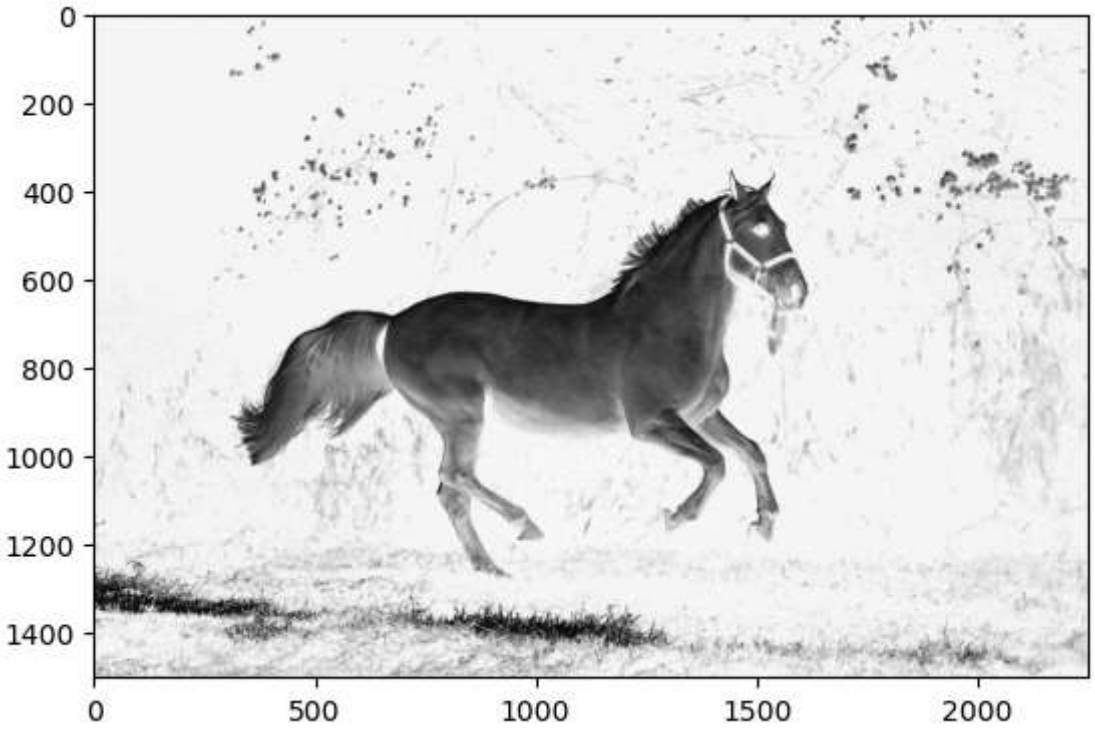
Out[43]:
```
<matplotlib.image.AxesImage at 0x1ec945544d0>
```

In [45]:
```
horse_red[:,:,0]
```

Out[45]:
```
array([[15, 15, 15, ..., 26, 23, 19],
       [15, 15, 14, ..., 28, 25, 21],
       [15, 14, 14, ..., 26, 23, 20],
       ...,
       [46, 32, 35, ..., 26, 24, 19],
       [41, 31, 37, ..., 17, 18, 16],
       [42, 31, 27, ..., 15, 18, 19]], dtype=uint8)
```

In [52]:
```
plt.imshow(horse_red[:,:,0], cmap='Greys')
```

Out[52]:
```
<matplotlib.image.AxesImage at 0x1ec94523050>
```



In [56]:
```
plt.imshow(horse_red[:,:,1], cmap='grey')
```

Out[56]:
```
<matplotlib.image.AxesImage at 0x1ec900bacf0>
```

In [58]:
```
plt.imshow(horse_red[:,:,1], cmap='YlGn')
```

Out[58]: <matplotlib.image.AxesImage at 0x1ec93e4ff80>

In [60]:
```
horse_red[:,:,0]
```

Out[60]:
```
array([[15, 15, 15, ..., 26, 23, 19],
       [15, 15, 14, ..., 28, 25, 21],
       [15, 14, 14, ..., 26, 23, 20],
       ...,
       [46, 32, 35, ..., 26, 24, 19],
       [41, 31, 37, ..., 17, 18, 16],
       [42, 31, 27, ..., 15, 18, 19]], dtype=uint8)
```

In [62]:
```
horse_red[:,:,1]
```

Out[62]:
```
array([[19, 19, 19, ..., 41, 38, 34],
       [19, 19, 18, ..., 43, 40, 36],
       [19, 18, 18, ..., 41, 38, 35],
       ...,
       [42, 28, 31, ..., 40, 36, 31],
       [44, 34, 38, ..., 31, 30, 28],
       [47, 36, 32, ..., 29, 30, 31]], dtype=uint8)
```

In [64]:
```
horse_red[:,:,2]
```

Out[64]:
```
array([[30, 30, 30, ..., 38, 35, 31],
       [30, 30, 29, ..., 40, 37, 33],
       [30, 29, 29, ..., 38, 35, 32],
       ...,
       [31, 17, 20, ..., 40, 36, 31],
       [37, 27, 32, ..., 31, 30, 28],
       [41, 30, 26, ..., 29, 30, 31]], dtype=uint8)
```

In [66]:
```
horse_red[:,:,1]=0
```

In [68]:
```
plt.imshow(horse_red)
```

Out[68]:
```
<matplotlib.image.AxesImage at 0x1ec96e5eff0>
```

In [70]:
```
horse_red[:,:,2]
```

Out[70]:
```
array([[30, 30, 30, ..., 38, 35, 31],
       [30, 30, 29, ..., 40, 37, 33],
       [30, 29, 29, ..., 38, 35, 32],
       ...,
       [31, 17, 20, ..., 40, 36, 31],
       [37, 27, 32, ..., 31, 30, 28],
       [41, 30, 26, ..., 29, 30, 31]], dtype=uint8)
```

In [72]:
```
horse_red[:,:,2]=0
```

In [74]:
```
plt.imshow(horse_red)
```

Out[74]:
```
<matplotlib.image.AxesImage at 0x1ec900ab110>
```

In [76]:
```
horse_arr
```

Out[76]:
```
array([[[15, 19, 30],
        [15, 19, 30],
        [15, 19, 30],
        ...,
        [26, 41, 38],
        [23, 38, 35],
        [19, 34, 31]],

       [[15, 19, 30],
        [15, 19, 30],
        [14, 18, 29],
        ...,
        [28, 43, 40],
        [25, 40, 37],
        [21, 36, 33]],

       [[15, 19, 30],
        [14, 18, 29],
        [14, 18, 29],
        ...,
        [26, 41, 38],
        [23, 38, 35],
        [20, 35, 32]],

       ...,

       [[46, 42, 31],
        [32, 28, 17],
        [35, 31, 20],
        ...,
        [26, 40, 40],
        [24, 36, 36],
        [19, 31, 31]],

       [[41, 44, 37],
        [31, 34, 27],
        [37, 38, 32],
        ...,
        [17, 31, 31],
        [18, 30, 30],
        [16, 28, 28]],

       [[42, 47, 41],
        [31, 36, 30],
        [27, 32, 26],
        ...,
        [15, 29, 29],
        [18, 30, 30],
        [19, 31, 31]]], dtype=uint8)
```

In [78]:
```
horse_red
```

Out[78]:
```
array([[[15,  0,  0],
        [15,  0,  0],
        [15,  0,  0],
        ...,
        [26,  0,  0],
        [23,  0,  0],
        [19,  0,  0]],

       [[15,  0,  0],
        [15,  0,  0],
        [14,  0,  0],
        ...,
        [28,  0,  0],
        [25,  0,  0],
        [21,  0,  0]],

       [[15,  0,  0],
        [14,  0,  0],
        [14,  0,  0],
        ...,
        [26,  0,  0],
        [23,  0,  0],
        [20,  0,  0]],

       ...,

       [[46,  0,  0],
        [32,  0,  0],
        [35,  0,  0],
        ...,
        [26,  0,  0],
        [24,  0,  0],
        [19,  0,  0]],

       [[41,  0,  0],
        [31,  0,  0],
        [37,  0,  0],
        ...,
        [17,  0,  0],
        [18,  0,  0],
        [16,  0,  0]],

       [[42,  0,  0],
        [31,  0,  0],
        [27,  0,  0],
        ...,
        [15,  0,  0],
        [18,  0,  0],
        [19,  0,  0]]], dtype=uint8)
```

In [80]:
```
horse_img
```

Out[80]:

In [82]:
```
arr1=np.asarray(horse_img)
```

In [84]:
```
type(arr1)
```

Out[84]:
```
numpy.ndarray
```

In [86]:
```
arr1.shape
```

Out[86]:
```
(1500, 2251, 3)
```

In [88]:
```
plt.imshow(arr1)
```

Out[88]:
```
<matplotlib.image.AxesImage at 0x1ec93e1cda0>
```

In [99]:
```
horse_img1=arr1.copy()
```

horse_img1[:,:,0]=0

In [101…
```
plt.imshow(horse_img1)
```

Out[101…
```
<matplotlib.image.AxesImage at 0x1ec96d87f80>
```

In [103…
```
horse_img1[:,:,1]
```

Out[103…
```
array([[19, 19, 19, ..., 41, 38, 34],
       [19, 19, 18, ..., 43, 40, 36],
       [19, 18, 18, ..., 41, 38, 35],
       ...,
       [42, 28, 31, ..., 40, 36, 31],
       [44, 34, 38, ..., 31, 30, 28],
       [47, 36, 32, ..., 29, 30, 31]], dtype=uint8)
```

In [105…
```
horse_img[:,:,1]=0
```

In [107…
```
plt.imshow(horse_img1)
```

Out[107…
```
<matplotlib.image.AxesImage at 0x1ec96e89280>
```

In [ ]: