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

In [2]:
```
 ones_arr=np.ones((5,5))
ones_arr
```

Out[2]:
```
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 [3]:
```
 ones_arr=np.ones((5,5),dtype=int)
ones_arr
```

Out[3]:
```
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 [4]:
```
zeros_arr=np.zeros((3,3),dtype=int)
```

In [5]:
```
zeros_arr
```

Out[5]:
```
array([[0, 0, 0],
       [0, 0, 0],
       [0, 0, 0]])
```

In [6]:
```
ones_arr
```

Out[6]:
```
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 [7]:
```
ones_arr*255
```

Out[7]:
```
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 [8]:
```
zeros_arr
```

Out[8]:
```
array([[0, 0, 0],
       [0, 0, 0],
       [0, 0, 0]])
```

In [9]:
```
ones_arr
```

Out[9]:
```
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 [10]:
```
import matplotlib.pyplot as plt
```

In [11]:
```
%matplotlib inline
```

In [12]:
```
from PIL import Image
```

In [13]:
```
horse_img=Image.open(r'C:\Users\SWAPNA\OneDrive\Desktop\th.jpg')
```

In [14]:
```
horse_img
```

Out[14]:

In [15]:
```
type(horse_img)
```

Out[15]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [16]:
```
horse_arr=np.asarray(horse_img)
horse_arr
```

Out[16]:
```
array([[[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 12,  20,  23],
        [ 14,  22,  25],
        [ 17,  25,  28]],

       [[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 13,  21,  24],
        [ 14,  22,  25],
        [ 16,  24,  27]],

       [[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 15,  23,  26],
        [ 14,  22,  25],
        [ 13,  21,  24]],

       ...,

       [[ 96,  83,  38],
        [202, 189, 144],
        [197, 183, 138],
        ...,
        [ 35,  41,  39],
        [ 18,  27,  24],
        [ 21,  30,  29]],

       [[213, 200, 155],
        [142, 129,  84],
        [171, 157, 112],
        ...,
        [ 38,  44,  42],
        [ 21,  30,  27],
        [ 22,  31,  30]],

       [[144, 131,  87],
        [ 61,  48,   4],
        [167, 152, 109],
        ...,
        [ 46,  52,  50],
        [ 30,  39,  36],
        [ 31,  40,  39]]], dtype=uint8)
```

In [17]:
```
type(horse_arr)
```

Out[17]:
```
numpy.ndarray
```

In [18]:
```
horse_arr.shape
```

Out[18]:
```
(214, 400, 3)
```

In [19]:
```
plt.imshow(horse_arr)
plt.show()
```

In [20]:
```
horse_red=horse_arr.copy()
```

In [21]:
```
horse_red
```

Out[21]:
```
array([[[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 12,  20,  23],
        [ 14,  22,  25],
        [ 17,  25,  28]],

       [[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 13,  21,  24],
        [ 14,  22,  25],
        [ 16,  24,  27]],

       [[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 15,  23,  26],
        [ 14,  22,  25],
        [ 13,  21,  24]],

       ...,

       [[ 96,  83,  38],
        [202, 189, 144],
        [197, 183, 138],
        ...,
        [ 35,  41,  39],
        [ 18,  27,  24],
        [ 21,  30,  29]],

       [[213, 200, 155],
        [142, 129,  84],
        [171, 157, 112],
        ...,
        [ 38,  44,  42],
        [ 21,  30,  27],
        [ 22,  31,  30]],

       [[144, 131,  87],
        [ 61,  48,   4],
        [167, 152, 109],
        ...,
        [ 46,  52,  50],
        [ 30,  39,  36],
        [ 31,  40,  39]]], dtype=uint8)
```

In [22]:
```
horse_red.shape
```

Out[22]:
```
(214, 400, 3)
```

In [23]:
```
plt.imshow(horse_red[:,:,0])
```

Out[23]:
```
<matplotlib.image.AxesImage at 0x1cd11115090>
```

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

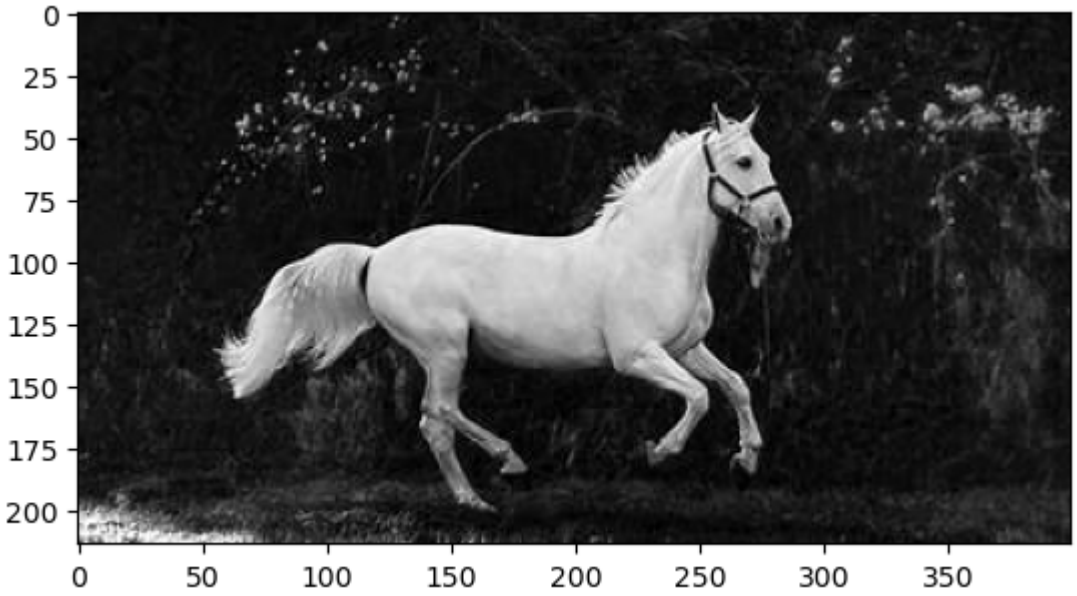
In [25]:
```
(horse_red[:,:,0])
```

Out[25]:
```
array([[ 18,  17,  15, ...,  12,  14,  17],
       [ 18,  17,  15, ...,  13,  14,  16],
       [ 18,  17,  15, ...,  15,  14,  13],
       ...,
       [ 96, 202, 197, ...,  35,  18,  21],
       [213, 142, 171, ...,  38,  21,  22],
       [144,  61, 167, ...,  46,  30,  31]], dtype=uint8)
```

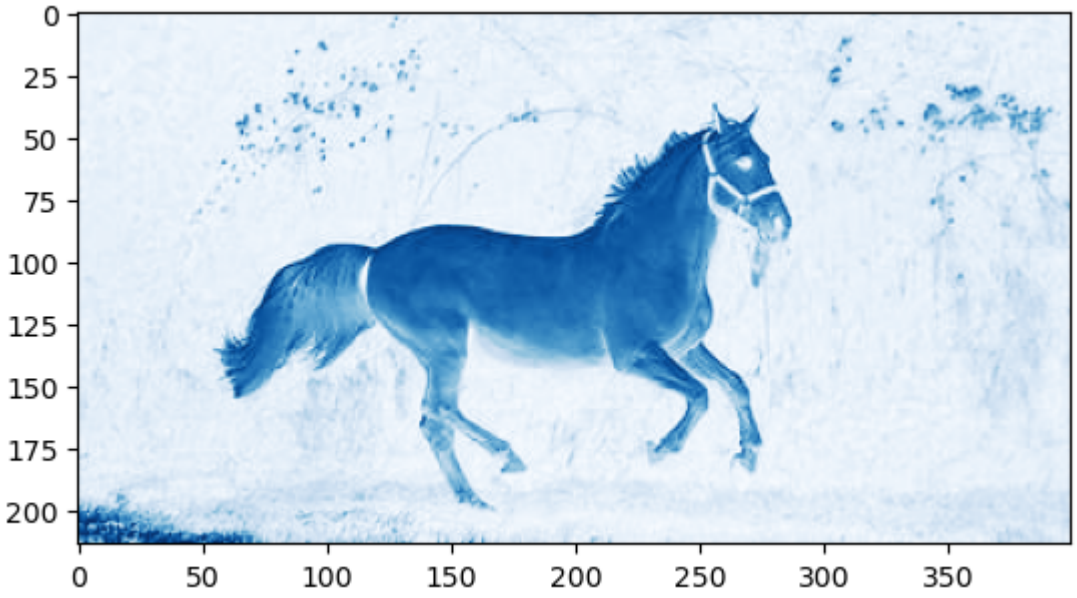
In [26]:
```
plt.imshow(horse_red[:,:,0],cmap='grey')
```

Out[26]:
```
<matplotlib.image.AxesImage at 0x1cd111a4190>
```

In [27]:
```
plt.show()
```

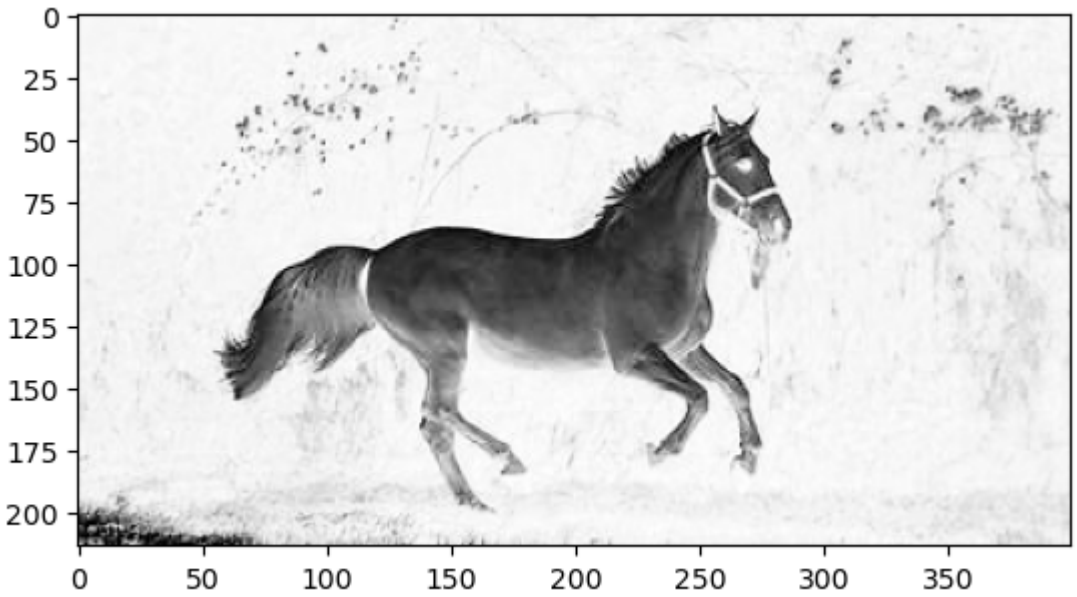


In [28]:
```
plt.imshow(horse_red[:,:,0],cmap='Blues')
plt.show()
```



In [29]:
```
plt.imshow(horse_red[:,:,0],cmap='Reds')
plt.show()
```

In [30]:
```
plt.imshow(horse_red[:,:,0],cmap='Greys')
plt.show()
```



In [31]:
```
(horse_red[:,:,0])
```

Out[31]:
```
array([[ 18,  17,  15, ...,  12,  14,  17],
       [ 18,  17,  15, ...,  13,  14,  16],
       [ 18,  17,  15, ...,  15,  14,  13],
       ...,
       [ 96, 202, 197, ...,  35,  18,  21],
       [213, 142, 171, ...,  38,  21,  22],
       [144,  61, 167, ...,  46,  30,  31]], dtype=uint8)
```

In [32]:
```
(horse_red[:,:,1])
```

Out[32]:
```
array([[ 18,  17,  15, ...,  20,  22,  25],
       [ 18,  17,  15, ...,  21,  22,  24],
       [ 18,  17,  15, ...,  23,  22,  21],
       ...,
       [ 83, 189, 183, ...,  41,  27,  30],
       [200, 129, 157, ...,  44,  30,  31],
       [131,  48, 152, ...,  52,  39,  40]], dtype=uint8)
```

In [33]:
```
(horse_red[:,:,2])
```

Out[33]:
```
array([[ 30,  29,  27, ...,  23,  25,  28],
       [ 30,  29,  27, ...,  24,  25,  27],
       [ 30,  29,  27, ...,  26,  25,  24],
       ...,
       [ 38, 144, 138, ...,  39,  24,  29],
       [155,  84, 112, ...,  42,  27,  30],
       [ 87,   4, 109, ...,  50,  36,  39]], dtype=uint8)
```

In [35]:
```
(horse_red[:,:,1])=0
```

In [36]:
```
(horse_red[:,:,1])
```

Out[36]:
```
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 [37]:
```
plt.imshow(horse_red)
plt.show()
```

In [38]:
```
(horse_red[:,:,2])=0
```

In [39]:
```
(horse_red[:,:,2])
```

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(horse_red)
plt.show()
```

In [41]:
```
horse_arr
```

Out[41]:
```
array([[[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 12,  20,  23],
        [ 14,  22,  25],
        [ 17,  25,  28]],

       [[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 13,  21,  24],
        [ 14,  22,  25],
        [ 16,  24,  27]],

       [[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 15,  23,  26],
        [ 14,  22,  25],
        [ 13,  21,  24]],

       ...,

       [[ 96,  83,  38],
        [202, 189, 144],
        [197, 183, 138],
        ...,
        [ 35,  41,  39],
        [ 18,  27,  24],
        [ 21,  30,  29]],

       [[213, 200, 155],
        [142, 129,  84],
        [171, 157, 112],
        ...,
        [ 38,  44,  42],
        [ 21,  30,  27],
        [ 22,  31,  30]],

       [[144, 131,  87],
        [ 61,  48,   4],
        [167, 152, 109],
        ...,
        [ 46,  52,  50],
        [ 30,  39,  36],
        [ 31,  40,  39]]], dtype=uint8)
```

In [42]:
```
horse_red
```

Out[42]:
```
array([[[ 18,   0,   0],
        [ 17,   0,   0],
        [ 15,   0,   0],
        ...,
        [ 12,   0,   0],
        [ 14,   0,   0],
        [ 17,   0,   0]],

       [[ 18,   0,   0],
        [ 17,   0,   0],
        [ 15,   0,   0],
        ...,
        [ 13,   0,   0],
        [ 14,   0,   0],
        [ 16,   0,   0]],

       [[ 18,   0,   0],
        [ 17,   0,   0],
        [ 15,   0,   0],
        ...,
        [ 15,   0,   0],
        [ 14,   0,   0],
        [ 13,   0,   0]],

       ...,

       [[ 96,   0,   0],
        [202,   0,   0],
        [197,   0,   0],
        ...,
        [ 35,   0,   0],
        [ 18,   0,   0],
        [ 21,   0,   0]],

       [[213,   0,   0],
        [142,   0,   0],
        [171,   0,   0],
        ...,
        [ 38,   0,   0],
        [ 21,   0,   0],
        [ 22,   0,   0]],

       [[144,   0,   0],
        [ 61,   0,   0],
        [167,   0,   0],
        ...,
        [ 46,   0,   0],
        [ 30,   0,   0],
        [ 31,   0,   0]]], dtype=uint8)
```

In [43]:
```
horse_img
```

Out[43]:

In [44]:
```
arry1=np.asarray(horse_img)
```

In [45]:
```
arry1
```

Out[45]:
```
array([[[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 12,  20,  23],
        [ 14,  22,  25],
        [ 17,  25,  28]],

       [[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 13,  21,  24],
        [ 14,  22,  25],
        [ 16,  24,  27]],

       [[ 18,  18,  30],
        [ 17,  17,  29],
        [ 15,  15,  27],
        ...,
        [ 15,  23,  26],
        [ 14,  22,  25],
        [ 13,  21,  24]],

       ...,

       [[ 96,  83,  38],
        [202, 189, 144],
        [197, 183, 138],
        ...,
        [ 35,  41,  39],
        [ 18,  27,  24],
        [ 21,  30,  29]],

       [[213, 200, 155],
        [142, 129,  84],
        [171, 157, 112],
        ...,
        [ 38,  44,  42],
        [ 21,  30,  27],
        [ 22,  31,  30]],

       [[144, 131,  87],
        [ 61,  48,   4],
        [167, 152, 109],
        ...,
        [ 46,  52,  50],
        [ 30,  39,  36],
        [ 31,  40,  39]]], dtype=uint8)
```

In [46]:
```
type(arry1)
```

Out[46]:
```
numpy.ndarray
```

In [48]:
```
arry1.shape
```

Out[48]:
```
(214, 400, 3)
```

In [49]:
```
plt.imshow(arry1)
plt.show()
```

In [68]:
```
horse_img1=arry1.copy()
```

In [70]:
```
horse_img1[:,:,0]=0
```

In [53]:
```
plt.imshow(horse_img1)
plt.show()
```

In [71]:
```
horse_img1[:,:,1]
```

Out[71]:
```
array([[ 18,  17,  15, ...,  20,  22,  25],
       [ 18,  17,  15, ...,  21,  22,  24],
       [ 18,  17,  15, ...,  23,  22,  21],
       ...,
       [ 83, 189, 183, ...,  41,  27,  30],
       [200, 129, 157, ...,  44,  30,  31],
       [131,  48, 152, ...,  52,  39,  40]], dtype=uint8)
```

In [72]:
```
horse_img1[:,:,1]=0
```

In [73]:
```
plt.imshow(horse_img1)
plt.show()
```

In [ ]: