

```

import numpy as np
ones_arr=np.ones((5,5),dtype=int)
ones_arr
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]])
arr=np.zeros((3,3),dtype=int)
arr
array([[0, 0, 0],
       [0, 0, 0],
       [0, 0, 0]])
ones_arr*255
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]])
import matplotlib.pyplot as plt
%matplotlib inline
from PIL import Image
horse_image=Image.open(r'C:\Users\ttwrd\OneDrive\Attachments\Desktop\
horse.jpeg')
horse_image

```



```
type(horse_image)
```

```
PIL.JpegImagePlugin.JpegImageFile
```

```
horse_array=np.asarray(horse_image)
```

```
horse_array
```

```
array([[20, 20, 32],  
       [20, 20, 32],  
       [20, 20, 32],  
       ...,  
       [14, 25, 27],  
       [17, 27, 29],  
       [17, 27, 29]],
```

```
      [[20, 20, 32],  
       [20, 20, 32],  
       [19, 19, 31],  
       ...,  
       [20, 31, 33],  
       [17, 27, 29],  
       [17, 27, 29]],
```

```
      [[20, 20, 32],  
       [19, 19, 31],  
       [19, 19, 31],  
       ...,  
       [14, 24, 26],  
       [16, 26, 28],  
       [16, 26, 28]],
```

```
      ...,
```

```
      [[17, 31, 18],  
       [16, 30, 17],  
       [24, 36, 24],  
       ...,  
       [51, 53, 42],  
       [69, 71, 60],  
       [69, 69, 59]],
```

```
      [[29, 41, 29],  
       [33, 45, 33],  
       [44, 54, 43],  
       ...,  
       [46, 48, 37],  
       [65, 67, 56],  
       [66, 66, 56]],
```

```
      [[49, 59, 48],  
       [51, 61, 50],
```

```

    [53, 61, 50],
    ...,
    [50, 52, 41],
    [54, 56, 45],
    [55, 55, 45]]], dtype=uint8)

```

```
horse_array.shape
```

```
(148, 234, 3)
```

```
plt.imshow(horse_array)
plt.show()
```



```
horse_red=horse_array.copy()
```

```
horse_red==horse_array
```

```

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]],

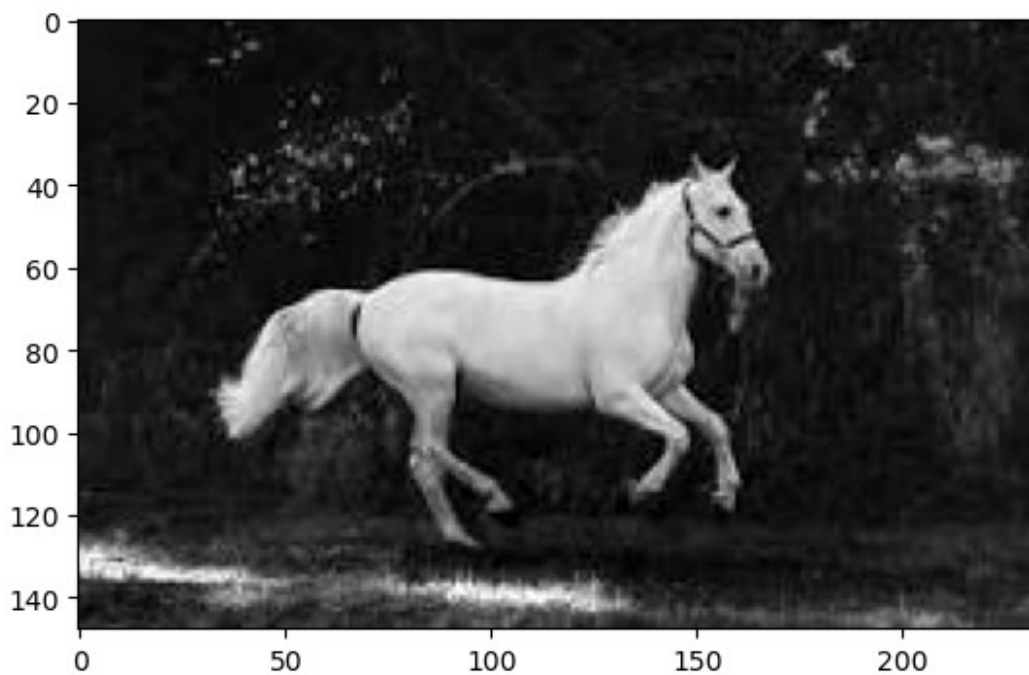
    [[ True,  True,  True],
     [ True,  True,  True],
     [ True,  True,  True],
     ...,
     [ True,  True,  True],
     [ True,  True,  True],
     [ True,  True,  True]]])

plt.imshow(horse_red)
plt.show()

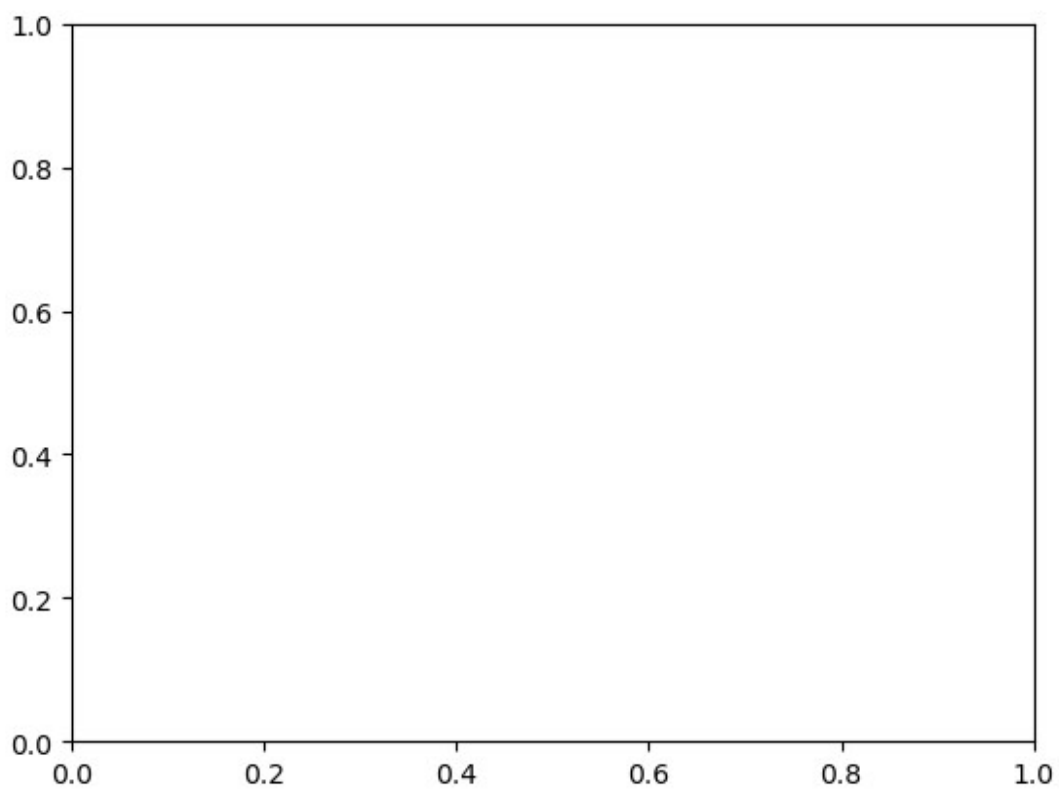
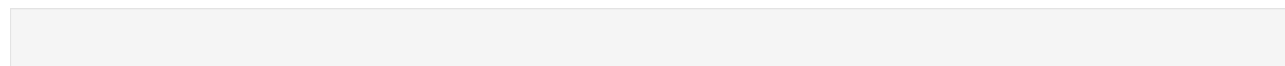
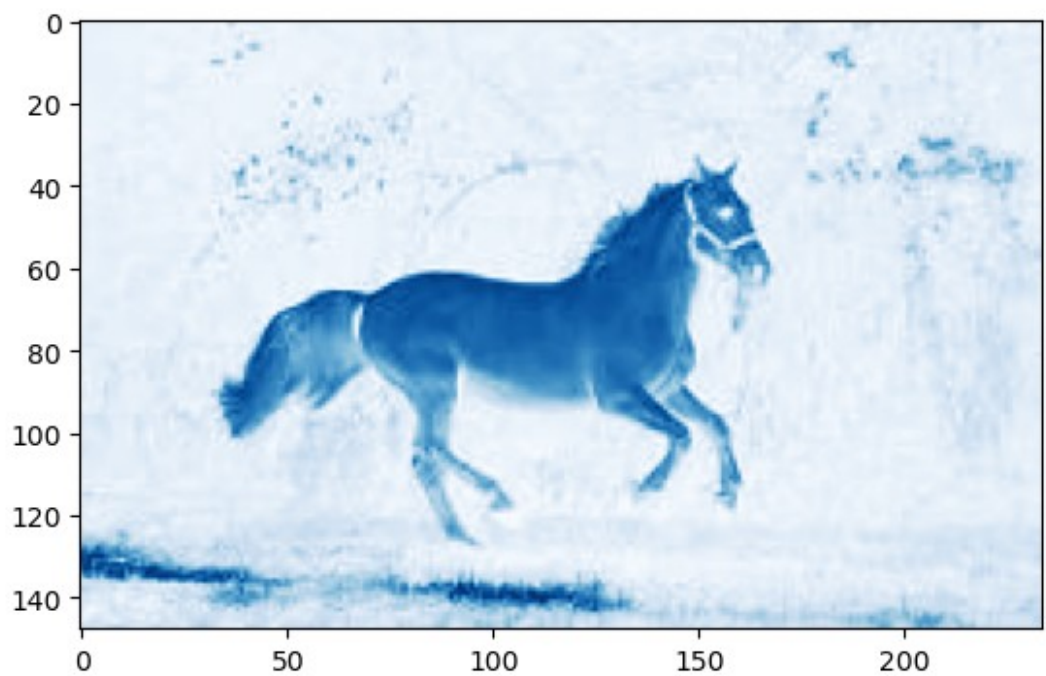
```



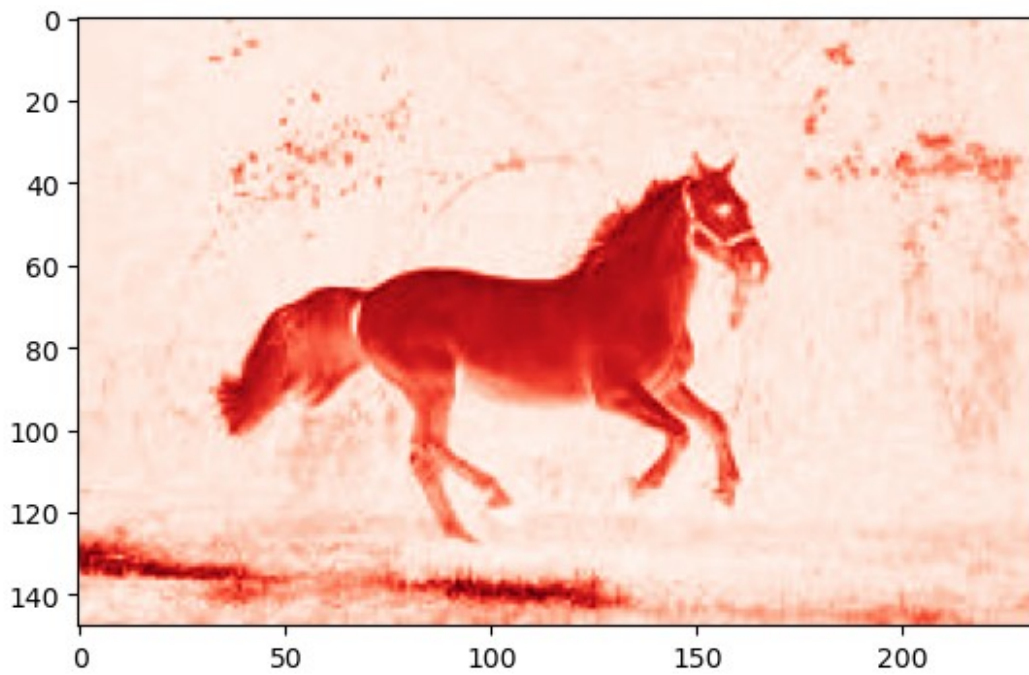
```
plt.imshow(horse_red[:, :, 0], cmap='gray')  
plt.show()
```



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



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



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



```
horse_red[:, :, 1]
array([[20, 20, 20, ..., 25, 27, 27],
       [20, 20, 19, ..., 31, 27, 27],
       [20, 19, 19, ..., 24, 26, 26],
       ...,
       [31, 30, 36, ..., 53, 71, 69],
       [41, 45, 54, ..., 48, 67, 66],
       [59, 61, 61, ..., 52, 56, 55]], dtype=uint8)
```

```
horse_red[:, :, 2]
array([[32, 32, 32, ..., 27, 29, 29],
       [32, 32, 31, ..., 33, 29, 29],
       [32, 31, 31, ..., 26, 28, 28],
       ...,
       [18, 17, 24, ..., 42, 60, 59],
       [29, 33, 43, ..., 37, 56, 56],
       [48, 50, 50, ..., 41, 45, 45]], dtype=uint8)
```

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

```
horse_red
```

```
array([[[ 0,  0, 32],
        [ 0,  0, 32],
        [ 0,  0, 32],
        ...,
        [ 0,  0, 27],
        [ 0,  0, 29],
        [ 0,  0, 29]],

       [[ 0,  0, 32],
        [ 0,  0, 32],
        [ 0,  0, 31],
        ...,
        [ 0,  0, 33],
        [ 0,  0, 29],
        [ 0,  0, 29]],

       [[ 0,  0, 32],
        [ 0,  0, 31],
        [ 0,  0, 31],
        ...,
        [ 0,  0, 26],
        [ 0,  0, 28],
        [ 0,  0, 28]],

       ...,

       [[ 0,  0, 18],
```



```

        [ 0,  0, 17],
        [ 0,  0, 24],
        ...,
        [ 0,  0, 42],
        [ 0,  0, 60],
        [ 0,  0, 59]],

        [[ 0,  0, 29],
        [ 0,  0, 33],
        [ 0,  0, 43],
        ...,
        [ 0,  0, 37],
        [ 0,  0, 56],
        [ 0,  0, 56]],

        [[ 0,  0, 48],
        [ 0,  0, 50],
        [ 0,  0, 50],
        ...,
        [ 0,  0, 41],
        [ 0,  0, 45],
        [ 0,  0, 45]]], dtype=uint8)

plt.imshow(horse_red)
plt.show()

```



```
arr1=np.asarray(horse_image)
```

arr1

arr1

```
array([[20, 20, 32],
       [20, 20, 32],
       [20, 20, 32],
       ...,
       [14, 25, 27],
       [17, 27, 29],
       [17, 27, 29]],

      [[20, 20, 32],
       [20, 20, 32],
       [19, 19, 31],
       ...,
       [20, 31, 33],
       [17, 27, 29],
       [17, 27, 29]],

      [[20, 20, 32],
       [19, 19, 31],
       [19, 19, 31],
       ...,
       [14, 24, 26],
       [16, 26, 28],
       [16, 26, 28]],

      ...,

      [[17, 31, 18],
       [16, 30, 17],
       [24, 36, 24],
       ...,
       [51, 53, 42],
       [69, 71, 60],
       [69, 69, 59]],

      [[29, 41, 29],
       [33, 45, 33],
       [44, 54, 43],
       ...,
       [46, 48, 37],
       [65, 67, 56],
       [66, 66, 56]],

      [[49, 59, 48],
       [51, 61, 50],
       [53, 61, 50],
       ...,
```

```
    [50, 52, 41],
    [54, 56, 45],
    [55, 55, 45]]], dtype=uint8)
```

```
type(arr1)
```

```
numpy.ndarray
```

```
horse_image1=arr1.copy()
```

```
horse_image1
```

```
array([[20, 20, 32],
       [20, 20, 32],
       [20, 20, 32],
       ...,
       [14, 25, 27],
       [17, 27, 29],
       [17, 27, 29]],
```

```
      [[20, 20, 32],
       [20, 20, 32],
       [19, 19, 31],
       ...,
       [20, 31, 33],
       [17, 27, 29],
       [17, 27, 29]],
```

```
      [[20, 20, 32],
       [19, 19, 31],
       [19, 19, 31],
       ...,
       [14, 24, 26],
       [16, 26, 28],
       [16, 26, 28]],
```

```
      ...,
```

```
      [[17, 31, 18],
       [16, 30, 17],
       [24, 36, 24],
       ...,
       [51, 53, 42],
       [69, 71, 60],
       [69, 69, 59]],
```

```
      [[29, 41, 29],
       [33, 45, 33],
       [44, 54, 43],
       ...,
       [46, 48, 37],
```

```
        [65, 67, 56],  
        [66, 66, 56]],  
  
    [[49, 59, 48],  
     [51, 61, 50],  
     [53, 61, 50],  
     ...,  
     [50, 52, 41],  
     [54, 56, 45],  
     [55, 55, 45]]], dtype=uint8)  
  
horse_image1[:, :, 0]=0  
plt.imshow(horse_image1)  
plt.show()
```

