In [1]:
```
import numpy as npy
import matplotlib.pyplot as plt
%matplotlib inline
from PIL import Image
```

In [9]:
```
Dog_image=Image.open(r'C:\Users\manga\Desktop\Pictures\download.jpg')
Dog_image
```

Out[9]:

In [8]:
```
type(Dog_image)
```

Out[8]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [13]:
```
Dog_arr=npy.asarray(Dog_image)
Dog_arr
```

Out[13]:
```
array([[[  0,   1,   0],
        [  0,   1,   0],
        [  0,   1,   0],
        ...,
        [  9,  22,   4],
        [  7,  20,   2],
        [ 13,  26,   8]],

       [[  1,   3,   0],
        [  0,   2,   0],
        [  0,   1,   0],
        ...,
        [ 11,  24,   6],
        [ 11,  24,   6],
        [ 19,  32,  14]],

       [[  2,   4,   0],
        [  2,   4,   0],
        [  1,   3,   0],
        ...,
        [ 15,  28,  11],
        [ 18,  31,  14],
        [ 28,  41,  24]],

       ...,

       [[145, 118, 107],
        [146, 119, 108],
        [147, 120, 109],
        ...,
        [143, 123, 112],
        [143, 123, 112],
        [144, 124, 113]],

       [[144, 117, 106],
        [145, 118, 107],
        [146, 119, 108],
        ...,
        [141, 121, 110],
```

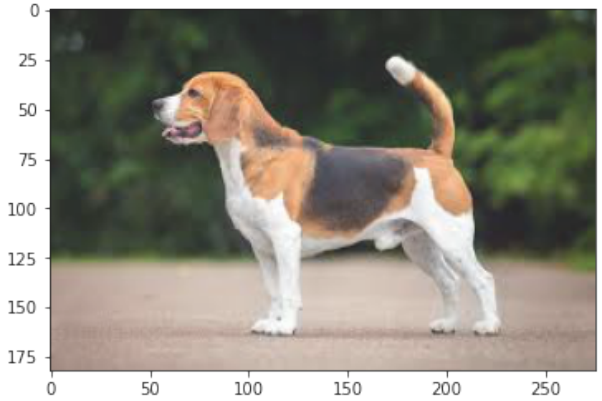
```
        [142, 122, 111],
        [142, 122, 111]],

       [[144, 117, 106],
        [144, 117, 106],
        [145, 118, 107],
        ...,
        [140, 120, 109],
        [140, 120, 109],
        [141, 121, 110]]], dtype=uint8)
```

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

Out[15]:
```
numpy.ndarray
```

In [14]:
```
plt.imshow(Dog_arr)
```

Out[14]:
```
<matplotlib.image.AxesImage at 0x19d04975dc0>
```



In [16]:
```
Dog_arr.shape
```

Out[16]: (182, 276, 3)

In [19]:
```
Dog_red = Dog_arr.copy()
Dog_red
```

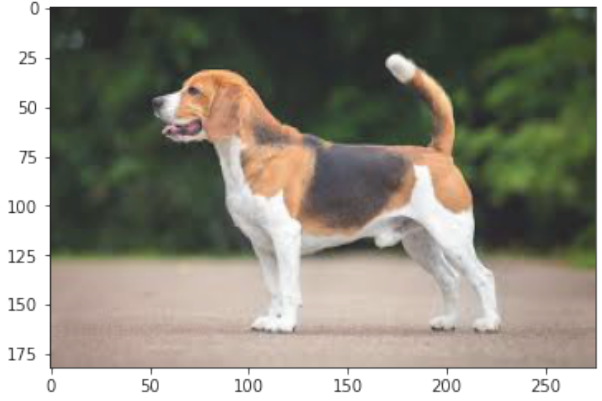
Out[19]:
```
array([[[  0,   1,   0],
        [  0,   1,   0],
        [  0,   1,   0],
        ...,
        [  9,  22,   4],
        [  7,  20,   2],
        [ 13,  26,   8]],

       [[  1,   3,   0],
        [  0,   2,   0],
        [  0,   1,   0],
        ...,
        [ 11,  24,   6],
        [ 11,  24,   6],
        [ 19,  32,  14]],

       [[  2,   4,   0],
        [  2,   4,   0],
        [  1,   3,   0],
        ...,
        [ 15,  28,  11],
        [ 18,  31,  14],
        [ 28,  41,  24]],

       ...,

       [[145, 118, 107],
        [146, 119, 108],
        [147, 120, 109],
        ...,
        [143, 123, 112],
        [143, 123, 112],
        [144, 124, 113]],

       [[144, 117, 106],
        [145, 118, 107],
        [146, 119, 108],
        ...,
        [141, 121, 110],
```

```
 [142, 122, 111],
 [142, 122, 111]],

[[144, 117, 106],
 [144, 117, 106],
 [145, 118, 107],
 ...,
 [140, 120, 109],
 [140, 120, 109],
 [141, 121, 110]]], dtype=uint8)
```

In [20]:
```
Dog_arr=Dog_red
```

In [21]:
```
plt.imshow(Dog_red)
```

Out[21]: <matplotlib.image.AxesImage at 0x19d05aed2b0>

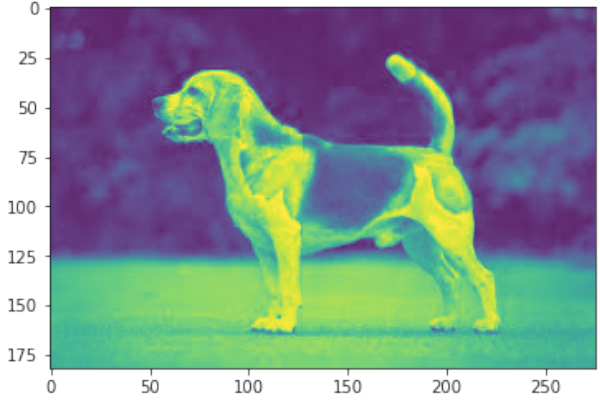


In [22]:
```
Dog_red.shape
```

Out[22]: (182, 276, 3)

In [23]:
```
# R G B

plt.imshow(Dog_red[:,:,0])
```

Out[23]:
```
<matplotlib.image.AxesImage at 0x19d05b0fe80>
```

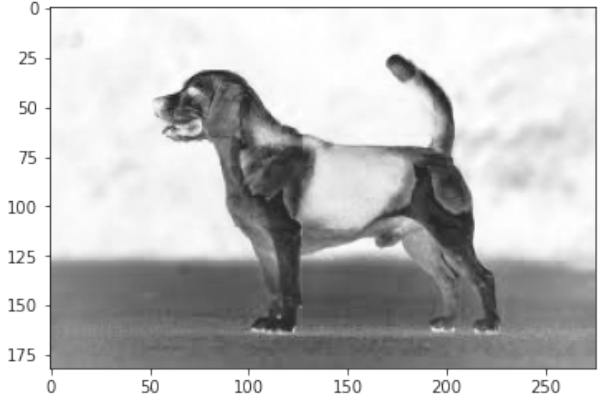


In [25]:
```
Dog_red[:,:,0]
```

Out[25]:
```
array([[  0,   0,   0, ...,   9,   7,  13],
       [  1,   0,   0, ...,  11,  11,  19],
       [  2,   2,   1, ...,  15,  18,  28],
       ...,
       [145, 146, 147, ..., 143, 143, 144],
       [144, 145, 146, ..., 141, 142, 142],
       [144, 144, 145, ..., 140, 140, 141]], dtype=uint8)
```

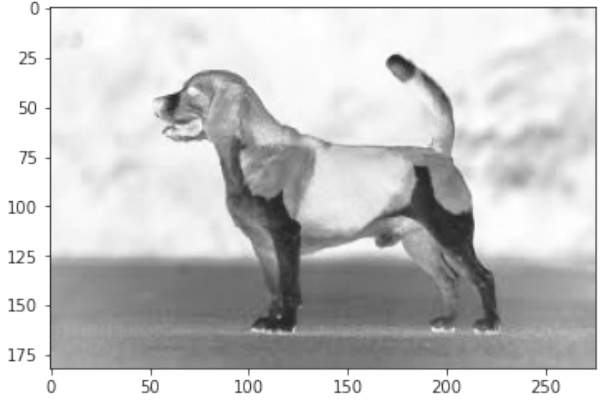
In [27]:
```
plt.imshow(Dog_red[:,:,0], cmap='Greys')
```

Out[27]: <matplotlib.image.AxesImage at 0x19d06ba1cd0>



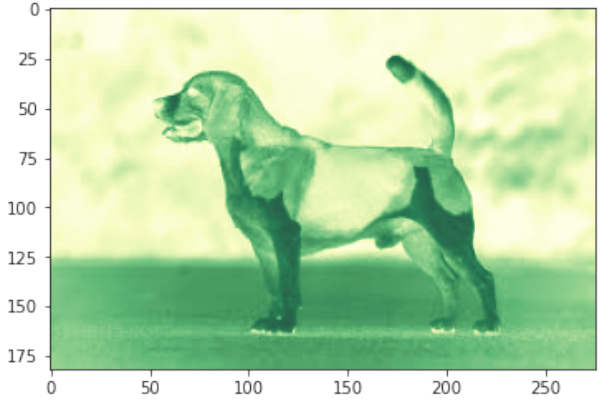
In [33]:
```
plt.imshow(Dog_red[:,:,1], cmap='Greys')
```

Out[33]: <matplotlib.image.AxesImage at 0x19d09913fd0>



In [30]:
```
plt.imshow(Dog_red[:,:,1], cmap='YlGn')
```

Out[30]:
```
<matplotlib.image.AxesImage at 0x19d09851400>
```



In [35]:
```
Dog_red[:,:,0]
```

Out[35]:
```
array([[  0,   0,   0, ...,   9,   7,  13],
       [  1,   0,   0, ...,  11,  11,  19],
       [  2,   2,   1, ...,  15,  18,  28],
       ...,
       [145, 146, 147, ..., 143, 143, 144],
       [144, 145, 146, ..., 141, 142, 142],
       [144, 144, 145, ..., 140, 140, 141]], dtype=uint8)
```

In [36]:
```
Dog_red[:,:,1]
```

Out[36]:
```
array([[  1,   1,   1, ...,  22,  20,  26],
       [  3,   2,   1, ...,  24,  24,  32],
       [  4,   4,   3, ...,  28,  31,  41],
       ...,
       [118, 119, 120, ..., 123, 123, 124],
       [117, 118, 119, ..., 121, 122, 122],
       [117, 117, 118, ..., 120, 120, 121]], dtype=uint8)
```

In [38]:
```
Dog_red[:,:,2]
```

Out[38]:
```
array([[  0,   0,   0, ...,   4,   2,   8],
       [  0,   0,   0, ...,   6,   6,  14],
       [  0,   0,   0, ...,  11,  14,  24],
       ...,
       [107, 108, 109, ..., 112, 112, 113],
       [106, 107, 108, ..., 110, 111, 111],
       [106, 106, 107, ..., 109, 109, 110]], dtype=uint8)
```

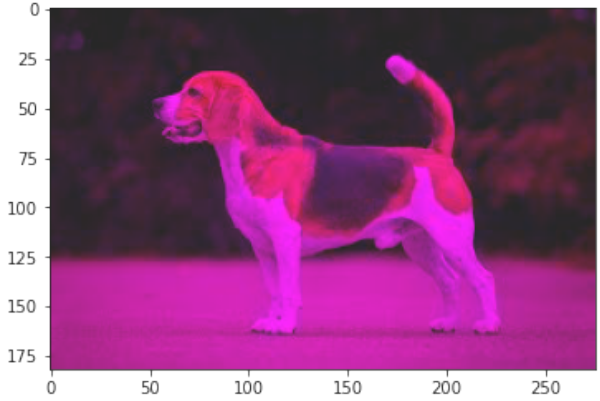
In [42]:
```
Dog_red[:,:,1] = 0
```

In [41]:
```
Dog_red[:,:,1]
```

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 [43]:
```
plt.imshow(Dog_red)
```

Out[43]:
```
<matplotlib.image.AxesImage at 0x19d099db730>
```



In [45]:
```
Dog_red[:,:,2]
```

Out[45]:
```
array([[  0,   0,   0, ...,   4,   2,   8],
       [  0,   0,   0, ...,   6,   6,  14],
       [  0,   0,   0, ...,  11,  14,  24],
       ...,
       [107, 108, 109, ..., 112, 112, 113],
       [106, 107, 108, ..., 110, 111, 111],
       [106, 106, 107, ..., 109, 109, 110]], dtype=uint8)
```

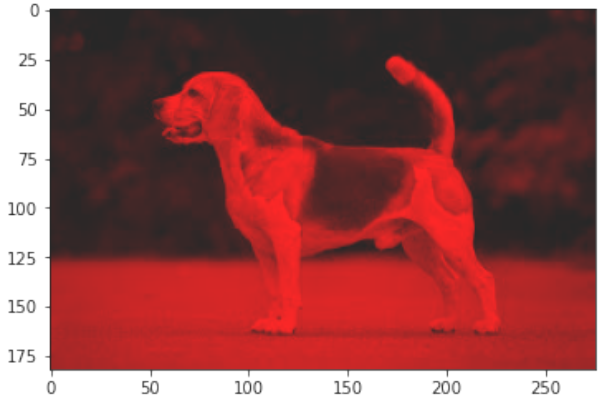
In [47]:
```
Dog_red[:,:,2]  = 0
```

In [51]:
```
Dog_red[:,:,2]
```

Out[51]:
```
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 [52]:
```
plt.imshow(Dog_red)
```

Out[52]:
```
<matplotlib.image.AxesImage at 0x19d09a76ac0>
```



In [54]:
```
Dog_arr
```

Out[54]:
```
array([[[  0,   0,   0],
        [  0,   0,   0],
        [  0,   0,   0],
        ...,
        [  9,   0,   0],
        [  7,   0,   0],
        [ 13,   0,   0]],

       [[  1,   0,   0],
        [  0,   0,   0],
        [  0,   0,   0],
        ...,
        [ 11,   0,   0],
        [ 11,   0,   0],
        [ 19,   0,   0]],

       [[  2,   0,   0],
        [  2,   0,   0],
        [  1,   0,   0],
        ...,
        [ 15,   0,   0],
        [ 18,   0,   0],
        [ 28,   0,   0]],

       ...,

       [[145,   0,   0],
        [146,   0,   0],
        [147,   0,   0],
        ...,
        [143,   0,   0],
        [143,   0,   0],
        [144,   0,   0]],

       [[144,   0,   0],
        [145,   0,   0],
        [146,   0,   0],
        ...,
        [141,   0,   0],
```

```
 [142,   0,   0],
 [142,   0,   0]],

[[144,   0,   0],
 [144,   0,   0],
 [145,   0,   0],
 ...,
 [140,   0,   0],
 [140,   0,   0],
 [141,   0,   0]]], dtype=uint8)
```

In [55]:
```
Dog_red
```

```
Out[55]: array([[[  0,   0,   0],
                 [  0,   0,   0],
                 [  0,   0,   0],
                 ...,
                 [  9,   0,   0],
                 [  7,   0,   0],
                 [ 13,   0,   0]],

                [[  1,   0,   0],
                 [  0,   0,   0],
                 [  0,   0,   0],
                 ...,
                 [ 11,   0,   0],
                 [ 11,   0,   0],
                 [ 19,   0,   0]],

                [[  2,   0,   0],
                 [  2,   0,   0],
                 [  1,   0,   0],
                 ...,
                 [ 15,   0,   0],
                 [ 18,   0,   0],
                 [ 28,   0,   0]],

                ...,

                [[145,   0,   0],
                 [146,   0,   0],
                 [147,   0,   0],
                 ...,
                 [143,   0,   0],
                 [143,   0,   0],
                 [144,   0,   0]],

                [[144,   0,   0],
                 [145,   0,   0],
                 [146,   0,   0],
                 ...,
                 [141,   0,   0],
```

```
       [142,   0,   0],
       [142,   0,   0]],

      [[144,   0,   0],
       [144,   0,   0],
       [145,   0,   0],
       ...,
       [140,   0,   0],
       [140,   0,   0],
       [141,   0,   0]]], dtype=uint8)
```

In [57]:
```
Dog_image
```

Out[57]:

In [59]:
```
arr1 = npy.asarray(Dog_image)
```

In [60]:
```
type(arr1)
```

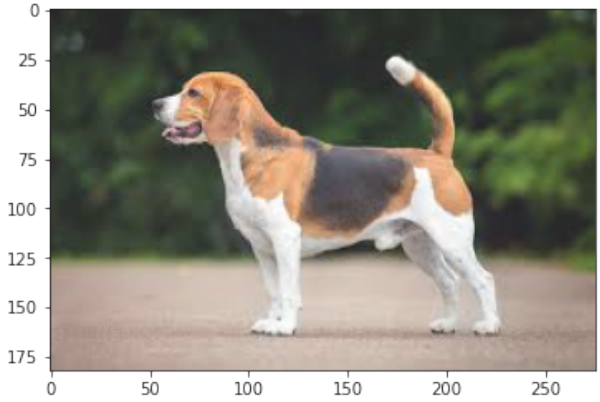
Out[60]:
```
numpy.ndarray
```

In [61]:
```
arr1.shape
```

Out[61]:
```
(182, 276, 3)
```

In [62]:
```
plt.imshow(arr1)
```

Out[62]: <matplotlib.image.AxesImage at 0x19d09b03fd0>

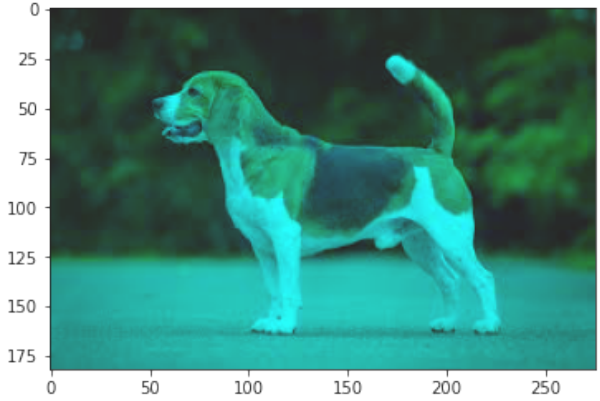


In [63]:
```
Dog_image1 = arr1.copy()
```

In [64]:
```
Dog_image1[:,:,0] = 0
```

In [65]:
```
plt.imshow(Dog_image1)
```

Out[65]:
```
<matplotlib.image.AxesImage at 0x19d09b510d0>
```



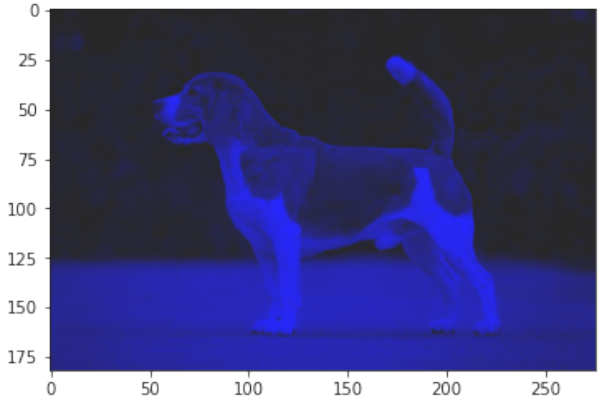
In [66]:
```
Dog_image1[:,:,1]
```

Out[66]:
```
array([[  1,   1,   1, ...,  22,  20,  26],
       [  3,   2,   1, ...,  24,  24,  32],
       [  4,   4,   3, ...,  28,  31,  41],
       ...,
       [118, 119, 120, ..., 123, 123, 124],
       [117, 118, 119, ..., 121, 122, 122],
       [117, 117, 118, ..., 120, 120, 121]], dtype=uint8)
```

In [68]:
```
Dog_image1[:,:,1] = 0
```

In [69]:
```
plt.imshow(Dog_image1)
```

Out[69]: <matplotlib.image.AxesImage at 0x19d09ba6c10>



In [70]:
```
# The First project of Dog image Processing has been completed by using Generative-AI,Numpy and MATPLOTLIB,PI
```