

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

```
In [2]: import matplotlib.pyplot as plt
```

```
In [3]: %matplotlib inline
```

```
In [4]: from PIL import Image
```

```
In [6]: Elephant_img = Image.open(r'C:\Users\DELL\Downloads\Elephant.jpg')
```

```
In [7]: Elephant_img
```

```
Out[7]:
```



```
In [9]: type(Elephant_img)
```

```
Out[9]: PIL.JpegImagePlugin.JpegImageFile
```

```
In [11]: Elephant_arr = np.asarray(Elephant_img)  
Elephant_arr
```

```
Out[11]: array([[ 97, 141, 180],
               [ 97, 141, 180],
               [ 97, 141, 180],
               ...,
               [100, 140, 191],
               [100, 140, 191],
               [100, 140, 191]],

            [[ 97, 141, 180],
               [ 97, 141, 180],
               [ 97, 141, 180],
               ...,
               [100, 140, 191],
               [100, 140, 191],
               [100, 140, 191]],

            [[ 97, 141, 180],
               [ 97, 141, 180],
               [ 97, 141, 180],
               ...,
               [100, 140, 189],
               [100, 140, 189],
               [100, 140, 189]],

            ...,

            [[133, 116,  64],
               [106,  89,  37],
               [146, 129,  77],
               ...,
               [121,  99,  58],
               [135, 113,  72],
               [121,  99,  58]],

            [[117, 100,  48],
               [119, 102,  50],
               [137, 120,  68],
               ...,
               [ 99,  78,  33],
               [131, 110,  65],
               [120,  99,  54]],

            [[ 98,  82,  30],
               [117, 101,  49],
               [100,  83,  31],
               ...,
               [ 98,  78,  28],
               [139, 119,  69],
               [125, 105,  55]]], shape=(183, 276, 3), dtype=uint8)
```

```
In [12]: type(Elephant_arr)
```

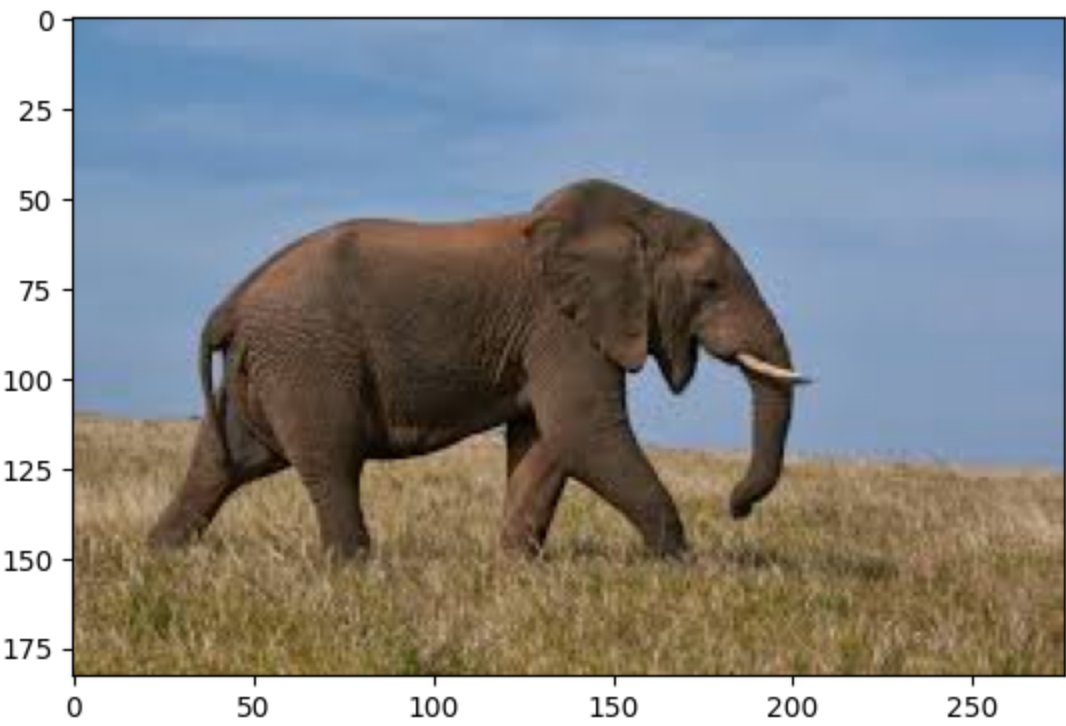
Out[12]: numpy.ndarray

```
In [13]: Elephant_arr.shape
```

Out[13]: (183, 276, 3)

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

Out[14]: <matplotlib.image.AxesImage at 0x26c52385160>



```
In [17]: Elephant_red = Elephant_arr.copy()
```

```
In [18]: Elephant_red
```

```
Out[18]: array([[ 97, 141, 180],
                [ 97, 141, 180],
                [ 97, 141, 180],
                ...,
                [100, 140, 191],
                [100, 140, 191],
                [100, 140, 191]],

                [[ 97, 141, 180],
                [ 97, 141, 180],
                [ 97, 141, 180],
                ...,
                [100, 140, 191],
                [100, 140, 191],
                [100, 140, 191]],

                [[ 97, 141, 180],
                [ 97, 141, 180],
                [ 97, 141, 180],
                ...,
                [100, 140, 189],
                [100, 140, 189],
                [100, 140, 189]],

                ...,

                [[133, 116,  64],
                [106,  89,  37],
                [146, 129,  77],
                ...,
                [121,  99,  58],
                [135, 113,  72],
                [121,  99,  58]],

                [[117, 100,  48],
                [119, 102,  50],
                [137, 120,  68],
                ...,
                [ 99,  78,  33],
                [131, 110,  65],
                [120,  99,  54]],

                [[ 98,  82,  30],
                [117, 101,  49],
                [100,  83,  31],
                ...,
                [ 98,  78,  28],
                [139, 119,  69],
                [125, 105,  55]]], shape=(183, 276, 3), dtype=uint8)
```

```
In [19]: Elephant_arr == Elephant_red
```

```
Out[19]: 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]],

              ...,

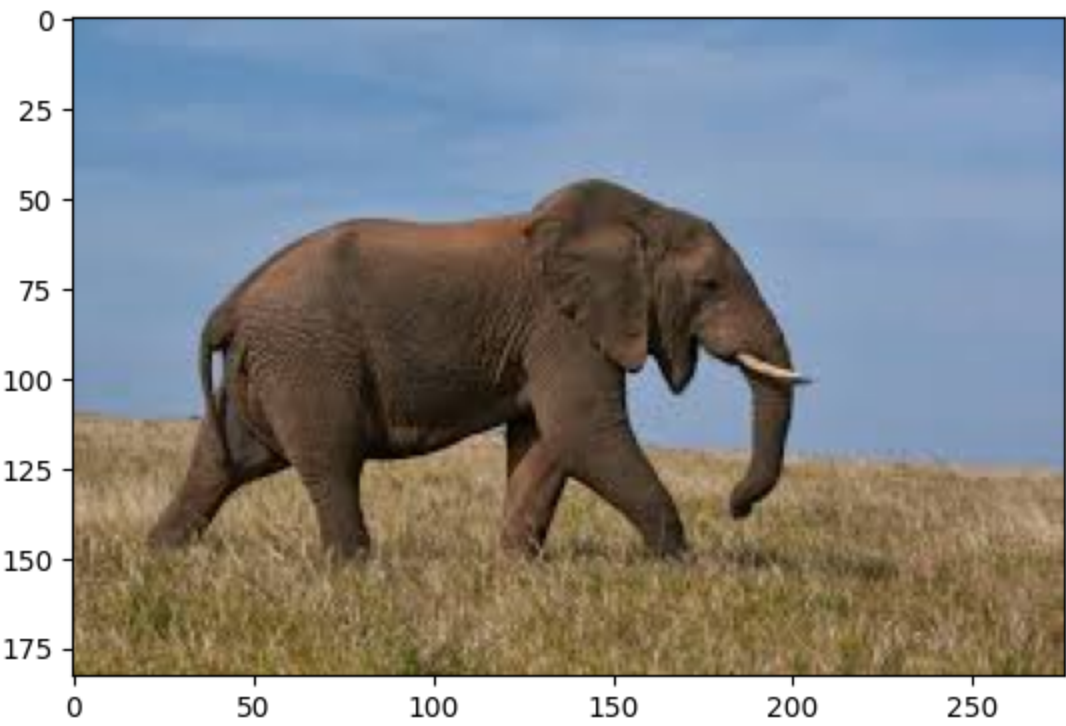
              [[ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True],
               ...,
               [ True,  True,  True],
               [ True,  True,  True],
               [ True,  True,  True]],

              [[ 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]]], shape=(183, 276, 3))
```

```
In [20]: plt.imshow(Elephant_img)
```

```
Out[20]: <matplotlib.image.AxesImage at 0x26c522edd10>
```



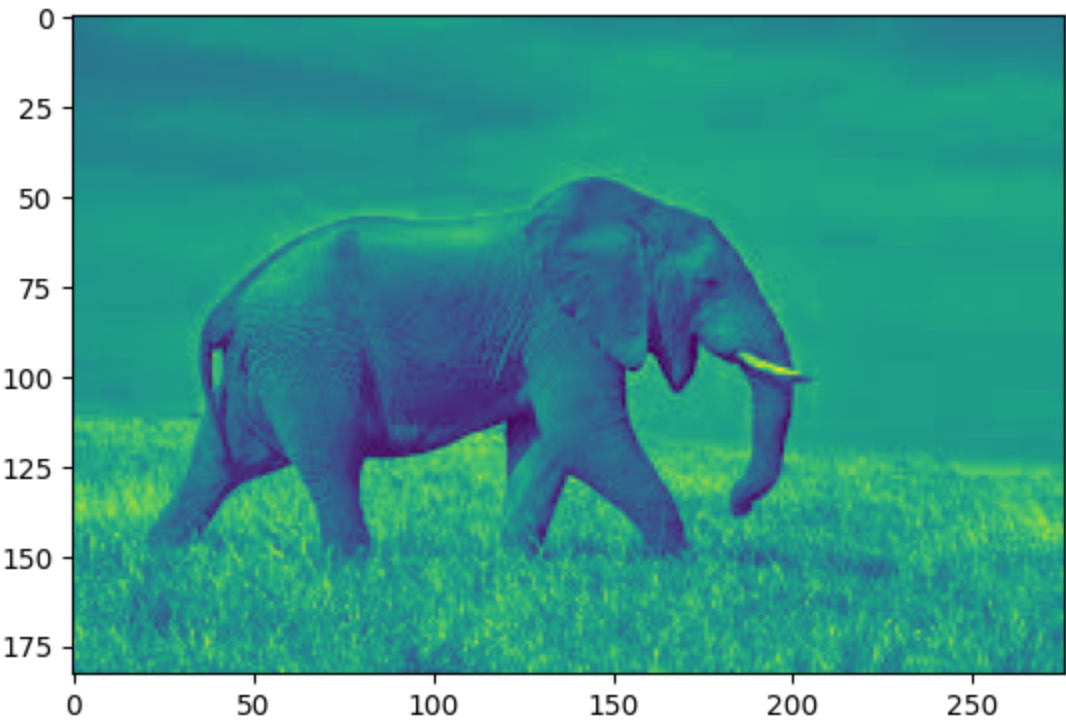
```
In [21]: Elephant_red.shape
```

Out[21]: (183, 276, 3)

```
In [31]: # R G B

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

Out[31]: <matplotlib.image.AxesImage at 0x26c524a3250>

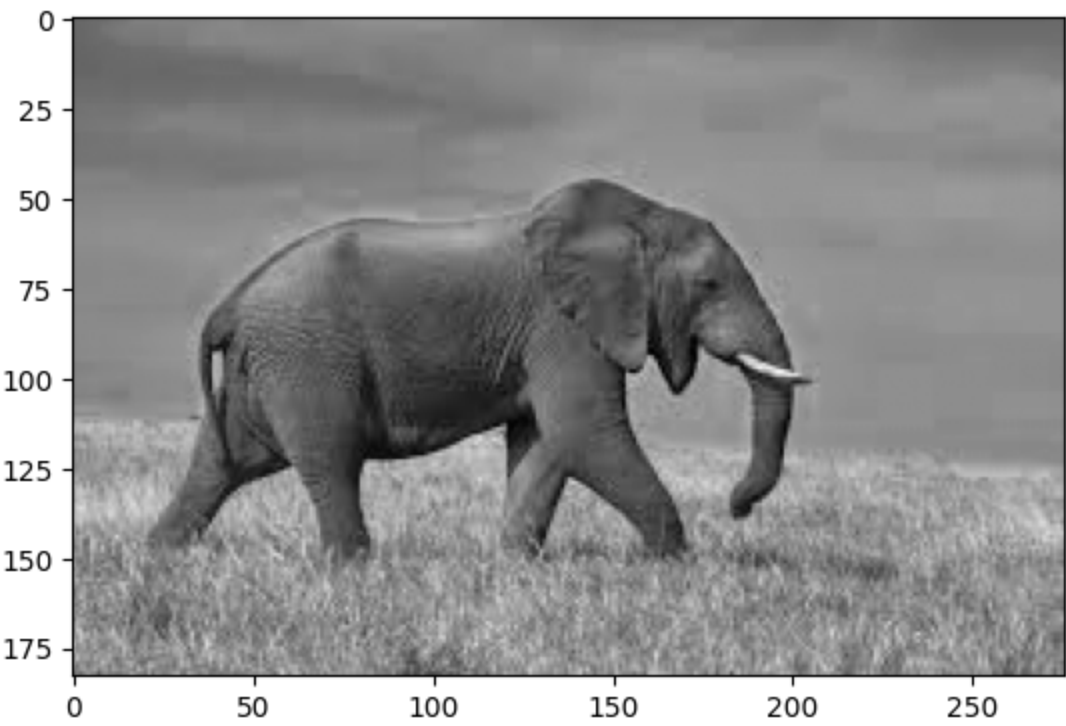


```
In [26]: Elephant_red[:, :, 0]
```

Out[26]: array([[97, 97, 97, ..., 100, 100, 100],
 [97, 97, 97, ..., 100, 100, 100],
 [97, 97, 97, ..., 100, 100, 100],
 ...,
 [133, 106, 146, ..., 121, 135, 121],
 [117, 119, 137, ..., 99, 131, 120],
 [98, 117, 100, ..., 98, 139, 125]], shape=(183, 276), dtype=uint8)

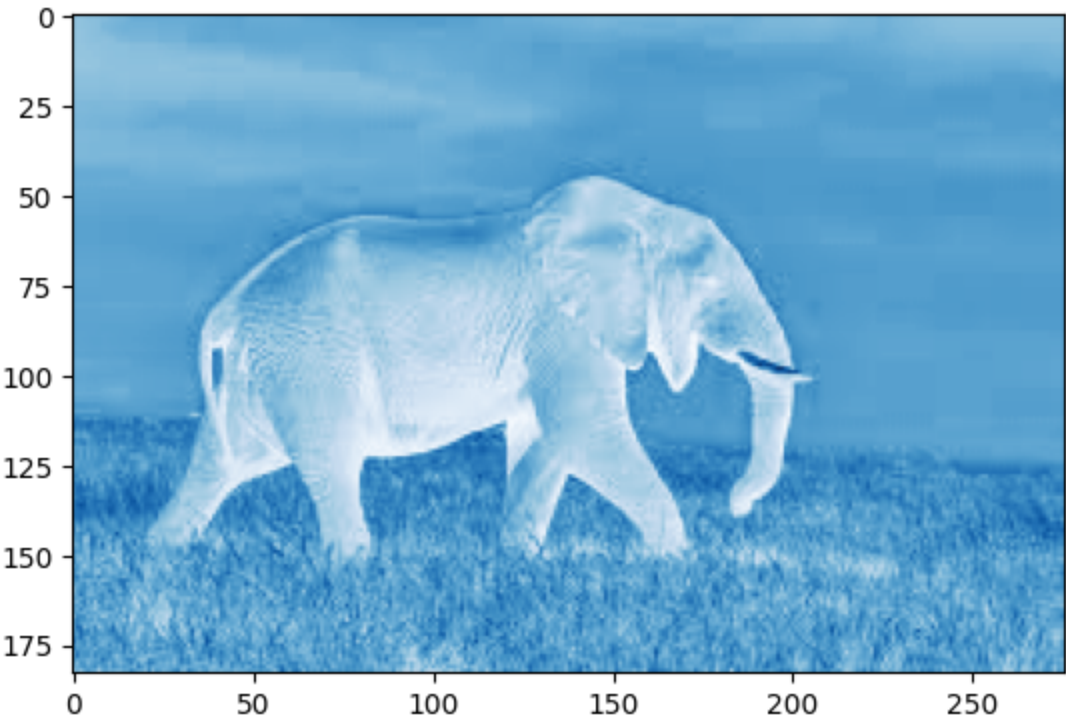
```
In [33]: plt.imshow(Elephant_red[:, :, 0], cmap='gray')
```

Out[33]: <matplotlib.image.AxesImage at 0x26c520be350>



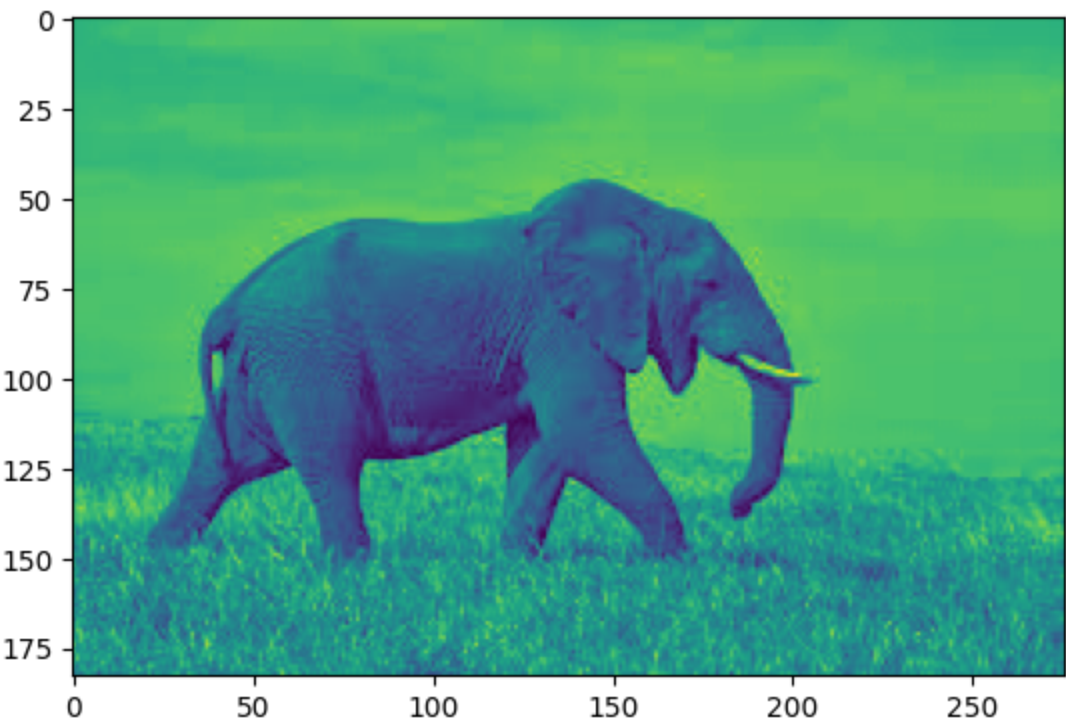
```
In [34]: plt.imshow(Elephant_red[:, :, 0], cmap='Blues')
```

Out[34]: <matplotlib.image.AxesImage at 0x26c5217d1d0>



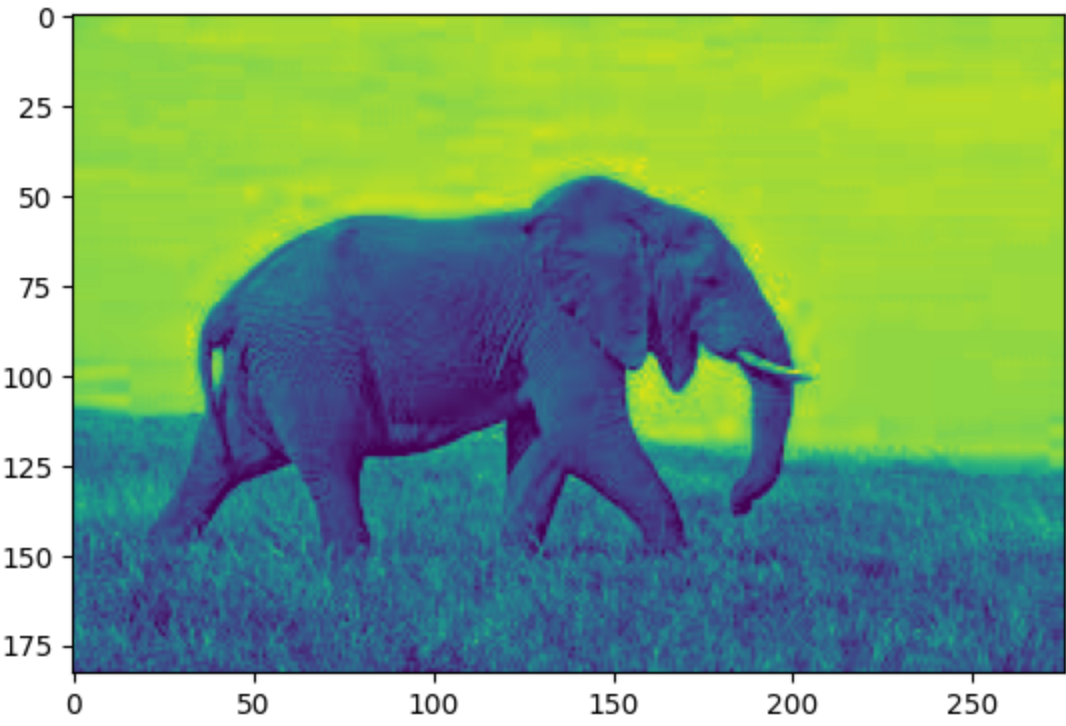
```
In [41]: plt.imshow(Elephant_red[:, :, 1])
```

Out[41]: <matplotlib.image.AxesImage at 0x26c51d30690>



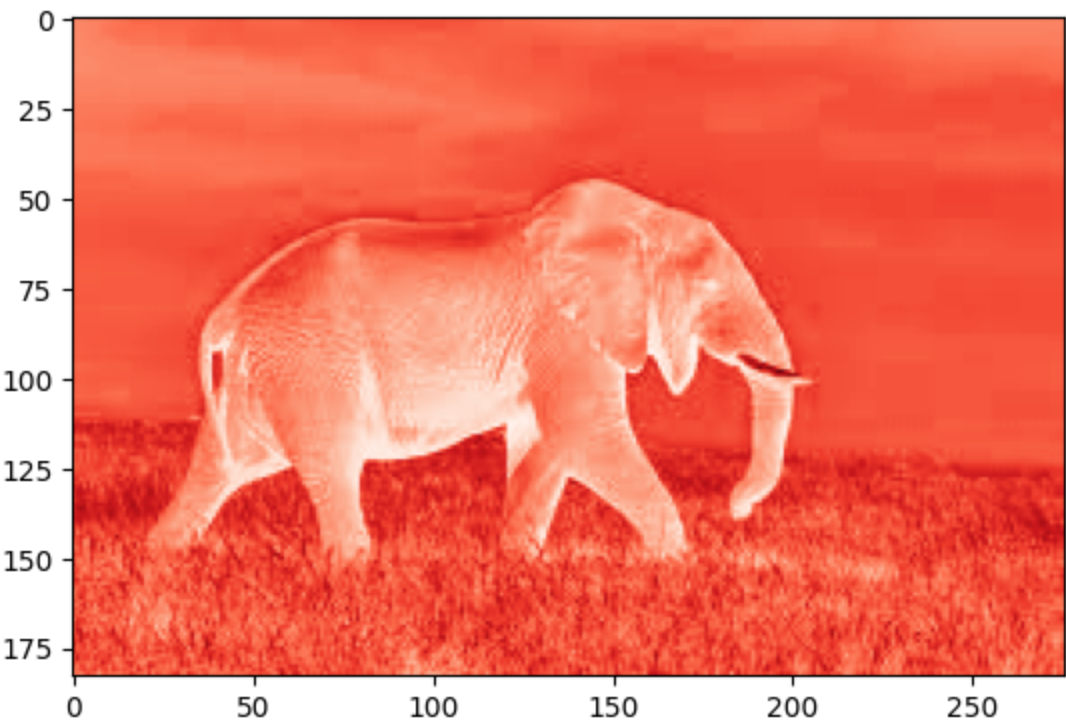
```
In [42]: plt.imshow(Elephant_red[:, :, 2])
```

Out[42]: <matplotlib.image.AxesImage at 0x26c51ee3390>



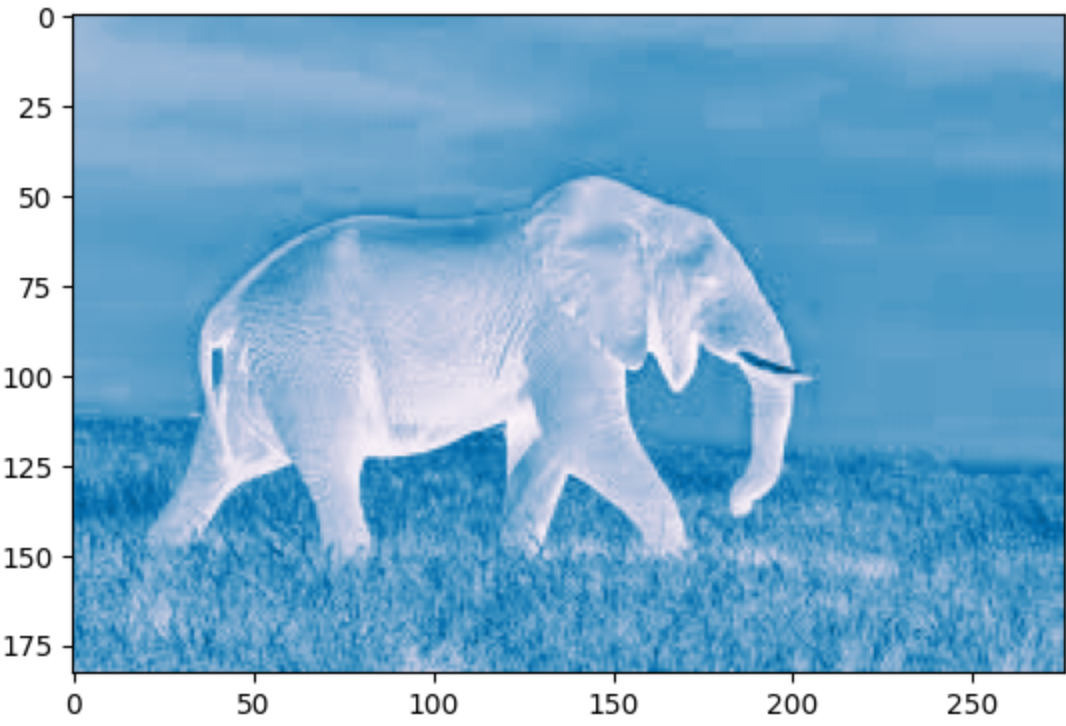
```
In [43]: plt.imshow(Elephant_red[:, :, 0], cmap='Reds')
```

Out[43]: <matplotlib.image.AxesImage at 0x26c51f420d0>



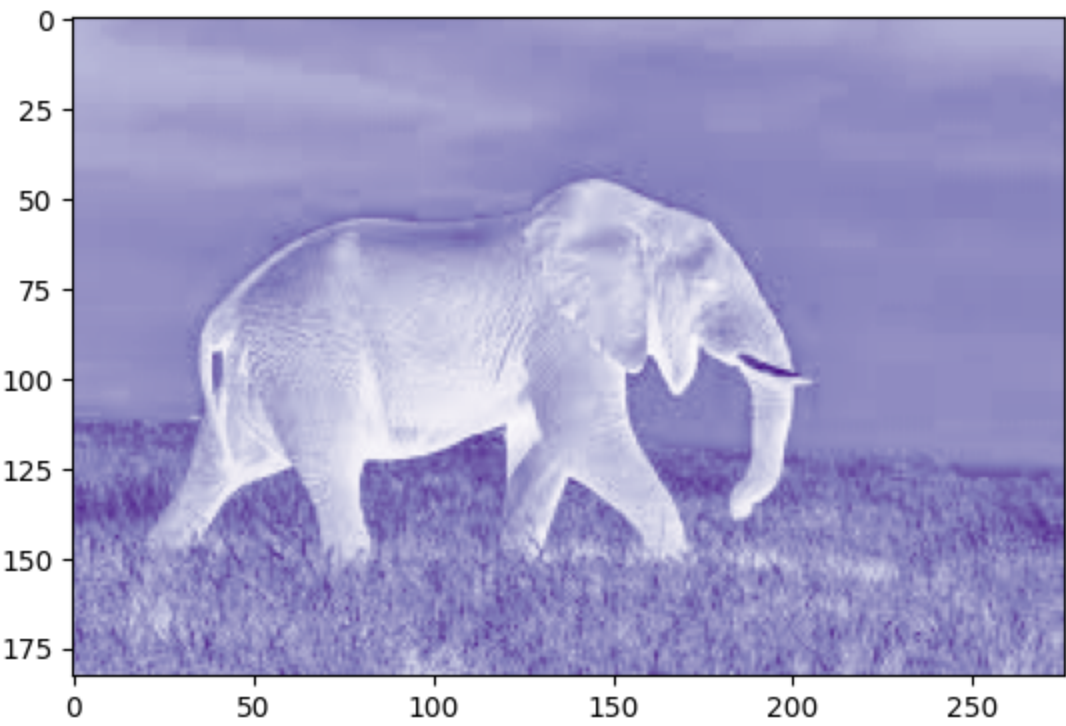
```
In [44]: plt.imshow(Elephant_red[:, :, 0], cmap='PuBu')
```

Out[44]: <matplotlib.image.AxesImage at 0x26c51f88e10>



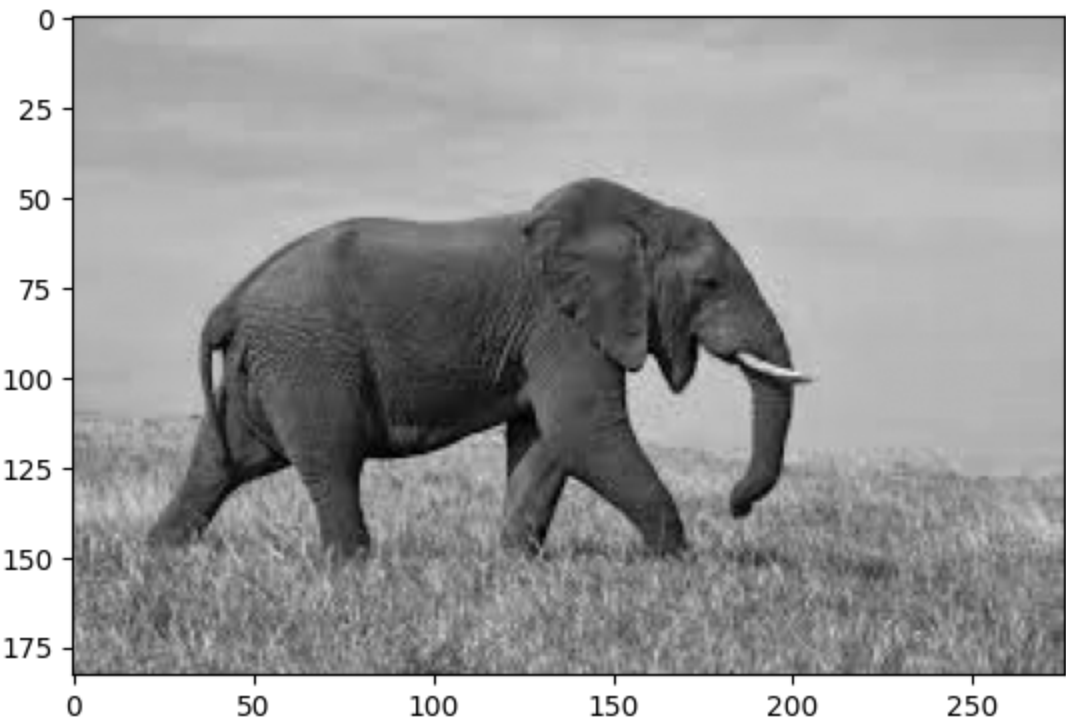
```
In [46]: plt.imshow(Elephant_red[:, :, 0], cmap='Purples')
```

Out[46]: <matplotlib.image.AxesImage at 0x26c55976e90>



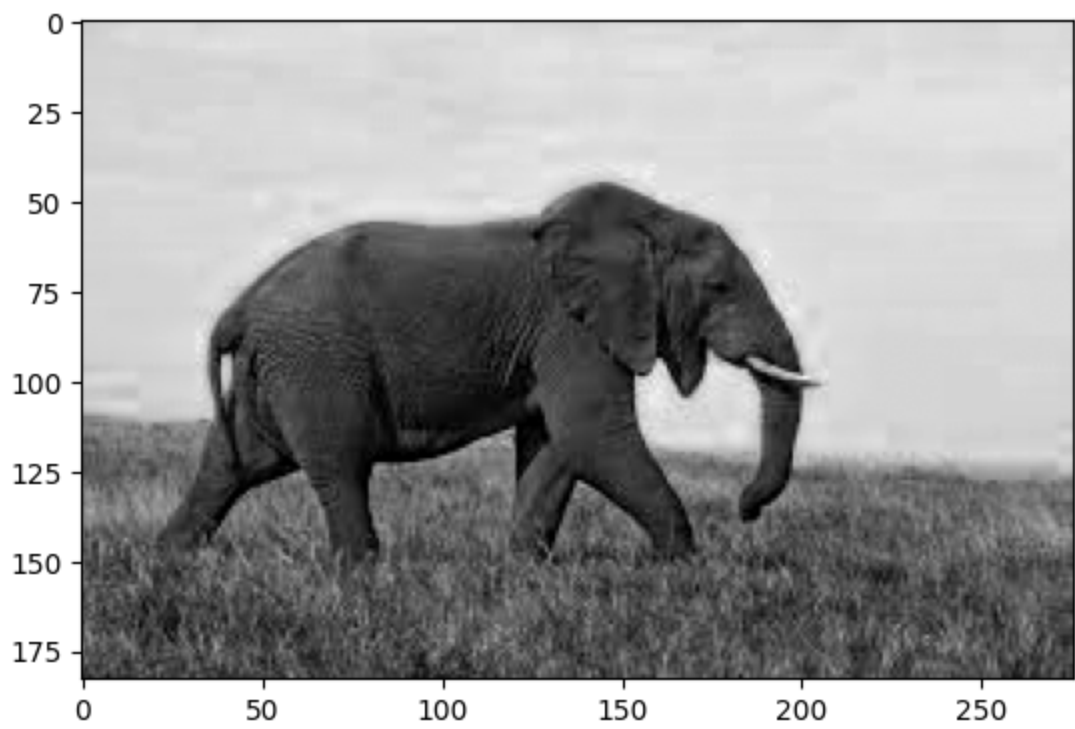
```
In [47]: plt.imshow(Elephant_red[:, :, 1], cmap='grey')
```

Out[47]: <matplotlib.image.AxesImage at 0x26c57ba5bd0>



```
In [48]: plt.imshow(Elephant_red[:, :, 2], cmap='grey')
```

Out[48]: <matplotlib.image.AxesImage at 0x26c57c18690>



```
In [49]: Elephant_red[:, :, 0]
```

```
Out[49]: array([[ 97,  97,  97, ..., 100, 100, 100],
                [ 97,  97,  97, ..., 100, 100, 100],
                [ 97,  97,  97, ..., 100, 100, 100],
                ...,
                [133, 106, 146, ..., 121, 135, 121],
                [117, 119, 137, ...,  99, 131, 120],
                [ 98, 117, 100, ...,  98, 139, 125]], shape=(183, 276), dtype=uint8)
```

```
In [50]: Elephant_red[:, :, 1]
```

```
Out[50]: array([[141, 141, 141, ..., 140, 140, 140],
                [141, 141, 141, ..., 140, 140, 140],
                [141, 141, 141, ..., 140, 140, 140],
                ...,
                [116,  89, 129, ...,  99, 113,  99],
                [100, 102, 120, ...,  78, 110,  99],
                [ 82, 101,  83, ...,  78, 119, 105]], shape=(183, 276), dtype=uint8)
```

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

```
Out[51]: array([[180, 180, 180, ..., 191, 191, 191],
                [180, 180, 180, ..., 191, 191, 191],
                [180, 180, 180, ..., 189, 189, 189],
                ...,
                [ 64,  37,  77, ...,  58,  72,  58],
                [ 48,  50,  68, ...,  33,  65,  54],
                [ 30,  49,  31, ...,  28,  69,  55]], shape=(183, 276), dtype=uint8)
```

```
In [52]: Elephant_red[:, :, 1]=0
```

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

```
Out[53]: 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]], shape=(183, 276), dtype=uint8)
```

```
In [54]: plt.imshow(Elephant_red)
```

```
Out[54]: <matplotlib.image.AxesImage at 0x26c57c53390>
```



```
In [55]: Elephant_red[:, :, 2]
```

```
Out[55]: array([[180, 180, 180, ..., 191, 191, 191],
                [180, 180, 180, ..., 191, 191, 191],
                [180, 180, 180, ..., 189, 189, 189],
                ...,
                [ 64,  37,  77, ...,  58,  72,  58],
                [ 48,  50,  68, ...,  33,  65,  54],
                [ 30,  49,  31, ...,  28,  69,  55]], shape=(183, 276), dtype=uint8)
```

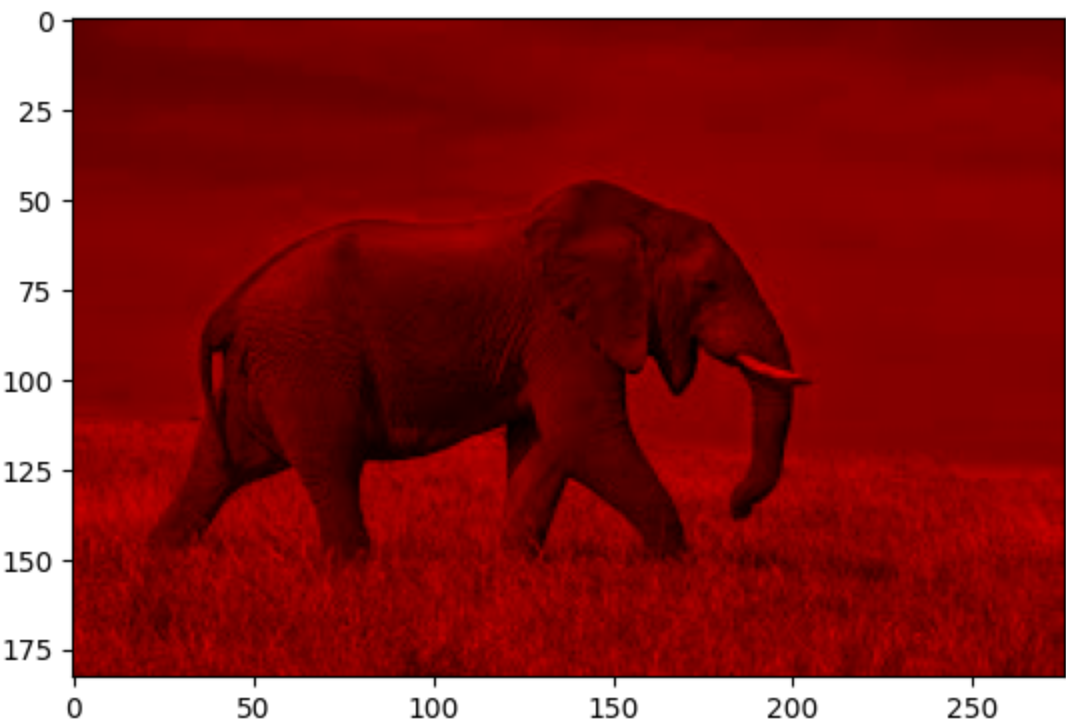
```
In [57]: Elephant_red[:, :, 2] = 0
```

```
In [58]: Elephant_red[:, :, 2]
```

```
Out[58]: 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]], shape=(183, 276), dtype=uint8)
```

```
In [59]: plt.imshow(Elephant_red)
```

```
Out[59]: <matplotlib.image.AxesImage at 0x26c57cca0d0>
```



In [60]: Elephant_arr

Out[60]: array([[97, 141, 180],
[97, 141, 180],
[97, 141, 180],
...,
[100, 140, 191],
[100, 140, 191],
[100, 140, 191]],

[[97, 141, 180],
[97, 141, 180],
[97, 141, 180],
...,
[100, 140, 191],
[100, 140, 191],
[100, 140, 191]],

[[97, 141, 180],
[97, 141, 180],
[97, 141, 180],
...,
[100, 140, 189],
[100, 140, 189],
[100, 140, 189]],

...,

[[133, 116, 64],
[106, 89, 37],
[146, 129, 77],
...,
[121, 99, 58],
[135, 113, 72],
[121, 99, 58]],

[[117, 100, 48],
[119, 102, 50],
[137, 120, 68],
...,
[99, 78, 33],
[131, 110, 65],
[120, 99, 54]],

[[98, 82, 30],
[117, 101, 49],
[100, 83, 31],
...,
[98, 78, 28],
[139, 119, 69],
[125, 105, 55]]], shape=(183, 276, 3), dtype=uint8)

In [61]: Elephant_red

```
Out[61]: array([[ 97,   0,   0],
                [ 97,   0,   0],
                [ 97,   0,   0],
                ...,
                [100,   0,   0],
                [100,   0,   0],
                [100,   0,   0]],

                [[ 97,   0,   0],
                [ 97,   0,   0],
                [ 97,   0,   0],
                ...,
                [100,   0,   0],
                [100,   0,   0],
                [100,   0,   0]],

                [[ 97,   0,   0],
                [ 97,   0,   0],
                [ 97,   0,   0],
                ...,
                [100,   0,   0],
                [100,   0,   0],
                [100,   0,   0]],

                ...,

                [[133,   0,   0],
                [106,   0,   0],
                [146,   0,   0],
                ...,
                [121,   0,   0],
                [135,   0,   0],
                [121,   0,   0]],

                [[117,   0,   0],
                [119,   0,   0],
                [137,   0,   0],
                ...,
                [ 99,   0,   0],
                [131,   0,   0],
                [120,   0,   0]],

                [[ 98,   0,   0],
                [117,   0,   0],
                [100,   0,   0],
                ...,
                [ 98,   0,   0],
                [139,   0,   0],
                [125,   0,   0]]], shape=(183, 276, 3), dtype=uint8)
```

```
In [63]: Elephant_img
```



```
In [64]: arr1 = np.asarray(Elephant_img)
```

```
In [65]: arr1
```

```
Out[65]: array([[ 97, 141, 180],
                [ 97, 141, 180],
                [ 97, 141, 180],
                ...,
                [100, 140, 191],
                [100, 140, 191],
                [100, 140, 191]],

                [[ 97, 141, 180],
                [ 97, 141, 180],
                [ 97, 141, 180],
                ...,
                [100, 140, 191],
                [100, 140, 191],
                [100, 140, 191]],

                [[ 97, 141, 180],
                [ 97, 141, 180],
                [ 97, 141, 180],
                ...,
                [100, 140, 189],
                [100, 140, 189],
                [100, 140, 189]],

                ...,

                [[133, 116,  64],
                [106,  89,  37],
                [146, 129,  77],
                ...,
                [121,  99,  58],
                [135, 113,  72],
                [121,  99,  58]],

                [[117, 100,  48],
                [119, 102,  50],
                [137, 120,  68],
                ...,
                [ 99,  78,  33],
                [131, 110,  65],
                [120,  99,  54]],

                [[ 98,  82,  30],
                [117, 101,  49],
                [100,  83,  31],
                ...,
                [ 98,  78,  28],
                [139, 119,  69],
                [125, 105,  55]]], shape=(183, 276, 3), dtype=uint8)
```

```
In [66]: type(arr1)
```

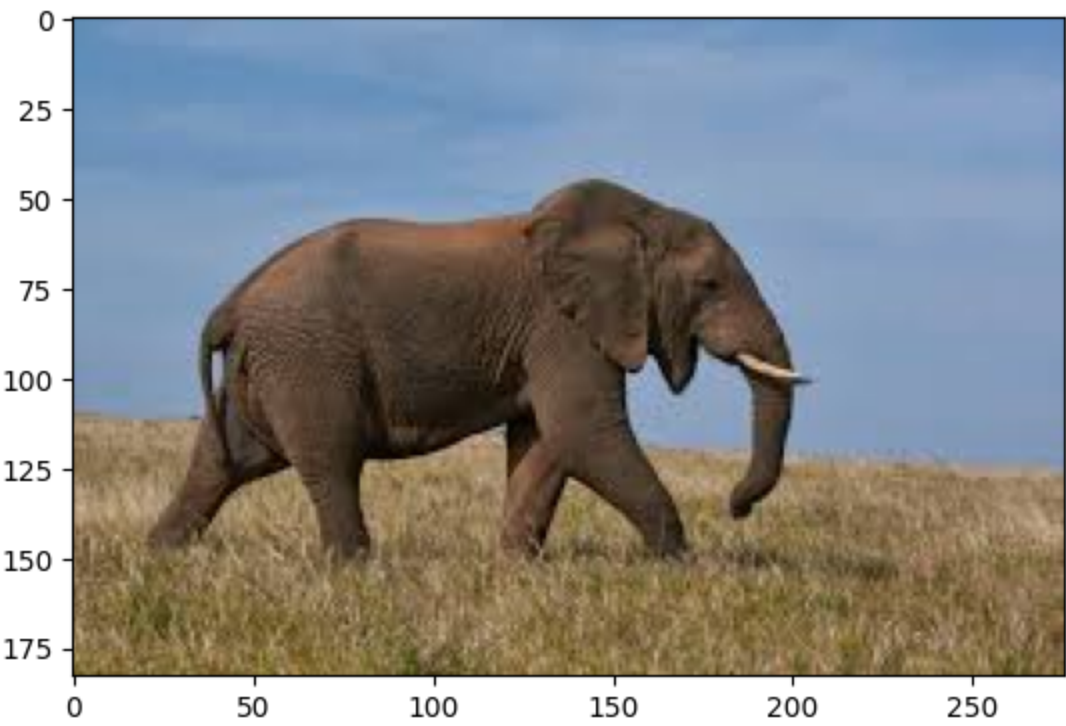
Out[66]: numpy.ndarray

```
In [67]: arr1.shape
```

Out[67]: (183, 276, 3)

```
In [68]: plt.imshow(arr1)
```

Out[68]: <matplotlib.image.AxesImage at 0x26c57d74e10>

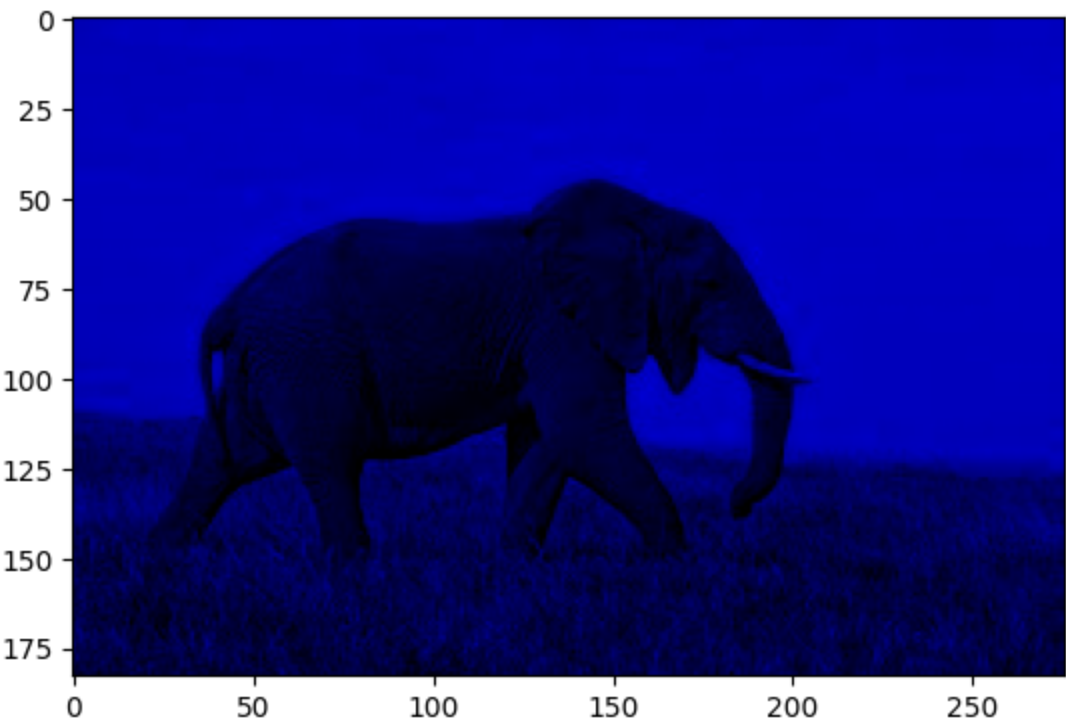


```
In [71]: Elephant_img1 = arr1.copy()
```

```
In [77]: Elephant_img1[:, :, 0] = 0
```

```
In [78]: plt.imshow(Elephant_img1)
```

Out[78]: <matplotlib.image.AxesImage at 0x26c55b25590>



```
In [79]: Elephant_img[:, :, 1]
```

Out[79]: array([[141, 141, 141, ..., 140, 140, 140],
 [141, 141, 141, ..., 140, 140, 140],
 [141, 141, 141, ..., 140, 140, 140],
 ...,
 [116, 89, 129, ..., 99, 113, 99],
 [100, 102, 120, ..., 78, 110, 99],
 [82, 101, 83, ..., 78, 119, 105]], shape=(183, 276), dtype=uint8)

```
In [80]: Elephant_img[:, :, 1] = 0
```

```
In [81]: plt.imshow(Elephant_img)
```

Out[81]: <matplotlib.image.AxesImage at 0x26c55bac2d0>



In []:

In []: