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

In [6]:
```
ones_arr = np.ones((5,5) , dtype=int)
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]:
```
zeros_arr = np.zeros((3,3) , dtype = int)
zeros_arr
```

Out[7]:
```
array([[0, 0, 0],
       [0, 0, 0],
       [0, 0, 0]])
```

In [8]:
```
ones_arr * 255
```

Out[8]:
```
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 [9]:
```
import matplotlib.pyplot as plt
```

In [10]:
```
%matplotlib inline
```

In [11]:
```
from PIL import Image  # PIL - Pythom imaging library
```

In [16]:
```
img  = Image.open('/Users/mahidharreddy/Downloads/2.JPG')
img
```

Out[16]:

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

Out[17]:
```
PIL.JpegImagePlugin.JpegImageFile
```

In [19]:
```
img_arr = np.asarray(img)
img_arr
```

Out[19]:
```
array([[[190, 188, 189],
        [190, 188, 189],
        [190, 188, 189],
        ...,
        [192, 190, 191],
        [192, 190, 191],
        [191, 189, 190]],

       [[189, 187, 188],
        [189, 187, 188],
        [190, 188, 189],
        ...,
        [189, 187, 188],
        [188, 186, 187],
        [187, 185, 186]],

       [[187, 185, 186],
        [188, 186, 187],
        [190, 188, 189],
        ...,
        [187, 185, 186],
        [186, 184, 185],
        [185, 183, 184]],

       ...,

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [190, 189, 187],
        [192, 191, 189],
        [193, 192, 190]],

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [192, 191, 189],
        [193, 192, 190],
        [193, 192, 190]],

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [194, 193, 191],
        [193, 192, 190],
        [193, 192, 190]]], dtype=uint8)
```

In [20]:
```
type(img_arr)
```

Out[20]:
```
numpy.ndarray
```

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

Out[21]: (360, 639, 3)

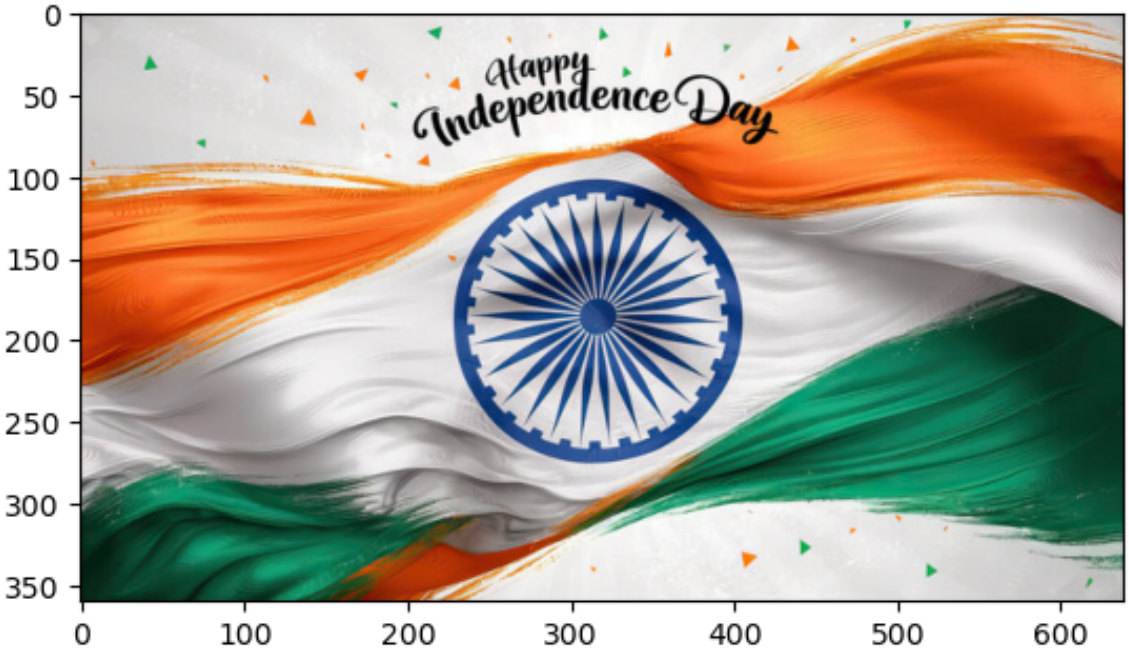
In [26]:
```
plt.imshow(img_arr)
```

Out[26]: <matplotlib.image.AxesImage at 0x12e1c0b90>

In [25]:
```
img_red = img_arr.copy()
img_red
```

Out[25]:
```
array([[[190, 188, 189],
        [190, 188, 189],
        [190, 188, 189],
        ...,
        [192, 190, 191],
        [192, 190, 191],
        [191, 189, 190]],

       [[189, 187, 188],
        [189, 187, 188],
        [190, 188, 189],
        ...,
        [189, 187, 188],
        [188, 186, 187],
        [187, 185, 186]],

       [[187, 185, 186],
        [188, 186, 187],
        [190, 188, 189],
        ...,
        [187, 185, 186],
        [186, 184, 185],
        [185, 183, 184]],

       ...,

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [190, 189, 187],
        [192, 191, 189],
        [193, 192, 190]],

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [192, 191, 189],
        [193, 192, 190],
        [193, 192, 190]],

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [194, 193, 191],
        [193, 192, 190],
        [193, 192, 190]]], dtype=uint8)
```

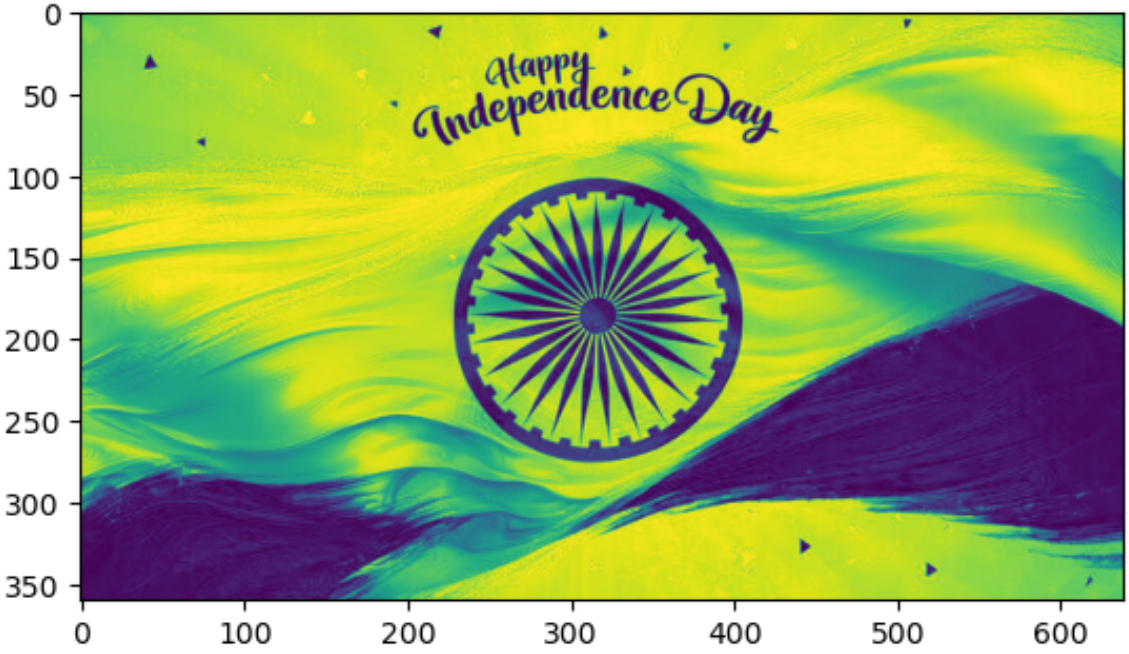
In [29]:
```
plt.imshow(img_red)
plt.show()
```



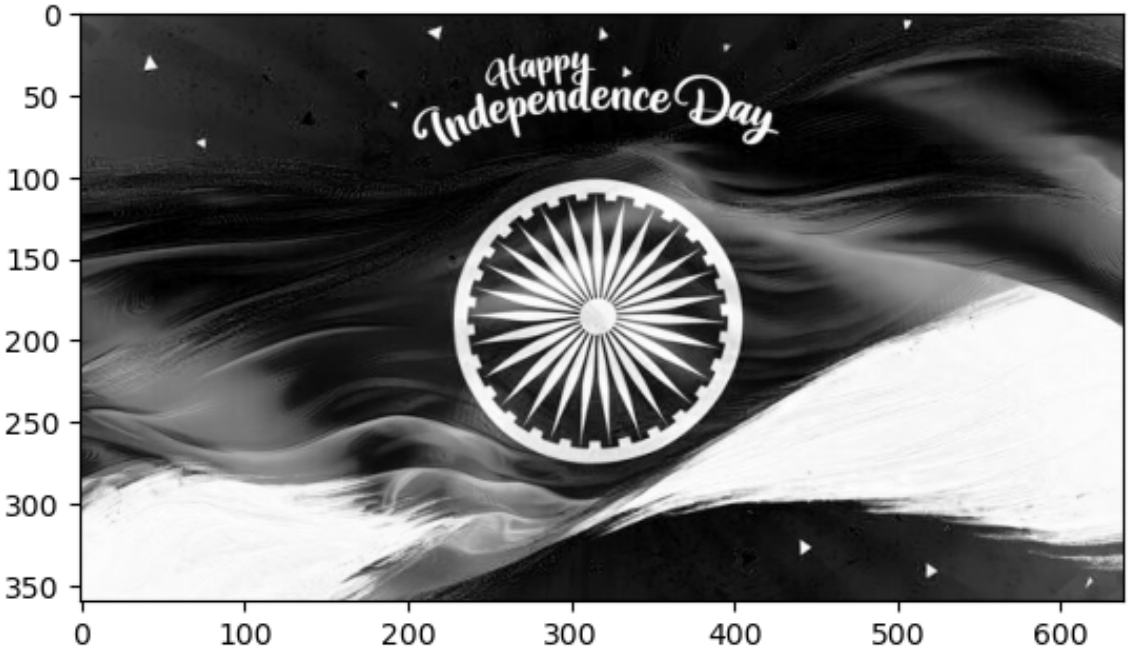
In [30]:
```
img_red.shape
```

Out[30]: (360, 639, 3)

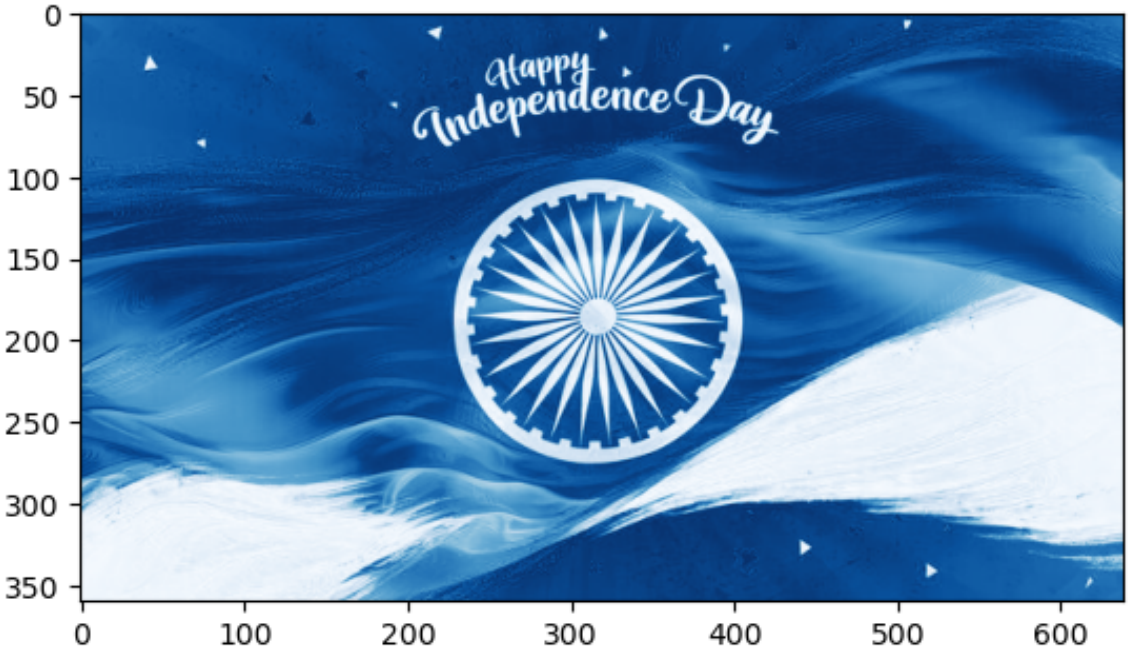
In [31]:
```
plt.imshow(img_red[:,:,0])
plt.show()
```



In [33]:
```
plt.imshow(img_red[:,:,0], cmap='Greys')
plt.show()
```

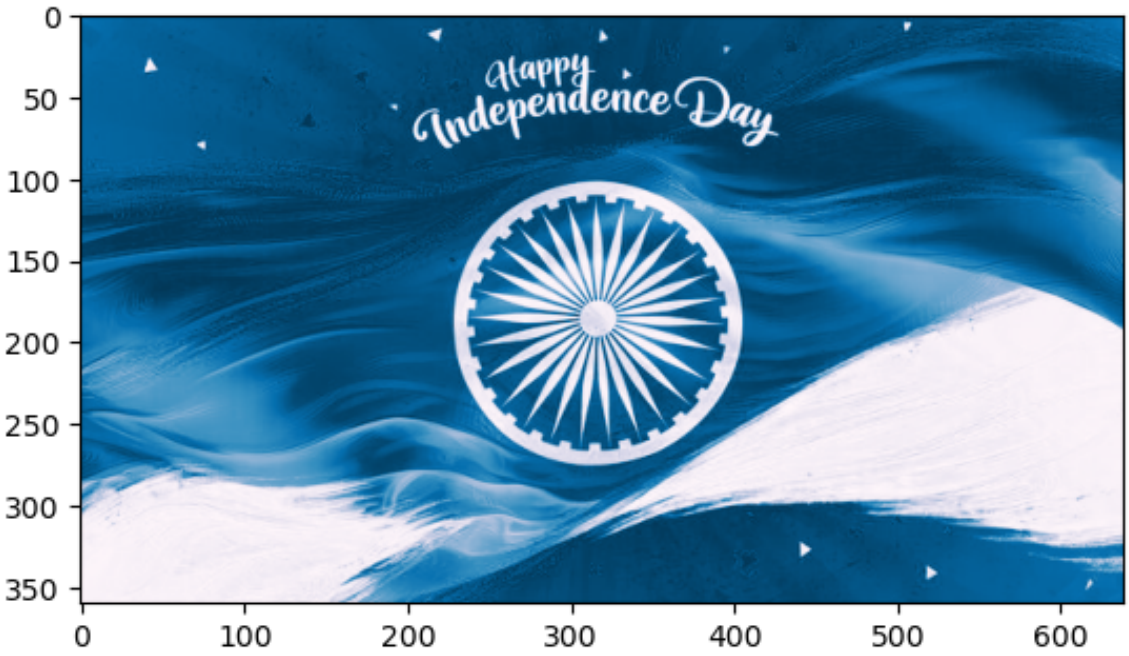


In [34]:
```
plt.imshow(img_red[:,:,0], cmap='Blues')
plt.show()
```

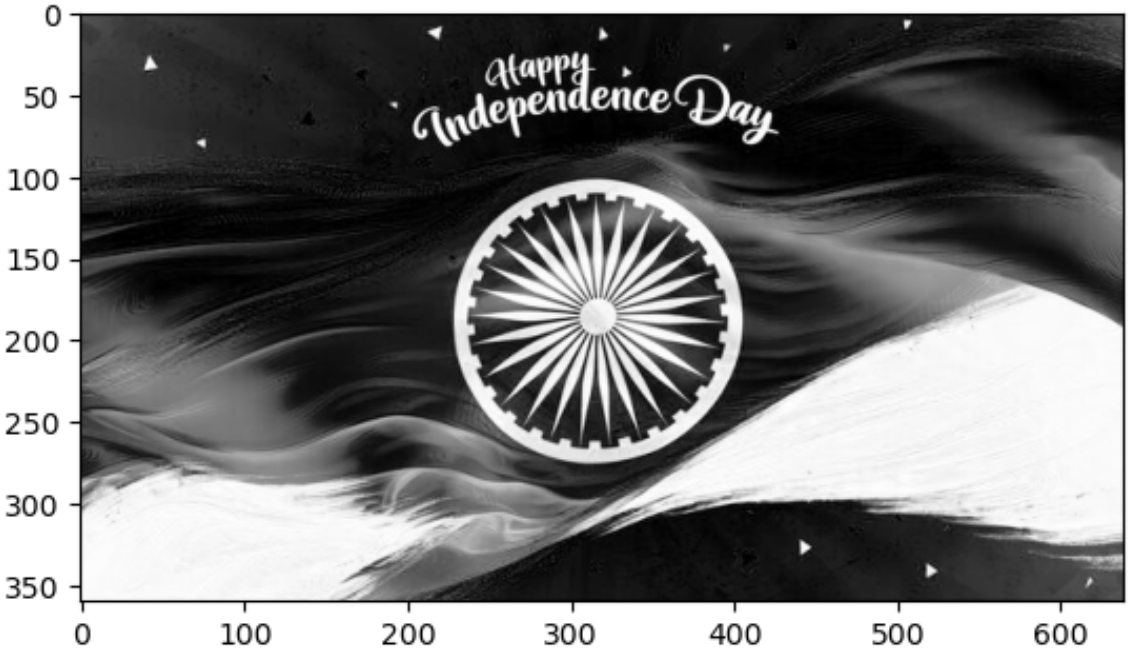


In [35]:
```
plt.imshow(img_red[:,:,0], cmap='Reds')
plt.show()
```

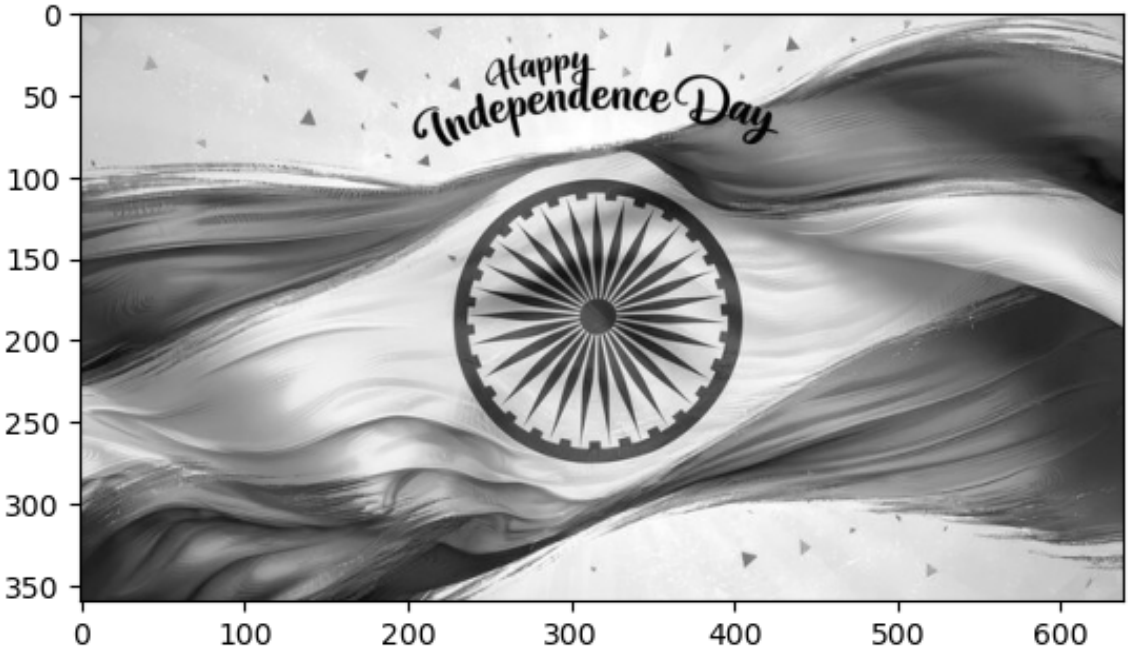
In [37]:
```
plt.imshow(img_red[:,:,0], cmap='PuBu')
plt.show()
```



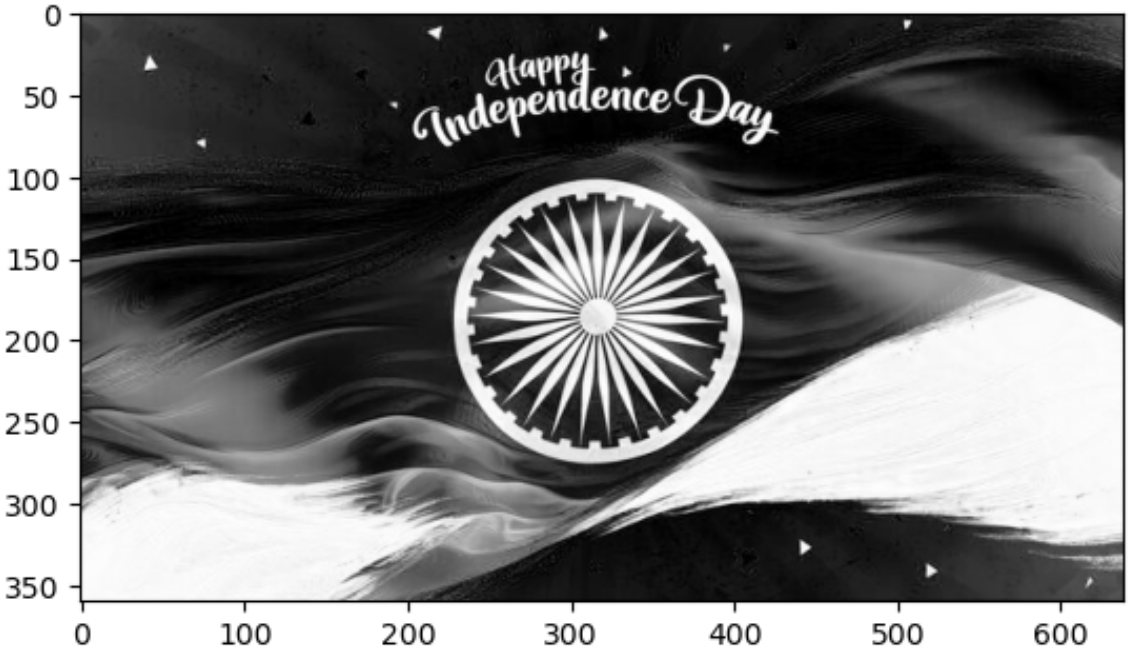
In [38]:
```
plt.imshow(img_red[:,:,0], cmap='Greys')
plt.show()
```



In [42]:
```
plt.imshow(img_red[:,:,1], cmap='grey')
plt.show()
```



In [43]:
```
plt.imshow(img_red[:,:,0], cmap='Greys')
plt.show()
```



In [44]:
```
img_red[:,:,0]
```

Out[44]:
```
array([[190, 190, 190, ..., 192, 192, 191],
       [189, 189, 190, ..., 189, 188, 187],
       [187, 188, 190, ..., 187, 186, 185],
       ...,
       [  6,   6,   7, ..., 190, 192, 193],
       [  6,   6,   7, ..., 192, 193, 193],
       [  6,   6,   7, ..., 194, 193, 193]], dtype=uint8)
```

In [45]:
```
img_red[:,:,1]
```

Out[45]:
```
array([[188, 188, 188, ..., 190, 190, 189],
       [187, 187, 188, ..., 187, 186, 185],
       [185, 186, 188, ..., 185, 184, 183],
       ...,
       [ 38,  38,  39, ..., 189, 191, 192],
       [ 38,  38,  39, ..., 191, 192, 192],
       [ 38,  38,  39, ..., 193, 192, 192]], dtype=uint8)
```

In [46]:
```
img_red[:,:,2]
```

Out[46]:
```
array([[189, 189, 189, ..., 191, 191, 190],
       [188, 188, 189, ..., 188, 187, 186],
       [186, 187, 189, ..., 186, 185, 184],
       ...,
       [ 23,  23,  24, ..., 187, 189, 190],
       [ 23,  23,  24, ..., 189, 190, 190],
       [ 23,  23,  24, ..., 191, 190, 190]], dtype=uint8)
```

In [50]:
```
img_red[:,:,1] = 0
img_red
```

Out[50]:
```
array([[[190,   0, 189],
        [190,   0, 189],
        [190,   0, 189],
        ...,
        [192,   0, 191],
        [192,   0, 191],
        [191,   0, 190]],

       [[189,   0, 188],
        [189,   0, 188],
        [190,   0, 189],
        ...,
        [189,   0, 188],
        [188,   0, 187],
        [187,   0, 186]],

       [[187,   0, 186],
        [188,   0, 187],
        [190,   0, 189],
        ...,
        [187,   0, 186],
        [186,   0, 185],
        [185,   0, 184]],

       ...,

       [[  6,   0,  23],
        [  6,   0,  23],
        [  7,   0,  24],
        ...,
        [190,   0, 187],
        [192,   0, 189],
        [193,   0, 190]],

       [[  6,   0,  23],
        [  6,   0,  23],
        [  7,   0,  24],
        ...,
        [192,   0, 189],
        [193,   0, 190],
        [193,   0, 190]],

       [[  6,   0,  23],
        [  6,   0,  23],
        [  7,   0,  24],
        ...,
        [194,   0, 191],
        [193,   0, 190],
        [193,   0, 190]]], dtype=uint8)
```

In [54]:
```
plt.imshow(img_red)
plt.show()
```

In [59]:
```
arr1 = np.asarray(img)
arr1
```

Out[59]:
```
array([[[190, 188, 189],
        [190, 188, 189],
        [190, 188, 189],
        ...,
        [192, 190, 191],
        [192, 190, 191],
        [191, 189, 190]],

       [[189, 187, 188],
        [189, 187, 188],
        [190, 188, 189],
        ...,
        [189, 187, 188],
        [188, 186, 187],
        [187, 185, 186]],

       [[187, 185, 186],
        [188, 186, 187],
        [190, 188, 189],
        ...,
        [187, 185, 186],
        [186, 184, 185],
        [185, 183, 184]],

       ...,

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [190, 189, 187],
        [192, 191, 189],
        [193, 192, 190]],

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [192, 191, 189],
        [193, 192, 190],
        [193, 192, 190]],

       [[  6,  38,  23],
        [  6,  38,  23],
        [  7,  39,  24],
        ...,
        [194, 193, 191],
        [193, 192, 190],
        [193, 192, 190]]], dtype=uint8)
```

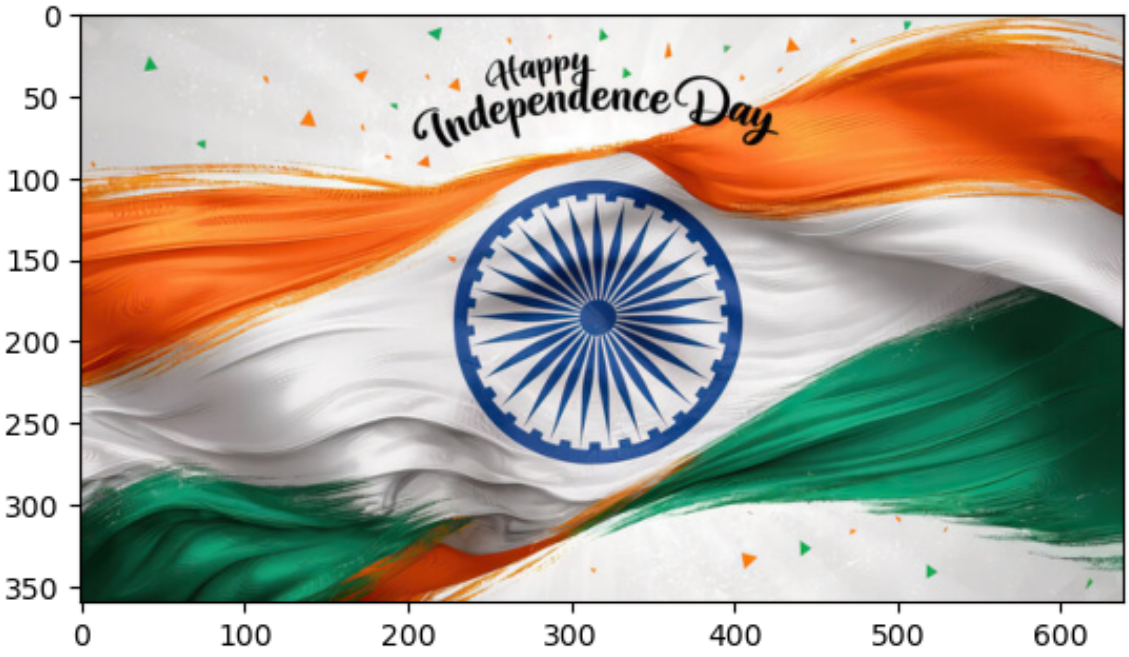
In [60]:
```
type(arr1)
```

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

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

Out[61]: (360, 639, 3)

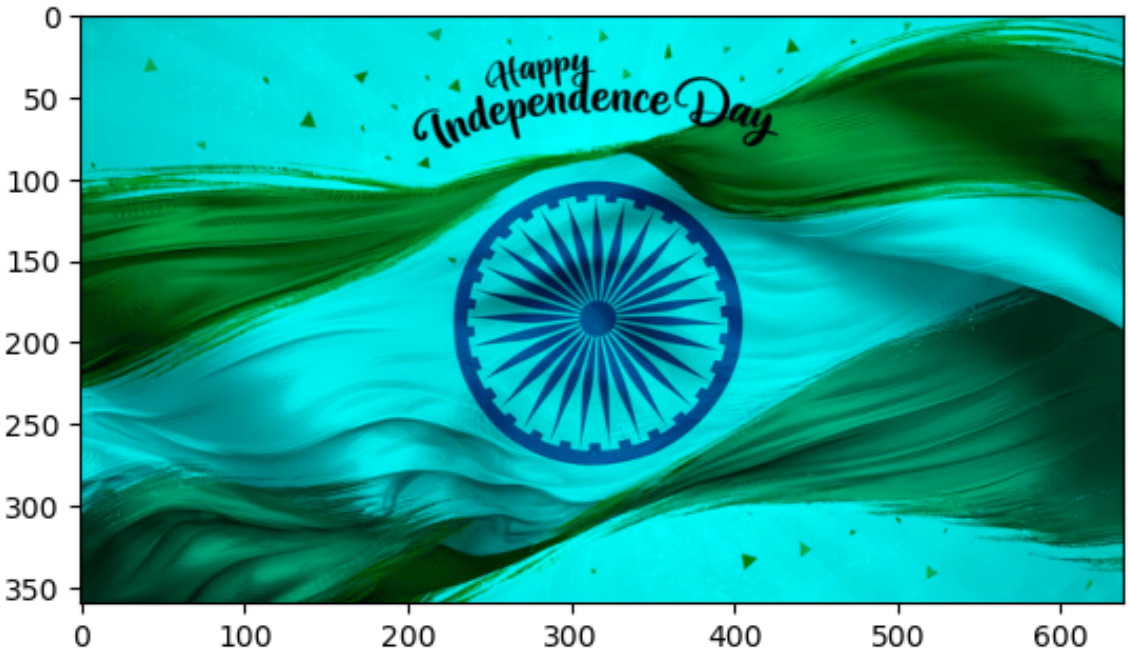
In [63]:
```
plt.imshow(arr1)
plt.show()
```



In [64]:
```
img_1 = arr1.copy()
```

In [65]:
```
img_1[:,:,0] = 0
```

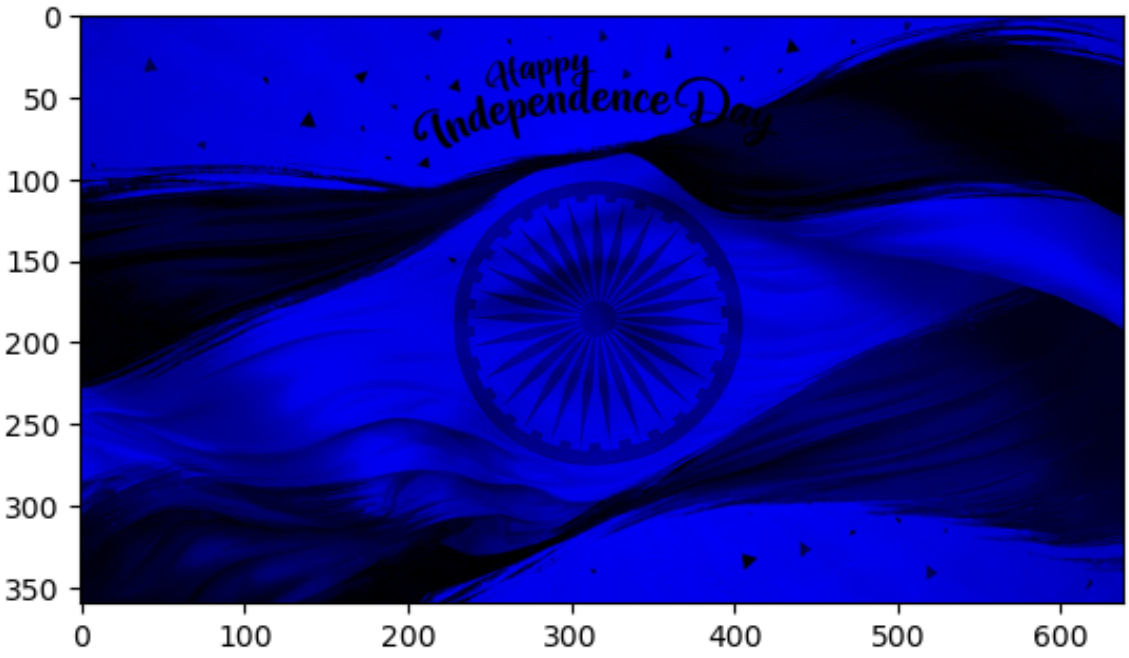
In [66]:
```
plt.imshow(img_1)
plt.show()
```



In [67]:
```
img_1[:,:,1]
```

Out[67]:
```
array([[188, 188, 188, ..., 190, 190, 189],
       [187, 187, 188, ..., 187, 186, 185],
       [185, 186, 188, ..., 185, 184, 183],
       ...,
       [ 38,  38,  39, ..., 189, 191, 192],
       [ 38,  38,  39, ..., 191, 192, 192],
       [ 38,  38,  39, ..., 193, 192, 192]], dtype=uint8)
```

In [68]:
```
img_1[:,:,1] = 0
plt.imshow(img_1)
plt.show()
```



In [ ]:

In [ ]:

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In [ ]:

In [ ]: