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INSTITUTE OF TECHNOLOGY  
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YEAR : 2<sup>nd</sup> YEAR

ACADEMIC YEAR : 2021-2023

MAJOR PROJECT - 2

```
import numpy as np # linear algebra import pandas as pd # data
processing, CSV file I/O (e.g. pd.read_csv) import cv2 import
matplotlib.pyplot as plt
#from PIL import Image
# Input data files are available in the "../input/" directory. # For example, running
this (by clicking run or pressing Shift+Enter) will list all files
```

```
import os for dirname, _, filenames in
os.walk('/content/flowers_alpha.png'):
```

```
    for filename in filenames:
print(os.path.join(dirname, filename))
```

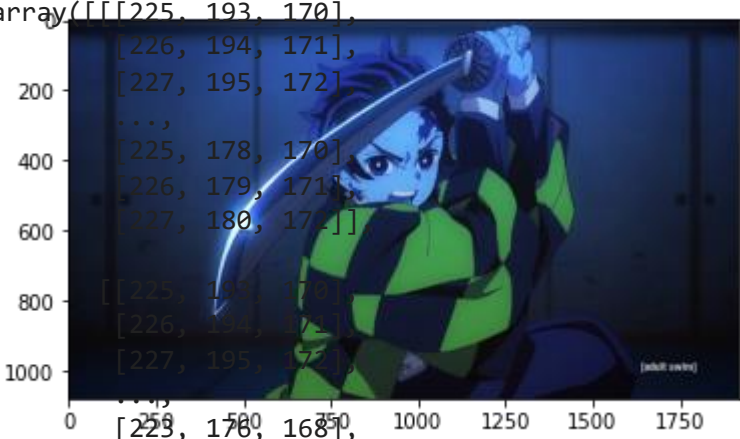
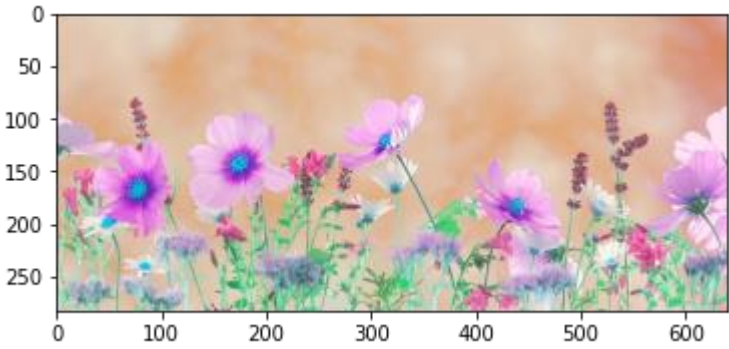
```
# Any results you write to the current directory are saved as output.
```

```
img1 = cv2.imread('/content/flowers_alpha.png')
```

```
plt.imshow(img1) plt.show() img2 =
cv2.imread('/content/Screenshot (43).png')
```

```
plt.imshow(img2) plt.show() img3 = cv2.imread('/content/Iron-
Fist-Computer-Wallpaper.jpg')
```

```
plt.imshow(img3)
plt.show()
```



img1

```
[[220, 204, 187],
 [205, 204, 184],
 [206, 237, 210],
 ...,
 [234, 179, 176],
 [228, 180, 179],
 [226, 179, 181]],

[[216, 200, 183],
 [212, 211, 191],
 [196, 225, 199],
 ...,
 [227, 176, 174],
 [224, 176, 175],
 [222, 175, 177]],

[[211, 201, 183],
 [206, 211, 190],
 [195, 228, 201],
 ...,
 [218, 173, 170],
```

```
[221, 171, 171],  
[223, 171, 171]]], dtype=uint8) print(  
img1.shape )  
  
(283, 640, 3)
```

```
len( img1.shape )
```

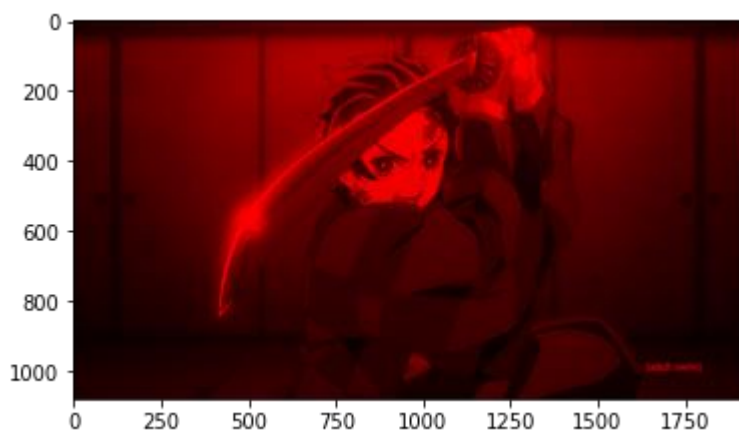
```
3
```

```
print(img1[150,200])
```

```
[234 178 227]
```

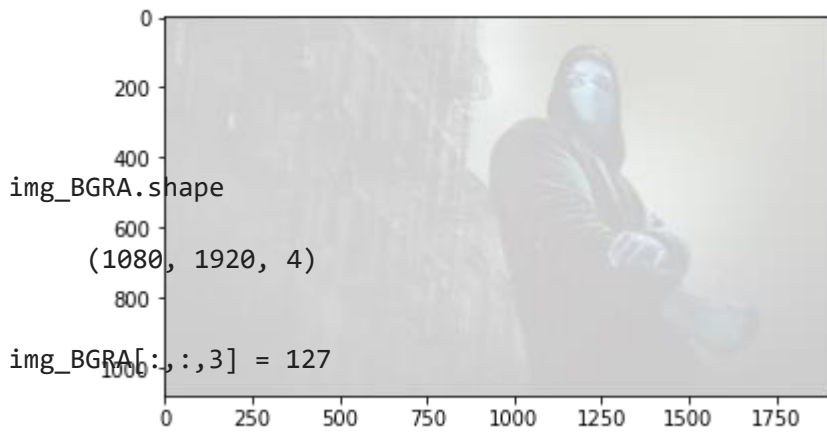
```
#img1 img2[:, :, 1]  
= 0 img2[:, :, 0] =  
0  
#plt.imshow(img2)
```

```
plt.imshow(cv2.cvtColor(img2, cv2.COLOR_BGR2RGB))  
plt.show()
```



```
plt.imshow(cv2.cvtColor(img3, cv2.COLOR_BGR2RGB))  
plt.show()
```

```
b_channel, g_channel, r_channel = cv2.split(img3)  
alpha_channel = np.ones(b_channel.shape, dtype=b_channel.dtype) * 50  
img_BGRA = cv2.merge((b_channel, g_channel, r_channel, alpha_channel))  
cv2.imwrite('/content/Iron-Fist-Computer-Wallpaper.jpg', img_BGRA)  
plt.imshow(cv2.cvtColor(img_BGRA, cv2.COLOR_BGR2BGRA)) plt.show()
```



```
img_BGRA.shape
```

```
(1080, 1920, 4)
```

```
img_BGRA[:, :, 3] = 127
```

```
plt.imshow(cv2.cvtColor(img_BGRA, cv2.COLOR_BGR2RGB))
plt.show()
```

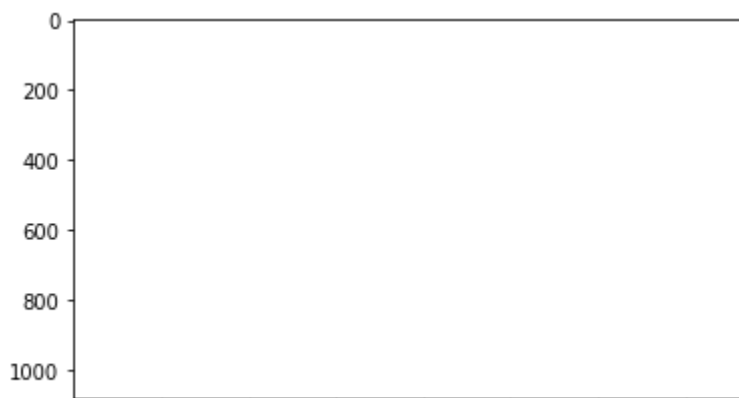


```
# First create the image with alpha channel rgba
= cv2.cvtColor(img3, cv2.COLOR_RGB2RGBA)
```

```
# Then assign the mask to the last channel of the image
rgba[:, :, 3] = 0.5 cv2.imwrite('result.png', rgba)
```

```
True
```

```
plt.imshow(cv2.cvtColor(rgba, cv2.COLOR_BGR2BGRA))
plt.show()
```

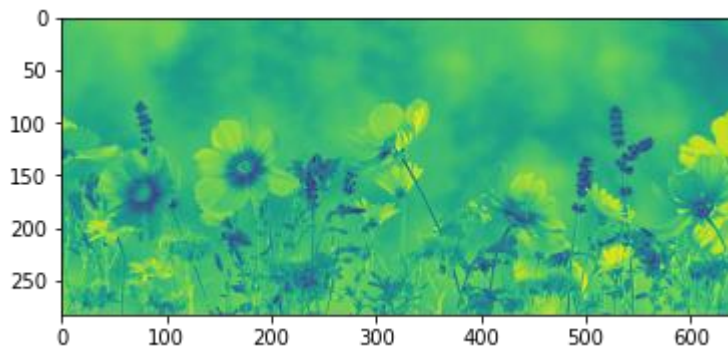


```
plt.imshow(cv2.cvtColor(img1, cv2.COLOR_BGR2RGB))
plt.show()
```

```
b_channel, g_channel, r_channel = cv2.split(img1)
horse_gray = ((0.3 * r_channel) + (0.59 * g_channel) + (0.11 * b_channel))
#horse_gray = cv2.merge((b_channel, g_channel, r_channel))
print(horse_gray.shape) plt.imshow(horse_gray) plt.show()
```



(283, 640)



```
rosebloom = cv2.VideoCapture('/content/Screenshot (43).png')
```

```
type(rosebloom)
frame_width = int(rosebloom.get(3))
print(frame_width)
frame_height = int(rosebloom.get(4))
print(frame_height)
```

1920

1080

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