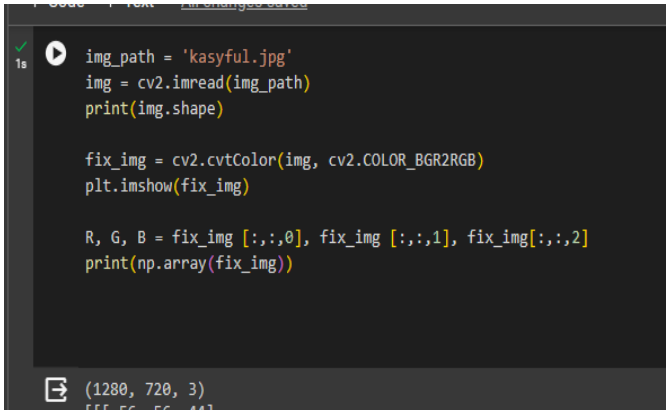
Nama: Andi Muh Kasyful A

NIM : 221011113

KELAS :IK22-B

Citra R,G,B

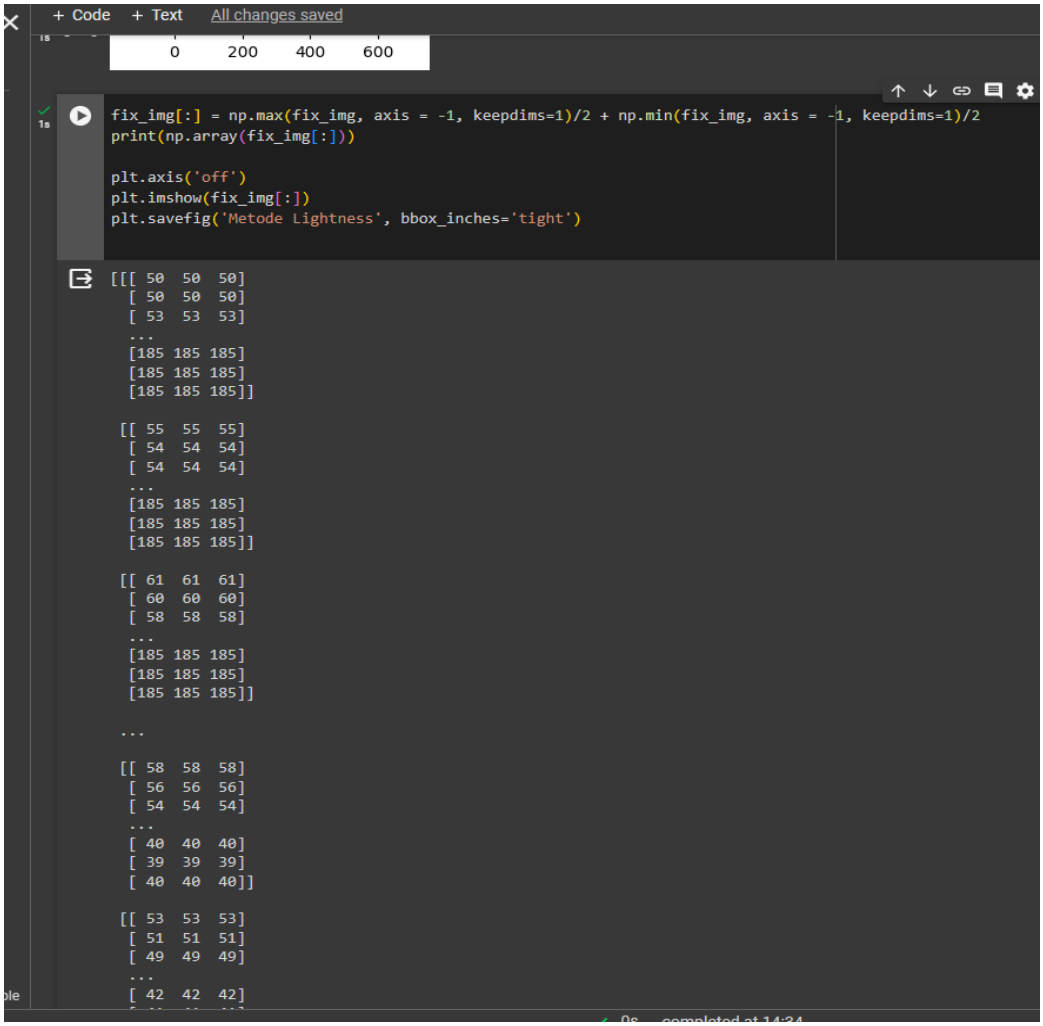


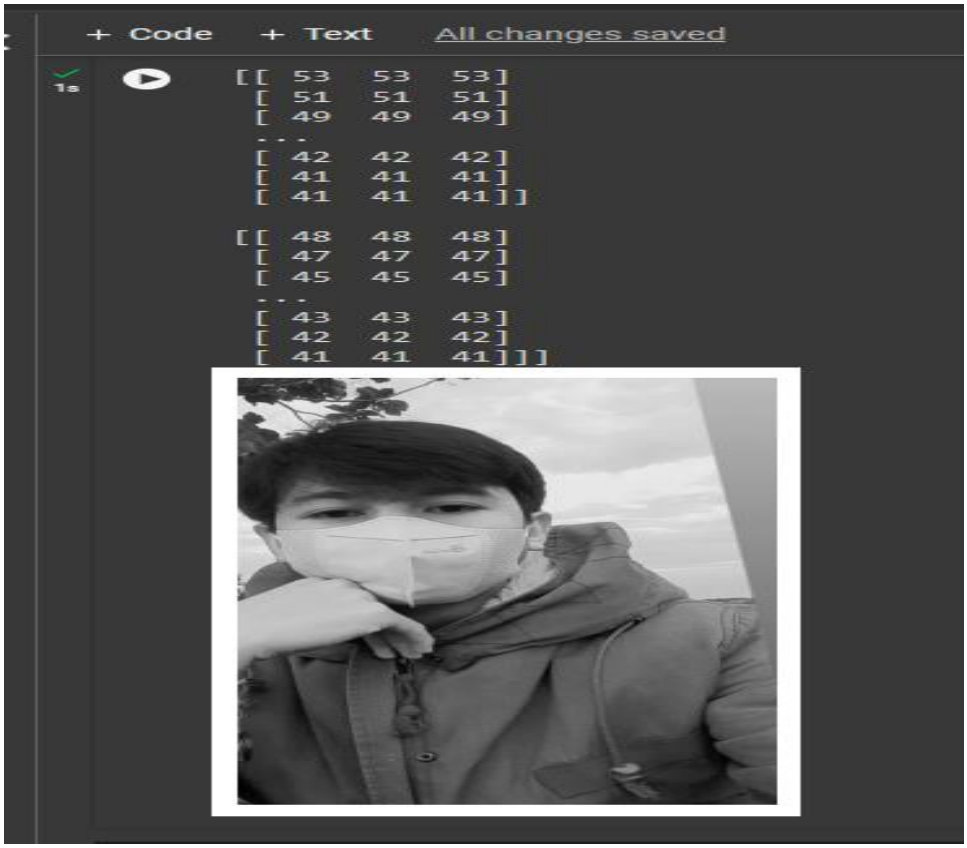
```
img_path = 'kasyful.jpg'
img = cv2.imread(img_path)
print(img.shape)

fix_img = cv2.cvtColor(img, cv2.COLOR_BGR2RGB)
plt.imshow(fix_img)

R, G, B = fix_img [:,:,0], fix_img [:,:,1], fix_img[:,:,2]
print(np.array(fix_img))
```

```
(1280, 720, 3)
```

1.metode lighnest

Lightness, mencari nilai tertinggi dan terendah dari nilai R, G, dan B, kemudian hasil penjumlahan nilai tertinggi dan terendah tersebut dikalikan dengan 0,5. Secara matematis dapat diru muskan:
Grayscale = (max(R, G, B)) + (min(R, G, B)) ∗ 0.5


+ Code
+ Text
All changes saved
0
200
400
600
fix_img[:] = np.max(fix_img, axis = -1, keepdims=1)/2 + np.min(fix_img, axis = -1, keepdims=1)/2
print(np.array(fix_img[:]))
plt.axis('off')
plt.imshow(fix_img[:])
plt.savefig('Metode Lightness', bbox_inches='tight')
[[[50 50 50]
[50 50 50]
[53 53 53]
...
[185 185 185]
[185 185 185]
[185 185 185]]
[[55 55 55]
[54 54 54]
[54 54 54]
...
[185 185 185]
[185 185 185]
[185 185 185]]
[[61 61 61]
[60 60 60]
[58 58 58]
...
[185 185 185]
[185 185 185]
[185 185 185]]
...
[[58 58 58]
[56 56 56]
[54 54 54]
...
[40 40 40]
[39 39 39]
[40 40 40]]
[[53 53 53]
[51 51 51]
[49 49 49]
...
[42 42 42]



2.metode average

Average, mencari nilai rata-rata dari R, G, dan B. Nilai rata rata itulah yang dapat dikatakan sebagai grayscale. Rumus matematisnya adalah: Grayscale = Grayscale = (R + G + B)/ 3

```
[20] lumi_img =(0.2126*R ) + (0.7152*G) + (0.0722*B)
     # print(lumi_img)
     print(np.array(lumi_img))

     plt.axis('off')
     plt.imshow(lumi_img, cmap = 'gray')
     plt.savefig('Metode Luminocity', bbox_inches='tight')
```

```
[[ 55.1336  55.1336  58.1336 ... 183.5736 183.5736 183.5736]
 [ 60.1336  59.1336  59.1336 ... 183.5736 183.5736 183.5736]
 [ 66.1336  65.1336  63.1336 ... 183.5736 183.5736 183.5736]
 ...
 [ 62.7806  60.7806  58.7806 ...  42.3542  41.3542  42.3542]
 [ 57.7806  55.7806  53.7806 ...  44.3542  43.3542  43.3542]
 [ 52.7806  51.7806  49.7806 ...  45.3542  44.3542  43.3542]]
```

3.metode luminocity

Luminosity, mengalikan setiap nilai R, G, dan B dengan kon stanta tertentu yang sudah ditetapkan nilainya, kemudian hasil perkalian seluruh nilai R, G, B dijumlahkan satu sama lain. Ru mus matematisnya adalah: Grayscale = (0.2126 × R) + (0.7152 × G) + (0.0722 × B)

```
gray_img = np.mean(fix_img, axis = -1)

print(np.array(gray_img))

plt.axis('off')
plt.imshow(gray_img, cmap = 'gray')
plt.savefig('Metode Average', bbox_inches='tight')
```

```
[[ 52.          52.          55.         ... 185.         185.
   185.        ]
 [ 57.          56.          56.         ... 185.         185.
   185.        ]
 [ 63.          62.          60.         ... 185.         185.
   185.        ]
 ...
 [ 59.66666667  57.66666667  55.66666667 ...  40.66666667  39.66666667
   40.66666667]
 [ 54.66666667  52.66666667  50.66666667 ...  42.66666667  41.66666667
   41.66666667]
 [ 49.66666667  48.66666667  46.66666667 ...  43.66666667  42.66666667
   41.66666667]]
```