

LAB ACTIVITY

PENGOLAHAN CITRA DIGITAL

Pertemuan 7 – Histogram Citra

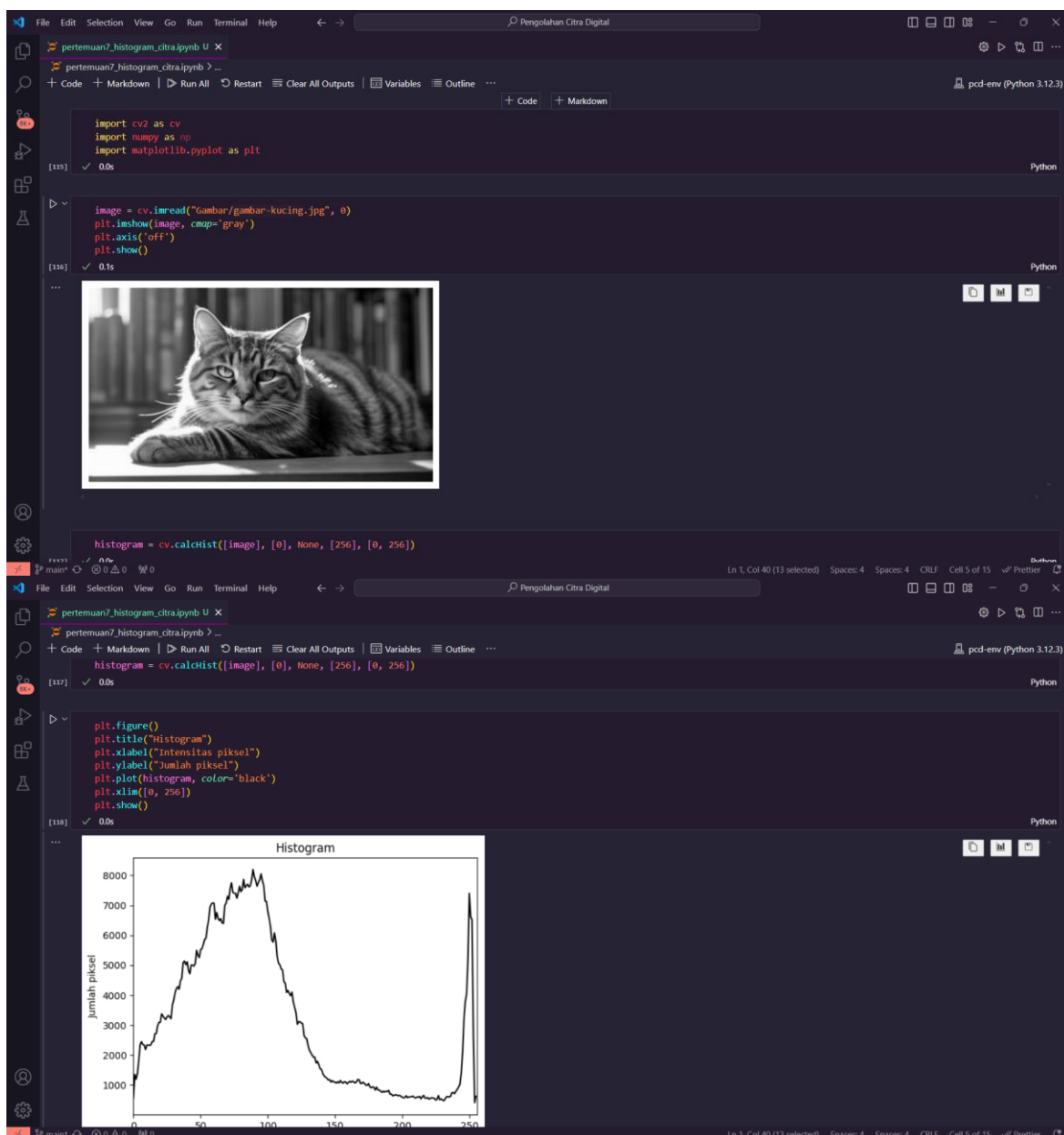
Nama: Muhammad Rifqi Amir Putra
Kelas: 5 CA

NPM: 062230701416
Mata Kuliah: Pengolahan Citra Digital

Alat dan Bahan:

1. Text Editor
2. Python
3. Library Python numpy, opencv, matplotlib
4. Google Colab (Opsional)

1. Membuat Histogram Citra Menggunakan Python



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pcd-env (Python 3.12.3)

GAMBAR BERHARUA

```
image_clr = cv.imread("gambar/gambar-kucing.jpg")
plt.imshow(cv.cvtColor(image_clr, cv.COLOR_BGR2RGB))
plt.axis('off')
plt.show()
```

[130] ✓ 0.1s




Python

```
blue_channel = image_clr[:, :, 0]

plt.imshow(blue_channel, cmap="gray")
plt.axis('off')
plt.title("Blue Channel")
plt.show()
```

[130] ✓ 0.3s




Python

```
green_channel = image_clr[:, :, 1]

plt.imshow(green_channel, cmap="gray")
plt.axis('off')
plt.title("Green Channel")
plt.show()
```

[132] ✓ 0.1s




Python

```
red_channel = image_clr[:, :, 2]

plt.imshow(red_channel, cmap="gray")
plt.axis('off')
plt.title("Red Channel")
plt.show()
```

[132] ✓ 0.1s



Python

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pcd-env (Python 3.12.3)

```
histogram_blue = cv.calcHist([image_clr], [0], None, [256], [0, 256])
histogram_green = cv.calcHist([image_clr], [1], None, [256], [0, 256])
histogram_red = cv.calcHist([image_clr], [2], None, [256], [0, 256])
```

[123] ✓ 0.0s Python

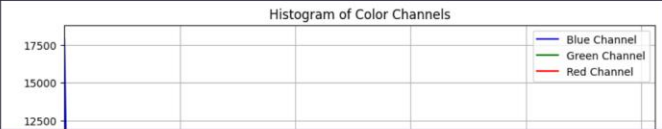
```
# Menampilkan histogram
plt.figure(figsize=(10, 5))
plt.title("Histogram of color Channels")
plt.xlabel("Pixel Intensity")
plt.ylabel("Jumlah Piksel")
plt.xlim([0, 256])

# Plot histogram untuk masing-masing channel
plt.plot(histogram_blue, color='blue', label='Blue Channel')
plt.plot(histogram_green, color='green', label='Green Channel')
plt.plot(histogram_red, color='red', label='Red Channel')

# Menambahkan legenda
plt.legend()
plt.grid() # Menambahkan grid untuk memudahkan pembacaan
plt.show()
```

[134] ✓ 0.0s Python

...



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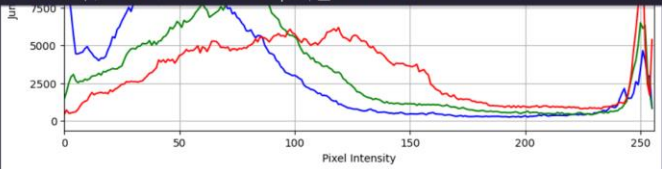
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pcd-env (Python 3.12.3)



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pcd-env (Python 3.12.3)

```
plt.xlabel('Pixel Intensity')
plt.ylabel('Frequency')
plt.grid()

plt.tight_layout()
plt.show()
```

[125] ✓ 0.1s

Frequency

Histogram of Blue Channel

Pixel Intensity

Frequency

Histogram of Green Channel

Pixel Intensity

Frequency

Histogram of Red Channel

Pixel Intensity

main

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pcd-env (Python 3.12.3)

```
dark_image = cv.imread("gambar/pertemuan 7/hutan-Gelap.jpeg", 0)
plt.imshow(dark_image, cmap="gray")
plt.axis('off')
plt.show()
```

[126] ✓ 0.0s

histogram_before = cv.calcHist([dark_image], [0], None, [256], [0, 256])

```
plt.figure()
plt.xlabel("Jumlah Pixel")
plt.ylabel("Intensitas")
plt.plot(histogram_before)
plt.xlim([0, 256])
plt.show()
```

[127]

Intensity

Jumlah Pixel

```
equalized_image = cv.equalizeHist(dark_image)

plt.imshow(equalized_image, cmap="gray")
```

[128] ✓ 0.1s

<matplotlib.image.AxesImage at 0x1e1edf7290>

0

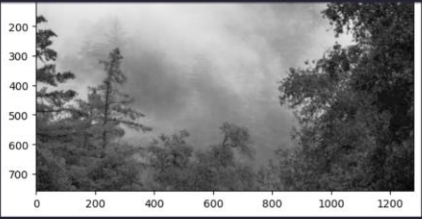
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pcd-env (Python 3.12.3)



```
histogram_after = cv.calcHist([equalized_image], [0], None, [256], [0, 256])

plt.figure()
plt.xlabel("jumlah piksel")
plt.ylabel("intensitas")
plt.plot(histogram_after)
plt.xlim([0, 256])
plt.show()
```

(129) ✓ 0.0s Python



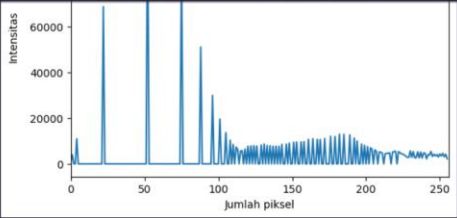
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pcd-env (Python 3.12.3)



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