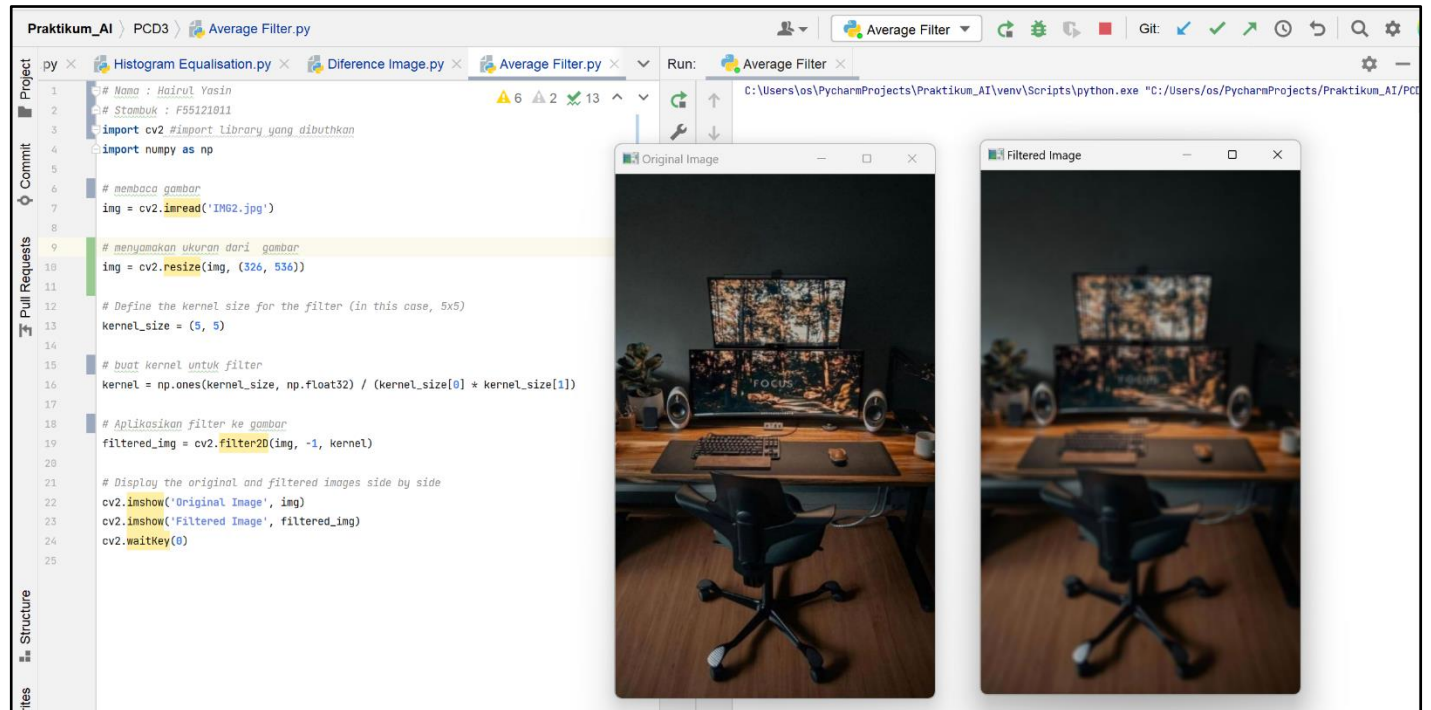Nama   : Hairul Yasin
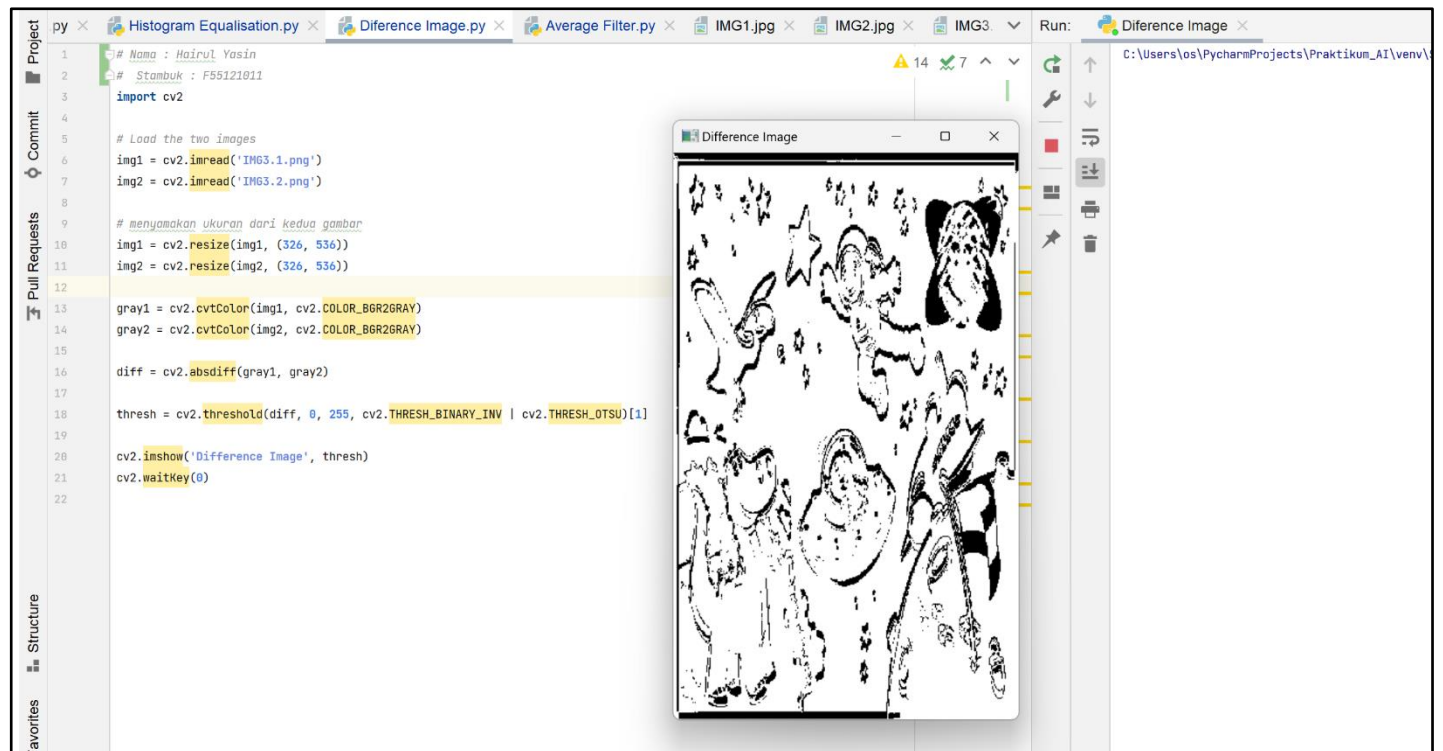
Stambuk : F55121011

Tugas 3 Perbaikan Citra
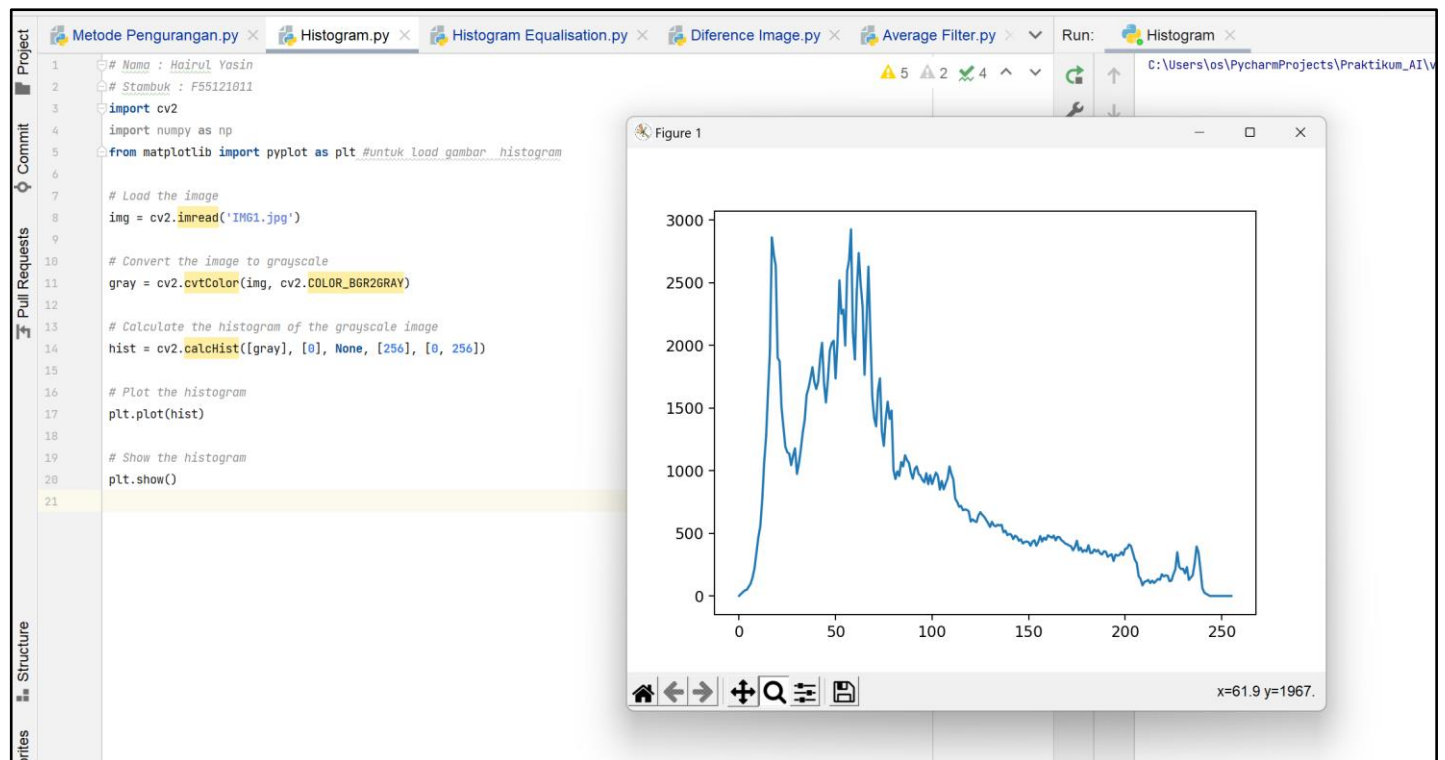
1. Average Filter
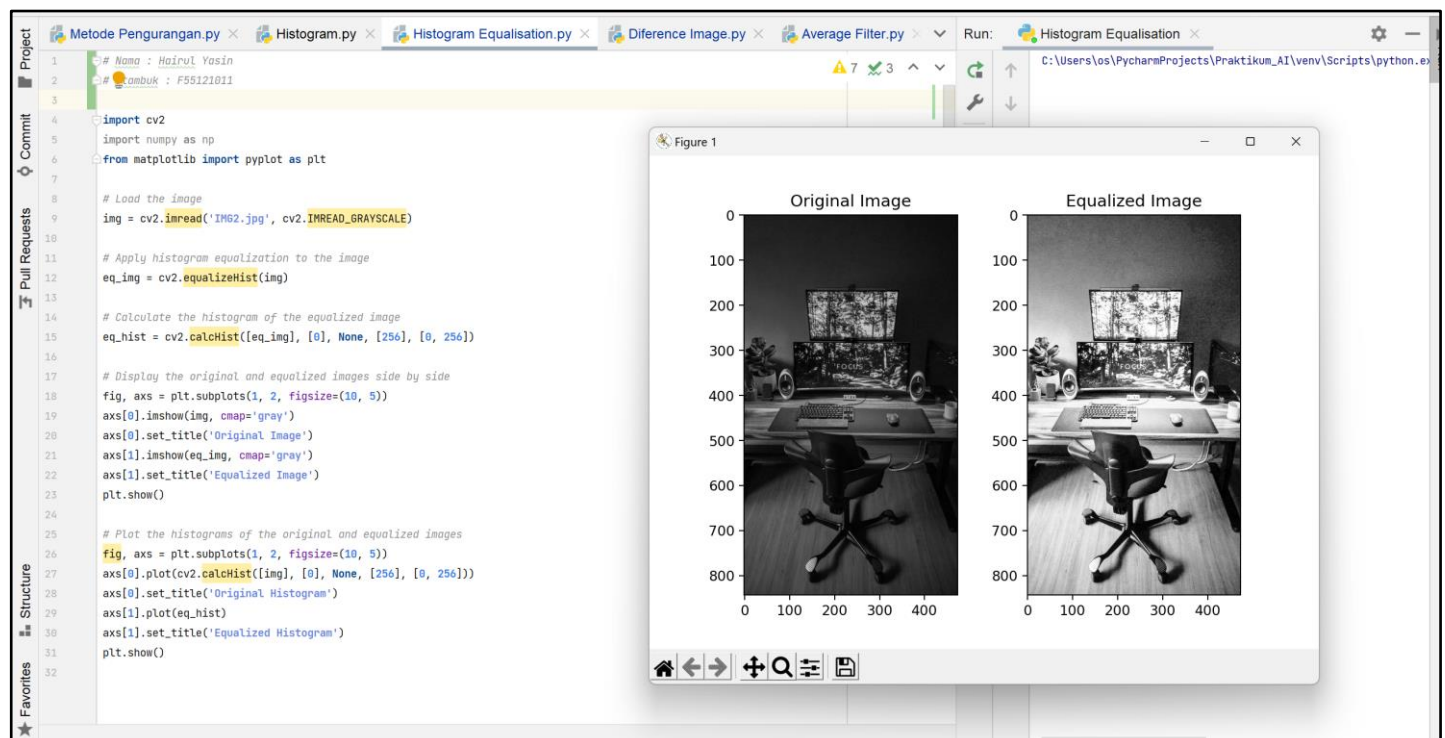

2. Diference Image
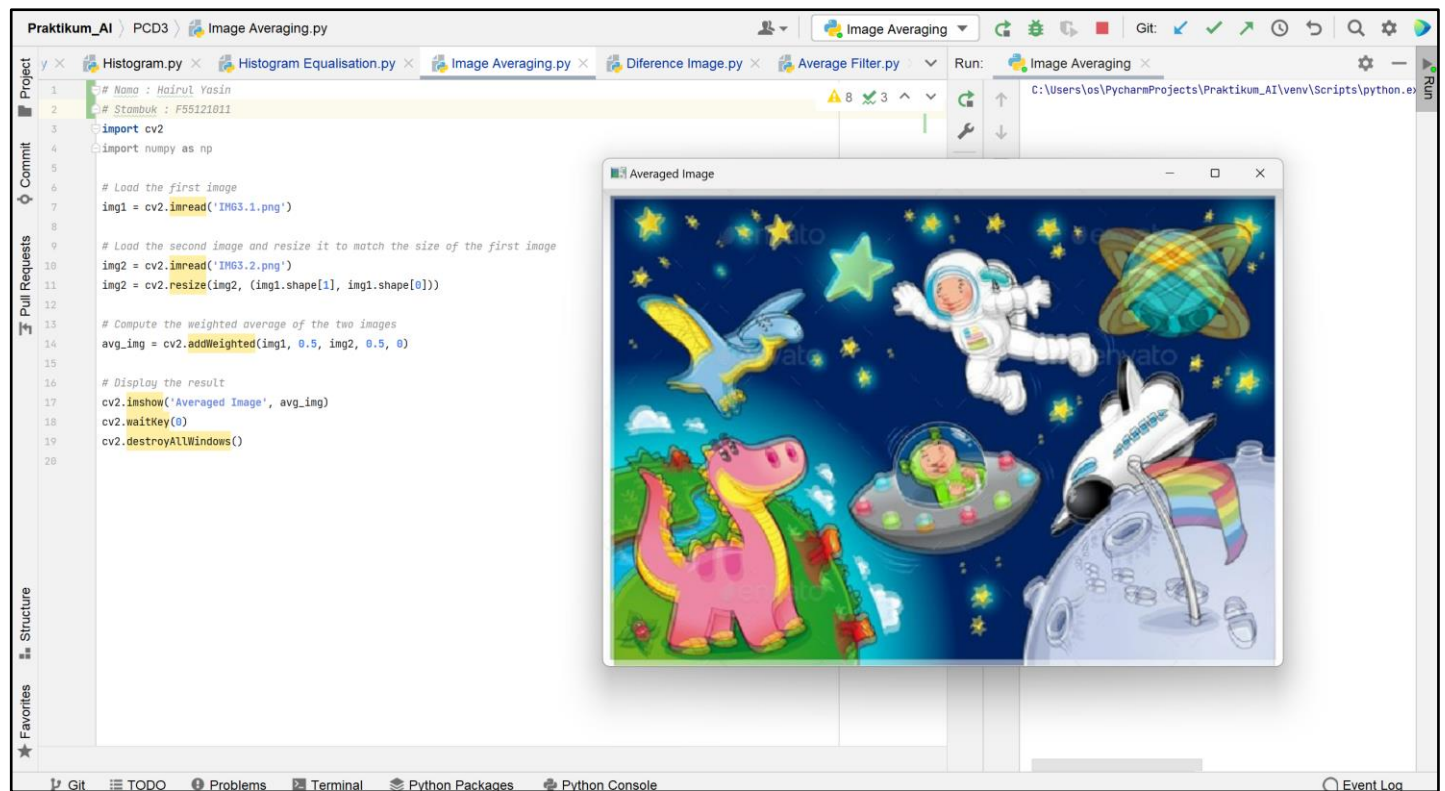
3. Histogram


```python
# Nama : Hairul Yasin
# Stambuk : F55121011
import cv2
import numpy as np
from matplotlib import pyplot as plt  #untuk load gambar  histogram

# Load the image
img = cv2.imread('IMG1.jpg')

# Convert the image to grayscale
gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

# Calculate the histogram of the grayscale image
hist = cv2.calcHist([gray], [0], None, [256], [0, 256])

# Plot the histogram
plt.plot(hist)

# Show the histogram
plt.show()
```

4. Histogram Equalisation


```python
# Nama : Hairul Yasin
# Stambuk : F55121011

import cv2
import numpy as np
from matplotlib import pyplot as plt

# Load the image
img = cv2.imread('IMG2.jpg', cv2.IMREAD_GRAYSCALE)

# Apply histogram equalization to the image
eq_img = cv2.equalizeHist(img)

# Calculate the histogram of the equalized image
eq_hist = cv2.calcHist([eq_img], [0], None, [256], [0, 256])

# Display the original and equalized images side by side
fig, axs = plt.subplots(1, 2, figsize=(10, 5))
axs[0].imshow(img, cmap='gray')
axs[0].set_title('Original Image')
axs[1].imshow(eq_img, cmap='gray')
axs[1].set_title('Equalized Image')
plt.show()

# Plot the histograms of the original and equalized images
fig, axs = plt.subplots(1, 2, figsize=(10, 5))
axs[0].plot(cv2.calcHist([img], [0], None, [256], [0, 256]))
axs[0].set_title('Original Histogram')
axs[1].plot(eq_hist)
axs[1].set_title('Equalized Histogram')
plt.show()
```

5. Image Averaging

6. Metode Pengurangan