```
from google.colab import files
uploaded = files.upload()
```

```
Choose Files i14.PNG
• i14.PNG(image/png) - 282659 bytes, last modified: 5/7/2025 - 100% done
Saving i14.PNG to i14.PNG
```

```
image = cv2.imread('your_image.jpg', cv2.IMREAD_GRAYSCALE)
```

```
from google.colab import files
uploaded = files.upload()

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

# Replace with your uploaded image name
image = cv2.imread('i14.PNG', cv2.IMREAD_GRAYSCALE)

# Check if the image loaded
if image is None:
    print("Error: Image not loaded.")
else:
    # Laplacian kernel with diagonal neighbors
    laplacian_kernel = np.array([[1, 1, 1],
                                 [1, -8, 1],
                                 [1, 1, 1]])

    # Apply the filter
    sharpened = cv2.filter2D(image, -1, laplacian_kernel)

    # Subtract to sharpen
    final_result = cv2.add(image, -sharpened)

    # Show the images
    plt.figure(figsize=(12, 4))
    plt.subplot(1, 3, 1), plt.imshow(image, cmap='gray'), plt.title("Original")
    plt.subplot(1, 3, 2), plt.imshow(sharpened, cmap='gray'), plt.title("Laplacian")
    plt.subplot(1, 3, 3), plt.imshow(final_result, cmap='gray'), plt.title("Sharpened")
    plt.tight_layout()
    plt.show()
```

```
Choose Files i14.PNG
• i14.PNG(image/png) - 282659 bytes, last modified: 5/7/2025 - 100% done
Saving i14.PNG to i14 (2).PNG
```