

## 18. Perform Sharpening of Image using Laplacian mask with positive center coefficient.

### PROGRAM:

```
EXP-18.py - C:\Users\reddy\OneDrive\Desktop\COMPUTER VISION\EXP-18.py (3.11.9)
File Edit Format Run Options Window Help
import cv2
import numpy as np

# Read image
img = cv2.imread("C:\Users\reddy\OneDrive\Desktop\COMPUTER VISION\111.jpg")
# Convert to grayscale
gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

# Laplacian mask (positive center)
kernel = np.array([[0, -1, 0],
                  [-1, 5, -1],
                  [0, -1, 0]])

# Apply filter (direct sharpening)
sharpened = cv2.filter2D(gray, -1, kernel)

# Display images
cv2.imshow("Original Image", gray)
cv2.imshow("Sharpened Image", sharpened)

cv2.waitKey(0)
cv2.destroyAllWindows()
```

### OUTPUT:

