

19. Perform Sharpening of Image using unsharp masking.

PROGRAM:

```
EXP-19.py - C:\Users\reddy\OneDrive\Desktop\COMPUTER VISION\EXP-19.py (3.11.9)
File Edit Format Run Options Window Help
import cv2
import numpy as np

# Step 1: Read image
img = cv2.imread(r"C:\Users\reddy\OneDrive\Desktop\COMPUTER VISION\iii.jpg")

# Step 2: Convert to grayscale
gray = cv2.cvtColor(img, cv2.COLOR_BGR2GRAY)

# Step 3: Apply Gaussian Blur
blur = cv2.GaussianBlur(gray, (5, 5), 0)

# Step 4: Create mask (Original - Blurred)
mask = cv2.subtract(gray, blur)

# Step 5: Add mask to original image
sharpened = cv2.add(gray, mask)

# Display results
cv2.imshow("Original Image", gray)
cv2.imshow("Blurred Image", blur)
cv2.imshow("Unsharp Mask", mask)
cv2.imshow("Sharpened Image", sharpened)

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

OUTPUT:



