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**AIM: Perform grey level operations images.**

import cv2 import numpy as np from google.colab.patches import cv2\_imshow # Load the input grayscale image image = cv2.imread('/content/ex1\_1.png', cv2.IMREAD\_GRAYSCALE)

# Check if the image is loaded successfully if image is None:

print("Error: Could not open or find the image.") exit()

# Function to perform image negation def image\_negation(input\_image): negated\_image = 255 - input\_image return negated\_image

# Function to perform image thresholding def image\_thresholding(input\_image, threshold\_value):

\_, thresholded\_image = cv2.threshold(input\_image, threshold\_value, 255, cv2.THRESH\_BINARY)

return thresholded\_image

# Function to perform image gamma correction def image\_gamma\_correction(input\_image, gamma):

gamma\_corrected\_image = np.power(input\_image / 255.0, gamma) \* 255.0 gamma\_corrected\_image = np.uint8(gamma\_corrected\_image) return gamma\_corrected\_image # Perform gray level operations negated\_image = image\_negation(image) thresholded\_image = image\_thresholding(image, 128) gamma\_corrected\_image = image\_gamma\_correction(image, 1.5)

# Display the original and processed images cv2\_imshow(image) cv2\_imshow(negated\_image) cv2\_imshow(thresholded\_image) cv2\_imshow(gamma\_corrected\_image)

# Wait for a key press and then close the windows cv2.waitKey(0)

cv2.destroyAllWindows()

Output:









