EXPT NO: 2	**CONTRAST ADJUSTMENT**
DATE: 11-07-2025	

AIM:

To Implement contrast adjustment of an image.

ALGORITHM:

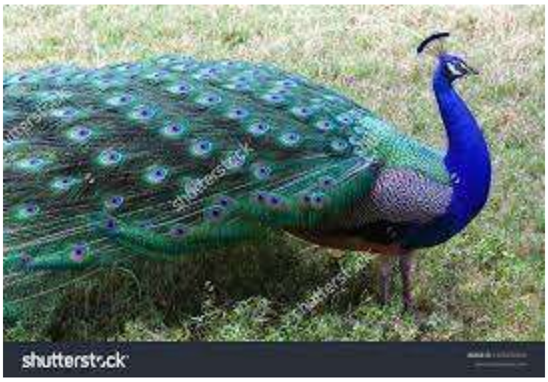
1. Read the input image in **grayscale.**
2. Normalize pixel values or use **histogram stretching**.
3. Apply **formula**: output = alpha * input + beta (alpha = contrast, beta = brightness).
4. Clip values to [0,255] range.
5. Display **original** and **adjusted images.**
6. Save the **adjusted image**.

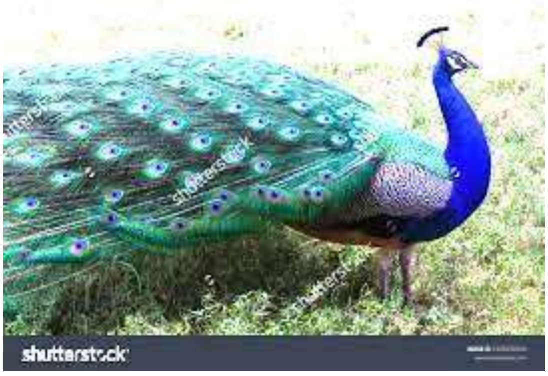
CODE:

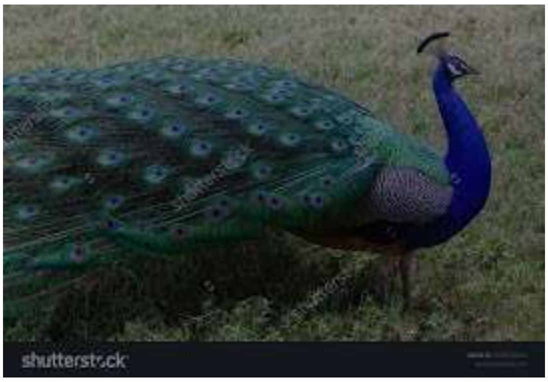
```
# PROGRAM 2

import cv2
import numpy as np
from google.colab.patches import cv2_imshow # Import cv2_imshow

# Step 1: Read the input image
image = cv2.imread('/content/PEACOCK.jpg')  # Replace with your image path

# Check if the image was successfully loaded
if image is None:
    print("Error: Image not found.")
    exit()

# Set the contrast factor (alpha)
alpha_increase = 1.5  # Contrast > 1: Increase contrast
alpha_decrease = 0.5  # 0 < Contrast < 1: Decrease contrast
beta = 0              # No brightness adjustment
```

```
# Step 2: Adjust the contrast
# To increase contrast
contrasted_img_inc = cv2.convertScaleAbs(image, alpha=alpha_increase,
beta=beta)
# To decrease contrast
contrasted_img_dec = cv2.convertScaleAbs(image, alpha=alpha_decrease,
beta=beta)

# Step 3: Display the images
cv2_imshow(image) # Use cv2_imshow
cv2_imshow(contrasted_img_inc) # Use cv2_imshow
cv2_imshow(contrasted_img_dec) # Use cv2_imshow
# cv2.waitKey(0) # waitKey and destroyAllWindows are not needed with
cv2_imshow
# cv2.destroyAllWindows() # waitKey and destroyAllWindows are not needed with
cv2_imshow

# Step 4: Save the results
cv2.imwrite('contrast_increased.jpg', contrasted_img_inc)
cv2.imwrite('contrast_decreased.jpg',  contrasted_img_dec)
print("Images saved as contrast_increased.jpg and contrast_decreased.jpg")
```

OUTPUT:







RESULT:

Thus, contrast adjustment of an image implemented successfully.