Marwadi University	
	Faculty of Technology
	Department of Information and Communication Technology
Subject: Digital Signal and Image Processing(01CT0513)	**Aim:** Simulate Boundary Extraction on images.
Experiment No: 13	**Date:** **Enrollment No: 92200133030**

Aim: Simulate Boundary Extraction on images.

Theory:-

- Boundary extraction is a morphological operation used to extract the boundary or contour of objects in an image. It highlights the boundaries between object regions and the background, providing important information about the shape and structure of objects

- The boundary extraction operation can be achieved by subtracting the input image from its morphological dilation. This highlights the pixels that are on the object boundaries, as the dilation operation expands the object while maintaining its shape.

Programm:-

```
import cv2
import numpy as np

image = cv2.imread("./Images.jpg", cv2.IMREAD_GRAYSCALE)
image_blurred = cv2.GaussianBlur(image, (5, 5), 0)
edges = cv2.Canny(image_blurred, threshold1=30, threshold2=100)
boundary_image = np.zeros_like(image)
boundary_image[edges > 0] = 255
cv2.imwrite("boundary_image_result.jpg", boundary_image)
print("The boundary image is saved as 'boundary_image_result.jpg'")
```

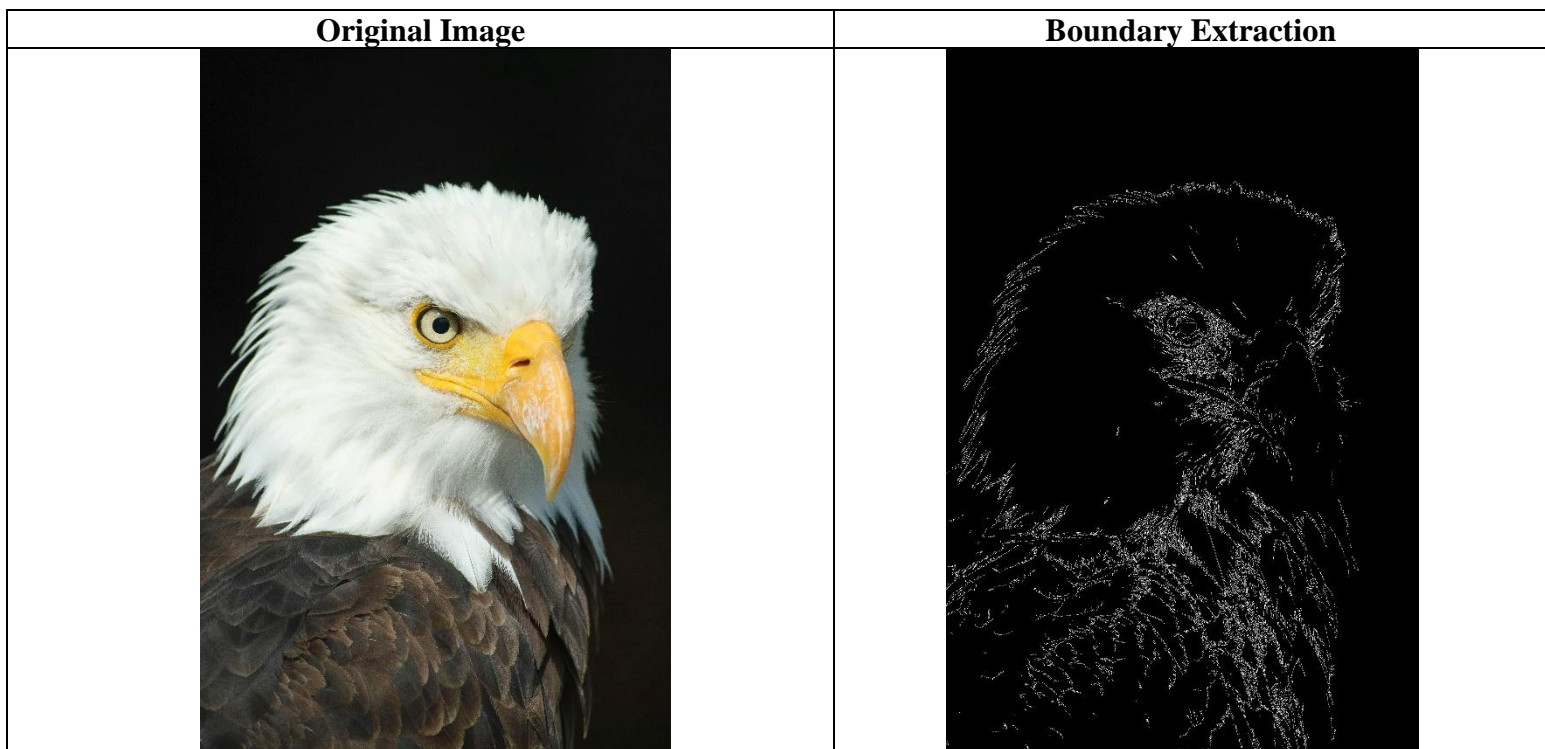**Output:-**

Original Image	**Boundary Extraction**

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Conclusion :-

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