Edge-Linking-using-Hough-Transformm

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Aim:

To write a Python program to detect the lines using Hough Transform.

Software Required:

Anaconda - Python 3.7

Algorithm:

Step1:

Import all the necessary modules for the program.

Step2:

Load a image using imread() from cv2 module.

Step3:

Convert the image to grayscale.

Step4:

Using Canny operator from cv2,detect the edges of the image.

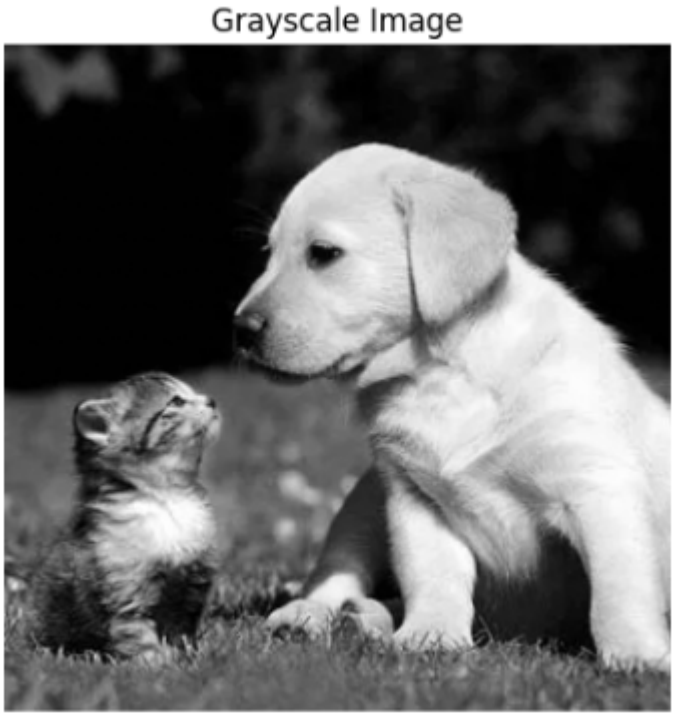
Step5:

Using the HoughLinesP(),detect line co-ordinates for every points in the images.Using For loop,draw the lines on the found co-ordinates.Display the image.

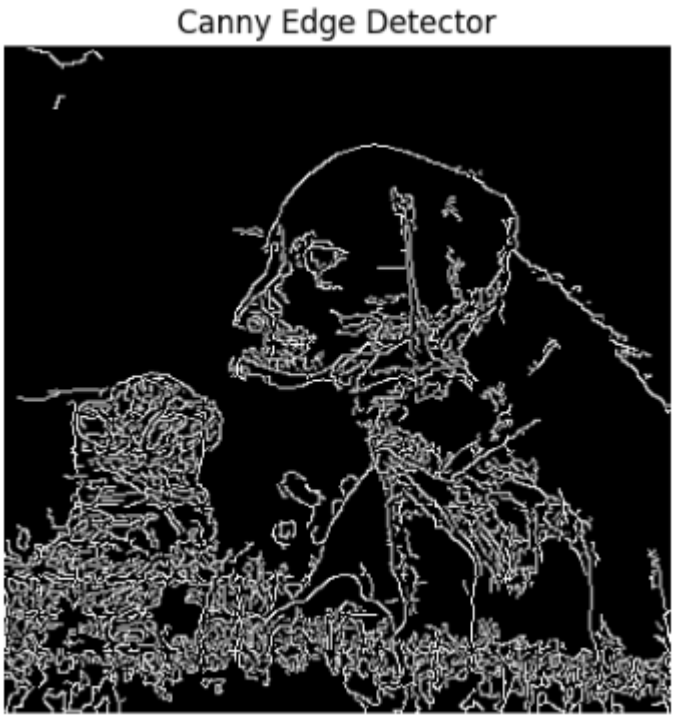
PROGRAM:

```
import cv2
import numpy as np
import matplotlib.pyplot as plt
image = cv2.imread('dog cat.jpg')
gray_image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)
plt.imshow(cv2.cvtColor(image, cv2.COLOR_BGR2RGB))
plt.title("Input Image")
plt.axis('off')
plt.imshow(gray_image, cmap='gray')
plt.title("Grayscale Image")
plt.axis('off')
edges = cv2.Canny(gray_image, 50, 150)
plt.imshow(edges, cmap='gray')
plt.title("Canny Edge Detector")
plt.axis('off')
lines = cv2.HoughLinesP(edges, 1, np.pi / 180, 100, minLineLength=50,
maxLineGap=10)
for line in lines:
    x1, y1, x2, y2 = line[0]
    cv2.line(image, (x1, y1), (x2, y2), (0, 255, 0), 2)
plt.imshow(cv2.cvtColor(image, cv2.COLOR_BGR2RGB))
plt.title("Result of Hough Transform")
plt.axis('off')
```

Input image and grayscale image



Canny Edge detector output



Display the result of Hough transform

RESULT:

Thus the program for Edge-Linking-using-Hough-Transform was executed successfully.