karthikeyanpachiyappan-Record-IMPLEMENTATION-OF-EROSION-AND-DILATION

Implementation-of-Erosion-and-Dilation

Aim

To implement Erosion and Dilation using Python and OpenCV.

Software Required

1. Anaconda - Python 3.7
2. OpenCV

Algorithm:

Step1:

Import required libraries (OpenCV, NumPy) and load the image in grayscale

Step2:

Define a structuring element (kernel) for morphological operations.

Step3:

Apply erosion using cv2.erode() on the image with the defined kernel.

Step4:

Apply dilation using cv2.dilate() on the image with the same kernel.

Step5:

Display and compare the original, eroded, and dilated images.

Program

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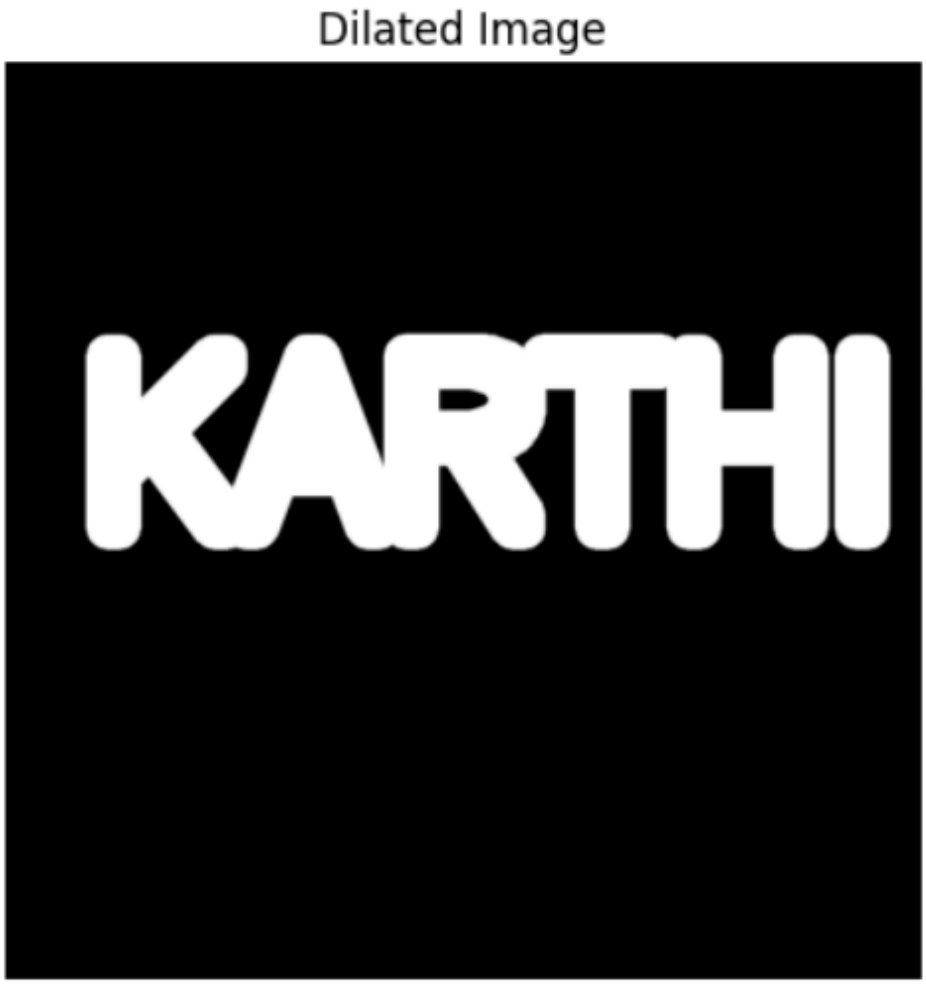
```
import cv2
import numpy as np
import matplotlib.pyplot as plt



image = np.zeros((600, 600), dtype=np.uint8)
cv2.putText(image,text='KARTHI',org=
(50,300),fontFace=cv2.FONT_HERSHEY_SIMPLEX,fontScale=5,color=
(255,255,255),thickness=25,lineType=cv2.LINE_AA)
plt.imshow(image,cmap='gray')
plt.axis('off')
plt.show()



kernel = np.ones((10, 10), np.uint8)
eroded_image = cv2.erode(image, kernel, iterations=1)



plt.imshow(eroded_image,cmap='gray')
plt.title("Eroded Image")
plt.axis('off')



dilated_image = cv2.dilate(image, kernel, iterations=1)



plt.imshow(dilated_image,cmap='gray')
plt.title("Dilated Image")
plt.axis('off')
```

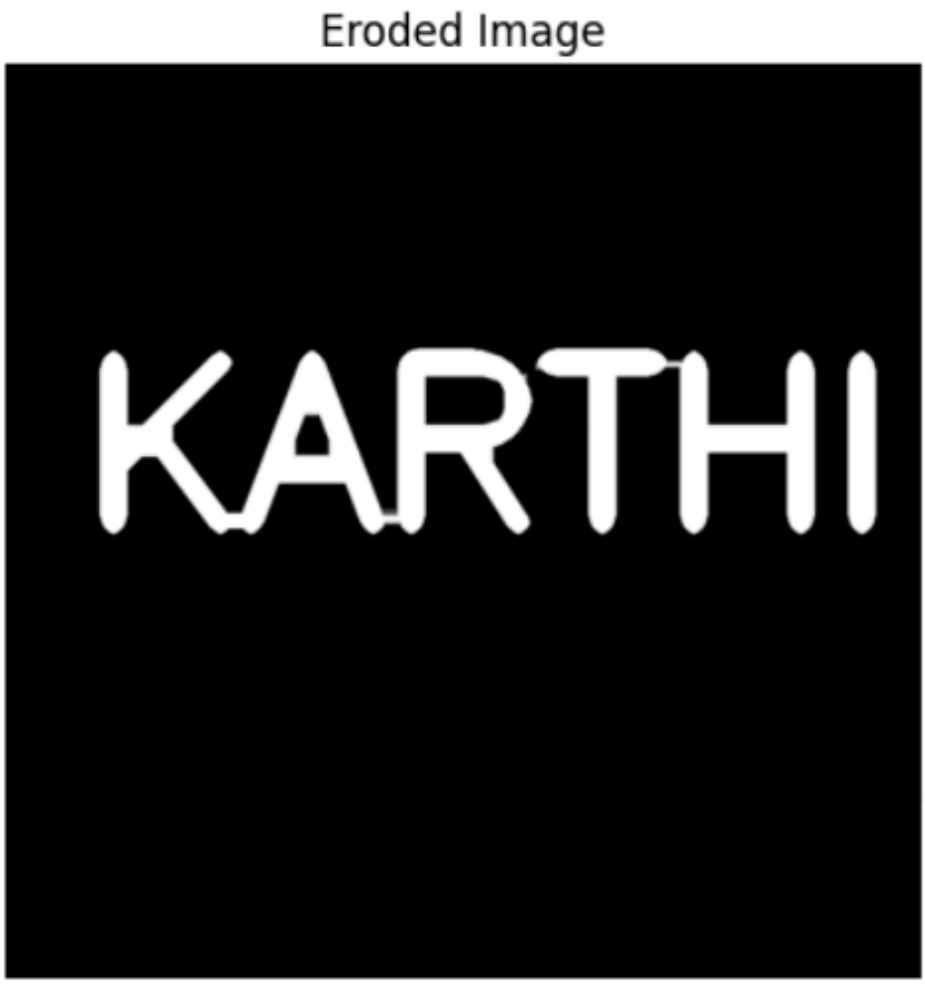
Output:

Display the input Image

Display the Eroded Image



Display the Dilated Image



Result

Thus the generated text image is eroded and dilated using python and OpenCV.