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import cv2
import numpy as np
import matplotlib.pyplot as plt
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# Name : ABISHEK PV
# Register Number : 212222230003
# Experiment : Morphological Operations – Erosion & Dilation

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

# -------------------- Create Blank Image --------------------
image = np.zeros((500, 500, 3), dtype=np.uint8)

# Add your name as text
font = cv2.FONT_HERSHEY_SIMPLEX
cv2.putText(image, 'ABISHEK PV', (100, 250), font, 1.5, (255, 255, 255), 3, cv2.LINE_AA)

# -------------------- Display Input Image --------------------
plt.figure(figsize=(5,5))
plt.imshow(cv2.cvtColor(image, cv2.COLOR_BGR2RGB))
plt.title("Input Image with Text")
plt.axis('off')

# -------------------- Create 3x3 Kernel --------------------
kernel = np.ones((3, 3), np.uint8)

# -------------------- Erosion --------------------
eroded_image = cv2.erode(image, kernel, iterations=1)

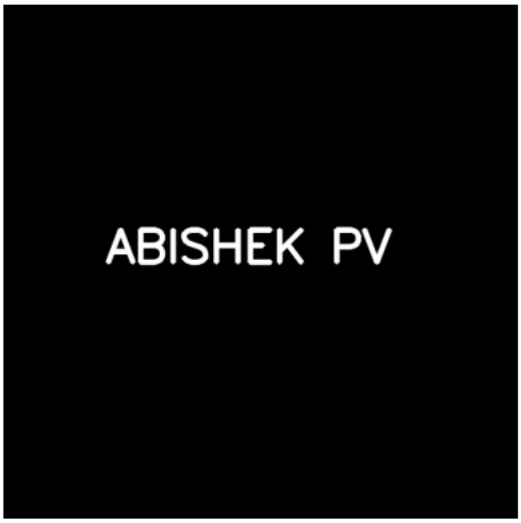
plt.figure(figsize=(5,5))
plt.imshow(cv2.cvtColor(eroded_image, cv2.COLOR_BGR2RGB))
plt.title("Eroded Image")
plt.axis('off')

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

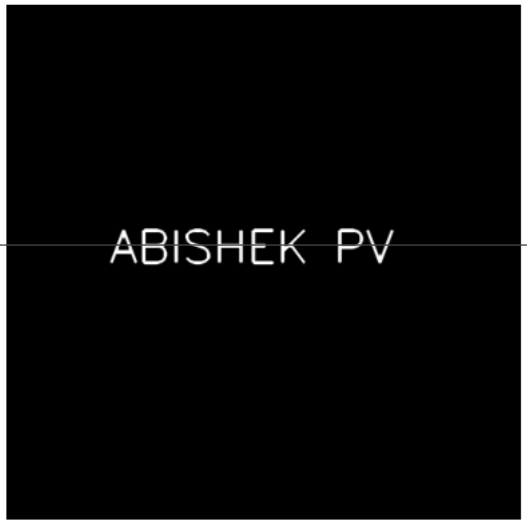
plt.figure(figsize=(5,5))
plt.imshow(cv2.cvtColor(dilated_image, cv2.COLOR_BGR2RGB))
plt.title("Dilated Image")
plt.axis('off')
```

```
(np.float64(-0.5), np.float64(499.5), np.float64(499.5), np.float64(-0.5))
```

Input Image with Text



Eroded Image



Dilated Image