Exp:Erosion and Dilation

Erosion

- Erosion is the morphological operation that is performed to reduce the size of the foreground object.
- The boundary of the foreign object is slowly eroded.
- Erosion has many applications in image editing and transformations, and erosion shrinks the image pixels.
- Pixels on object boundaries are also removed.

Syntax: cv2.putText(image, text, org, font, fontScale, color[, thickness[, lineType[, bottomLeftOrigin]]])

Parameters:

image: It is the image on which text is to be drawn.

text: Text string to be drawn.

org: It is the coordinates of the bottom-left corner of the text string in the image. The coordinates are represented as tuples of two values i.e. (X coordinate value, Y coordinate value).

font: It denotes the font type. Some of font types are FONT_HERSHEY_SIMPLEX, FONT_HERSHEY_PLAIN, , etc.

fontScale: Font scale factor that is multiplied by the font-specific base size.

color: It is the color of text string to be drawn. For BGR, we pass a tuple. eg: (255, 0, 0) for blue color.

thickness: It is the thickness of the line in px.

lineType: This is an optional parameter.It gives the type of the line to be used.

bottomLeftOrigin: This is an optional parameter. When it is true, the image data origin is at the bottom-left corner. Otherwise, it is at the top-left corner.

Input Text

```
img1 = np.zeros((100,400), dtype = 'uint8')
font = cv2.FONT_HERSHEY_SIMPLEX
cv2.putText(img1,'TheAILearner',(5,70), font, 2,(255),5,cv2.LINE_AA)
```

Erosion

cv2.erode(image, kernel)

```
kernel = np.ones((5, 5), np.uint8)
kernel1 = cv2.getStructuringElement(cv2.MORPH_CROSS,(7,7))
```

```
image_erode1 = cv2.erode(img2,kernel1)
```

Dilation

```
image_dilate1 = cv2.dilate(img2, kernel1)
```


Original
TheAILearner
Eroded Image
TheAILearner
Dilated Image
TheAILearner