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Exp 3: Image Annotation – Drawing lines, text circle, rectangle, ellipse on images

Aim: To perform the image annotation operations like

- Drawing lines
- Writing text
- Drawing circle, rectangle, ellipse on images

Procedure:

1. Read the image using cv2.imread() function
2. Create a window and display the image using imshow() function. Give a preferred name to the window (eg: "Original Image") as a parameter to the function along with the image handle
3. Use the function waitkey(0) function to display a window for given milliseconds or until any key is pressed. It takes time in milliseconds as a parameter and waits for the given time, if 0 is passed in the argument it waits till any key is pressed.
4. Close the image windows after displaying the results using the function destroyAllWindows()
5. The function imwrite() is used to save the processed image file in the specified location.

Code:

```
import cv2

import numpy as np

#To load the image and display

image=cv2.imread("image.jpeg")

cv2.imshow("original_image",image)

#The following command waits till we press the key

cv2.waitKey(0)

#Defining colours

green=(0,255,0)

red=(0,0,255)

blue=(255,0,0)

white=(255,255,255)

black=(0,0,0)
```

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```
#To find the dimensions of the image
```

```
print("The original dimension")
```

```
height,width,_=image.shape
```

```
print('width:',width)
```

```
print('height:',height)
```

```
#Drawing a line, x,y are the coordinates of the 2 terminal
```

```
points x=(50,190)
```

```
y=(200,190)
```

```
#FORMAT cv2.line(image_name,start point,end
```

```
point,color,thickness) line=cv2.line(image,x,y, white, 3)
```

```
cv2.imwrite('line.jpeg',line)
```

```
cv2.imshow("line",line)
```

```
cv2.waitKey(0)
```

```
#Adding text to the image,z is the coordinate of the position
```

```
z=(15,25)
```

```
#FORMAT
```

```
cv2.putText(image_name,text,position,font,scale,color,thickness)
```

```
text=cv2.putText(image,"hello",z,2,1,white,2)
```

```
cv2.imwrite('text.jpeg',text)
```

```
cv2.imshow("text",text)
```

```
cv2.waitKey(0)
```

```
#Drawing a circle on the image, q is the center of the circle
```

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q=(150,90)

#FORMAT cv2.circle(image_name,center,radius,color,thickness)

circle=cv2.circle(image,q,80,green,2)

cv2.imwrite('circle.jpeg',circle)

cv2.imshow("circle",circle)

cv2.waitKey(0)

#Drawing an rectangle on the image,a is the top left coordinate, b is the bottom right

coordinate a=(14,2)

b=(92,32)

#FORMAT cv2.rectangle(image_name,top left coordinate,bottom right

coordinate,color,thickness) rectangle=cv2.rectangle(image,a,b,white,2)

cv2.imwrite('rectangle.jpeg',rectangle)

cv2.imshow("rectangle",rectangle)

cv2.waitKey(0)

#Drawing an ellipse on the image, c is the major axis length and d is the minor axis

length c=(90,155)

d=(30,35)

#FORMAT cv2.ellipse(image_name,major axis length,minor axis length,angle,start angle,end

angle,color,thickness)

ellipse=cv2.ellipse(image,c,d,90,0,360,red,2)

cv2.imwrite('ellipse.jpeg',ellipse)

cv2.imshow("ellipse",ellipse)

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```
cv2.waitKey(0)
```

#To close all windows created till now

```
cv2.destroyAllWindows()
```

RESULT:

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Thus, the python program to implement the Drawing Lines, Text Circle, Rectangle and Ellipse is executed successfully.

Output:

Dimensions:

```
*IDLE Shell 3.12.3*
File Edit Shell Debug Options Window Help
Python 3.12.3 (tags/v3.12.3:f6650f9, Apr  9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/CV/program/exp2/pg2.py
The original dimension
width: 298
height: 169
>>>
```

ANNOTATION IMAGE:



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