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Computer Vision Assignment No. 2

Problem Statement : Image Annotation using mouse.

Add Trackbar as controller.

1) Image Annotation using Mouse

In [3]:

```
# Import packages
import cv2

# Lists to store the points
top_left_corner=[]
bottom_right_corner=[]

# Define drawRectangle function
def drawRectangle(action, x, y, flags, *userdata):
  # Referencing global variables
  global top_left_corner, bottom_right_corner
  # Action to be taken when left mouse button is pressed
  if action == cv2.EVENT_LBUTTONDOWN:
    top_left_corner = [(x,y)]
    # Action to be taken when left mouse button is released
  elif action == cv2.EVENT_LBUTTONUP:
    bottom_right_corner = [(x,y)]
    # Draw the rectangle
    cv2.rectangle(image, top_left_corner[0], bottom_right_corner[0], (0,255,0),2, 8)
    cv2.imshow("Window",image)


# Read Images
image = cv2.imread("sample.jpg")
# Make a dummy image, will be useful to clear the drawing
```

```
dummy = image.copy()
# Create a named window
cv2.namedWindow("Window")
# highgui function called when mouse events occur
cv2.setMouseCallback("Window", drawRectangle)

k=0
# Close the window when key q is pressed
while k!=113:
  # Display the image
  cv2.imshow("Window", image)
  k = cv2.waitKey(0)
  # Clear the window when c is presses
  if (k == 99):
    image= dummy.copy()
    cv2.imshow("Window", image)

cv2.destroyAllWindows()
```

2) Add Trackbar as controller

In [4]:

```
# Import dependancies
import cv2

maxScaleUp = 100
scaleFactor = 1
windowName = "Resize Image"
trackbarValue = "Scale"

# load an image
image = cv2.imread("sample.jpg")

# Create a window to display results
cv2.namedWindow(windowName, cv2.WINDOW_AUTOSIZE)

# Callback functions
def scaleImage(*args):
    # Get the scale factor from the trackbar
    scaleFactor = 1+ args[0]/100.0
    # Resize the image
    scaledImage = cv2.resize(image, None, fx=scaleFactor, fy = scaleFactor, interpolation = cv2.INTER_LINEAR)
```

```
    cv2.imshow(windowName, scaledImage)

# Create trackbar
cv2.createTrackbar(trackbarValue, windowName, scaleFactor, maxScaleUp, scaleImage)

# Display the image
cv2.imshow(windowName, image)
c = cv2.waitKey(0)
cv2.destroyAllWindows()
```

Note: After execution of respective cell, output is displayed. Output is uploaded in PDF File.

In [ ]: