Major Project 2

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#Step - 1 - Load Libraries and Image
#Step - 2 - Converte Image into Gray Scale
#Step - 3 - Inveted Gary Scale Image [For Shifting toward selected channel]
#Step - 4 - Apply Image Smooting For Shading effect
#Step - 5 - Invert Blur Image and Apply division between gray and invert_blur.
#-----------------------------------------------------------------------------------------------------------
#Step-1-Importing numpy and cv2 packages
import numpy as np
import cv2

#Read Image-------------------
img = cv2.imread('image to sketch.jpg')#   imread( ) is used to read the image for the given directory
img = cv2.resize(img,(450,450))#   resize( ) is used to change the image size

#Create Trackbar----

def nothing(x):#Define a function which can be used as call back function for the trackbar
    pass

#namedWindow( ) takes two arguments-1.window_name:Used to name window that displayed,
#2.flag:Represents if window size is automatically set or adjustable
cv2.namedWindow("Color Adjustments",cv2.WINDOW_NORMAL)

#It takes 3 arguments-1.window_name, 2.width, 3.height
cv2.resizeWindow("Color Adjustments", (450, 450))

#createTrackbar()-Used to read the current poisition of the trackbar slider
cv2.createTrackbar("Scale", "Color Adjustments", 0, 255, nothing)
cv2.createTrackbar("Color", "Color Adjustments", 0, 255, nothing)

#Step -2
#Convert into gray--
gray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)


while True:
    scale =  cv2.getTrackbarPos("Scale", "Color Adjustments")
    clr = cv2.getTrackbarPos("Color", "Color Adjustments") #getting track bar value
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    #Extracting Color Code --
    #Step - 3
    inverted_gray =  clr - gray  #inverted color image
    #Step -4
    blur_img = cv2.GaussianBlur(inverted_gray,(255,255),0)#Used to smoothing the input image
    #Step -5
    inverted_blur = clr - blur_img  #inverted blured image
    fltr = cv2.divide(gray,inverted_blur,scale = scale)



    #Output----------------------
    cv2.imshow("image to sketch",fltr)#show the image to sketch imge
    k = cv2.waitKey(1)#use waitkey to add delay and stop the function when the user presses esc key
    if k == ord("q"):
         break
    if k == ord("s"):
        cv2.imwrite("image to sketch.jpg",fltr)#Used to save an image to any storage device

cv2.destroyAllWindows()#destroy all widows after exiting the while loop
```