import cv2

import tkinter as tk

from tkinter import filedialog

from PIL import Image, ImageTk

def sketch\_image(image\_path):

    # Load the image

    img = cv2.imread(image\_path)

    # Convert image to grayscale

    gray\_img = cv2.cvtColor(img, cv2.COLOR\_BGR2GRAY)

    # Invert the grayscale image

    inverted\_gray\_img = cv2.bitwise\_not(gray\_img)

    # Apply Gaussian blur

    blurred\_img = cv2.GaussianBlur(inverted\_gray\_img, (21, 21), 0)

    # Blend the images

    blended\_img = cv2.divide(gray\_img, 255 - blurred\_img, scale=256)

    return blended\_img

def select\_image():

    # Open a file dialog to select an image

    file\_path = filedialog.askopenfilename()

    if file\_path:

        # Convert image to sketch

        sketch = sketch\_image(file\_path)

        # Display the original and sketch images

        original\_img = Image.open(file\_path)

        sketch\_img = Image.fromarray(sketch)

        # Resize images to fit in the GUI

        original\_img = original\_img.resize((300, 300), Image.BILINEAR)

        sketch\_img = sketch\_img.resize((300, 300), Image.BILINEAR)

        # Convert images to Tkinter format

        original\_img\_tk = ImageTk.PhotoImage(original\_img)

        sketch\_img\_tk = ImageTk.PhotoImage(sketch\_img)

        # Update image labels

        original\_label.config(image=original\_img\_tk)

        original\_label.image = original\_img\_tk

        sketch\_label.config(image=sketch\_img\_tk)

        sketch\_label.image = sketch\_img\_tk

        # Save the sketch image

        global sketch\_image\_path

        sketch\_image\_path = 'sketch\_image.jpg'

        sketch.save(sketch\_image\_path)

def save\_sketch():

    if sketch\_image\_path:

        file\_path = filedialog.asksaveasfilename(defaultextension=".jpg", filetypes=[("JPEG files", "\*.jpg"), ("All files", "\*.\*")])

        if file\_path:

            sketch\_img = Image.open(sketch\_image\_path)

            sketch\_img.save(file\_path)

# Create a Tkinter window

root = tk.Tk()

root.title("convert image to pencil sketch")

# Add heading

heading = tk.Label(root, text="convert image to pencil sketch", font=("Arial", 16, "bold"))

heading.pack(pady=10)

# Create a button to select an image

select\_button = tk.Button(root, text="Select Image", command=select\_image)

select\_button.pack(pady=5)

# Create a button to save the sketch image

save\_button = tk.Button(root, text="Save Sketch", command=save\_sketch)

save\_button.pack(pady=5)

# Create labels for original and sketch images

original\_label = tk.Label(root, text="Original Image")

original\_label.pack(pady=5)

sketch\_label = tk.Label(root, text="Sketch Image")

sketch\_label.pack(pady=5)

root.mainloop()