

Assignment UCS547

The functionality is as follows

The object does not cover the face initially

When the face is clicked the object starts covering the face

When the object is clicked it stops following the face and can be dragged and moved anywhere

Note:2 files paths have to be changed **face_classifier** and **object** which are present at lines 8 and 10

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# KUNAL NARANG 102003058

from tkinter import *
from PIL import Image, ImageTk
import cv2

# Create an instance of Tkinter Window or frame
face_classifier = cv2.CascadeClassifier('F:\Edge ai\class
4\haarcascade_frontalface_default.xml')
object = cv2.imread("F:\Edge ai\images\img1.png")

x_cord = 0
y_cord = 0
clicked = 0
width = 0
height = 0
mouse_x = 0
mouse_y = 0
faces = []

win = Tk()

win.geometry("700x350")
label =Label(win)
label.place(x= 0, y= 0)
objlabel =Label(win)

cap= cv2.VideoCapture(0)

def changeMouseCord(event):
    global mouse_x, mouse_y
    mouse_x,mouse_y = event.x,event.y

def moveImage(event):
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global mouse_x, mouse_y,x_cord,y_cord
# print(event.x -mouse_x,event.y-mouse_y)
difx,dify = event.x -mouse_x,event.y-mouse_y
x_cord ,y_cord = x_cord+difx,y_cord+dify
objlabel.place(x= x_cord, y= y_cord)

def stopFaceDetection(event):
    global clicked,mouse_x,mouse_y
    clicked+=1
    mouse_x = event.x
    mouse_y = event.y
    print(mouse_x,mouse_y)

def showImage(event):
    global clicked
    global faces
    for (x,y,w,h) in faces:
        if(event.x>x and event.x<x+w and event.y>y and event.y<y+h):
            clicked+=1

def changeCord(x,y):
    global x_cord, y_cord
    x_cord=x
    y_cord=y

def setDimension(w,h):

    global width,height
    width = w
    height = h

def show_frames():
    global faces
    frame = cap.read()[1]
    gray = cv2.cvtColor(frame , cv2.COLOR_BGR2GRAY)
    faces = face_classifier.detectMultiScale(gray, 1.3, 5)

    # Get the latest frame and convert into Image

    frameInvert= cv2.cvtColor(frame,cv2.COLOR_BGR2RGB)
    frameimg = Image.fromarray(frameInvert)

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# Convert image to PhotoImage
frameimgtk = ImageTk.PhotoImage(image = frameimg)
label.imgtk = frameimgtk
label.configure(image=frameimgtk)

if(clicked < 2):
    for (x,y,w,h) in faces:

        resizedObj = cv2.resize(object,(w,h))

        objectInvert= cv2.cvtColor(resizedObj,cv2.COLOR_BGR2RGB)
        objectimg = Image.fromarray(objectInvert)

        objlabel.place(x= 0, y= 0)
        if(clicked >= 1):

            objectimgtk = ImageTk.PhotoImage(image = objectimg)
            objlabel.imgtk = objectimgtk
            objlabel.configure(image=objectimgtk)
            objlabel.place(x= x, y= y)

        changeCord(x,y)
        setDimension(w,h)

label.after(30, show_frames)

objlabel.bind('<B1-Motion>',moveImage)
objlabel.bind('<ButtonRelease-1>',changeMouseCord)
label.bind('<Button-1>', showImage)
objlabel.bind('<Button-1>', stopFaceDetection)
show_frames()
win.mainloop()

```



