

Lab 5: Python GUI Programming Report

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1. 請貼上自己的程式碼並附上註解

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import tkinter as tk
import pickle as pk
from PIL import Image, ImageTk

window1 = tk.Tk()
# 第一個視窗（登入介面）
window1.title('Lab5')
f1 = tk.Frame(window1)
f2 = tk.Frame(window1)
# f1 放檔名為'photo.jpg'的圖片，並重新規劃圖片大小
image1 = ImageTk.PhotoImage(Image.open('photo.jpg').resize((320, 240)))
im = tk.Label(f1, image = image1)

# build up variation for the program
userName = tk.StringVar()
pwd = tk.StringVar()
inputName = tk.StringVar()
inputPwd = tk.StringVar()
var5 = tk.StringVar()
entry1 = tk.Entry(f2, textvariable=userName).grid(row=0, column=1)
# 密碼要用*遮
entry2 = tk.Entry(f2, textvariable=pwd, show='*').grid(row=1, column=1)
Label1 = tk.Label(f2, text="User:").grid(row=0, column=0)
Label2 = tk.Label(f2, text="Password:").grid(row=1, column=0)

def login():
    entry_usr = entry1.get()
    entry_pwd = entry2.get()

    try:
        try:
            # 讀取檔案中的 data
            with open('user_info.pickle', 'rb') as f:
                user_info = pk.load(f)
        except EOFError:
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        user_info = {}
    except FileNotFoundError:
        user_info = {}

    if entry_usr in user_info: # user name exists
        if entry_pwd == user_info[entry_usr]: #password correct
            tk.messagebox.showinfo(message="sucessful")
        else: # password wrong
            tk.messagebox.showerror(message="password incorrect")
    else: # user name does not exist
        # ask the user if he/she wants to create an account
        sign_up = tk.messagebox.askyesno(
            message="Do you want to create an account by your input?")

        if sign_up:
            with open('user_info.pickle', 'wb') as f:
                #user_info={entry_usr, entry_pwd}
                user_info[entry_usr] = entry_pwd
                pk.dump(user_info, f)

# set up location and size of the buttons for 'Log In' and 'Sign Up'
Btnlog = tk.Button(f2, text="Log In", borderwidth=3, width=8,
                   height=1, command=lambda: login()).grid(row=2, column=0)
Btnsign = tk.Button(f2, text="Sign Up", borderwidth=3, width=9,
                   height=1, command=lambda: signup1()).grid(row=2, column=1)

def signup1():
    window2 = tk.Toplevel()
    #window 大小
    window2.geometry('300x300')
    f3 = tk.Frame(window2)
    Label3 = tk.Label(f3, text="User Name:").grid(row=0, column=0)
    Label4 = tk.Label(f3, text="Password:").grid(row=1, column=0)
    Label5 = tk.Label(f3, text="Confirm Password:").grid(row=2, column=0)
    BtnsignUp = tk.Button(f3, text="Sign Up", borderwidth=5, width=10,
                          height=1, command=lambda: signup2()).grid(row=3, column=0)
    entry3 = tk.Entry(f3, textvariable=inputName).grid(row=0, column=1)
    # 密碼用*遮

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    entry4 = tk.Entry(f3, textvariable=inputPwd, show='*').grid(row=1,
column=1)
    entry5 = tk.Entry(f3, textvariable=var5, show='*')
    #assign location (another method to set up)
    entry5.grid(row=2, column=1)
    f3.pack() #這行還是要打，才能讓視窗正常出現

def signup2(): #申請帳號後，當按下 Sign Up 會到這裡
    sign_usr = entry3.get()
    sign_pwd = entry4.get()
    sign_pwd_again = entry5.get()

    try:
        try:
            with open('user_info.pickle', 'rb') as f:
                user_info = pk.load(f)
                print(user_info)
        except EOFError:
            user_info = {}
    except FileNotFoundError:
        user_info = {}

    # check if the username has been adopted
    if sign_usr in user_info:
        tk.messagebox.showerror(message="User name exists!")
    else:
        if sign_pwd == sign_pwd_again:
            with open('user_info.pickle', 'wb') as f:
                user_info[sign_usr] = sign_pwd
                pk.dump(user_info, f)
            tk.messagebox.showinfo(message="Sucessful!")
            window2.destroy()
        else:
            tk.messagebox.showerror(message="Password incorrect!")

im.pack()
f1.pack()
f2.pack()
window1.mainloop()

```

2. 心得或建議

這是 topic1 的最後一個作業，我覺得 android studio 和 python 除了程式語言種類不同，感受最深的應該是佈局方式。在 android studio 中可以藉由選取、伸縮物件等方式決定其位置和大小，但 python 就需要用 grid, pack 等方式設定物件在介面上的擺放方式，很榮幸能夠學習這兩種軟體。

這次實驗讓我卡關最久的是處理 PIL 這個模組。在 lab3 和 lab4 我都是用 vs code，然而在我編譯時卻會顯示 PIL 的錯誤，上網查詢後試過例如在終端機打指令或是下載相關軟體等方法，但都沒有成功，最後決定直接下載 anaconda，也成功利用 spyder 執行這次實驗。

至於建議，我嘗試過把在 android studio 做的軟體放到手機上，但可能因為網路資料太瑣碎或是礙於能力不足而沒辦法成功。感覺可以在 android studio 的最後一堂課提及把成果輸出到手機的方法，讓學生之後能在手機上玩實驗做的遊戲。