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

```python
import tkinter as tk
from PIL import Image, ImageTk
import pickle

def login(Name, Pwd):

    #get the user input name and password
    entry_usr = Name.get()
    entry_pwd = Pwd.get()

    #check if the user info is in the file compressed in pickle
    try:
        try:
            with open('user_info.pickle', 'rb') as f:
                user_info = pickle.load(f)

        #load error, create a new dict
        except EOFError:
            user_info = {}

    except FileNotFoundError:
        user_info = {}
```

```python
    #check if user is in the dict load from pickle file
    if entry_usr in user_info:

        #check if the password is correct
        if entry_pwd == user_info[entry_usr]:
            tk.messagebox.showinfo(message = 'Login Sucessfully!')
        else:
            tk.messagebox.showwarning(message = 'Password Error!')

    # if user info not found
    else:
        #create a new account with the entry name & password, return 0/1
        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}
                pickle.dump(user_info, f)

        else:
            tk.messagebox.showinfo(message = 'See you!')
```

```python
46    #sign up pade back-end
47    def check_Info(tmpName, tmpPwd, tmpConfirmPwd, w):
48        entry_usr = tmpName.get()
49        entry_pwd = tmpPwd.get()
50        entry_confirm_pwd = tmpConfirmPwd.get()
51
52        try:
53            try:
54                with open('user_info.pickle', 'rb') as f:
55                    user_info = pickle.load(f)
56
57            except EOFError:
58                user_info = {}
59
60        except FileNotFoundError:
61            user_info = {}
62
63        if entry_usr in user_info:
64            tk.messagebox.showinfo(message = 'Existed Account!')
65
66        elif entry_pwd != entry_confirm_pwd:
67            tk.messagebox.showwarning(message = 'Different Password & Confirm Password!')
68
69        else:
70            with open('user_info.pickle', 'wb') as f:
71                user_info = {entry_usr: entry_pwd}
72                pickle.dump(user_info, f)
73                tk.messagebox.showinfo(message = 'Sign Up successfully!')
74                w.destroy()
75
```

```python
76    #open a new new side window for user to sign up
77    def sign_up():
78        window2 = tk.Toplevel(window)
79        window2.title('Sign Up')
80        window2.geometry('275x125')
81
82        tmpName = tk.StringVar()
83        tmpName.set('')
84        tmpPwd = tk.StringVar()
85        tmpPwd.set('')
86        tmpConfirmPwd = tk.StringVar()
87        tmpConfirmPwd.set('')
88
89        UserName = tk.Label(window2, text = 'User Name').grid(row = 0, column = 0)
90        User_Entry = tk.Entry(window2, textvariable = tmpName).grid(row = 0, column = 1)
91        Password = tk.Label(window2, text= 'Password').grid(row = 1, column = 0)
92        Password_Entry = tk.Entry(window2, textvariable = tmpPwd, show = '*').grid(row = 1, column = 1)
93        Confirm_Password = tk.Label(window2, text= 'Confirm Password').grid(row = 2, column = 0)
94        Confirm_Password_Entry = tk.Entry(window2, textvariable = tmpConfirmPwd, show = '*').grid(row = 2, column = 1)
95        Sign_UP_Btn = tk.Button(window2, text = 'Sign up', borderwidth = 5, width = 8, height = 1, command = lambda: check_Info(tmpName, tmpPwd, tmpConfirmPwd,
      window2)).grid(row = 3, column = 1)
```

```
96
97   #main driven code
98   if __name__ == "__main__":
99       window = tk.Tk()
100      window.title("Lab5")
101      window.geometry('300x400')
102
103      f1 = tk.Frame(window)
104      f2 = tk.Frame(window)
105      f1.pack()
106      f2.pack()
107
108      #Put the image on the upper frame
109      image1 = ImageTk.PhotoImage(Image.open('CoffeeShop.jpg'). resize((300,200)))
110      im = tk.Label(f1, image=image1)
111      im.pack()
112
113
114      Name = tk.StringVar()
115      Name.set('')
116      Pwd = tk.StringVar()
117      Pwd.set('')
118
119      User = tk.Label(f2, text = 'User:').grid(row = 0, column = 0)
120      User_Entry = tk.Entry(f2, textvariable = Name).grid(row = 0, column = 1)
121      Password = tk.Label(f2, text= 'Password:').grid(row = 1, column = 0)
122      Password_Entry = tk.Entry(f2, textvariable = Pwd, show = '*').grid(row = 1, column = 1)
123      login_btn = tk.Button(f2, text = 'Login', borderwidth = 5, width = 8, height = 1, command = lambda: login(Name, Pwd)).grid(row = 4, column = 0)
124      sign_btn = tk.Button(f2, text = 'Sign up', borderwidth = 5, width = 8, height = 1, command = lambda: sign_up()).grid(row = 4, column = 1)
125
126      window.mainloop()
```

Login():使用者按下 login button 所觸發的 function，會先得到兩個 entry 內部由使用者輸入的 name 及 password，而後與透過 pickle 壓縮的檔案比對內部是否存在使用者的資料，倘若有此資料則顯示登入成功，否則詢問使用者是否要使用者個 name 及 password 註冊新的帳戶。

ChcekInfo():使用者在按下註冊的 button 後所觸發的 function，會先與已存在的帳戶進行比對，倘若已存在帳戶則發出"Existed Account"的警訊，而後繼續比對使用者輸入的密碼與確認密碼是否一致。倘若以上都通過，則將使用者資料加入字典，存到 pickle 檔中保存。

Sign_up():跳出視窗的排版及按鈕 function 觸發設定。

Main 中的 driven code:則是主視窗的排版及按鈕 entry 的設定。

2. 心得或建議

這次的實驗來的真及時，剛好最近有需求要將 machine learning 演算法預測出來的結果顯示出來的需求(總不可能總是要看 terminal 的訊息吧 XD)，可以透過簡單的 tkinter 的 GUI 設計，將結果比較正式的展示出來。此外，這次在使用 pickle load 或是 dump 資料的時候，有很詳細的使用 try except 將例外情況都考慮到，非常仔細，學到不少東西。