

Python Codepage

```
# '''Copyright (C) <2019> Birgitta Dresp-Langley
#
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import sys

import cv2

import py2exe

import os

import numpy as np

import time

import random

from distutils.core import setup

import winsound

from tkinter import *

# excel files
```

```
import xlrd
```

```
import xlwt
```

```
# time in seconds
```

```
delai_clavier_son = 0.8
```

```
# or milliseconds
```

```
duree_son = 0.1
```

```
class RTimagesRandomOrder:
```

```
    def __init__(self, file_xl_name, fond, son):
```

```
        # result file
```

```
        self.dir_path = os.path.dirname(os.path.realpath('__file__'))
```

```
        # initialize excel result file
```

```
        if file_xl_name == "":
```

```
            file_xl_name = "test1"
```

```
        self.excel = file_xl_name
```

```
        self.wb = xlwt.Workbook()
```

```
        self.ws = self.wb.add_sheet('A Test Sheet')
```

```
        # initialize path to image folders and possible backgrounds
```

```
        if fond == 0:
```

```

self.path = "Images/ImagesW\\"

self.path_fond = "Images\\WBckrgd"

self.ws.write(2, 3, "Screen Background: White")

else:

    self.path = "Images/ImagesG\\"

    self.path_fond = "Images\\GBckrgd"

    self.ws.write(2, 3, "Screen Background: Gray")


# initialize possible alert sound frequencies

if son == 0:

    self.ws.write(1, 3, "Frequency: 0 Hz")

    self.sound = None

elif son == 1:

    self.ws.write(1, 3, "Frequency: 200 Hz")

    self.sound = "Sons/200Hz.wav"

elif son == 2:

    self.ws.write(1, 3, "Frequency: 1000 Hz")

    self.sound = "Sons/1000Hz.wav"

else:

    self.ws.write(1, 3, "Frequency: 2000 Hz")

    self.sound = "Sons/2000Hz.wav"


# creates background window

img_fond = cv2.imread(self.path_fond,1)

cv2.namedWindow("fond",cv2.WINDOW_NORMAL)

cv2.setWindowProperty("fond", cv2.WND_PROP_FULLSCREEN, cv2.WINDOW_FULLSCREEN);

cv2.imshow("fond",img_fond)

```

```
cv2.waitKey(0) & 0xFF
```

```
def showImages(self):
```

```
    dirs = os.listdir( self.path )
```

```
    # screen data
```

```
    fenetre = Tk()
```

```
    largeur_ecran = fenetre.winfo_screenheight()
```

```
    longueur_ecran = fenetre.winfo_screenwidth()
```

```
    cote_image = int(largeur_ecran/1.5)
```

```
    fenetre.destroy()
```

```
    # randomization presentation order of images
```

```
    for i in range(0,len(dirs)):
```

```
        # random order generation
```

```
        picChoiceFirst = random.choice(dirs)
```

```
        dirs.remove(picChoiceFirst)
```

```
        print(picChoiceFirst)
```

```
        # attente et son
```

```
        time.sleep(delai_clavier_son)
```

```
        winsound.PlaySound(self.sound,winsound.SND_ASYNC)
```

```
        time.sleep(duree_son)
```

```
        winsound.PlaySound(None,winsound.SND_NODEFAULT)
```

```
    # image presentation
```

```
    img = cv2.imread(os.path.join(self.dir_path, self.path, picChoiceFirst),1)
```

```
    img = cv2.resize(img,(cote_image,cote_image))
```

```

cv2.imshow("",img)

cv2.moveWindow("",int(longueur_ecran/2-cote_image/2),int(largeur_ecran/2-cote_image/2))

cv2.namedWindow("",cv2.WND_PROP_FULLSCREEN)


# counting

timestamp = time.time()


# wait for a keyboard response 1 or 2

k = cv2.waitKey(0) & 0xFF


while True:

    if cv2.getWindowProperty("",1) == -1 :

        cv2.destroyAllWindows()

        print("WINDOW CLOSED")

        sys.exit()

    if k == ord('1'):

        break

    if k== ord('2'):

        break

    print ("PLEASE PRESS 1 or 2 ON THE KEYBOARD")

    k = cv2.waitKey(0) & 0xFF


# writes 1 or 2 into an array

if k == ord('1'):

    self.ws.write(i, 0, 1)


elif k == ord('2'):

    self.ws.write(i, 0, 2)

```

```
cv2.destroyAllWindows()
```

```
# assigns the right number 1 or 2 with the corresponding RT and writes them into to the excel file
```

```
self.ws.write(i, 1, (time.time()-timestamp)*1000)
```

```
self.ws.write(i, 2, picChoiceFirst)
```

```
# saves excel file, closes txt file and windows
```

```
self.ws.write(0, 3, "NomSujetSession: " + self.excel)
```

```
self.wb.save("RESULTS/" + self.excel + ".xls")
```

```
cv2.destroyAllWindows()
```

```
if __name__ == '__main__':
```

```
    birgittaSoftware = RTImagesRandomOrder("",1,1)
```

```
    birgittaSoftware.showImages()
```