VISITING CARD SCANNER GUI APPLICATION USING PYTHON

•Pytesseract library:
• Pytesseract is an ICR (Intelligent character recognition) and OCR
 (Optical character recognition) based toolkit available in python. It is a
wrapper tool of Google and can *"Extract"* and *"Read"* the embedded
 text in any image. For getting started, Firstly, install and run Pytesseract
on your system using the tesseract setup available [here](#).
To install pytesseract on the shell after installing the application from the
above Github link

```
pip install pytesseract
```

•Pillow library: It is a free open source library available in Python for
image processing

- # PROGRAM APPROACH:

- FIRSTLY, WE WILL CREATE AN INTERFACE I.E. GUI USING VARIOUS WIDGETS AND ATTRIBUTES AVAILABLE IN TKINTER LIKE LABEL, BUTTON, FRAME, AND SO ON.

- AFTER CREATING A BASIC LAYOUT WE ARE NOW READY TO MAKE IT RESPONSIVE BY IMPLEMENTING ITS MAIN FUNCTIONALITY I.E. UPLOADING A FILE AND THEN CONVERTING IT.

- FILE DIALOG BOX LOGIC WILL WORK HERE SO THAT PROPERLY FORMATTED IMAGES CAN BE UPLOADED TO THE SOFTWARE.

- ON SUCCESSFUL UPLOAD, THE SYSTEM IS NOW READY FOR CONVERSION AND NOW THE PYTESSERACT MODULE ROLE COMES INTO PLAY. PYTESSERACT MODULE WILL READ AND EXTRACT THE EMBEDDED TEXT FROM THE IMAGE AND WILL UPDATE THE TEXT AREA WITH THAT CONVERTED TEXT.

- ALSO, THE FILE HANDLING APPROACH IN PYTHON WILL CREATE AND APPEND A TEXT FILE WITH THAT CONVERTED TEXT AND WILL STORE IT IN OUR SYSTEM'S LOCAL DATABASE.

- THE STORED FILE CAN BE ACCESSED IN THE FUTURE FOR INFORMATION AND VERIFICATION PURPOSES.

- **CODE**

```
# VISITING CARD SCANNER GUI


# IMPORTED TKINTER LIBRARY

FROM TKINTER IMPORT *

IMPORT TKINTER.MESSAGEBOX AS TMSG


# PILLOW LIBRARY FOR IMPORTING IMAGES

FROM PIL IMPORT IMAGE, IMAGETK


# LIBRARY FOR FILEDIALOG (FOR FILE SELECTION)

FROM TKINTER IMPORT FILEDIALOG


# PYTESSERACT MODULE IMPORTING

IMPORT PYTESSERACT

IMPORT OS.PATH


ROOT = TK()
```

```python
# FIXING GEOMETRY OF GUI

ROOT.GEOMETRY('800X500')

ROOT.MAXSIZE(1000, 500)

ROOT.MINSIZE(600, 500)

ROOT.TITLE('VISITING CARD SCANNER')


# FUNCTION FOR UPLOADING FILE TO GUI

DEF UPLOAD_FILE():

        GLOBAL FILENAME

        GLOBAL START, LAST

        FILENAME = FILEDIALOG.ASKOPENFILENAME(

                INITIALDIR='/DESKTOP', TITLE = 'SELECT A CARD IMAGE',

        FILETYPES=(('JPEG FILES', '*.JPG'), ('PNG FILES', '*.PNG')))


        IF FILENAME == '':

                T.DELETE(1.0, END)

                T.INSERT(1.0, 'YOU HAVE NOT PROVIDED ANY IMAGE TO CONVERT')

                TMSG.SHOWWARNING(

                        TITLE = 'ALERT!', MESSAGE = 'PLEASE PROVIDE PROPER FORMATTED IMAGE')

                RETURN
```

```
ELSE:

        P_LABEL_VAR.SET('IMAGE UPLOADED SUCCESSFULLY')

          L.CONFIG(FG='#0CDD19')


    IF FILENAME.ENDSWITH('.JPG') OR FILENAME.ENDSWITH('.JPEG') OR FILENAME.ENDSWITH('.JPG') OR FILENAME.ENDSWITH('.JPEG') OR
FILENAME.ENDSWITH('.PNG') OR FILENAME.ENDSWITH('.PNG'):

          FILENAME_REV = FILENAME[::-1]

          LAST = FILENAME.INDEX('.')

          START = LEN(FILENAME) - FILENAME_REV.INDEX('/') – 1

# FUNCTION FOR CONVERSION

DEF CONVERT():

    TRY:

          C_LABEL_VAR.SET('OUTPUT...')

          PYTESSERACT.PYTESSERACT.TESSERACT_CMD = R'C:\PROGRAM FILES (X86)\TESSERACT-OCR\TESSERACT'

          TEXT = PYTESSERACT.IMAGE_TO_STRING(FILENAME)

          T.DELETE(1.0, END)

          T.INSERT(1.0, TEXT)

          ROOT1 = TOPLEVEL()

          ROOT1.TITLE('UPLOADED IMAGE')

          IMG1 = IMAGETK.PHOTOIMAGE(IMAGE.OPEN(FILENAME))

          LABEL(ROOT1, IMAGE=IMG1).PACK()

          ROOT1.MAINLOOP()
```

```
EXCEPT:

            T.DELETE(1.0, END)

            T.INSERT(1.0, 'YOU HAVE NOT PROVIDED ANY IMAGE TO CONVERT')

            TMSG.SHOWWARNING(

                    TITLE='ALERT!', MESSAGE='PLEASE PROVIDE PROPER FORMATTED IMAGE')

            RETURN

        F_NAME = FILENAME[START+1:LAST]+'.TXT'

        F_NAME = OS.PATH.JOIN(R'DATABASE', F_NAME)

        F = OPEN(F_NAME, 'W')

        F.WRITE(TEXT)

        F.CLOSE()


# MENU BAR AND NAVIGATION TAB CREATION

MAINMENU = MENU(ROOT)

MAINMENU.CONFIG(FONT = ('TIMES', 29))


M1 = MENU(MAINMENU, TEAROFF = 0)

M1.ADD_COMMAND(LABEL = 'SCAN/UPLOAD VISITING OR BUSINESS CARDS AND GET ALL THE TEXT OF CARDS',

                    FONT = ('TIMES', 13))

ROOT.CONFIG(MENU = MAINMENU)

MAINMENU.ADD_CASCADE(LABEL = 'AIM', MENU = M1)
```

```
M2 = MENU(MAINMENU, TEAROFF = 0)

M2.ADD_COMMAND(LABEL = '|| ELECTRONICS AND COMMUNICATION ENGINEERING STUDENT ||',

                                    FONT = ('TIMES', 13))

M2.ADD_COMMAND(LABEL = '|| CODING ENTHUSIAST ||', FONT = ('TIMES', 13))

ROOT.CONFIG(MENU = MAINMENU)

MAINMENU.ADD_CASCADE(LABEL = 'ABOUT US', MENU = M2)


M3 = MENU(MAINMENU, TEAROFF=0)

M3.ADD_COMMAND(LABEL = 'E-MAIL: MATHURKARTIK1234@GMAIL.COM',

                                    FONT = ('TIMES', 13))

M3.ADD_SEPARATOR()

M3.ADD_COMMAND(LABEL = 'MOBILE: +91-9587823004', FONT=('TIMES', 13))

M3.ADD_SEPARATOR()

M3.ADD_COMMAND(LABEL = 'LINKEDIN: HTTPS://WWW.LINKEDIN.COM/IN/KARTIK-MATHUR-97A825160',

                                    FONT = ('TIMES', 13))

ROOT.CONFIG(MENU = MAINMENU) MAINMENU.ADD_CASCADE(LABEL = 'CONTACT US', MENU = M3)


LABEL(TEXT = 'VISITING CARD SCANNER', BG = '#FAD2B8',

              FG = '#39322D', FONT = ('TIMES', 18)).PACK(FILL = 'X')

LABEL(TEXT = 'PYTHON GUI', BG = '#FAD2B8', FG ='#39322D', FONT=(

              'TIMES NEW ROMAN', 12, 'ITALIC')).PACK(FILL='X')
```

```
F1 = FRAME()

F1.CONFIG(BG='WHITE')

LABEL(F1, TEXT='BROWSE PHOTO TO UPLOAD', WIDTH=20,
        FONT=('TIMES', 15), BG='WHITE').PACK(SIDE='LEFT')

LABEL(F1, TEXT='FORMAT: PNG/JPEG', BG='WHITE',
        WIDTH=30).PACK(SIDE='RIGHT', PADX=5)

BUTTON(F1, TEXT='UPLOAD CARD', BG='#F58D4B', FONT=('TIMES', 15),
        WIDTH=70, COMMAND=UPLOAD_FILE).PACK(SIDE='RIGHT')

F1.PACK(PADY=10, FILL='X')

P_LABEL_VAR = STRINGVAR()

P_LABEL_VAR.SET('PLEASE UPLOAD AN IMAGE TO SCAN')

L = LABEL(TEXTVARIABLE=P_LABEL_VAR, FG='RED', BG='WHITE')

L.PACK()


LABEL(TEXT='©COPYRIGHT 2020', BG='#433E3B', FG='WHITE',
        FONT=('TIMES', 10)).PACK(SIDE='BOTTOM', FILL='X')

LABEL(TEXT='DEVELOPER: KARTIK MATHUR', BG='#433E3B', FG='WHITE',
        FONT=('TIMES', 10, ' ITALIC')).PACK(SIDE='BOTTOM', FILL='X')

T = TEXT(ROOT, HEIGHT='9', FONT=('TIMES', 13))
```

```
T.PACK(SIDE='BOTTOM', FILL='X')

T.INSERT(1.0, 'TEXT OF CONVERTED CARD WILL BE SHOWN HERE...', END)

C_LABEL_VAR = STRINGVAR()

C_LABEL_VAR.SET('READY FOR CONVERSION')

C_LABEL = LABEL(TEXTVARIABLE=C_LABEL_VAR)

C_LABEL.PACK(SIDE='BOTTOM', ANCHOR='W')

BUTTON(ROOT, TEXT='SCAN AND CONVERT', BG='#F58D4B', FONT=('TIMES', 15),
          WIDTH=70, COMMAND=CONVERT).PACK(PADY='10', SIDE='BOTTOM')

ROOT.MAINLOOP()
```