**A**

**Mini project**

**(BASED ON KCS-554)**

**ON**

**TRANSLATOR**

**Acknowledgment**

**I would like to express my special thanks of gratitude to my teacher Mrs. Shivani Varshney who gave me the golden opportunity to do this wonderful project on the topic “TRANSLATOR” , which also helped me in doing a lot of research and I came to know about so many new things. I am really thankful to them.**

**I am making this project not only for marks but to also increase my knowledge.**

**THANKS AGAIN TO ALL WHO HELPED ME.**

**INTRODUCTION**

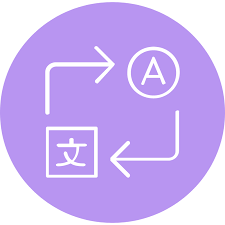
**Translation enables communication between people from different regions. It provides meaningful communication from one language to another language. Since, at this time when most of the people travel around the world, they need to understand the languages of countrymen for that either a person can learn there languages or simply just use a language translator which instantly Translate texts, words, phrases from one language to another.**

**A language translator or text translator is a tool to translate text, words, phrases from one language to any other language. It is like a dictionary where we can translate the text.**

**The OBJECTIVE of this project is to translate text from one language to any other language in real-time with a button click. And is built in Python. Python consists of some very innovative libraries such as googletrans and tkinter which help us to build the project using the Tkinter, googletrans libraries.**

**In this project, the user enters text in any language and get it translated in any other language by selecting the output language.**

**This project requires good knowledge of Python and GUI (Graphic User Interface). Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit. All the modules used need not be downloaded beforehand like the other libraries like NumPy, thus this project will be user friendly and accessible in any virtual environment used for python programming.**

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**LANGUAGE TRANSLATOR**

**Project File Structure:**

**First, let’s check the steps to build a translator program in Python:**

* **Import required modules.**
* **Create a display window.**
* **Create a language dictionary.**
* **Creating GUI using tkinter.**

**System requirements:**

**VS-Code.**

**MS word.**

**Operating System.**

**Hardware requirements:**

**A keyboard/mouse.**

**A monitor to display the content.**

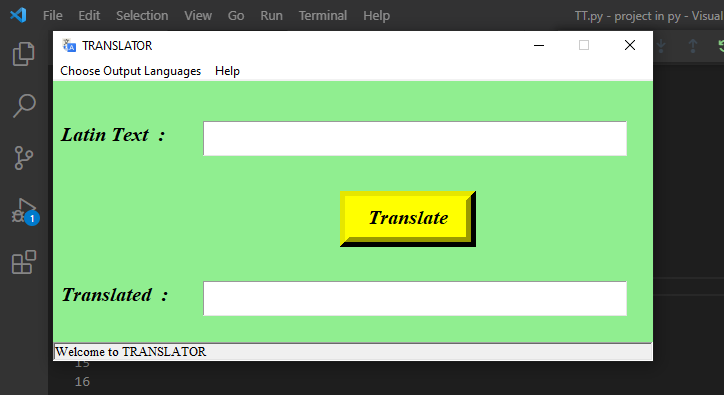
**Features:**

**A user friendly and user-interactive.**

**Attractive.**

**Colorful.**

**Screenshot:**

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**Language and software tool used:**

**Language : Python**

**Operating System: Windows 10**

**Project code:**

**1.** **First, we import all the necessary libraries and modules:**

**from tkinter import \***

**from tkinter import ttk**

**from tkinter import messagebox**

**from tkinter import TextBlob**

**Explanation:**

* **Tkinter  module belongs to a standard library of GUI in Python. It helps us to create a dialog box with any information that we want to provide or get from the users.**
* **The messagebox module is used to display the message boxes in the python applications. There are the various functions which are used to display the relevant messages depending upon the application requirements.**
* **TextBlob is a Python (2 and 3) library for processing textual data. It provides a simple API for diving into common natural language processing (NLP) tasks such as part-of-speech tagging, noun phrase extraction, sentiment analysis, classification, translation, and more. ... ''' blob = TextBlob(text) blob.**

**2. Then we will give a title to our project and decide its geometry**

**root = Tk()**

**root.title('TRANSLATOR')**

**root.geometry('600x300')**

**root.resizable(0,0)**

**root.config(bg='light green')**

**root.iconbitmap(r'C:\\Users\\hp\\OneDrive\\Pictures\\translator.ico')**

**Explanation:**

* **Tk() initialized tkinter which means window created.**
* **geometry() set the width and height of the window.**
* **resizable(0,0) set the fixed size of the window.**
* **bg = ‘’ use to set the background color.**
* **title() used to set the title of the window.**

**3. Create a language dictionary:**

**lan\_dict = {'afrikaans': 'af', 'albanian': 'sq', 'amharic': 'am', 'arabic': 'ar', 'armenian': 'hy', 'azerbaijani': 'az', 'basque': 'eu', 'belarusian': 'be', 'bengali': 'bn', 'bosnian': 'bs', 'bulgarian': 'bg', 'catalan': 'ca', 'cebuano': 'ceb', 'chichewa': 'ny', 'chinese (simplified)': 'zh-cn', 'chinese (traditional)': 'zh-tw', 'corsican': 'co', 'croatian': 'hr', 'czech': 'cs', 'danish': 'da', 'dutch': 'nl', 'english': 'en', 'esperanto': 'eo', 'estonian': 'et', 'filipino': 'tl', 'finnish': 'fi', 'french': 'fr', 'frisian': 'fy', 'galician': 'gl', 'georgian': 'ka', 'german': 'de', 'greek': 'el', 'gujarati': 'gu', 'haitian creole': 'ht', 'hausa': 'ha', 'hawaiian': 'haw', 'hebrew': 'iw', 'hindi': 'hi', 'hmong': 'hmn', 'hungarian': 'hu', 'icelandic': 'is', 'igbo': 'ig', 'indonesian': 'id', 'irish': 'ga', 'italian': 'it', 'japanese': 'ja', 'javanese': 'jw', 'kannada': 'kn', 'kazakh': 'kk', 'khmer': 'km', 'korean': 'ko', 'kurdish (kurmanji)': 'ku', 'kyrgyz': 'ky', 'lao': 'lo', 'latin': 'la', 'latvian': 'lv', 'lithuanian': 'lt', 'luxembourgish': 'lb', 'macedonian': 'mk', 'malagasy': 'mg', 'malay': 'ms', 'malayalam': 'ml', 'maltese': 'mt', 'maori': 'mi', 'marathi': 'mr', 'mongolian': 'mn', 'myanmar (burmese)': 'my', 'nepali': 'ne', 'norwegian': 'no', 'pashto': 'ps', 'persian': 'fa', 'polish': 'pl', 'portuguese': 'pt', 'punjabi': 'pa', 'romanian': 'ro', 'russian': 'ru', 'samoan': 'sm', 'scots gaelic': 'gd', 'serbian': 'sr', 'sesotho': 'st', 'shona': 'sn', 'sindhi': 'sd', 'sinhala': 'si', 'slovak': 'sk', 'slovenian': 'sl', 'somali': 'so', 'spanish': 'es', 'sundanese': 'su', 'swahili': 'sw', 'swedish': 'sv', 'tajik': 'tg', 'tamil': 'ta', 'telugu': 'te', 'thai': 'th', 'turkish': 'tr', 'ukrainian': 'uk', 'urdu': 'ur', 'uzbek': 'uz', 'vietnamese': 'vi', 'welsh': 'cy', 'xhosa': 'xh', 'yiddish': 'yi', 'yoruba': 'yo', 'zulu': 'zu', 'Filipino': 'fil', 'Hebrew': 'he'}**

**4. Creating GUI using tkinter:**

**#--------------------------------------------------------------------------FUNCTIONS**

**def main(event=None):**

**try:**

**word3 = TextBlob(varname1.get())**

**lan = word3.detect\_language()**

**lan\_todict = languages.get()**

**lan\_to = lan\_dict[lan\_todict]**

**word3 = word3.translate(from\_lang=lan,to=lan\_to)**

**label3.configure(text=word3)**

**varname2.set(word3)**

**except:**

**varname2.set('try another keyword')**

**def diff\_lans():**

**global languages**

**languages = StringVar()**

**font\_box = ttk.Combobox(root,width=10,textvariable=languages,state='readonly')**

**font\_box['values'] = [e for e in lan\_dict.keys()]**

**font\_box.current(37)**

**font\_box.place(x=0,y=0)**

**def about\_us():**

**messagebox.showinfo('TRANSLATOR','This is a translation tool viz. build using Python Tkinter.')**

**#---------------------------------------------------------------------------CREATING\_MENU\_BAR**

**menubar = Menu(root)**

**root.config(menu=menubar)**

**#----------------------------------------------------------------------------CREATING\_SUBMENU**

**subMenu = Menu(menubar, tearoff = 0)**

**menubar.add\_cascade(label="Choose Output Languages",menu=subMenu)**

**subMenu.add\_command(label="AVAILABLE LANGUAGE", command=diff\_lans)**

**subMenu.add\_command(label="Exit", command=root.destroy)**

**subMenu = Menu(menubar,tearoff = 0)**

**menubar.add\_cascade(label="Help", menu=subMenu)**

**subMenu.add\_command(label="About Us", command=about\_us)**

**#-----------------------------------------------------------------------------ENTRY\_BOX**

**varname1 = StringVar()**

**entry1 = Entry(root,width=30,textvariable=varname1,font=('times',20,'italic bold'))**

**entry1.place(x=150,y=40)**

**varname2 = StringVar()**

**entry2 = Entry(root,width=30,textvariable=varname2,font=('times',20,'italic bold'))**

**entry2.place(x=150,y=200)**

**#-----------------------------------------------------------------------------LABELS**

**label1 = Label(root,text='Latin Text : ',font=('times',15,'italic bold'),bg='light green')**

**label1.place(x=5,y=40)**

**label2 = Label(root,text='Translated : ',font=('times',15,'italic bold'),bg='light green')**

**label2.place(x=5,y=200)**

**label3 = Label(root,text='',font=('times',15,'italic bold'),bg='turquoise1')**

**#-----------------------------------------------------------------------------BUTTONS**

**btn = Button(root,text=' Translate ',bd=10,bg='yellow',activebackground= 'red',width='10',font=('times',15,'italic bold'),command=main)**

**btn.place(x=287,y=110)**

**root.bind('<Return>',main)**

**#-----------------------------------------------------------------------------BINDING\_FUNCTION**

**def on\_enterentry1(e):**

**entry1['bg'] = 'powder blue'**

**def on\_leaveentry1(e):**

**entry1['bg'] = 'white'**

**def on\_enterentry2(e):**

**entry2['bg'] = 'powder blue'**

**def on\_leaveentry2(e):**

**entry2['bg'] = 'white'**

**def on\_enterbtn(e):**

**btn['bg'] = 'red'**

**def on\_leavebtn(e):**

**btn['bg'] = 'yellow'**

**#-----------------------------------------------------------------------------BINDING**

**entry1.bind('<Enter>',on\_enterentry1)**

**entry1.bind('<Leave>',on\_leaveentry1)**

**entry2.bind('<Enter>',on\_enterentry2)**

**entry2.bind('<Leave>',on\_leaveentry2)**

**btn.bind('<Enter>',on\_enterbtn)**

**btn.bind('<Leave>',on\_leavebtn)**

**#-----------------------------------------------------------------------------STATUS\_BAR**

**statusbar = ttk.Label(root, text="Welcome to TRANSLATOR", relief=SUNKEN, anchor=W, font=('times',10))**

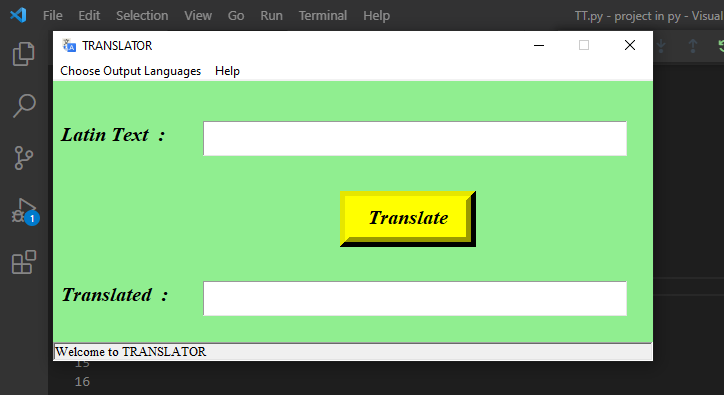
**statusbar.pack(side=BOTTOM, fill=X)**

**#----------------------------------------------------------------------------------------------------------------------------**

**root.mainloop()**

**Explanation:**

* **To Initialize tkinter, we pass a command under the name translator as  Tk().**
* **The dialog box has the title as TRANSLATOR with a geometry of (600x300).**
* **“main()” function contains the main logic of translation for the program. This function is made with library name TextBlob.**
* **“diff\_lans()” function is made to give option for output/translated language with help language dictionary(lan\_dict). Mainly, this function is made to perform its execution in the menu bar at the top of display. “ttk.Combobox()” widget is a class of ttk modules. It is a drop-down list, which can hold multi-value and show one item at a time. Combobox is useful to select one option from many option.**
* **“about\_us()” is simple function used in help at the top of window within menu bar that is submenu.**
* **title() used to set the title of the window.**
* **‘root’ is the name which we refer to our window.**
* **‘text’ which we display on the label.**
* **‘font’ in which the text is written.**
* **‘pack’ organized widget in block.**
* **Button() widget used to display button on our window.**
* **command is called when we click the button.**
* **activebackground sets the background color to use when the button is active.**
* **Tkinter doesn’t have a dedicated status bar widget but uses**[**Label**](https://www.delftstack.com/tutorial/tkinter-tutorial/tkinter-label/)**widget with appropriate configuration to work as the status bar in the GUI.’bd’ sets the size of the border and ‘relief’ determines how the label appears. We prefer the label to appear sunken so that so that the status bar looks like seamlessly one part of the window. ‘anchor’ sets the alignment of the text inside the label. ‘W’ means ‘West’ of left aligned.** This status bar is positioned at the bottom of the GUI and always covers the whole width of the window if we resize the window.
* **root.mainloop()  is the basic and the last command was given to compile all the previous commands with their basic settings of color, font, width, axis, etc. and displays the window as soon as the program is run.**

**Out Put**

**Summary**

**With this project in Python, we have successfully made the Language Translator. We have successfully developed the Language Translator python project. We used the popular tkinter library for rendering graphics on a display window, TextBlob library to translate text from one language to another.**

**We learned how to translate text, how to create Combobox, buttons widget, and pass the function to the button. In this way, we build a Language Translator.**

**A**

**Mini project on Digital Clock**

**A PROJECT REPORT**

**Submitted to**

**Dr. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW**

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**In partial fulfillment for the award of the degree of**

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE AND ENGINEERING**

**5 SEMESTER**

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**VIVEKANANDA COLLEGE OF ENGINEERING AND TECHNOLOGY COLLEGE, ALIGARH**

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