A Project Documentation on

LANGUAGE TRANSLATOR USING PYTHON

Submitted in partial fulfilment of the requirement for the award of the degree of

DIPLOMA

In

COMPUTER ENGINEERING

By

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2022-2023

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CERTIFICATE

This is to certify that the project work entitled "**LANGUAGE TRANSALATOR USING PYTHON"** carried out by **B.BHASKAR, N.SUJAN ,P.NITHISH, K.NIHARIKA,G.MAHESHWARI** bearing Roll nos. 20241-CM-005,20241-CM-053, 20241-008, 20241-CM-058, 20241-CM-013 respectively, in partial fulfilment of the requirements for the award of the degree of diploma in Computer Engineering is a record of Bonafide work carried out by them under my guidance.

The results of investigations enclosed in this report have been verified and found satisfactory. The results embodied in this project report have not been submitted ton any other University or Institute for the award of any other University or institute for the award of any other degree or diploma.

Signature of the Internal Guide **Signature of the HOD**

D.MOUNIKA

Signature of External examiner

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION BY THE CANDIDATE

We, **B.BHASKAR, N.SUJAN, P.NITHISH, K.NIHARIKA, G.MAHESHWARI** bearing roll No's. **20241-CM-005,20241-CM-053, 20241- CM-008, 20241-CM-058, 20241-CM-013** hereby declare that the project report entitled **"LANGUAGE TRANSLATOR USING PYTHON"** is done under the guidance of **Mrs. D. MOUNIKA**, HEAD OF THE DEPARTMENT(DIPLOMA), Department of Computer Engineering, TKR College of Engineering and Technology, is submitted in partial fulfilment of the requirements for the award of the degree of **Diploma in Computer Engineering**.

This is a record of Bonafide work carried out by us and the results embodied in this project have not been reproduced or copied from any source. The results embodied in this project report have not been submitted to any other University or Institute for the award of any other degree or diploma.

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LANGUAGE TRANSLATOR USING PYTHON

ABSTRACT

A language translator is a mobile application that can be utilized for translating from one language to another. The problem of language difference has hindered effective information communication over the years. This traditional approach used for solving the problem of language differences has not been productive and favorable. The study develops an android language converter app in order to make learning and language translation easy and facilitates stress-free communication. The system will also be able to evaluate language translation to determine their suitability for everyday conversation.

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1. INTRODUCTION

Translator is a cloud-based service that uses Artificial Intelligence to reliably translate text and documents between languages in near real time. You can add multi-language user experiences to your apps in 90 languages and dialects, along with free text translation with any operating system.

Because of the laboriousness of the translation process, since the 1940s efforts have been made, with varying degrees of success, to automate translation or to mechanically aid the human translator. More recently, the rise of the Internet has fostered a world-wide
market for translation services and has facilitated "$_{\text{language}}$ localisation"

Translation is not a simple language replacement exercise it is one of the main ways in which cultures shape political thought, literature, and science. This subject will offer answers to basic questions about how this happens. What are the main solutions available to translators What goes on in the translating brain How can technologies help translators How does translation change in accordance with different languages and text genres Students will also gain hands experience with the practical skills of post translation memories and subtitling

2.LITERATURE SURVEY

1. Google Translate is a multilingual neural machine translation service developed by Google to translate text, documents and websites from one language into another. It offers a website interface, a mobile app for Android and iOS, and an API that helps developers build browser extensions and software applications.[3] As of April 2023, Google Translate supports 133 languages at various levels,[4] and as of April 2016, claimed over 500 million total users, with more than 100 billion words translated daily,[5] after the company stated in May 2013 that it served over 200 million people daily.

2. DeepL Translator is a neural machine translation service launched in August 2017 and owned by Cologne based DeepL SE.[1] The translating system was first developed within Linguee and launched as entity DeepL. It initially offered translations between seven European languages and was gradually expanded to support 31 languages.

3. Microsoft Translator is a multilingual machine translation cloud service provided by Microsoft. Microsoft Translator is a part of Microsoft Cognitive Services[1] and integrated across multiple consumer, developer, and enterprise products; including Bing, Microsoft Office, SharePoint, Microsoft Edge, Microsoft Lync, Yammer, Skype Translator, Visual Studio, and Microsoft Translator apps for Windows, Windows Phone, iPhone and Apple Watch, and Android phone and Android Wear.

4. Reverso is a company specialized in AI-based language tools, translation aids, and language services. These include online translation based on NMT (Neural Machine Translation), contextual dictionaries, online bilingual concordances, grammar and spell checking and conjugation tools.Author Théo Hoffenberg.Reverso has been active since 1998, with the aim of providing online translation and linguistic tools to corporate and mass markets.

3. SYSTEM ANALYSIS

3.1 Existing system

- Language translator is the process of conveting on language to another language so that user can understand.
- It is the technology used to covert text to another language.
- google languages module is useful for representing more then 90 languages.
- This helps the user to understand the new languages in new places.
- google translator is mostly used existing system in world

3.2 Disadvantages of existing system

- The main disadvantage is that is not showing the converted text without internet and can see the error in the output.
- There are other limitations are like local languages are not exist in the software

3.3 Proposed system

- This is the project about translating the one language text to another language.
- The helps the user to understand different languages and easy to learn different languages.
- This system will enable the user to surviev in new places where language is different.

- The system is able to undertand the given text and covert it to another language by using tanslator module

- The language translator system will be able to activate this feature in the modern world.

3.4 Advantages of proposed system.

- It helps to know the different languages and easy to understand.

- We can easily get diffrent country languages and easy to use.

- This is useful to the users to learn new languages.

4. SYSTEM REQUIREMENTS SPECIFICATION

4.1 Functional requirements

4.1.1 Software requirements

- Windows XP
- Google translator module
- Geocoder
- PyCharm
- Google languages

4.1.2 Hardware requirements

- Hard disk – 2GB
- RAM – 1GB
- Processor
- Monitor
- Keyboard

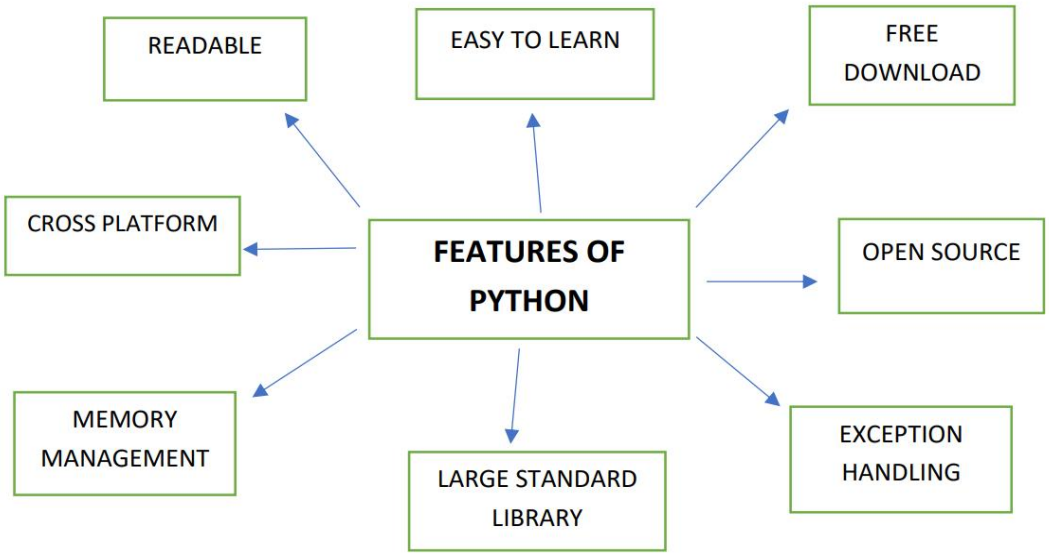
4.2 Software Environment

4.2.1 Introduction to PYTHON

Python is developed by Guido van Rossum. Guido van Rossum started implementing python in 1989. Python is very simple programming language so even, if you are new to programming. you can learn python without facing any issues.
Python is named after the comedy television show Monty python's flying circus it is not named after the python snake.

- In 1994, python 1.0 was released with new features like: lambda, map, filter etc.
- Python 2.0 added new features like: list comprehensions, garbage collection system.
- On December 3,2008, python 3.0(also called "Py3k") was released. It was designed to rectify fundamental flaw of the language.

Features of python programming



Applications of Python

- Web development-web framework like Django and flask are based on python.
- They help you write servers side code which helps you manage database write backend programming logic.
- Machine learning – there are many machine learning applications written in python machine can learn and solve a particular problem on its own.
- Data analysis – data analysis and data visualisation is form of charts can also developed using python.
- Scripting – scripting is writing small programs to automate simple tasks such as sending automated response emails etc.
- Game development – you can develop games using python
- desktop application – you can develop desktop application in python using library like Tkinter or QT

How to install python

- You can install python on any operating system such as windows, MacOS, Linux/Unix and others.
- To install the python on your Operating System go to this link:
- Download Python | Python.org

FIGURE- (Python Download webpage)

Installation steps are pretty simple you just have to accept the agreement and finish the installation.

4.2.2 Introduction to PyCharm

PyCharm is one of the most famous Integrated Development Environment (IDE) for python, developed by a Czech organization called JetBrains. The integrated environment comes with the platforms for code analysis, graphical debugger, unit test, version control system etc…

What is an IDE

An IDE is a software application/platform that provides an integrated environment for programmers to develop, debug, build, packages and deploy codes in multiple languages.

Tools and Features of PyCharm

- project window
- structure window
- code editor
- terminal and run
- event log

HOW TO INSTALL PYCHARM

- To download PyCharm visit the website https://www.jetbrains.com/pycharm/download and click the download link under the community section.

FIGURE- PyCharm webpage

- Once the download is completed, run the exe for install PyCharm. The setup wizard should have started. Click next

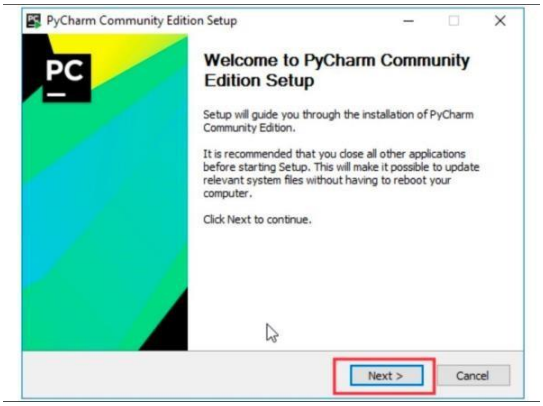


FIGURE-Welcome to PyCharm community edition setup page

- On the next screen change the installation path if required. click next

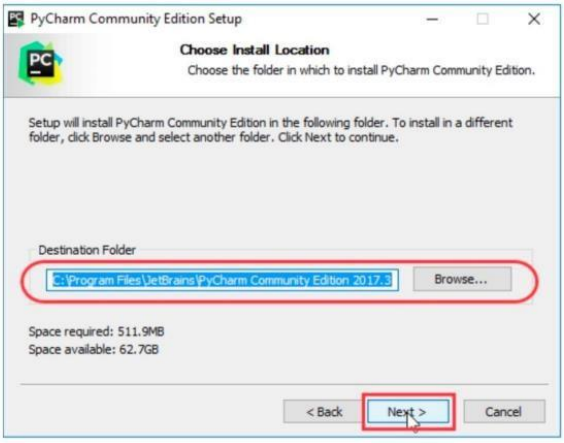


FIGURE- Choose install location page

✞ On the next screen, you can create a desktop shortcut if you want and click on next.

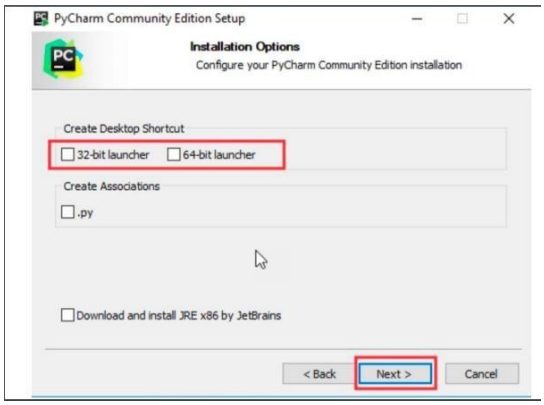


FIGURE- Installation options page

✞ Choose the start menu folder. keep selected JetBrains and click on install.

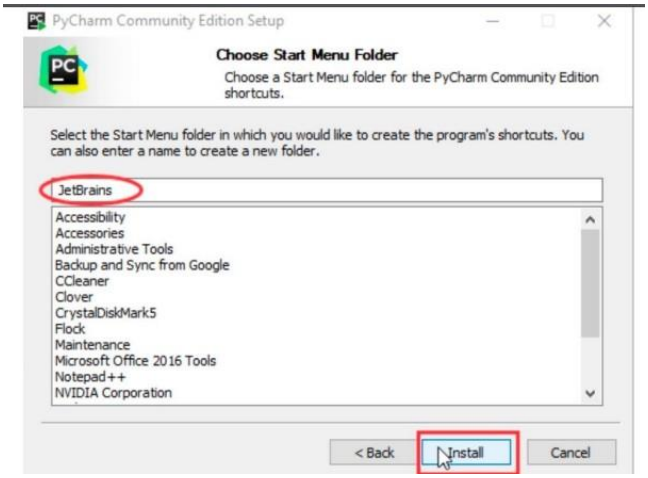


FIGURE- Choose start menu folder page

✞ Wait for the installation to finish

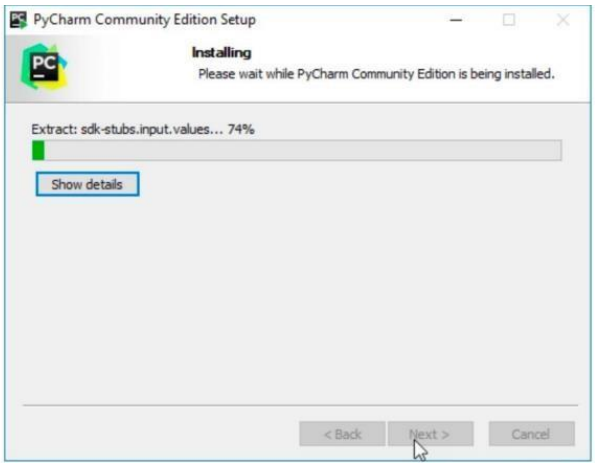


FIGURE- Installing page

- Once installation finished, you should receive a message screen that PyCharm is installed. If you want to go ahead and run it, click the run PyCharm community edition" box first and click finish.

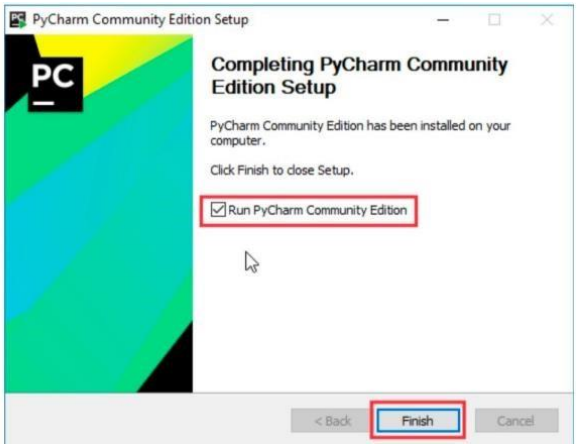


FIGURE-Completing PyCharm community edition setup page

- After you click on finish the following screen will appear.

FIGURE- PyCharm downloaded page

4.3 FEASIBLE STUDY

FEASIBILITY STUDY

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

- ECONOMICAL FEASIBILITY
- TECHNICAL FEASIBILITY
- SOCIAL FEASIBILITY

4.3.1 ECONOMICAL FEASIBILITY

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour

into the research and development of the system is limited. The expenditures must be justified. Thus, the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

4.3.2 TECHNICAL FEASIBILITY

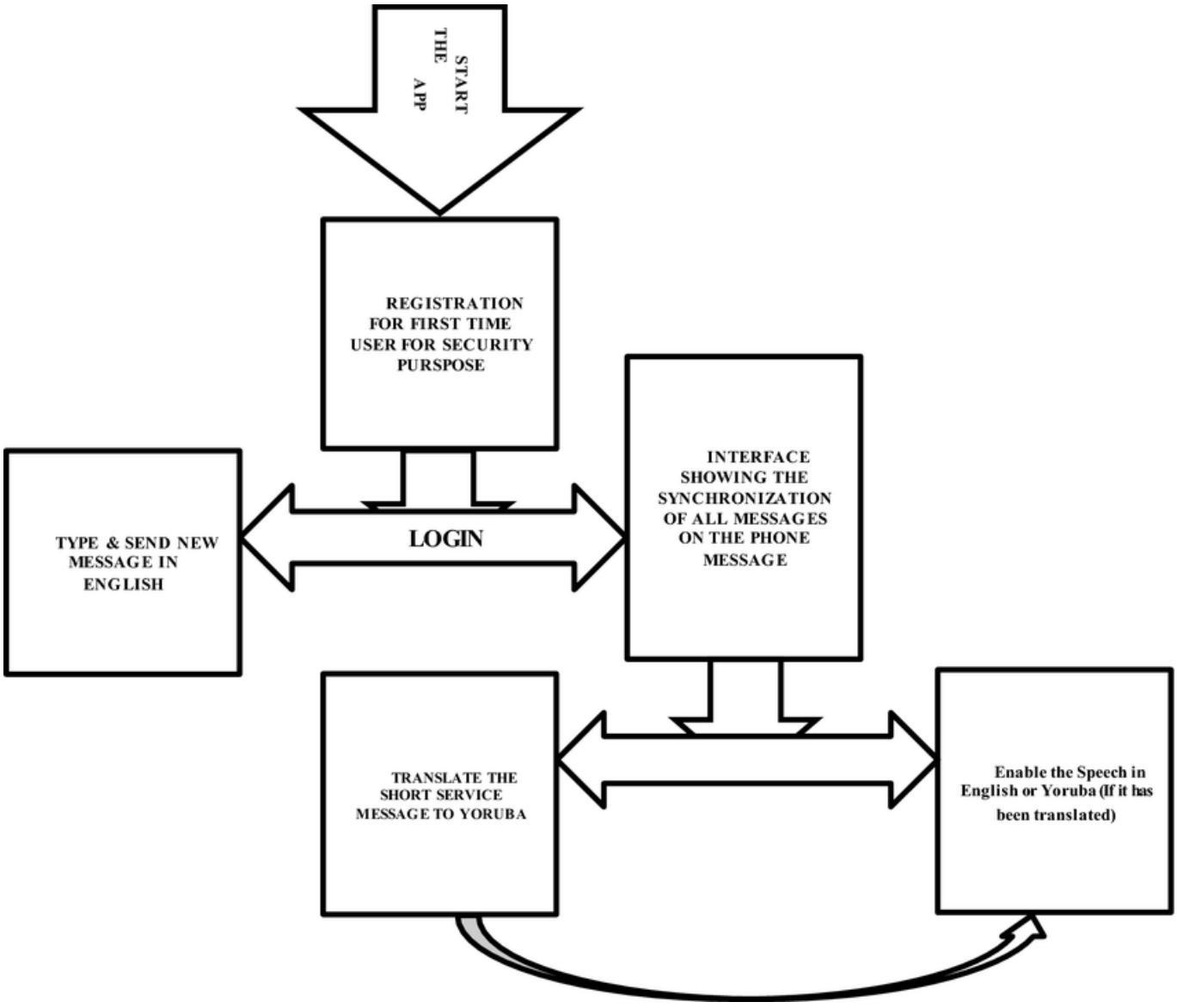
This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

4.3.3 SOCIAL FEASIBILITY

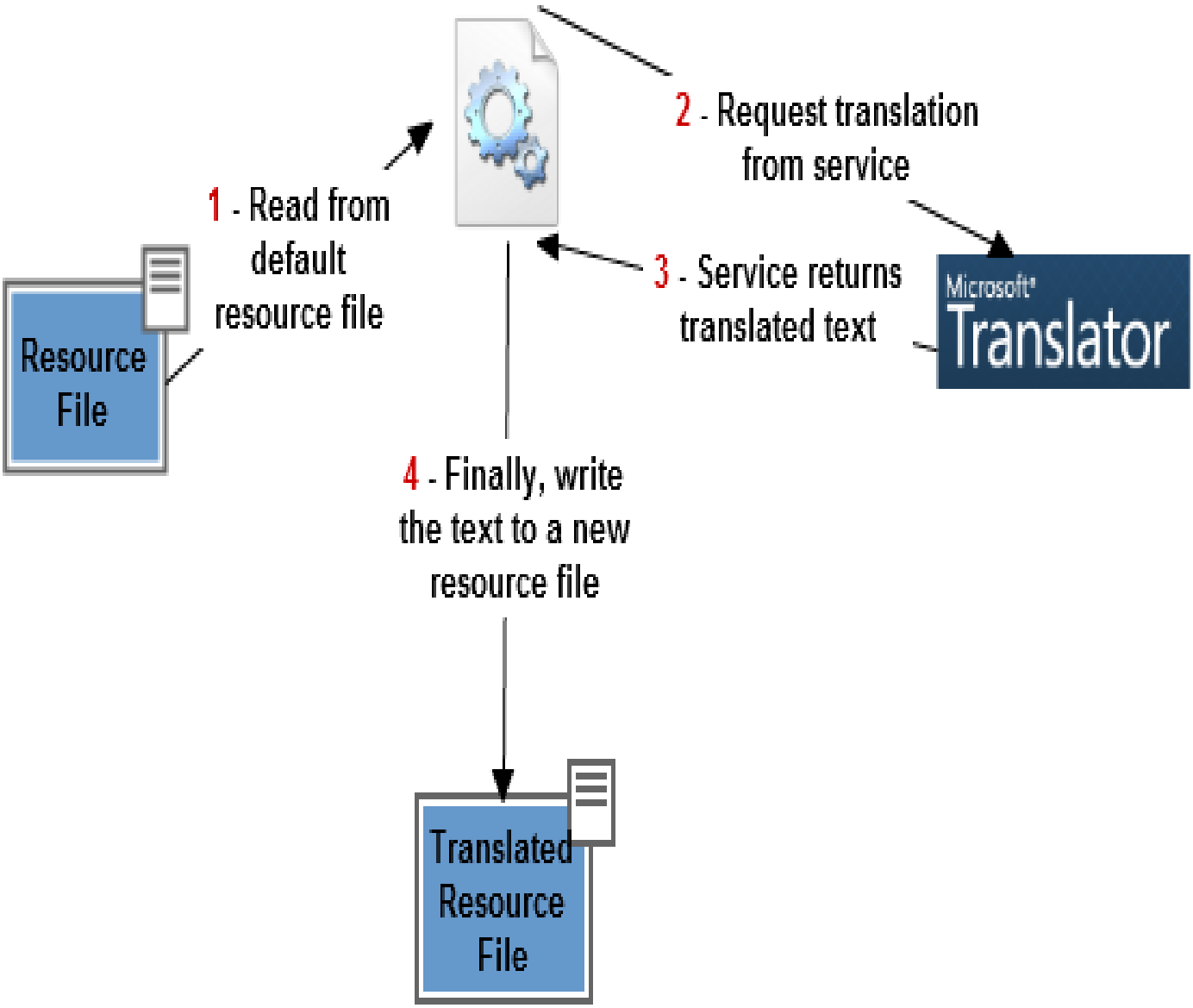
The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

5. SYSTEM DESIGN

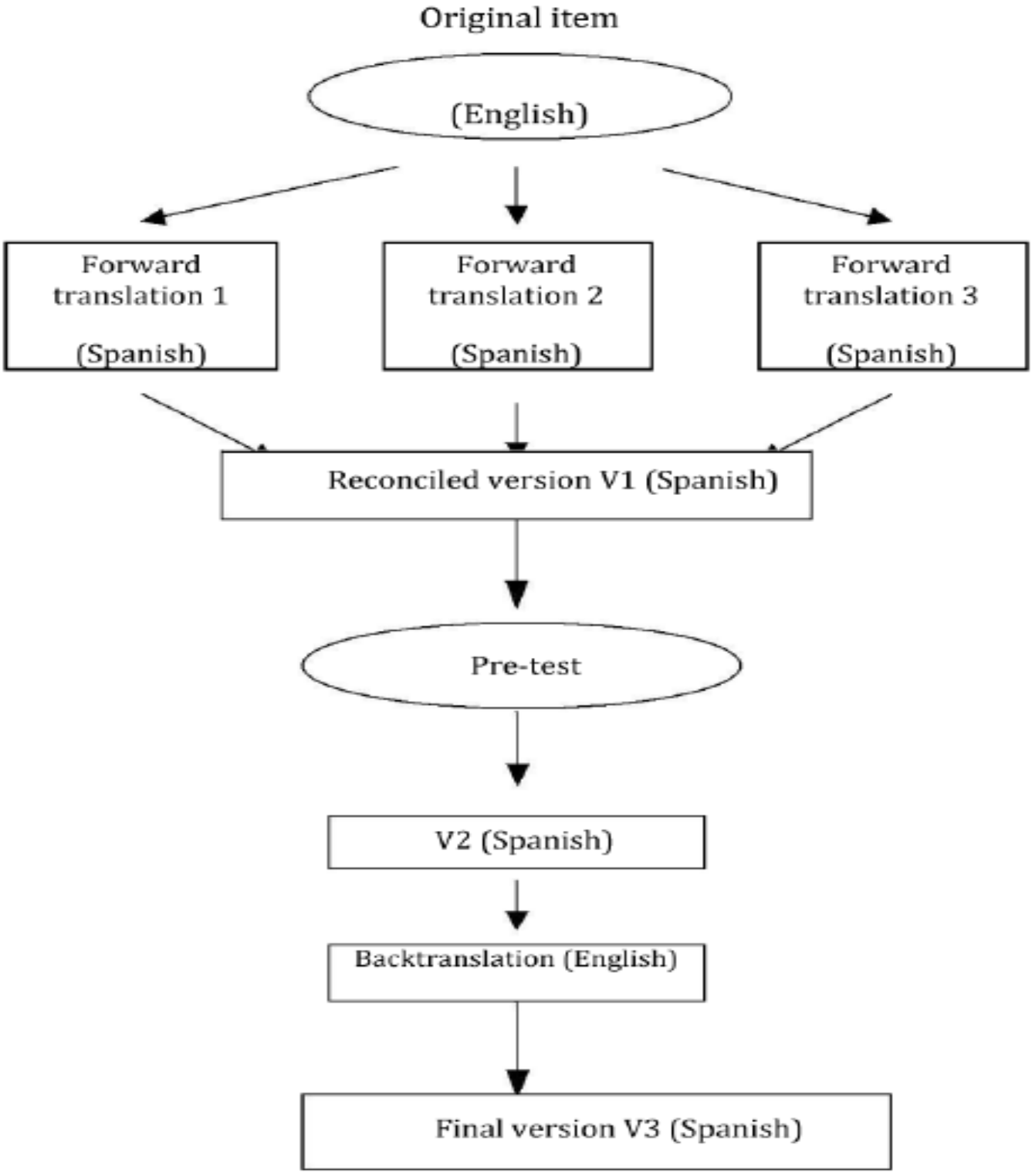
5.1 Data flow diagrams



5.2 ER-DIAGRAM:



5.3 UML-DIAGRAM:



6.IMPLEMENTATION (CODING)

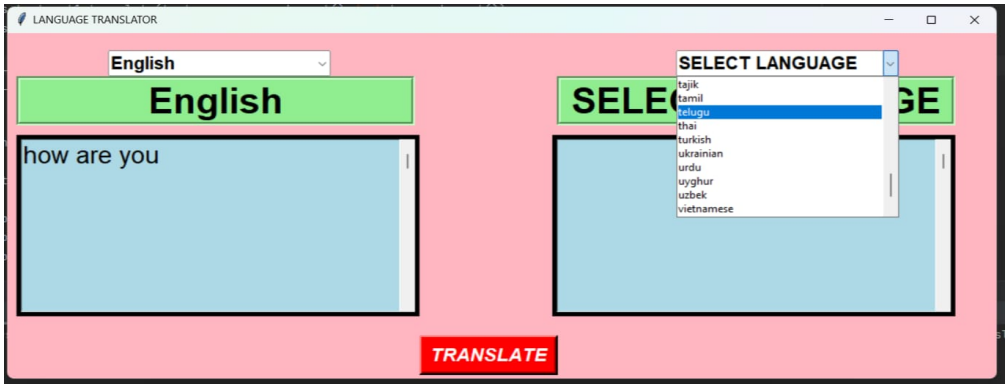
```
from tkinter import *
from tkinter import ttk, messagebox
import googletrans
from googletrans import Translator

window = Tk()
window.title("LANGUAGE TRANSLATOR")
window.geometry("1080x400")
window.config(background = "light pink")


def change_label():
    c1 = one_combo.get()
    c2 = two_combo.get()
    label_1.configure(text=c1)
    label_2.configure(text=c2)

def current_trans():
    text_ = text_1.get(1.0,END)
    t1 = Translator()
    trans_text = t1.translate(text_,src=one_combo.get(),dest=two_combo.get())
    trans_text = trans_text.text

    text_2.delete(1.0,END)
    text_2.insert(END,trans_text)


trans_language = googletrans.LANGUAGES
lang_a = list(trans_language.values())
lang1 = trans_language.keys()

one_combo = ttk.Combobox(window, values=lang_a, font="Arial 15 bold",state = "r")
one_combo.place(x=110,y=20)
one_combo.set("English")

label_1 =Label(window,text="ENGLISH",font="Arial 31 bold",bg="light
green",width=17,bd=4,relief=GROOVE)
label_1.place(x=10,y=50)

f_1 = Frame(window, bg="black",bd=5)
f_1.place(x=10,y=118,width=440,height=210)

text_1 = Text(f_1, font="Arial 21",bg="light blue",relief=GROOVE,wrap=WORD)
text_1.place(x=0,y=0,width=430,height=200)

scrollbar_one = Scrollbar(f_1)
scrollbar_one.pack(side="right",fill="y")
```

```
two_combo = ttk.Combobox(window, values=lang_a, font="Arial 15
bold",state="r") two_combo.place(x=730, y=20)
two_combo.set("SELECT LANGUAGE")
label_2 =Label(window,text="LANGUAGE",font="Arial 31 bold",bg="light
green",width=17,bd=4,relief=GROOVE)
label_2.place(x=600,y=50)

f_2 = Frame(window, bg="black",bd=5)
f_2.place(x=595,y=118,width=440,height=210)

text_2 = Text(f_2, font="Arial 21",bg= "light blue",relief=GROOVE,wrap=WORD)
text_2.place(x=0,y=0,width=430,height=200)

scrollbar_two = Scrollbar(f_2)
scrollbar_two.pack(side="right", fill="y")

button_translate = Button(window, text="TRANSLATE", font="Arial 16 bold italic",
activebackground="red",
                    cursor =
"hand2",bd=4,fg="white",bg="red",command=current_trans)
button_translate.place(x=450,y=350)

change_label()

window.mainloop()
```

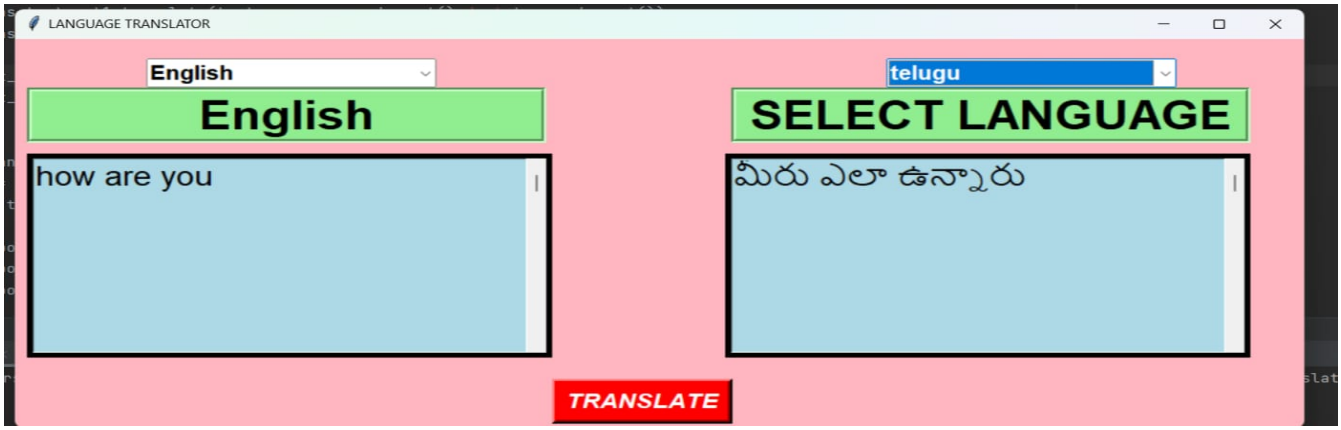
6.2 How it works

we have to enter the text on thegiven surface after clicking on it will show the translate text as shown.

✞ As long as we run the code a pop up window will appers as shown enter the text as your wish and now select the another end at other side



✞now click on the translate button shown one the window



✞ The text is converted as the language we required.we can change the language as our wish on both sides

7.TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub assemblies, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the

Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

TYPES OF TESTS

Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

Integration testing

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

Functional test

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centred on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

System Test

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

White Box Testing

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box . You cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

7.1 Unit Testing:

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing to be conducted as two distinct phases.

Test strategy and approach

Field testing will be performed manually and functional tests will be written in detail.

Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed
- All links should take the user to the correct page.

7.2 Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g, components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

7.3 Acceptance Testing

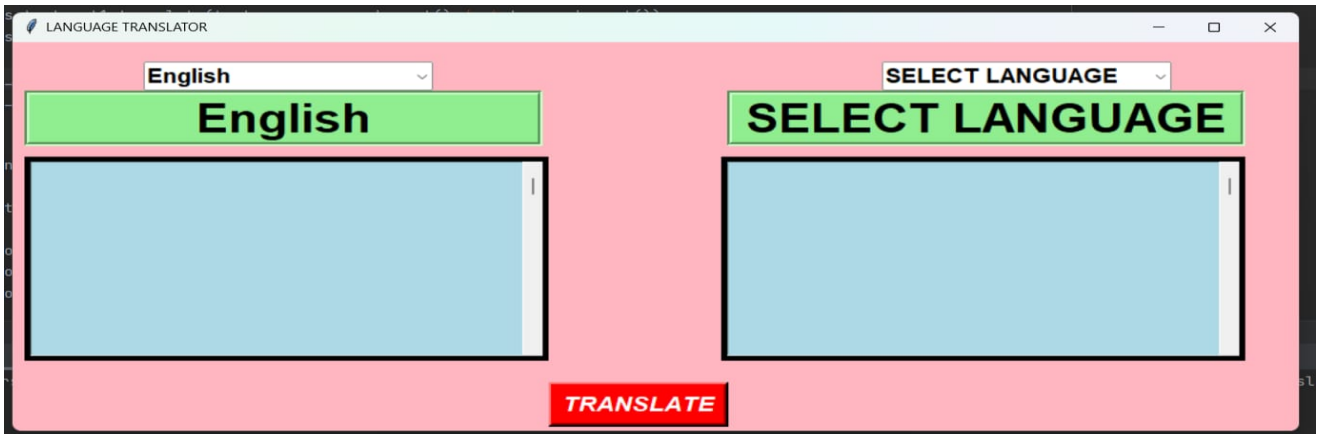
User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Test Results: All the test cases mentioned above passed successfully. No defects encountered

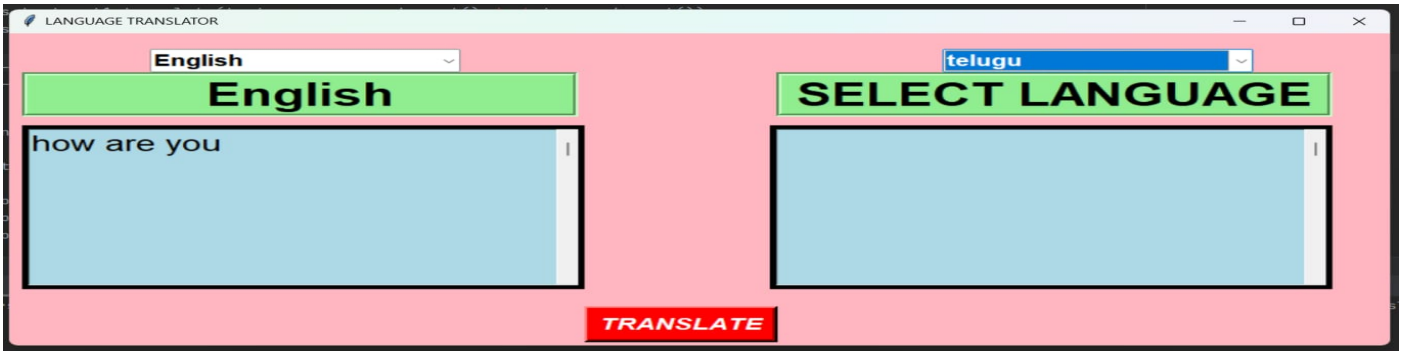
8. SNAP SHOTS

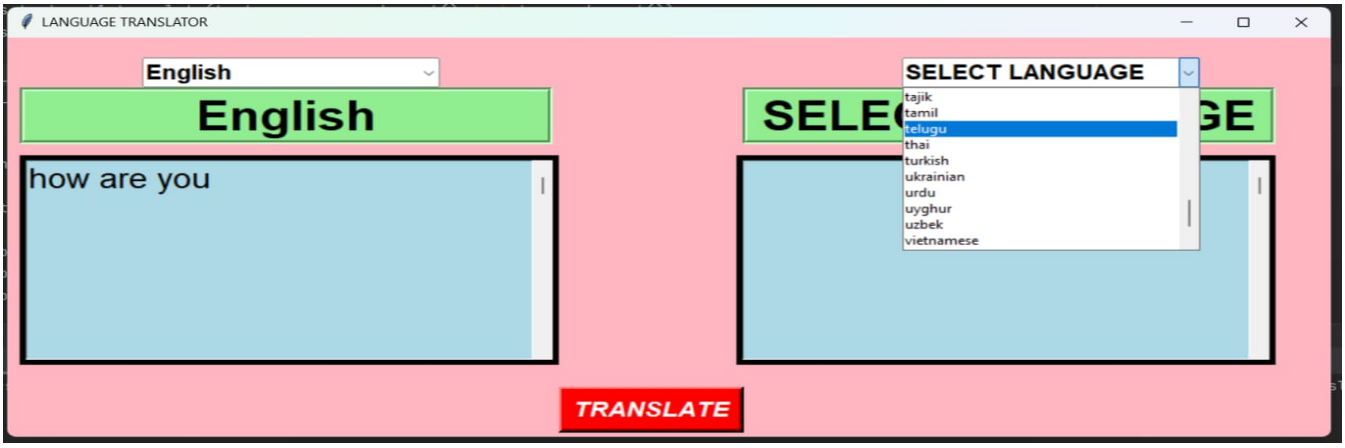
8.1 Output Screens

- We have entered the code and after runing it a pop up window will be displayed on the scree showing that enter a text as shown in figure.
- Look into the pictures.

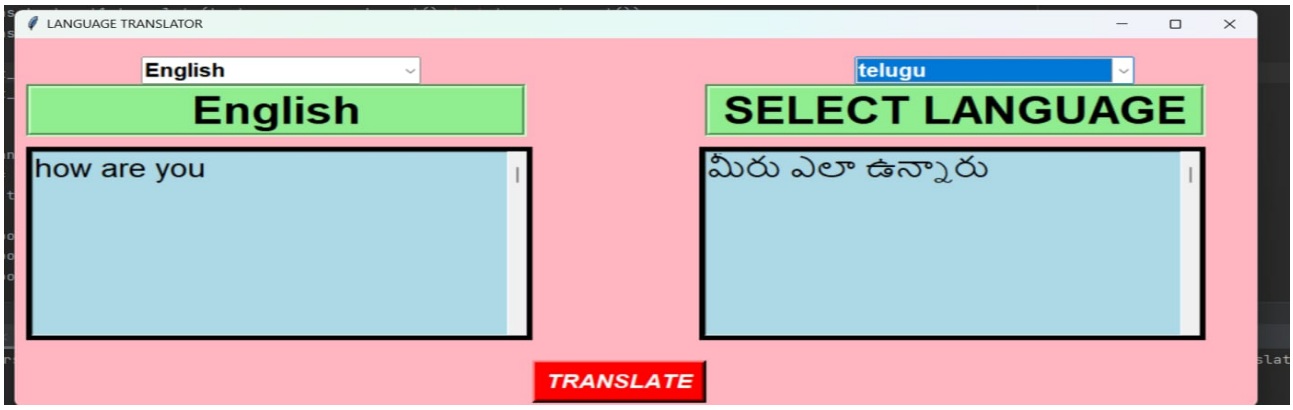


Enter the text you want to write





- Select the language you want which the text want to convert.Then click one the translate button



9. FUTURE IMPLEMENTATION

- The language translator has basic languages we can implement wide range of languages in it so everey one can easily use it.

- The local languages implementation make the local user to use this software easily.

- The described model of translator hepls the students and world travellers to learn languages quickly and make them to easy for understanding and it can their in every smart phone by default.

- The language translator is an online software even in future it can given offline.

9.1 DIFFERENT TYPES OF LANGUAGE TRANSLATOR

GOOGLE LANGUAGE TRANSLATOR

Google Translate is a multilingual neural machine translation service developed by Google to translate text, documents and websites from one language into another. It offers a website interface, a mobile app for Android and iOS, and an API that helps developers build browser extensions and software applications. As of April 2023, Google Translate supports 133 languages at various levels, and as of April 2016, claimed over 500 million total users, with more than 100 billion words translated daily, after the company stated in May 2013 that it served over 200 million people daily.

Launched in April 2006 as a statistical machine translation service, it used United Nations and European Parliament documents and transcripts to gather linguistic data. Rather than translating languages directly, it first translates text to English and then pivots to the target language in most of the language combinations it posits in its grid, with a few exceptions including Catalan-Spanish. During a translation, it looks for patterns in millions of documents to help decide which words to choose and how to arrange them in the target language

Its accuracy, which has been criticized on several occasions, has been measured to vary greatly across languages. In November 2016, Google announced that Google Translate would switch to a neural machine translation engine – Google Neural Machine Translation (GNMT) – which translates "whole sentences at a time, rather than just piece by piece. It uses this broader context to help it figure out the most relevant translation, which it then rearranges and adjusts to be more like a human speaking with proper grammar

DEEP TRANSLATOR

DeepL Translator is a neural machine translation service launched in August 2017 and owned by Cologne based DeepL SE.The translating system was first developed within Linguee and launched as entity DeepL. It initially offered translations between seven European languages and was gradually expanded to support 31 languages.

Its algorithm uses convolutional neural networks and an English pivot.[citation needed] It offers a paid subscription for additional features and access to its translation application programming interface.

10.CONCLUSION

- The project is designed to translate the give text from one language to another language.

- It intimates the easy way to understand different languages .

- This system helps the students to learn the languages easily and make them to understabd easily.

- The goal of translation practice for non-specialists is to found the language skills of the learner, to refine their thematic and cultural knowledge and to encourage them to think and to react.

- In Conclusion A professional language translator helps eliminate the barriers imposed by unfamiliar languages and allows you to communicate directly with your foreign audience without the fear of distorting the original message’s meaning

11. REFERENCES

The following books and websites have been referred during project development.

Websites:

https://www.w3schools.com

https://github.com

https://opencagedata.com

https://www.python.com

https://www.jetbrains.com