A Mini Project Synopsis on

SPEECHNOTES

S.E. - I.T Engineering

Submitted By

Suraj Singh 20104032

Himanshu Rane 20104008

Atharva Takle 20104022

Yogesh Kumbhar 20104139

Under The Guidance Of

Prof. Geetanjali Kalme

DEPARTMENT OF INFORMATION TECHNOLOGY

A.P. SHAH INSTITUTE OF TECHNOLOGY

G.B. Road, Kasarvadavali, Thane (W), Mumbai-400615

UNIVERSITY OF MUMBAI

Academic year: 2021-22

CERTIFICATE

This to certify that the Mini Project report on **SPEECHNOTES** has been submitted by **Suraj Singh (20104032)**, **Himanshu Rane (20104008)**, **Atharva Takle (20104022)** and **Yogesh Kumbhar (20104139)** who are the students of A. P. Shah Institute of Technology, Thane, Mumbai, as a partial fulfilment of the requirement for the degree in Information Technology, during the academic year 2021-2022 in the satisfactory manner as per the curriculum laid down by University of Mumbai.

.

Prof. Geetanjali Kalme
Guide

Prof. Kiran Deshpande
Head Department of Information Technology

Dr. Uttam D. Kolekar
Principal

External Examiner(s)
1.
2.

Place: A.P. Shah Institute of Technology, Thane
Date:

ACKNOWLEDGEMENT

This project would not have come to fruition without the invaluable help of our guide **Prof. Geetanjali Kalme**. Expressing gratitude towards our Hod **Prof. Kiran Deshpande**, and the Department of Information Technology for providing us with the opportunity as well as the support required to pursue this project. We would also like to thank our teacher **Mrs. Roshna sangle** who gave us her valuable suggestions and ideas when we were in need of them. We would also like to thank our peers for their helpful suggestions.

TABLE OF CONTENTS

Chapter 1

Introduction

It often happens that while studying or reading we come across some important point and want to note it. At such times we either write it on notebook or type it in word or notepad etc. which disturbs our studying or reading. Preparing Notes is a very crucial task in everyone's life. Students, Teachers, as well as researchers need to prepare notes. Writing or typing them manually is little bit hectic and time consuming. Still the output is not error-free.
The main aim of this project is to develop a software for voice recognition to make notes using python. In this project, we convert Speech to text and vice versa. Here we take input from user in the form of speech and convert it into Text and vice versa. The output both in the form of speech or text is converted in pdf format.
The software will be a great help for Disabled people and people with dyslexic. The process of making notes will become more convenient for People.

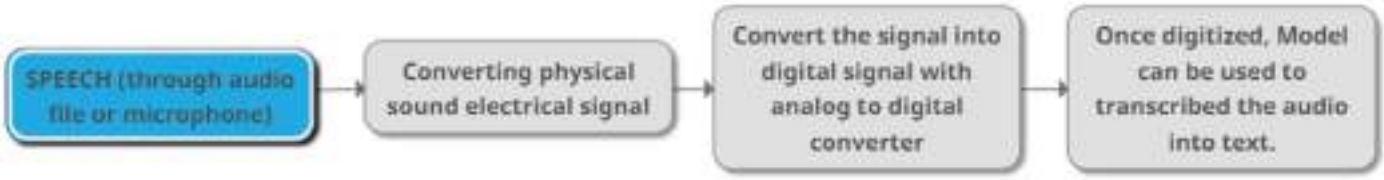

Fig 1.1 Speech Recognition

1.1 Purpose:

Speech to text converter is a platform where one can convert their voice into text by using speech recognition technology. It provides an environment to the user to prepare notes by using their voice and later download or save it in pdf format. The purpose of the project is to ease the process of making notes using speech recognition in python. Notes can be stored in pdf format. User can give his input in both ways- Speech as well as Text.
Also an editor is provided to enhance the quality of text. Another thing added is a translator. So the user no longer needs to use English language. User can prefer language of his\her choice. All these features reduce the burden of preparing notes. Preparing notes becomes an error free process and reduces effort and time.
Targeted Audience are students, teachers, researchers, as well as employees. The project also aims to be useful for disable people and people with dyslexic. Basically the project describes how to manage for good performance and better services for the clients.

1.2 Objectives:

- To build user-friendly software to ease the process of making notes.
- To enable both speech to text and text to speech converter with various languages including Indian Languages.
- To provide editor with various editing tools to enhance user experience.
- To add Paraphrasing to rephrase the sentences without changing its meaning.
- To provide translator with Speech to text for regional & foreign languages.
- To enable user type using their speech according to their prefer language and ascent.
- To convert Audio or Text Recordings to Text and save them in pdf format

1.3 Scope:

- **Can be applied in offices, educational institutes and daily life.**

  Preparing notes is part and parcel of life for people working or involved in educational institutes and Offices. Students and teachers from schools and colleges have different syllabus textbooks, reference books and others books to refer for learning as well as teaching. They need to prepare notes, reports, or need to jot down the points during meetings. Speech notes can be great help here. Using speech notes they can easily prepare notes and with the help of editable tools they make their reports and notes presentable with less time. This reduces their burden. Professionals no longer need to waste time writing or typing. In daily life too speech notes can play a major role. For them who forget names, addresses, or lists they can note down things using speech notes. People who want order groceries or medicines can list their orders using speech notes instead of writing down things. Also during emergencies where writing or typing is not possible Speech notes can help them.

- **Useful for students and Teachers for preparing notes from online recordings.**

  During Corona Virus Pandemic situation, Education system shifted to online mode. Lectures where conducted in online mode through different online meeting platforms like Zoom, Cisco webex etc. learning through this mode was a little difficult for students as it has many issues like network disconnection, Audio disturbances which disturbed leaning process. Students were provide same recordings which were difficult to understand. Speech Notes converts this online recording and lectures too text format which helps students understand the lecture. Later students can learn save this text in pdf Format.

- **Useful for research Scholars, Professor, scientists & for various Working Professionals.**

  Researchers and scientists have to go through a lot of reference books, researched papers and Google many things. During reading they immediately need to jot down points. Writing or typing them manually break their links and creates mistakes. Speech notes can lessen their burden of preparing notes and they can work more efficiently. Also, these notes can be stored easily.

- **Useful for person having problem like Dyslexia and Dysgraphia.**

  Dyslexia is a learning disorder that involves difficulty reading due to problems identifying speech sounds and learning how they relate to letters and words. Speech Notes can help them identify speech sounds easily. The software can be a boon for them.

- **Useful for Security agencies functioning in different languages.**

  Security agencies all over the nation as well as World have to investigate many criminals and suspects. At such times language becomes a barrier. To solve this language problem they have to wait for a language expert which is time consuming, non-trustworthy as well as not efficient. Speech notes can solve this problem by tackling above mentioned errors.

  Dyslexia is a learning disorder that involves difficulty reading due to problems identifying speech sounds and learning how they relate to letters and words. Speech Notes can help them identify speech sounds easily. The software can be a boon for them.

Chapter 2

Problem Definition

Preparing notes is a time consuming, complex, tedious, tiring and leads to many errors. Typing or manually writing them is difficult and printing them is costlier. Also the quality too sometimes gets affected. Also maintaining them is a big problem. Hand-written or printed notes need to be stored maintained properly otherwise they get displaced or damaged. Spelling errors are too common in such created notes. This makes notes making process complex. Disable people who cannot write or type are dependent on others to write or type notes for them. Many speech to text converters are available but they lack in some features. A big problem with such converters is the accent. Different Users have different accents. When user wants to speak specific word but converter prints other word. In this case both users and software are correct but the problem is not addressed. One more problem is different languages. People living in different regions speak different languages. Many speech to text converters are restricted to only English or a few languages which is inconvenient for users with different languages. Sometimes the user wants to translate his/her text to different language which is not possible in most of the converters. Many speech to text converters lack editing tools. So the user has to go to different editors to edit the text wasting their time. Also many converters have only speech to text or text to speech converter so the user have to find a new alternative according to their need.

Chapter 3

3.1 Proposed System

The aim of the project is to develop a speech to text converter and vice a versa to prepare notes. The proposed system can overcome all the limitations and errors of the manually prepared notes.

The system provides proper security and reduces the manual work.

- Security of Data
- Ensure data's Accuracy
- Greater efficiency
- Better services
- Minimum time required
- Paraphrasing
- Editor
- Translator
- Audio or Video recordings to Text
- Speech to Text in different languages
- Accent
- More Advanced Feature

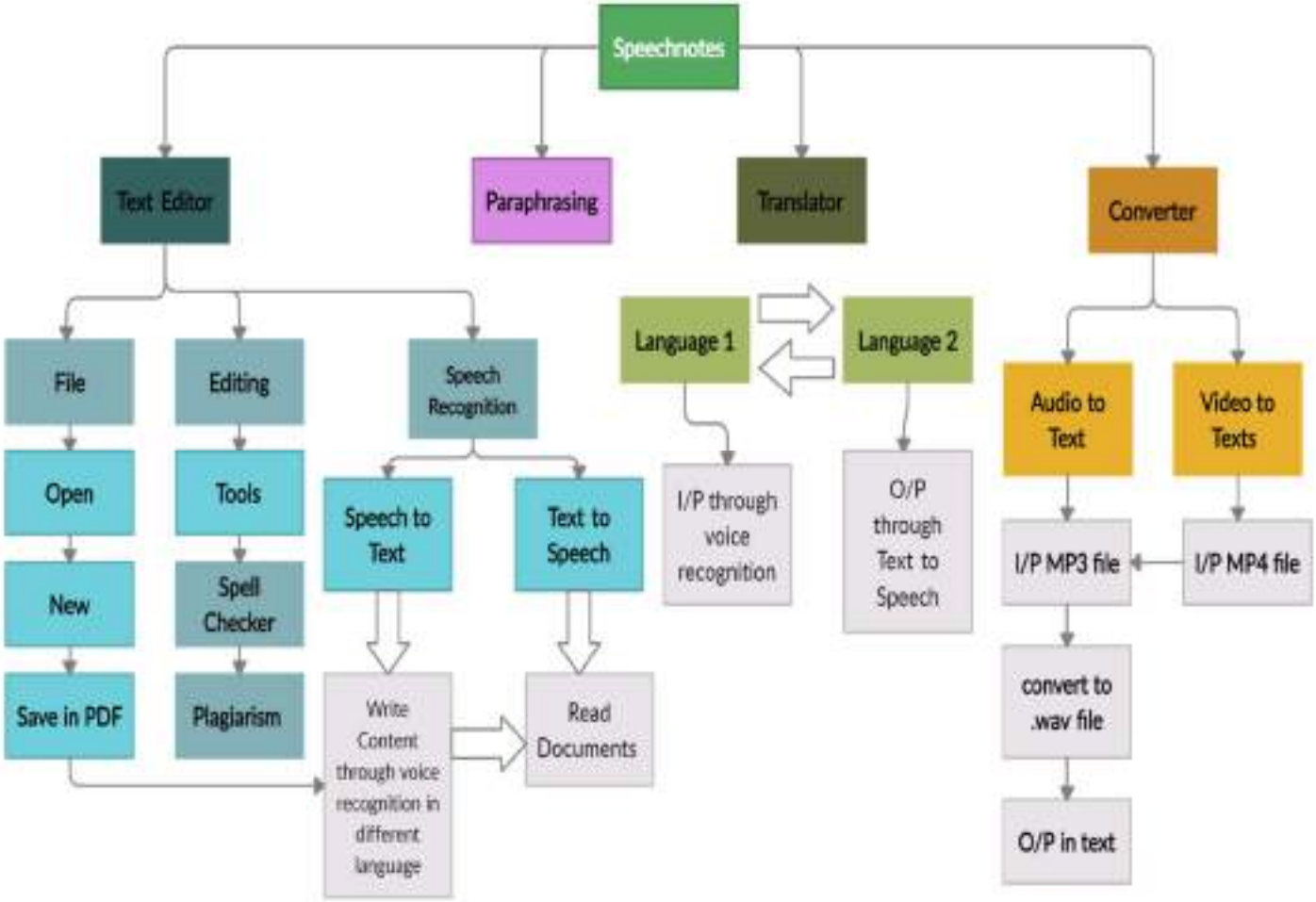

Fig 3.1.1 Proposed System

3.2 Features and Functionalities:

1. **Sign in/ Sign up/ Forget password:**

   User can be able to login the system and if the user is new, he/she should signup first with credentials first. If the user forgets password his/her password they can reset it with their username and password. This provides the information of the user and acts as a security to the data. The user can register and use the software.

2. **Speech to text and text to speech converter:**

   The user can use speech to text or text to speech according to his/her need and convenience. This enhances user's experience. Text to speech gives access to your content to a greater population, such as those with literacy difficulties, learning disabilities, reduced vision and those learning a language. It also opens doors to anyone else looking for easier ways to access digital content. This speech to text and text to speech converter has various languages including Indian Languages.

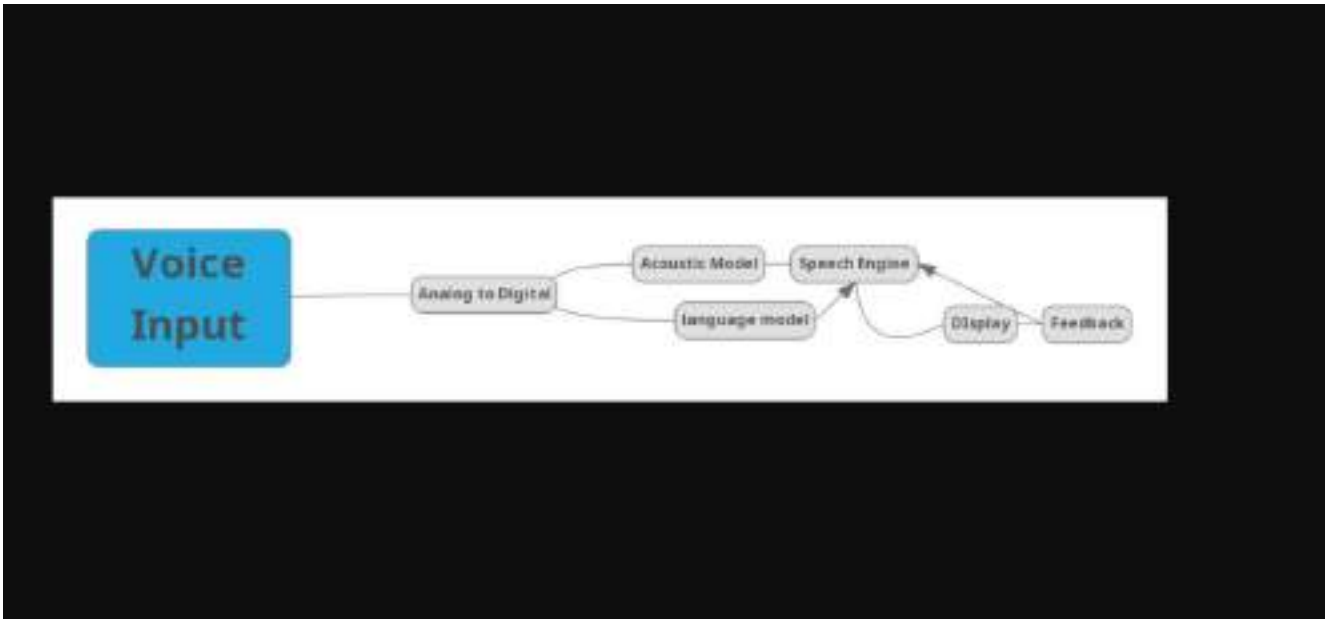

Fig 3.2.1 Speech to text converter

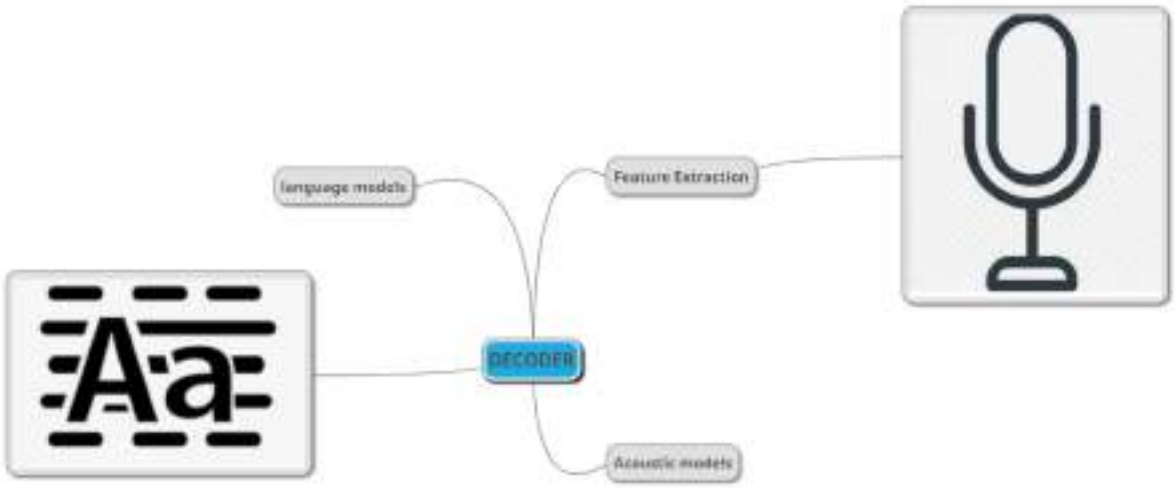

Fig 3.2.2 Text to speech converter

3. Editor:

User can edit his text using various editing tools provided. This enhances the quality of text and makes it presentable. editor tools added are:

Font size: User can increase or decrease font size

Font: User can use various fonts like Times New Roman, Calibri etc.

Underline, Bold & Italic: User can highlight the content using Underline, Bold and Italic.

Alignment: User can align the content to left, right or centre or can even justify it.

Font colour & Shading: User can change the colour of font using font colour and can even change background colour using shading.

Spell Checker: Spell checker shows the correct spelling of the word typed by the user.

Other several options like copy, paste, new file, save as, new folder etc. are also provided.

4. Translator:

User can use the software in different languages so user of any language can use the software. More than 50 + languages are added. There is no more language barrier for the user. User can use his/her preferable language. Regional Indian languages like Hindi, Marathi Tamil etc. and international languages like Arabic, Japanese, Russian, Spanish, French, Chinese etc. are added.

5. **Accent:**

Different people talk with different accent. Different people pronounce same word with different pronunciation. For instance European people emphasize more on ‘e’ while talking English. Indians have different accent while talking English. Even Americans speak English differently. Users with different accent can use the software easily without any problem.

6. **Paraphrasing:**

A paraphrase is a restatement of the meaning of a text or passage using other words. Rephrasing enables user to rephrase the sentences without changing its meaning. This helps in quality work.

7. **Audio or Video recordings to Text**

This feature enables user to convert Audio or video Recordings to text. This helps the user understand the concept easily explained in the audio or video recordings. This can be a great asset in online education.

Chapter 4

Project Outcomes:

- User can use both speech to text and text to speech converter according to his\her needs.
- User is able to login and signup and if in case can use forget password to change their password.
- Only Registered users can use the software.
- User can download the notes in the pdf format.
- User can edit the notes using editing tools and Spell checker provided.
- Notes can be translated in different languages.
- User can convert Audio or Text Recordings to Text and save them in pdf format.
- Users can type using speech according to their preferred language and accent.
- User can Rephrase the sentences without changing its meaning.

Chapter 5

Technology Stack:

- **Front End:**

  Frameworks: Tkinter:

  Tkinter is the standard GUI library for Python. 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.

  Creating a GUI application using Tkinter is an easy task. All you need to do is perform the following steps −

- Import the *Tkinter* module.
- Create the GUI application main window.
- Add one or more of the above-mentioned widgets to the GUI application.
- Enter the main event loop to take action against each event triggered by the user.

- **Back End:**

  Programming language: - Python 3.9.10-amd 64

  Python is a high-level general-purpose programming language. Its design philosophy emphasizes code readability with the use of significant indentation. Its language constructs and object-oriented approach aim to help programmers write clear, logical code for small- and large-scale projects.
  Python is dynamically-typed and garbage-collected. It supports multiple programming paradigms, including structured (particularly, procedural), object-oriented and functional programming. It is often described as a "batteries included" language due to its comprehensive standard library.
  Guido van Rossum began working on Python in the late 1980s, as a successor to the ABC programming language, and first released it in 1991 as Python 0.9.0. Python 2.0 was released in 2000 and introduced new features such as list comprehensions, cycle-detecting garbage collection, reference counting, and Unicode support. Python 3.0, released in 2008, was a major revision that is not completely backward-compatible with earlier versions. Python 2 was discontinued with version 2.7.18 in 2020

Database: MySQL

MySQL is the most popular Open Source Relational SQL database management system. MySQL is one of the best RDBMS being used for developing web-based software applications.

Server: Xampp 8.1.2.0

XAMPP is an abbreviation where X stands for Cross-Platform, A stands for Apache, M stands for MYSQL, and the Ps stand for PHP and Perl, respectively. It is an open-source package of web solutions that includes Apache distribution for many servers and command-line executable along with modules such as Apache server, MariaDB, PHP, and Perl. XAMPP helps a local host or server to test its website and clients via computers and laptops before releasing it to the main server. It is a platform that furnishes a suitable environment to test and verify the working of projects based on Apache, Perl, MySQL database, and PHP through the system of the host itself. Among these technologies, Perl is a programming language used for web development, PHP is a backend scripting language, and MariaDB is the most vividly used database developed by MySQL.

- **Development:- VS code 1.64.2 & IDLE (Python 3.9 64 bits)**

Visual Studio Code is a source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git. Users can change the theme, keyboard shortcuts, preferences, and install extensions that add additional functionality.

IDLE (short for Integrated Development and Learning Environment)[1][2] is an integrated development environment for Python, which has been bundled with the default implementation of the language since 1.5.2b1.It is packaged as an optional part of the Python packaging with many Linux distributions. It is completely written in Python and the Tkinter GUI toolkit (wrapper functions for Tcl/Tk).IDLE is intended to be a simple IDE and suitable for beginners, especially in an educational environment. To that end, it is cross-platform, and avoids feature clutter.

Chapter 6

Project Design:

In this phase, a logical system is built which fulfils the given requirements. Design phase of software development deals with transforming the client's requirements into a logically working system. Normally, design is performed in the following in the following two steps:

1. Primary Design Phase: In this phase, the system is designed at block level. The blocks are created on the basis of analysis done in the problem identification phase. Different blocks are created for different functions emphasis is put on minimizing the information flow between blocks. Thus, all activities which require more interaction are kept in one block.

2. Secondary Design Phase: In the secondary phase the detailed design of every block is performed. The general tasks involved in the design process are the following:

1. Design various blocks for overall system processes.
2. Design smaller, compact and workable modules in each block.
3. Design various database structures.
4. Specify details of programs to achieve desired functionality.
5. Design the form of inputs, and outputs of the system.
6. Perform documentation of the design.

User Interface Design: User Interface Design is concerned with the dialogue between a user and the computer. It is concerned with everything from starting the system or logging into the system to the eventually presentation of desired inputs and outputs. The overall flow of screens and messages is called a dialogue.

The following steps are various guidelines for User Interface Design:

1. The system user should always be aware of what to do next.
2. The screen should be formatted so that various types of information, instructions and messages always appear in the same general display area.
3. Message, instructions or information should be displayed long enough to allow the system user to read them.
4. Use display attributes sparingly.
5. Default values for fields and answers to be entered by the user should be specified.
6. A user should not be allowed to proceed without correcting an error.
7. The system user should never get an operating system message or fatal error.

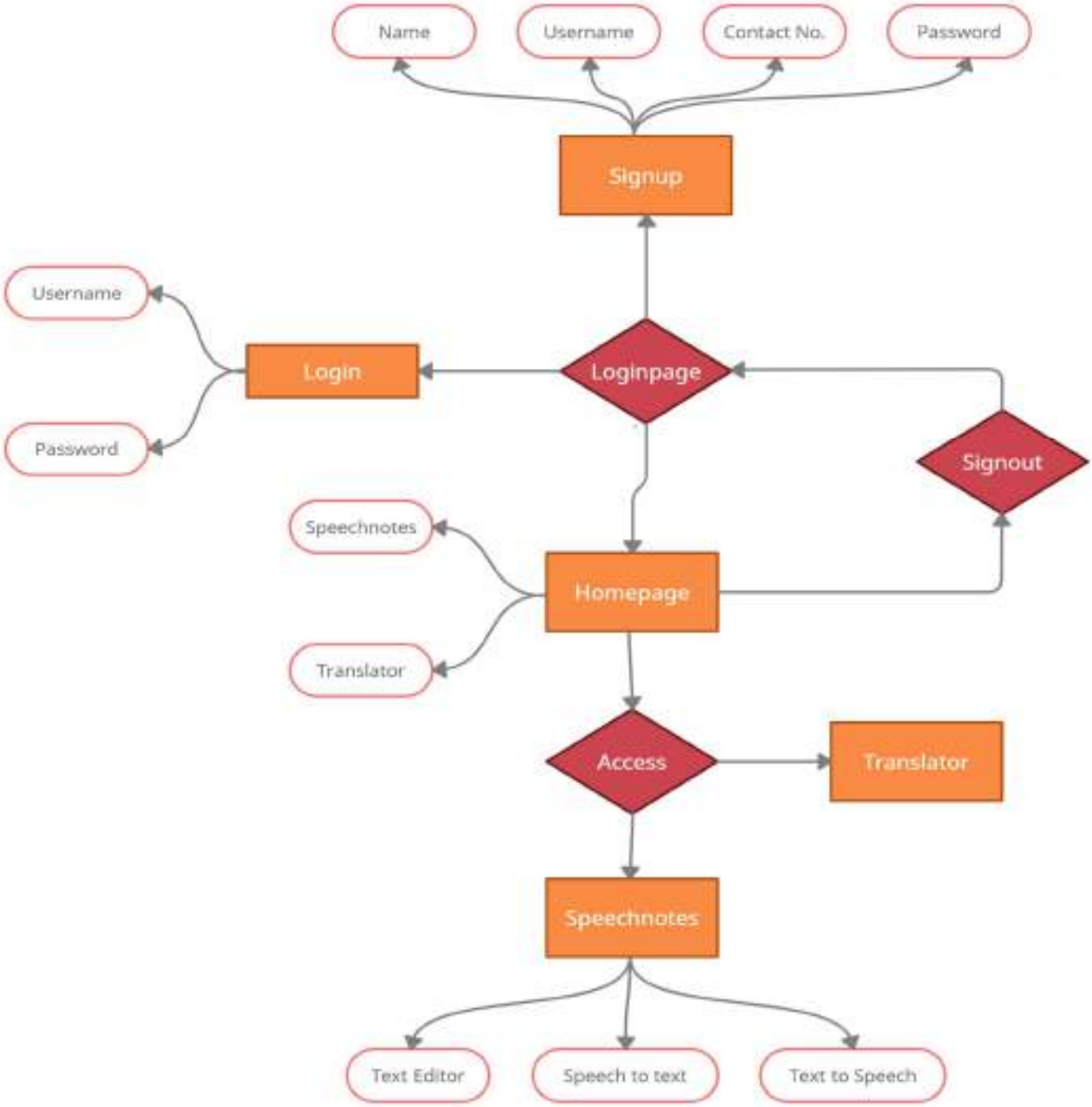

Fig 6.1 Block diagram

Chapter 7

E-R Diagram

A database management system (or DBMS) is essentially nothing more than a computerized data-keeping system. Users of the system are given facilities to perform several kinds of operations on such a system for either manipulation of the data in the database or the management of the database structure itself. E-R model stands for an Entity-Relationship model. It is a high-level data model. · It develops a conceptual design for the database. It also develops a very. The Below E-R Model is the representation of Speech Notes (Speech to Text Converter).

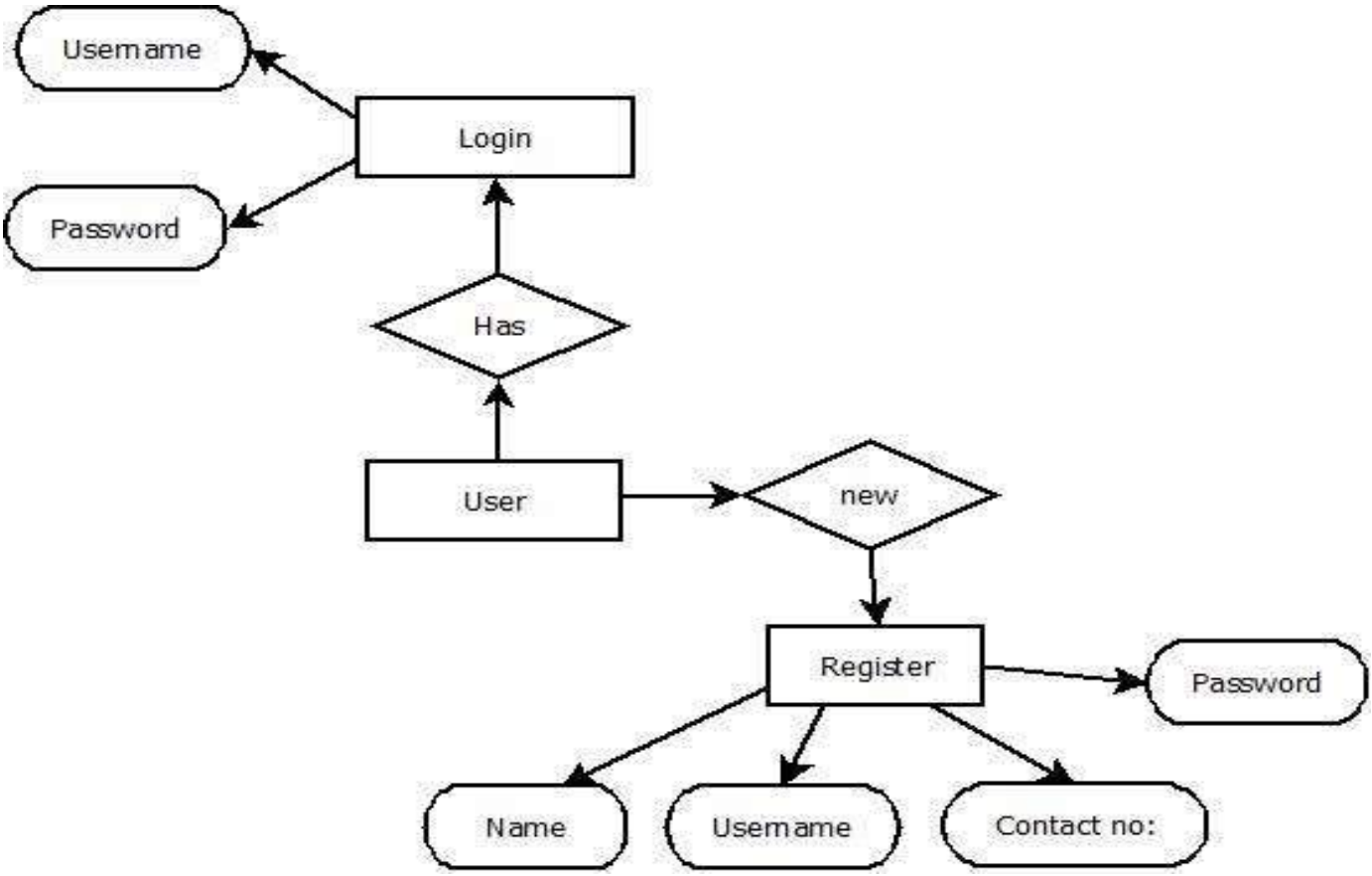

Fig 7.1 ER Model

Chapter 8

Implementation:

The following is the implementation of our project:

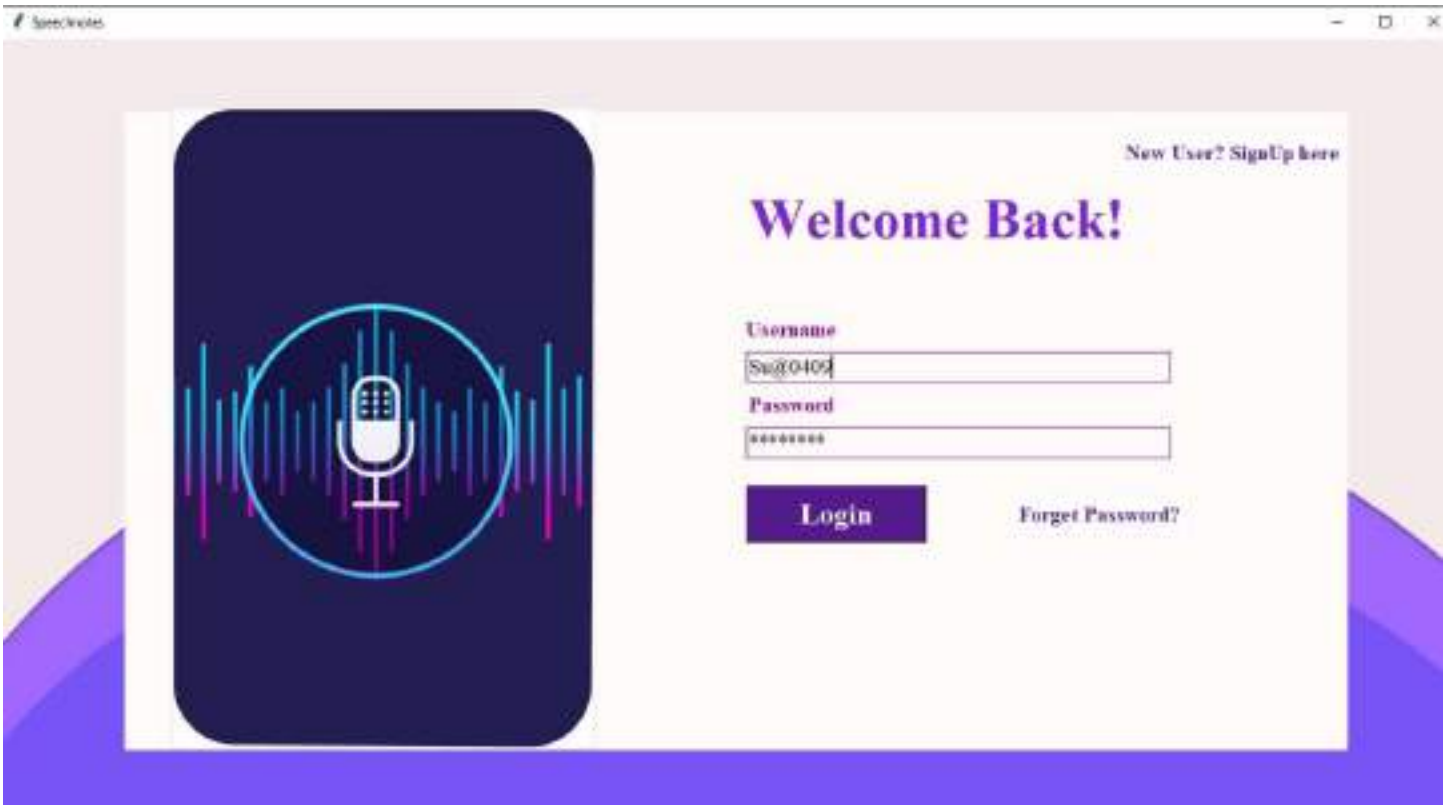

Figure 8.1 Login Page

Authorized Users can use the Software through the login page by using their Username and password with that it also has a Forget password page if user forgets its password, they can change it by adding their Contact number. Also this system is validate for the user.

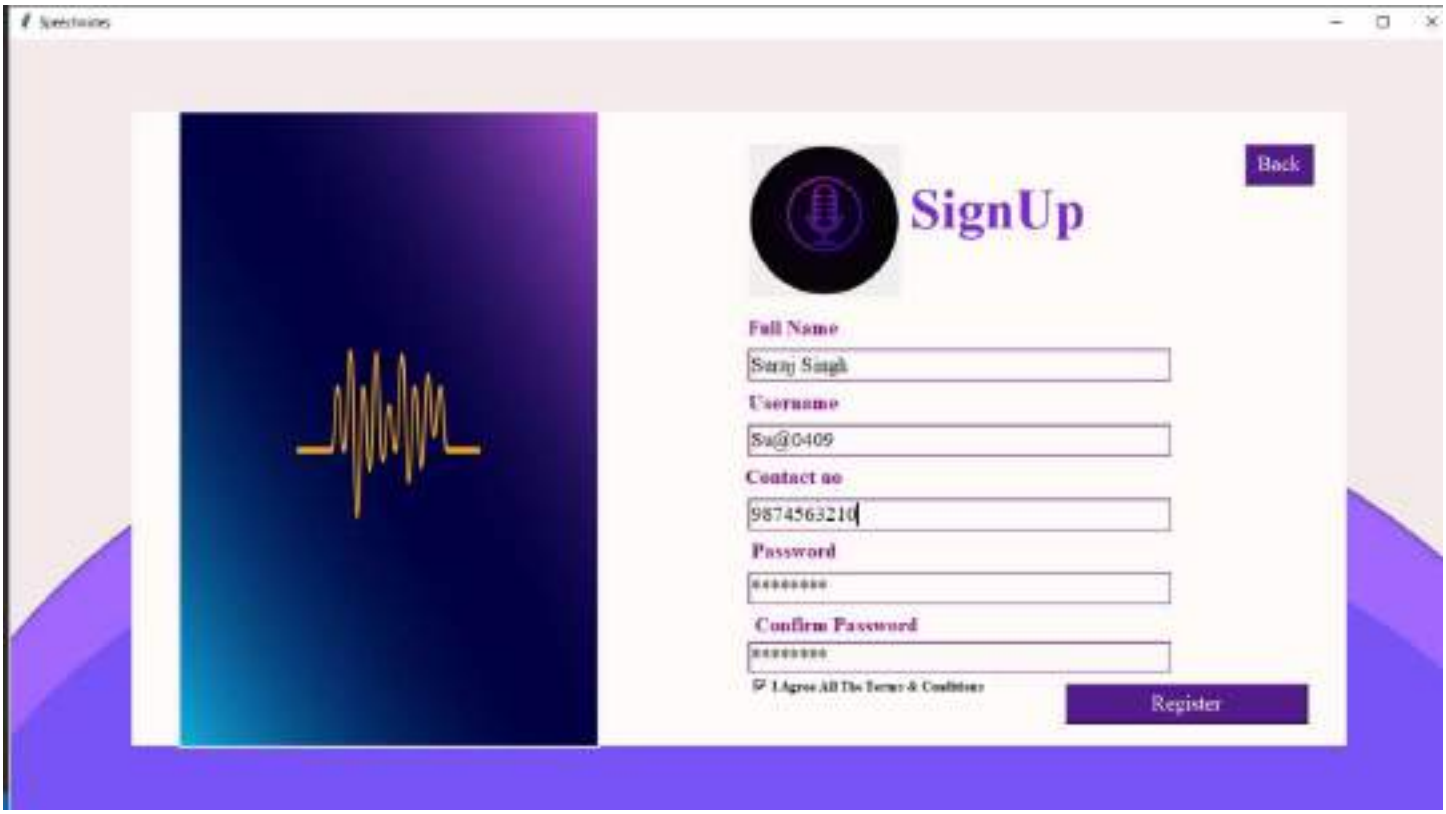

Figure 8.2 Signup Page

Users can get themselves enroll themselves in the Software by adding their details and thus get registered with that this system is validated for the user that means user has to fill all the details present in it.

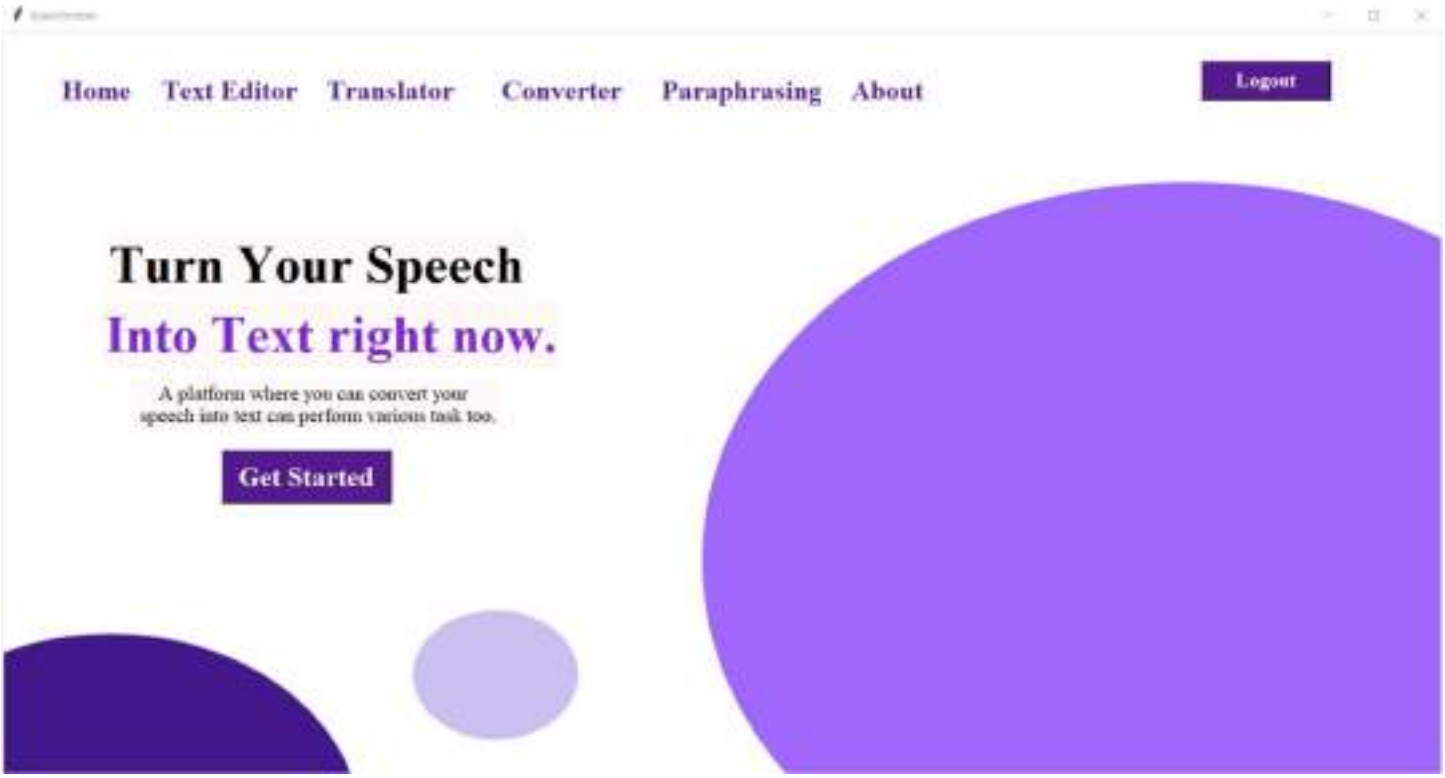

Figure 8.3 Homepage

This the Homepage of the application with Navigation options namely Home, Text Editor, translator, Paraphrasing, Convertor and logout.

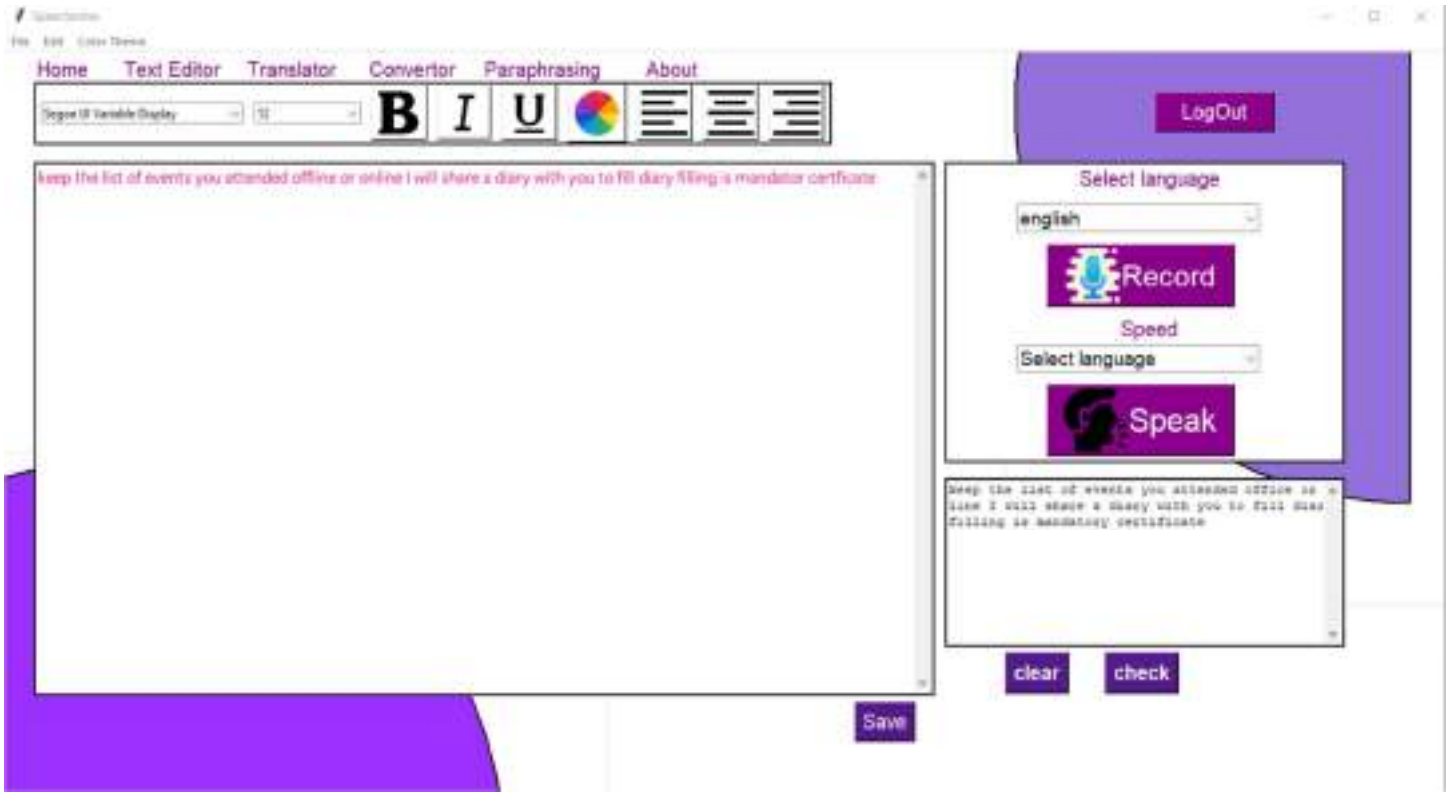

Figure 8.4 Text Editor

This is a text editor interface where user can able to do various Speech to text and text to speech in various languages as well as they can prepare notes in it and save in it as PDF format it also has a feature called as Spell Checker to check the grammar and spelling of the written text.

Figure 8.5 Text Editor

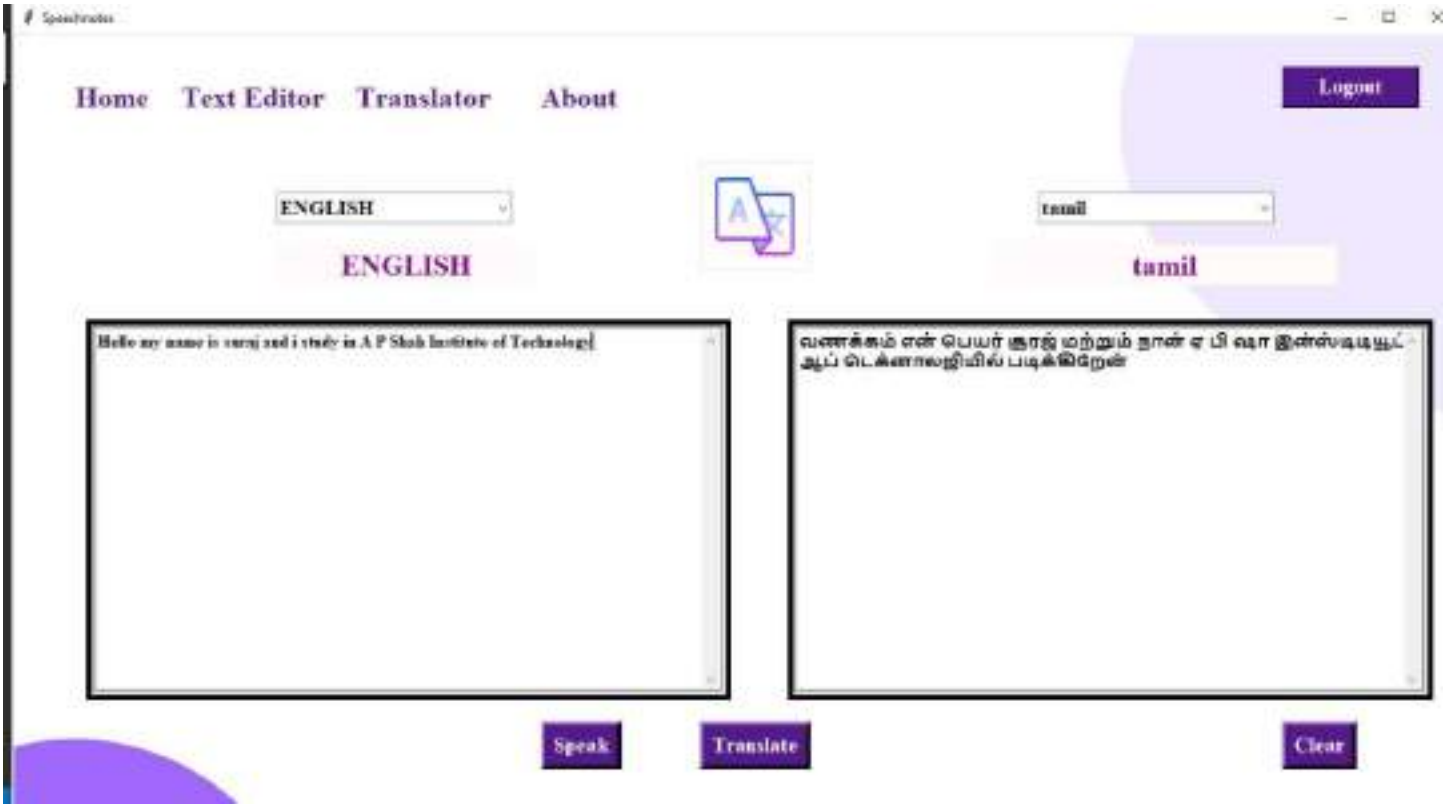

Figure 8.6 Translator

Users can translate their speech to text and text to speech using Translator page.

Figure 8.7 audio or video converter

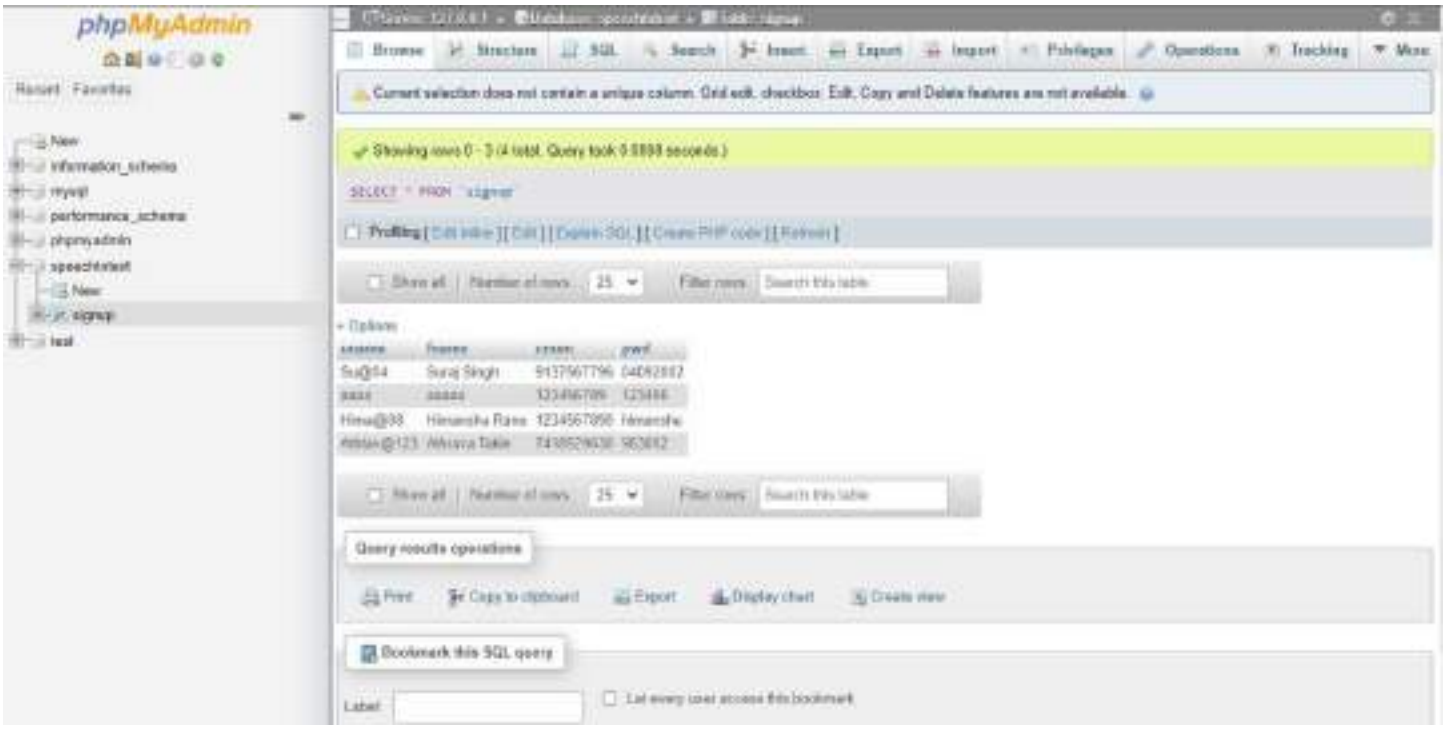

fig 8.8 Relational Database

Chapter 9

Project Scheduling

	Group Member	Time duration	Work to be done
	Suraj Singh Himanshu Rane Atharva Takle Yogesh Kumbhar	20/01/2022 to 05/02/2022	Implementing of Login/Register/Forgot Password functionality & Testing of 1st module
		07/02/2022 to 28/02/2022	Implementing of Home page/ Text Editor/Translator Functionality & Testing for the same modules
		01/03/2022 to 15/03/2022	Implementing of Speech to Text / multiple language functionality & Testing for the same
		17/03/2022 to 01/04/2022	Implementing of Audio or Video to text/ Paraphrasing / accent functionality and beautification and integration of all modules & Testing for same.

Chapter 10

Conclusion:

Our project is only a humble venture to satisfy the needs of the user. The main aim of the project is to create a user-friendly software to create notes using speech to text converter or text to speech converter. It facilitates the user to prepare notes according to his/her need time and availability. Several user friendly techniques like Editor and translator are added. Editor enhances the quality of text and translator enables user of any language to access the software. The notes created are available in pdf format. Audio or Video Recordings can be converted to text and saved in pdf format.

People living in different parts of the world speak different languages and each person on world has different accent. This problem too has been solved by this software. Users with different accents too can use the software. In our project we have overcome these problems and tried to create and lead to an errorless software. The software can be helpful for disable people and people with dyslexic. In future we are trying to add more features for the same.

References:

1) Wesley J Chun," Core Python Applications Programming", Third Edition, Pearson Publication.
2) E. Balguruswamy," Introduction to Computing and Problem Solving using Python", McGraw Hill Publication
3) Learn to Master Python, from Star EDU solutions, by Script Demi's.
4) https://www.geeksforgeeks.org/
5) https://www.tutorialspoint.com/
6) 3095 –Article Text- 5840-1-10-20210418, *"Turkish journal of computers and Mathematics Education, Vol.12 No.9 (2021), 411 -416".*
7) IRJET-V7I4224, *"International Research Journal of Engineering and Technology (IRJET), Volume: 07 Issue: 04 | Apr 2020".*
8) International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878,Volume-8, Issue-1C, May 2019
9) International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-6, April 2019
10) *IOSR Journal of Computer Engineering (IOSR-JCE) e-ISSN: 2278-0661,p-ISSN: 2278-8727, Volume 20, Issue 2, Ver. I (Mar.- Apr. 2018), PP 36-43*
11) International Journal of Trend in Research and Development, Volume 5(2), ISSN: 2394-9333
12) International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056 Volume: 07 Issue: 05 | May 2020 p-ISSN: 2395-0072
13) Dhanush Kumar S et.al; International Journal of Advance Research, Ideas and Innovations in Technology ISSN: 2454-132X Impact factor: 4.295 (Volume 4, Issue 2) Available online at: www.ijariit.co