SYNOPSIS

ON

"TEXT AND SPEECH TOOL"

Submitted in

Partial Fulfillment of requirements for the Award of Degree

of

Bachelor of Technology

In

Computer Science and Engineering

By

(Project Id: CS-2B-14)

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1. Introduction

Our project is educational purpose windows based software which is combination of many features like text to speech convertor, speech to text convertor, translator and dictionary. The main function of our project is text to speech and vice versa.

Speech is the most important part of communication between human beings. Though there are different means to express our thoughts and feeling, speech is considered as the main medium for communication. In our project the speech to text convertor feature have used speech recognition module in python based on AI technologies NLP , ML and deep learning to process voice data input and it's works with algorithms that perform linguistic and acoustic modeling. Acousting modeling is used to recognize phenones / phonetics in our speech to get the more significant part of speech, as words and sentences. The original form of speech is signal , and a signal is processed such that all the information present in the signal is converted in to the text format.

The second features of our project is text to speech convertor which is a type of assistive technology that reads digital text aloud. TTS can take words on a computer or other digital device and convert them into audio. This processes are done by bots. The bots reads a text file and associated pronunciations in its temporary database. The bot then read entire word to the user. The pronunciation of articles and basic words have been fed to the bot, the rest the word and complex ones are calculated and read accordingly.

The third feature of our project is translator which would help us translate a word, sentences or even a paragraph to another language. This feature is based on AI technologies, NLP, ML and deep learning to process the text data input and read that input and translate the given text to the another language and give the output according to the choice of language chosen by user.

The fourth feature of our project is dictionary made up with using pydictionary module. Under the hood function inside PyDictionary make API requests to different websites passing English Word as a parameter. For getting meaning of a word PyDictionary send API request to wordnet.princeton.edu which is a database of words and their meanings. For doing translation of English words to other languages, PyDictionary send API request to Google's translator. For getting synonyms / antonyms of a word ,PyDictionary send API request to synonyms.com which is a database of words and their respective synonyms or antonyms.

2. Project Objective

Our Project is windows based application used for educational purpose. which has a only one goal to strengthen relationships with people and make education easier.

As we know, our current generation spend maximum time of the day to the laptops and smartphones, It is not possible to a any person stay without a phones and laptop. whithout getting any eye strain.

We are developing our own converter of speech-to-text and text-to-speech with a translator and dictionary for the mild visual impairments or suffer from sensitivity to light and the vocally disturbed individuals.

The specific objectives are:

1. To enable the deaf and dumb to communicate and contribute to the growth of an organization through synthesized voice.
2. To enable the blind and elderly people enjoy a User-friendly computer interface.
3. To create modern technology appreciation and awareness by computer operators.
4. To implement an isolated whole word speech synthesizer that is capable of converting text and responding with speech.
5. To prevent eye strain, and user can sit and listen comfortably
6. To help in improving spelling, reading, writing skills.

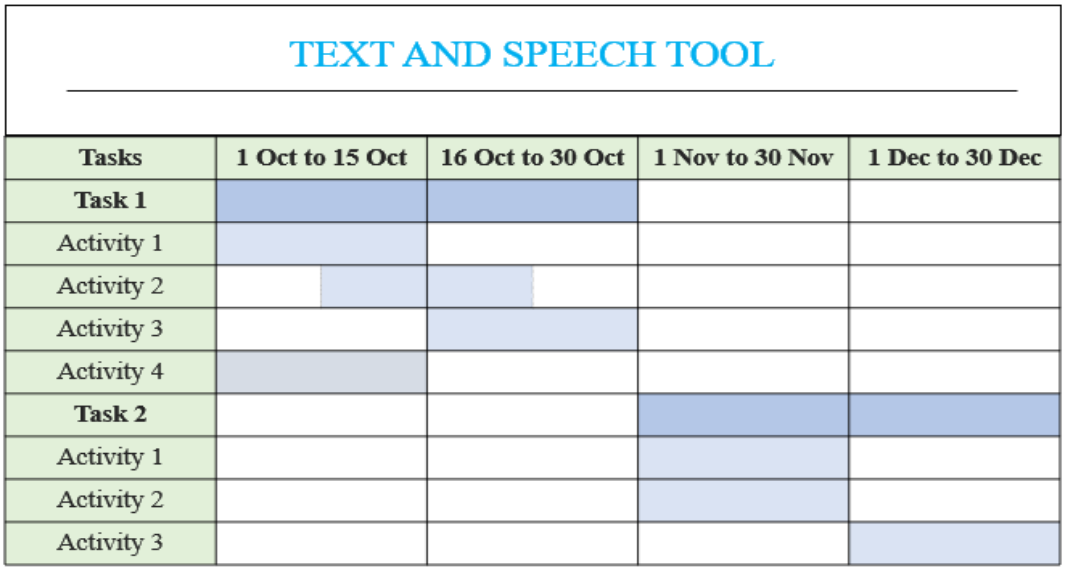
3. Feasibility Study:

Operational feasibility :- The software would be very easy to use and is designed only to help the people especially, the ones who cannot speak and also those who are visually challenged. This software would be a great help to them to live a normal life.

Economic feasibility :- Economic justification includes abroad range of concerns that includes cost benefit analysis. This system will be developed and operated in the existing hardware and software infrastructure. Hence there is no need of procuring additional hardware and software for the proposed system. The proposed will give the information within minutes, hence the performance is improved. Economic feasibility is checked by whether the financial benefits are exceeds the cost. This system uses only the Open source

software which is economically feasible. The proposed system will minimize the time and efforts involved in processing, hence it is economically feasible.

Technical feasibility :- This software only requires the use of python which is already widespread and used. Youtube which is used by billions of users has some parts of it implemented using python. So the only technology required in this project is already available and familiar. Hence, this software is technologically feasible

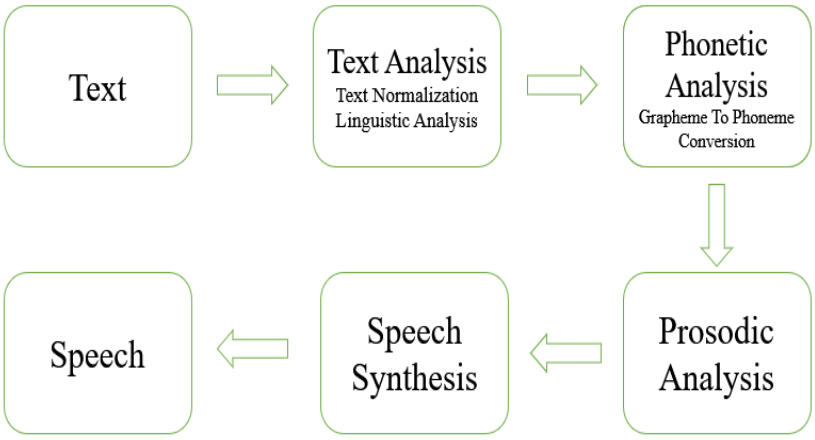


4. Methodology/ Planning of work

Our project is combination of four packages which are text to speech, speech to text, translator and dictionary.

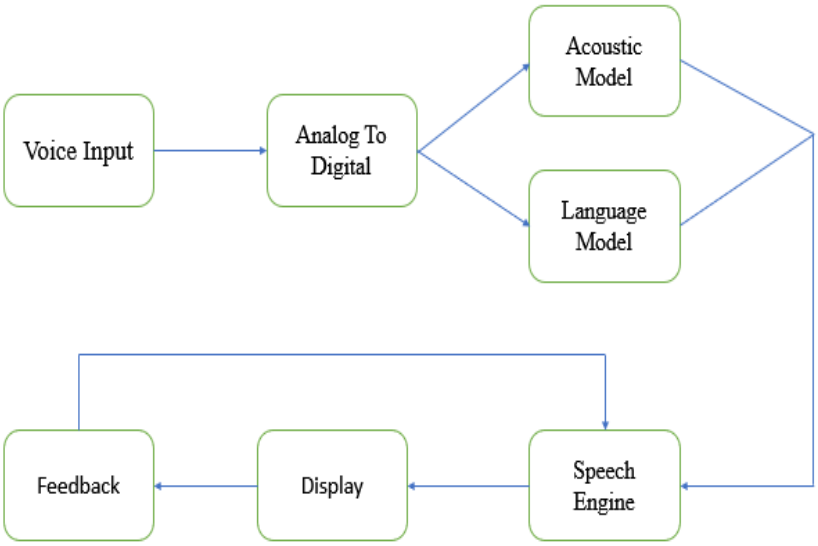
Steps for text to speech:-

1- Import libraries (gtts,tkinter,playsond)
2- Initializing window Using tkinter module
3- Create function to convert text to speech
4- Create function to exit
5- Create function to reset



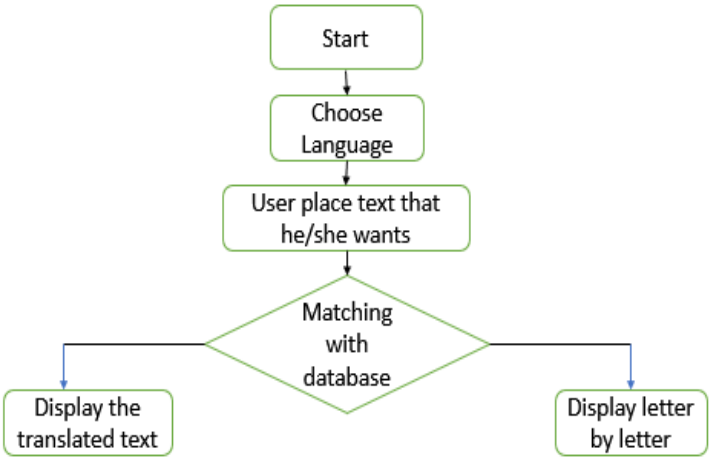
Steps for speech to text :-

1- Import libraries (speech_recoginition)
2- Initializing window using tkinter module
3- Create backend function for speak and record function



Steps for translator :-

1- Import module (googletrans)
2- Adding language to the project
3- Creating window using tkinter module
4- Create backend translate function

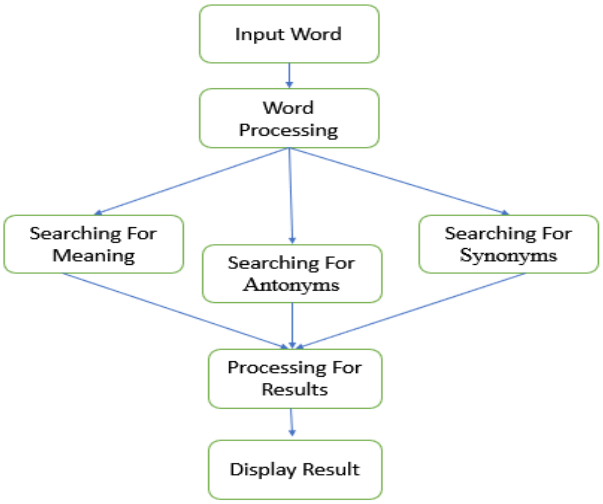


Steps for dictionary :-

1- Import module (pydictionary)

2- Create window using tkinter module

3- Create backend function for dictionary



5. Tools/Technology Used:

5.1 Hardware Requirements

Processor - i3

Hard Disk Space - 5Gb

Ram - 2Gb

5.2 Software Requirements

Python 3.10

Visual Studio Code

Windows 7/8/10/11

6. References:

https://www.geeksforgeeks.org/convert-text-speech-python/

https://www.geeksforgeeks.org/text-to-speech-gui-convertor-using-tkinter-in-python/

https://www.geeksforgeeks.org/python-gui-tkinter/

https://data-flair.training/blogs/python-speech-to-text-and-text-to-speech/

https://techvidvan.com/tutorials/python-language-translator/

https://github.com/

https://www.codewithharry.com/videos/python-gui-tkinter-hindi-0/