"Text To Speech Converter & Voice Recorder"

- **Problem Statement:**

Voice recorders are commonly used in various domains such as business, education, healthcare, and entertainment. The problem statement is to develop an application using MATLAB that will enable users to record their voices and convert them into text using a speech-to-text converter. Additionally, the application should also contain a voice changer feature which will enable altering the pitch, tone, and volume of the recorded voice. The goal of this project is to develop an efficient text-to-speech and voice recorder using MATLAB and make it easier for people to record and edit their voices, as well as to recognize and convert speech to text.

- **Introduction:**

MATLAB is a powerful scientific computing platform used to analyze and visualize large datasets. It can also be used to develop text to speech and audio recording applications. MATLAB provides a range of tools to easily create applications for text to speech conversion and audio recording. Text to speech conversion involves transforming written text into speech with a computer voice. Audio recording involves recording one or more audio sources and storing them in a file. This can be used to create voice memos, audio recordings for podcasts, or soundtracks. The MATLAB environment includes a programming language and a built-in audio processing library. With a few lines of code, you can create a program that will convert any text into an audio file.

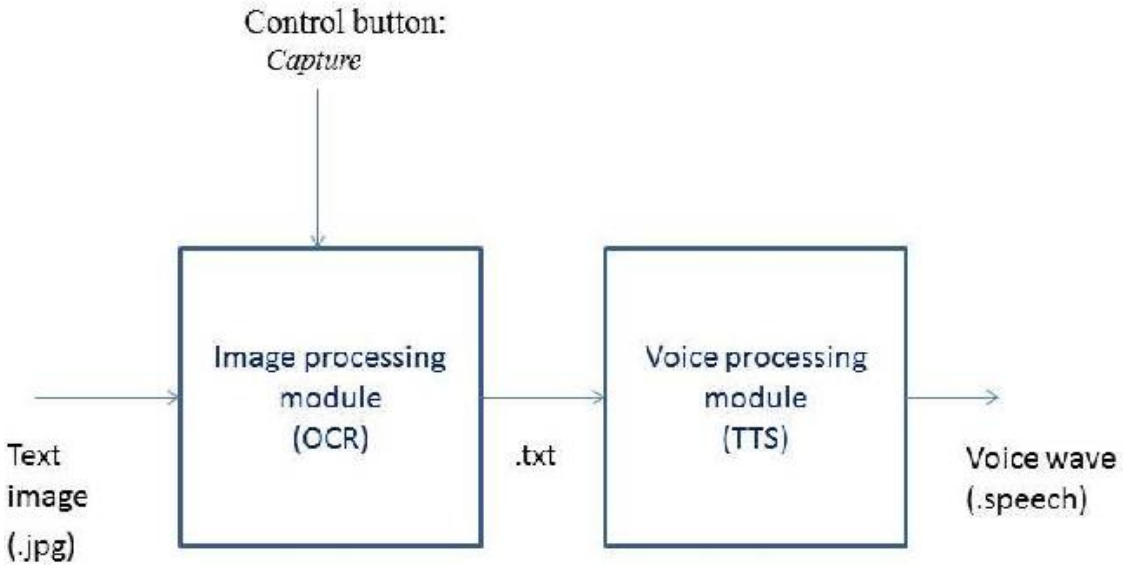
- **Methodology:**

The main idea of this project is **Optical Character recognition** which is used to convert text character into the audio signal. The text is preprocessed and then used for recognition by segmenting each character. Segmentation is followed by extraction of the letter and resizing of the file containing the text. This Text file is then converted into the audio signal. MATLAB15 will be used for all these processes.

- **Software Used: "** MATLAB R2015a".

- **Programming Language Used: "**MATLAB- programming language"**.**

➢ **Libraries Used: NET.addAssembly**



Voice Recorder Description:

A voice recorder in MATLAB is a useful tool for recording audio data, such as speech, music, or other sound signals. It enables users to capture, process, store and playback audio data within the MATLAB environment. It includes components and functions for recording, plotting, and analyzing audio data. The user can easily change the parameters of the sound waveform, and adjust the levels of input and output. It also provides tools and methods for noise reduction, equalization, and other signal processing.

This versatile tool is beneficial in a wide range of applications, including engineering, audio processing, research, and even hobbyists.

- **Applications:**

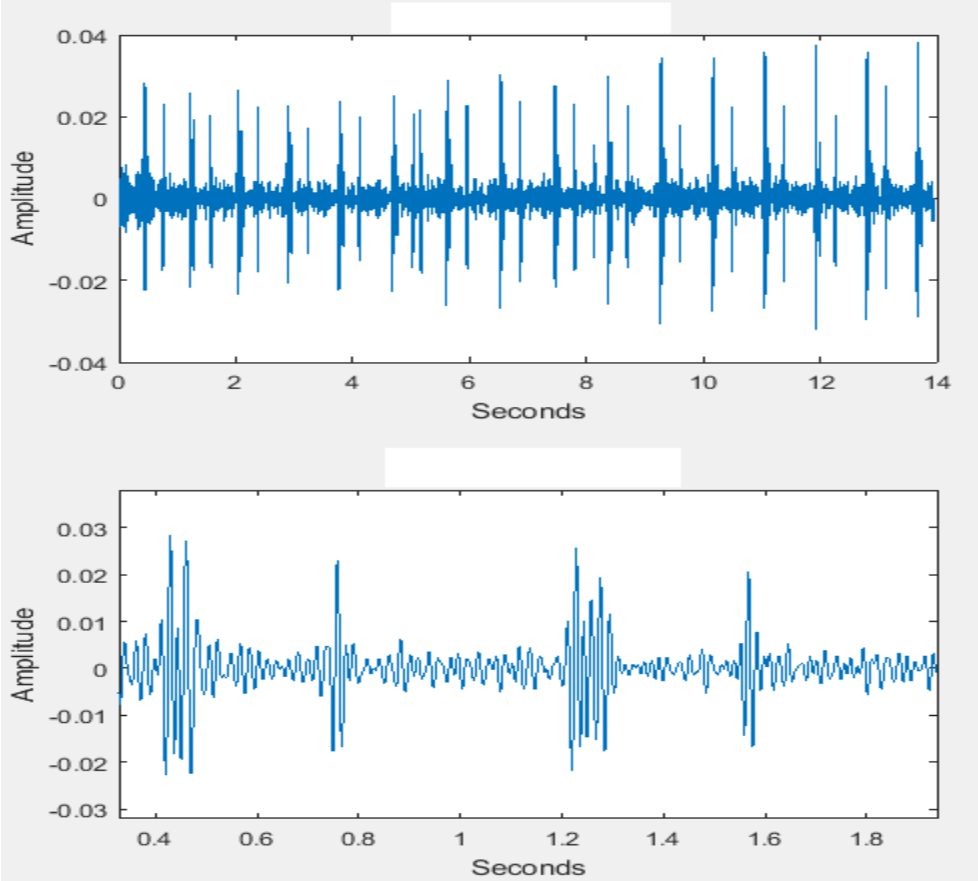
1. People with visual and reading impairments were the early adopters of TTS. The Proposed system is cost-efficient and helps the visually impaired person to hear the text.
2. TTS is very helpful for kids and adults who struggle with reading.
3. TTS eases the internet experience for the 1 out of 5 people who have dyslexia, low literacy readers and others with learning disabilities by removing the stress of reading and presenting information in an optimal format.
4. TTS works with nearly every personal digital device, including computers, smartphones, and tablets. All kinds of text files can be read aloud, including Word and Pages documents.
5. And the recorded voice can be heard later on whenever the user is free.

- **Conclusion/Expected Outcome:**

After defining a string and the rate/speed of speech, the program should read out the given string aloud record that audio in relevant file and plot the voice signals.

The expected outcome of a text to speech converter is an accurate, natural-sounding voice generated from text. This technology can help people who are visually impaired or have difficulty reading, and it can also be used to provide a more efficient and convenient way to consume information and text-based content.

- **Output:**



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