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Title: Text to Speech and Speech to Text Converter

Problem Statement

Create a Python project that enables text-to-speech and speech-to-text functionalities. Utilize libraries like pyttsx3 for text-to-speech conversion and Speech Recognition for speech-to-text. Design a user-friendly interface where users can input text for conversion to speech or speak into the microphone for text recognition.

Objective

i. Text-to-Speech Module Implementation: Focus on creating a robust and efficient text-to-speech module using the pyttsx3 library to ensure that the converted audio maintains a natural and easily understandable quality.

ii. Speech-to-Text Functionality: Prioritize the development of an accurate speech-to-text system using the Speech Recognition library, ensuring that users can effectively communicate with the system through spoken words, thereby enhancing accessibility and usability.

iii. User Interface Design: Emphasize the importance of an intuitive user interface, featuring input text boxes for text-to-speech conversion and a microphone input for speech-to-text recognition. A well-designed interface contributes significantly to the overall user experience and ease of interaction with the system.

Inputs

The input for the text-to-speech module is typically a text string that the user wants to convert into speech. This could be entered through a user interface.

The input for the speech-to-text module is an audio signal captured from a microphone. Users speak into the microphone that need to be converted into text.

Outputs

The output for the text-to-speech module is a real-time audio stream that represents the spoken version of the input text. This audio output can be played through speakers, making it accessible for the user.

The output for the speech-to-text module is a text string that represents the recognized speech from the input audio. This text can be further processed, displayed on a user interface.