



Basaveshwar Engineering College

Department of Artificial Intelligence and Machine Learning

WordBoom

Real-Time Speech Recognition + Translation Web App

Abstract

In today's multilingual world, seamless communication enabling inclusive and efficient communication across languages is essential. "WordBoom" - a real-time speech-to-text and translation web app is essential for inclusive and efficient communication in various situations.

Introduction

Language barriers often hinder effective communication in diverse environments. "WordBoom" addresses this issue by providing a real-time speech-to-text and translation tool accessible via a simple web interface. The app promotes language inclusivity by supporting major Indian and international languages.

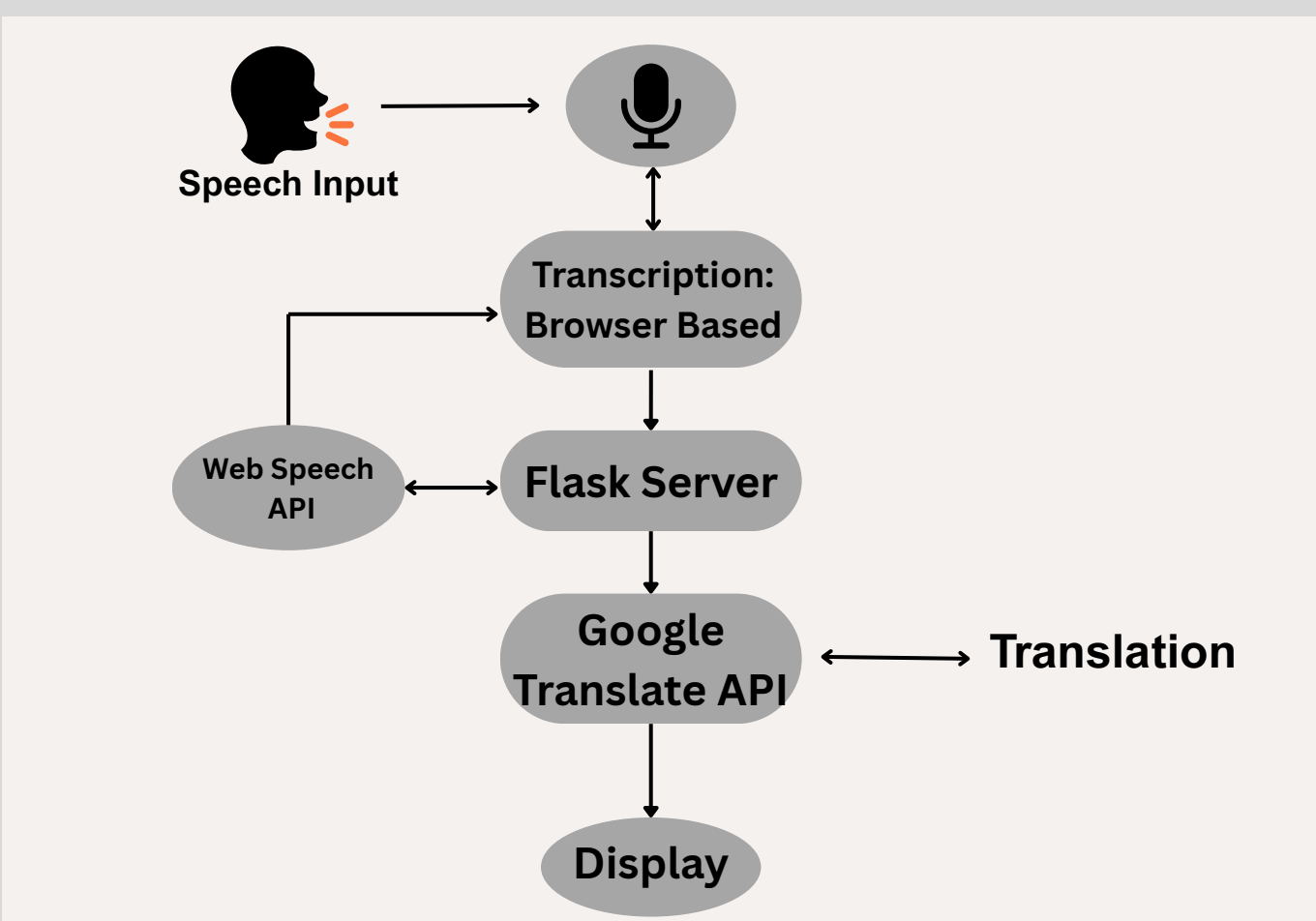
Tools & Technologies

- Frontend: HTML, CSS, JavaScript
- Backend: Flask (Python)
- APIs: Web Speech API (Speech Recognition), Google Translate API
- Others: Flask-CORS, Googletrans

Objectives

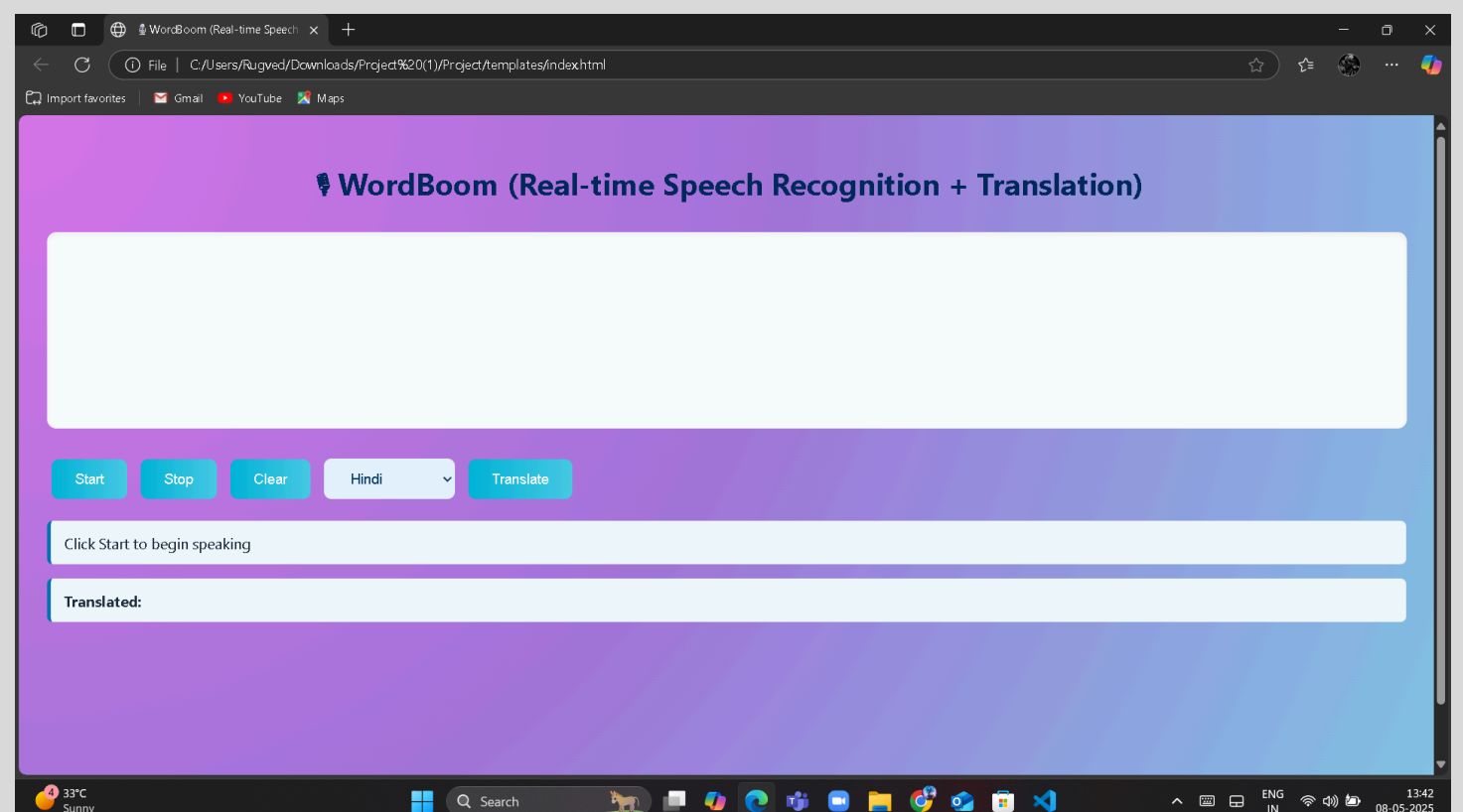
- Enable real-time speech recognition in English.
- Provide instant translation to multiple languages (e.g., Hindi, Tamil, Spanish).
- Create a user-friendly, browser-based interface.
- Support cross-language communication without any additional plugins.

Methodology



Results

- Seamless speech-to-text performance using Web Speech API.
- Accurate multi-language translation using Google Translate.
- Tested for various dialects and phrases with responsive UI.
- Successfully deployed locally with potential for cloud expansion.



Conclusion

"WordBoom" delivers an intuitive experience for multilingual speech translation, enabling inclusive and efficient communication. With further improvements, it can serve as an accessibility tool for the speech-impaired and language learners.

Future Work

- Integrate with cloud services for scalability.
- Support speech output for translated text.
- Extend to a mobile app for wider accessibility.
- Add speaker identification for multi-speaker scenarios.

Guided By..

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