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TEXT TO SPEECH CONVERTER USING JAVASCRIPT

Sachin S, Naveen Kumar
Students, Department of Computer Applications, School of Computing Sciences, VISTAS, Chennai.
Fathima Rumaiza SM
Guide, Department of Computer Applications, School of Computing Sciences, VISTAS, Chennai.

ABSTRACT
The Text To Speech Converter is a web-based application designed to transform written text into audible speech using modern browser technologies. The primary objective of this project is to enhance accessibility and user interaction by enabling users to listen to textual content instead of reading it manually.This system is developed using HTML, CSS, and JavaScript, ensuring a lightweight and responsive user interface. The application leverages the built-in Web Speech API, specifically the Speech Synthesis feature, to convert input text into natural-sounding speech. Users can enter any text into the provided textarea, select from a variety of available voices, and play the audio output with a single click.
The interface is designed with a clean and modern layout, featuring a gradient background, responsive elements, and intuitive controls. The voice selection dropdown dynamically loads all available system voices, allowing users to customize their listening experience based on language, accent, or gender preferences.This project demonstrates the practical implementation of client-side scripting and browser APIs without requiring any backend or database integration. It is highly useful for applications such as assistive technology for visually impaired users, language learning tools, content consumption, and productivity enhancement. In conclusion, the Text To Speech Converter is an efficient, user-friendly, and accessible solution that showcases the power of web technologies in creating interactive and inclusive digital tools

I. INTRODUCTION

In the modern digital era, the way users interact with technology has evolved significantly. Traditional methods of reading and writing are gradually being complemented by more interactive and accessible solutions. One such innovation is Text-to-Speech (TTS) technology, which enables the conversion of written text into spoken words. This technology plays a vital role in improving accessibility, enhancing user experience, and supporting individuals with visual impairments or reading difficulties
The Text To Speech Converter is a web-based application designed to provide an easy and efficient way to transform textual content into audible speech. The system allows users to input any form of text and listen to it through a simple and user-friendly interface. With the increasing demand for multitasking and hands-free operations, TTS systems have gained popularity in various domains such as education, entertainment, customer service, and assistive technologies
This project is developed using fundamental web technologies including HTML (HyperText Markup Language) for structuring the webpage, CSS (Cascading Style Sheets) for designing and styling the interface, and JavaScript for implementing functionality and interactivity. The core functionality of this system relies on the Web Speech API, a powerful browser-based API that enables speech synthesis directly within web applications without requiring external software or complex backend integration.
In conclusion, the Text To Speech Converter project is a practical demonstration of how web technologies can be used to create accessible, interactive, and efficient applications. It not only provides a useful tool for everyday use but also serves as a strong foundation for understanding browser APIs, user interface design, and client-side programming. This project highlights the growing importance of accessibility in technology and showcases how simple solutions can make a significant impact on users' lives

III. SYSTEM MODULES

A. User Interface Module (UI Module)

The User Interface Module is the front-end component of the system that allows users to interact with the application. It is developed using HTML and CSS to create a simple, clean, and responsive design

B. Text Input Processing Module

This module is responsible for capturing and processing the text entered by the user.

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C. Speech Synthesis Modul

The Speech Synthesis Module is the core component of the system that converts text into speech. It uses the Web Speech API, specifically the SpeechSynthesisUtterance object

D. Voice Selection Module

This module allows users to select different voices available in their system or browser, enabling customization

IV. EXISTING SYSTEM

Text-to-Speech (TTS) technology has been in use for many years and is widely implemented in various applications such as accessibility tools, virtual assistants, navigation systems, and educational software. Existing systems are designed to convert written text into spoken words using different techniques and technologies. These systems have played an important role in improving accessibility, especially for visually impaired users and individuals with reading difficulties. However, most of the existing systems are either complex, require installation, or depend heavily on external services

Some applications are built with advanced features but are not user-friendly for beginners. Others may require paid subscriptions to access premium voices and functionalities. Therefore, it is essential to study these systems to understand their working, advantages, and limitations before developing a simplified and efficient solution

V. DOMAIN EXPLANATION

The Text-to-Speech (TTS) domain is a part of the broader field of Human-Computer Interaction (HCI) and Artificial Intelligence (AI). It focuses on enabling computers to communicate with humans through spoken language by converting written text into audible speech. This domain plays a crucial role in making digital systems more interactive, user friendly, and accessible. With the rapid growth of digital content, there is an increasing need for technologies that allow users to consume information in multiple formats. Text-to-Speech systems address this need by transforming text into speech, allowing users to listen instead of reading. This is particularly beneficial for visually impaired individuals, elderly users, and people with reading difficulties. The Text To Speech Converter project falls under this domain and demonstrates how modern web technologies
can be used to implement speech synthesis in a simple and effective manner

VI. PROJECT VALUE

A Text-to-Speech Converter project is valuable because it converts written text into spoken words, helping users listen instead of read.
It improves accessibility for visually impaired people and supports learning through audio.
The project is useful in education, customer service, and assistive technology applications.
It enhances user experience with features like voice selection, speed control, and language support.
Overall, it demonstrates practical use of web technologies and speech synthesis in real-world applications.

VII. CONCLUSION

The Text To Speech Converter is a successful implementation of a modern web-based application that demonstrates the effective use of technology to solve real-world problems. The system provides a simple yet powerful solution for converting text into speech, making it accessible to a wide range of users

VIII. REFERENCES

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4) Visual Studio Code Documentation Used for understanding development environment setup and code editing features.
5) Eloquent JavaScript A comprehensive guide to learning JavaScript concepts and programming techniques.