Speech to Text App

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Abstract

The "Text to Speech" application is a user-friendly and privacy-focused web tool that transforms text input into spoken words using advanced text-to-speech technology. With a modern and responsive user interface built on HTML, CSS, and JavaScript, users can effortlessly enter text, click the "Speak" button, and hear their words come to life. The application also offers a convenient "Clear Text" option to reset the input. Ensuring data privacy and featuring a welcoming introduction screen, this application leverages a versatile tech stack, encompassing web development libraries, text-to-speech APIs, and possible server-side components. It represents a seamless fusion of cutting-edge technology and user-centered design, catering to a wide range of practical applications.

Abbreviations

HTML	(HyperText Markup Language)
CSS	(Cascaded Style Sheet)
API	(Application Programming Interface)

Introduction

The above app is a "Text to Speech" application that allows users to input text into a textarea, and upon clicking the "Speak" button, it converts the entered text into spoken words using text-to-speech technology. This application also features a "Clear Text" button to remove the content from the textarea and provides a user-friendly interface with visual feedback. It includes a welcome screen and ensures data privacy by not saving user input. Additionally, it employs responsive design principles for a seamless experience across various devices.

Tech Stack

The "Text to Speech" app employs a modern tech stack to provide its functionality:

- **HTML and CSS:** The front-end of the application is built using HTML for structuring the content and CSS for styling. These technologies ensure a visually appealing and responsive user interface.

- **JavaScript**: JavaScript is used to add interactivity to the app. It enables event handling, such as clicking buttons and dynamically updating the user interface based on user input.

- **Text-to-Speech API:** The app utilizes a text-to-speech API or library to convert the entered text into spoken words. These APIs leverage machine learning and natural language processing to generate human-like speech.

- **Version Control:** GitHub is used to collaborate on code and manage changes to the application.

- **Styling and Animations:** The app leverages CSS for styling and potentially CSS animation libraries for creating visually appealing animations.

Overall, this tech stack combines front-end web technologies, JavaScript interactivity, text-to-speech capabilities, and potentially back-end components to create a feature-rich "Text to Speech" application.

SpeechSynthesis API

The "Text to Speech" application harnesses the power of the SpeechSynthesis JavaScript API to facilitate text-to-speech conversion. This API is an integral part of modern web browsers and provides a straightforward way to generate human-like speech from textual content.

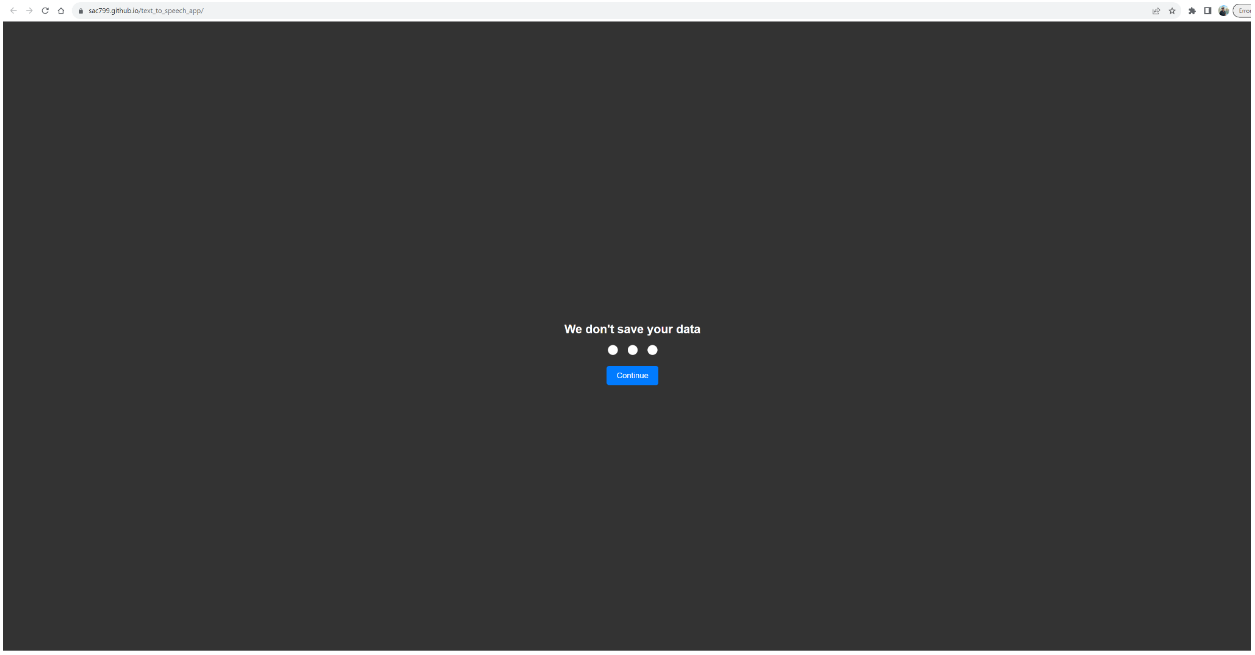
Key features and components of the SpeechSynthesis API include:

- Speech Synthesis Interface: The API exposes the SpeechSynthesis interface, which serves as the entry point for interacting with text-to-speech functionality. Developers can access properties and methods to control and customize speech output.
- Voice Selection: Users can typically choose from a range of available voices to personalize the speech experience. These voices can represent different accents, genders, and languages.
- Utterance Configuration: Developers can create SpeechSynthesisUtterance objects to configure various aspects of the speech, such as pitch, rate, volume, and text content. This allows for fine-tuning the speech output to suit specific preferences.
- Event Handling: The API provides event listeners for tracking the progress of speech synthesis. Developers can monitor events like start, end, pause, resume, and boundary to enhance the user experience.
- Pausing and Resuming: Users and developers can control the speech synthesis process by pausing and resuming speech output, enabling more interactive and flexible applications.
- Fallback Mechanisms: The API gracefully handles scenarios where specific voices or features may not be available on a user's device. This ensures a consistent user experience across different platforms.
- Cross-Browser Compatibility: SpeechSynthesis is supported by modern web browsers, making it a cross-platform solution for text-to-speech functionality.

In the "Text to Speech" application, this API plays a central role in transforming user-entered text into spoken words. It empowers developers to create an engaging and accessible user interface, allowing users to interact with content in a unique and inclusive way.

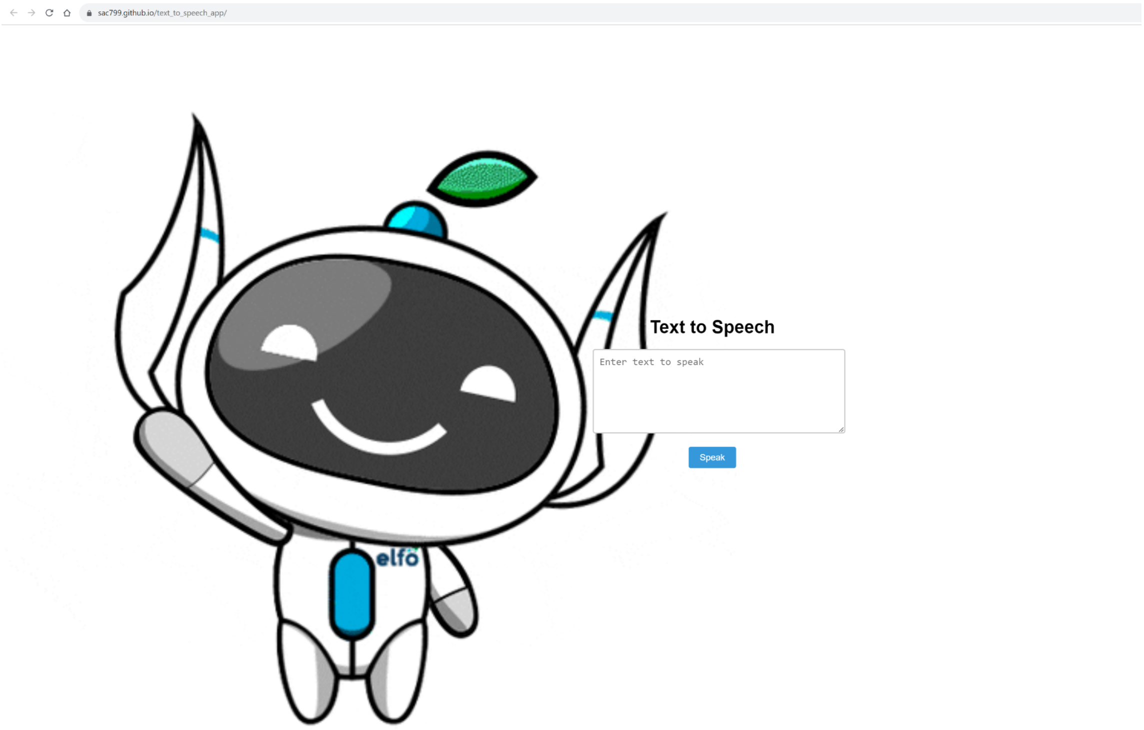
Appendix A- ScreenShots

1. Welcome Screen



We don't save your data

2. Home Screen



Appendix B- Application Link

https://sac799.github.io/text_to_speech_app/