

# Project Overview

## Vocalize

### 1. Introduction:

In today's digital world, accessibility remains a significant challenge for individuals with limited mobility. Many users struggle with traditional input methods, such as keyboards and mice, which can hinder their ability to interact with websites effectively. This project aims to develop a website with integrated voice recognition capabilities to facilitate hands-free interaction. By leveraging speech recognition technology, the website will enhance accessibility, improve user experience, and ensure inclusivity for people with disabilities.

### 2. Objective:

The primary objective of this project is to design and develop a voice-enabled website that allows users to navigate, interact, and access information using voice commands. The project seeks to:

- Enhance web accessibility for individuals with mobility impairments.
- Implement reliable voice recognition for seamless interaction.
- Provide a user-friendly and intuitive interface.
- Ensure compatibility across different devices and browsers.
- Conduct usability testing to refine the system for optimal performance.

### 3. Applications:

A voice-enabled website has numerous applications across various domains, including:

- **Assistive Technology:** Aiding individuals with disabilities by providing hands-free web navigation.
- **E-Commerce:** Allowing users to browse and shop online using voice commands.
- **Healthcare:** Enabling patients to access medical information and schedule appointments without manual input.
- **Education:** Supporting students with disabilities in accessing online learning resources effortlessly.
- **Smart Home Control:** Integrating with smart home devices for hands-free automation.

### 4. Tools and Technology requirements:

To develop a functional voice-enabled website, the following tools and technologies will be utilized:

- **Programming Languages:** HTML, CSS, JavaScript
- **Frameworks and Libraries:**
  - React.js for dynamic front-end development
  - Web Speech API for voice recognition

- Speech Synthesis API for text-to-speech functionalities
- **Backend Technologies:**
  - Node.js with Express.js for server-side operations
  - Database Management: MongoDB or Firebase

## **REFERENCES:**

- [1] Google Speech-to-Text API: <https://cloud.google.com/speech-to-text>
- [2] Web Accessibility Guidelines: <https://www.w3.org/WAI/standards-guidelines/wcag/>
- [3] Inclusive Web Design Principles: <https://www.a11yproject.com/>

### **Submitted By:**

**Kratika Jain (0827IT221079)**  
**Pratham Bothra (0827IT221112)**  
**Saloni Jain (0827IT221128)**  
**Urvashi Yadav (0827IT221147)**

### **Project Co-ordinator:**

**Prof. Reshma Shivhare**

### **Guided by:**

**Prof. Shahida Khan**