

# Beyond QWERTY: Voice-Enabled Bank Form Application

BY:

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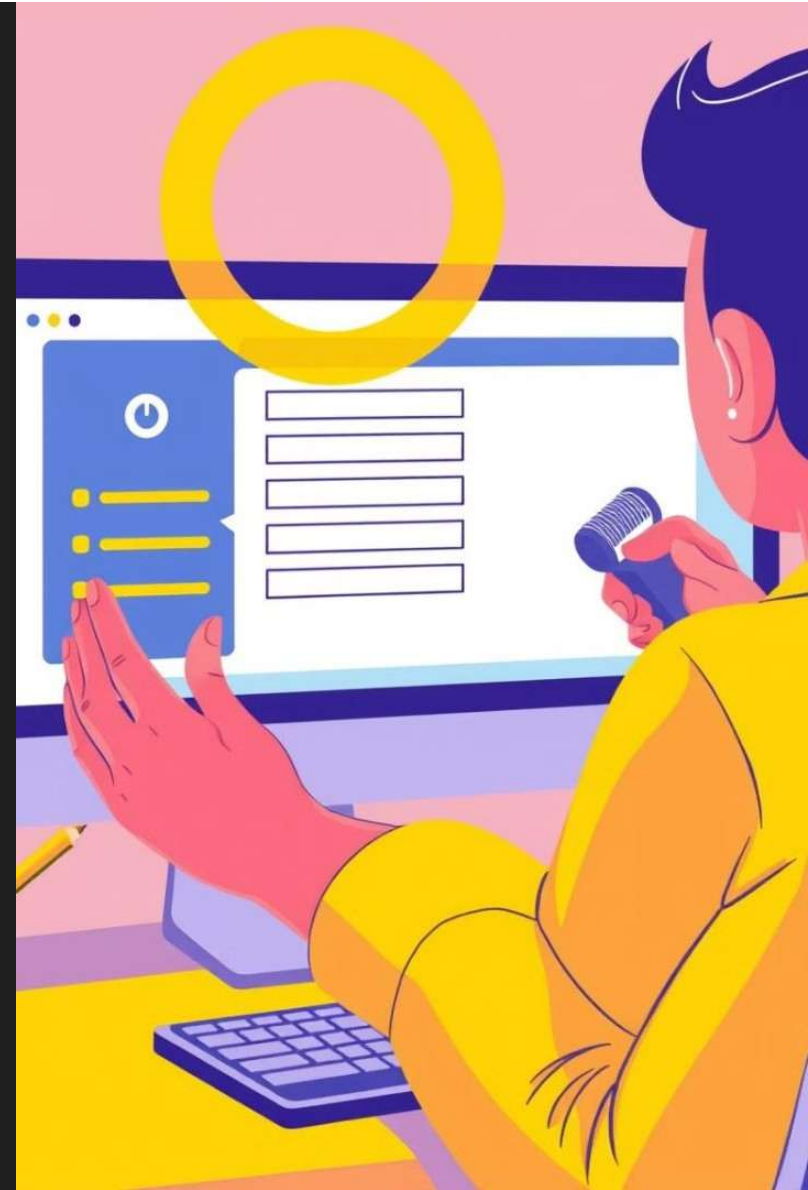
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# Problem Statement



## Time-Consuming

Manual form filling is slow and inefficient.



## Error-Prone

Manual data entry is prone to errors, causing inaccuracies and wasted time.



## Accessibility Barriers

Typing challenges hinder access to forms and services for people with disabilities.

# Solution Overview



## Voice Command Form Filling

Users can fill out forms by voice, reducing typing and errors.



## Reduces Errors and Language Barriers

Voice recognition enables natural input, reducing errors and increasing accessibility.



## Automatic PDF Generation

The system auto-generates PDFs, ensuring efficient and organized output.

# Key Features

## Secure Authentication

A robust authentication system ensures the safety and privacy of user data.

## Speech Recognition Engine

A powerful engine that accurately converts spoken words into text.

## Natural Language Processing

Interprets and understands the meaning of spoken language, allowing for natural interactions.



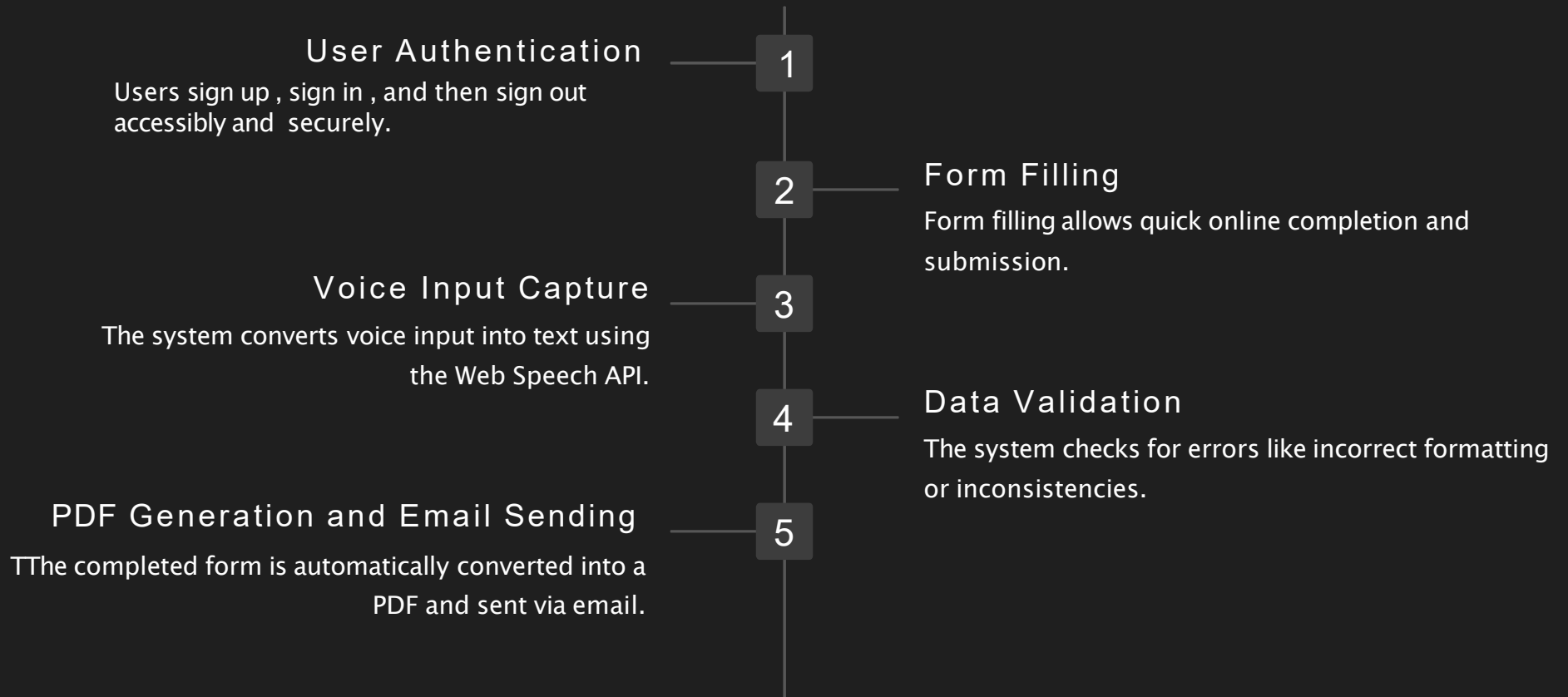
## Real-Time Form Validation

Ensures data accuracy by verifying the information as it is being entered.

## Automated PDF Generation

Generates PDF files from filled forms, eliminating manual formatting and reducing errors.

# Workflow Structure



# Technical Implementation

## 1. Frontend Technologies

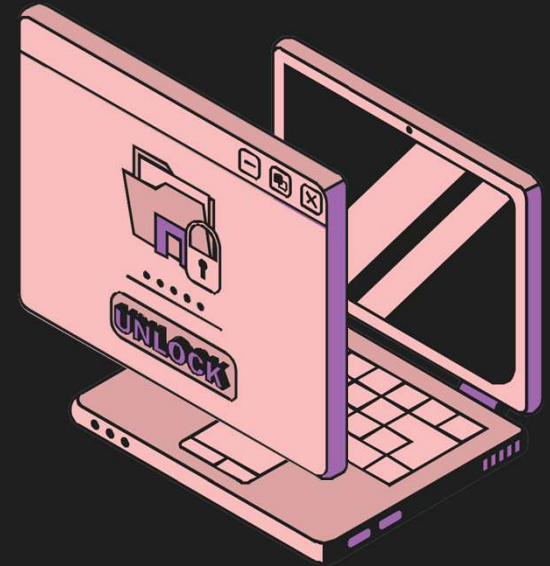
HTML, CSS, and JavaScript create the UI and handle interactions.

## 2. Backend Technologies

Flask (Python) handles backend processing and data management.

## 3. Database

Supabase (cloud postgres) stores user data, form templates, and submissions securely.



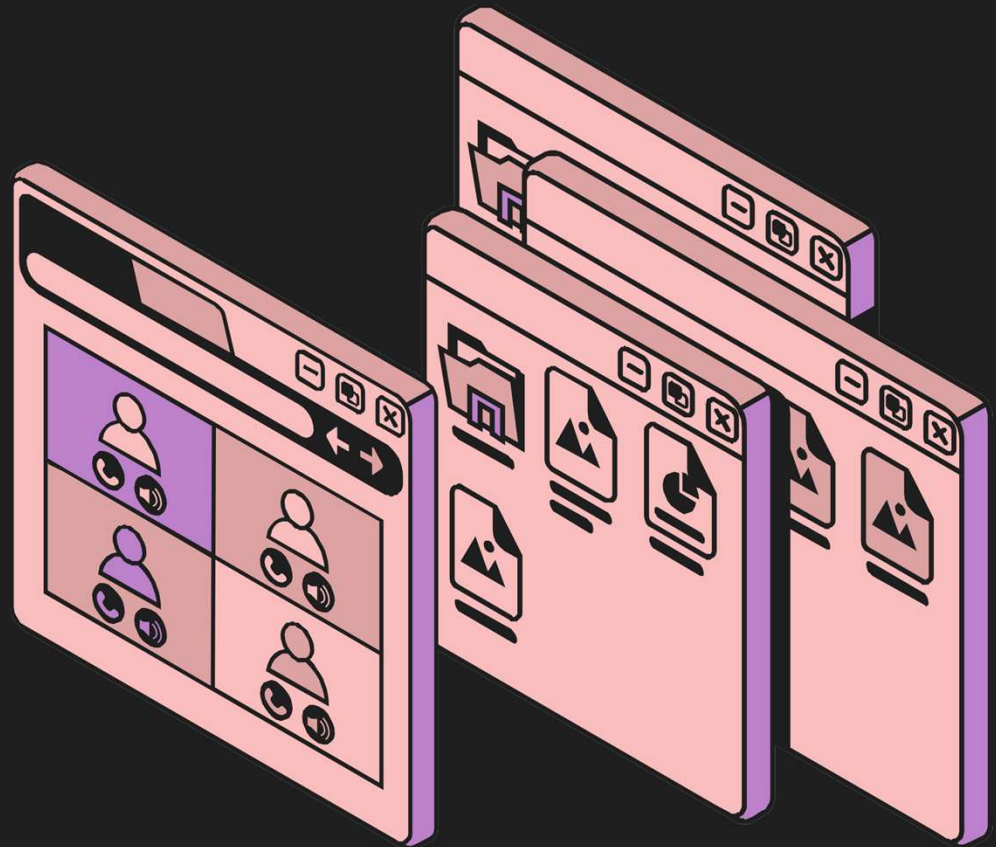
# Technical Implementation

## 4. API

The Web Speech API converts voice input into text.

## 5. Android Application

A PWA builder is used to create the Android application.





# User Authentication Process

## 1 Login

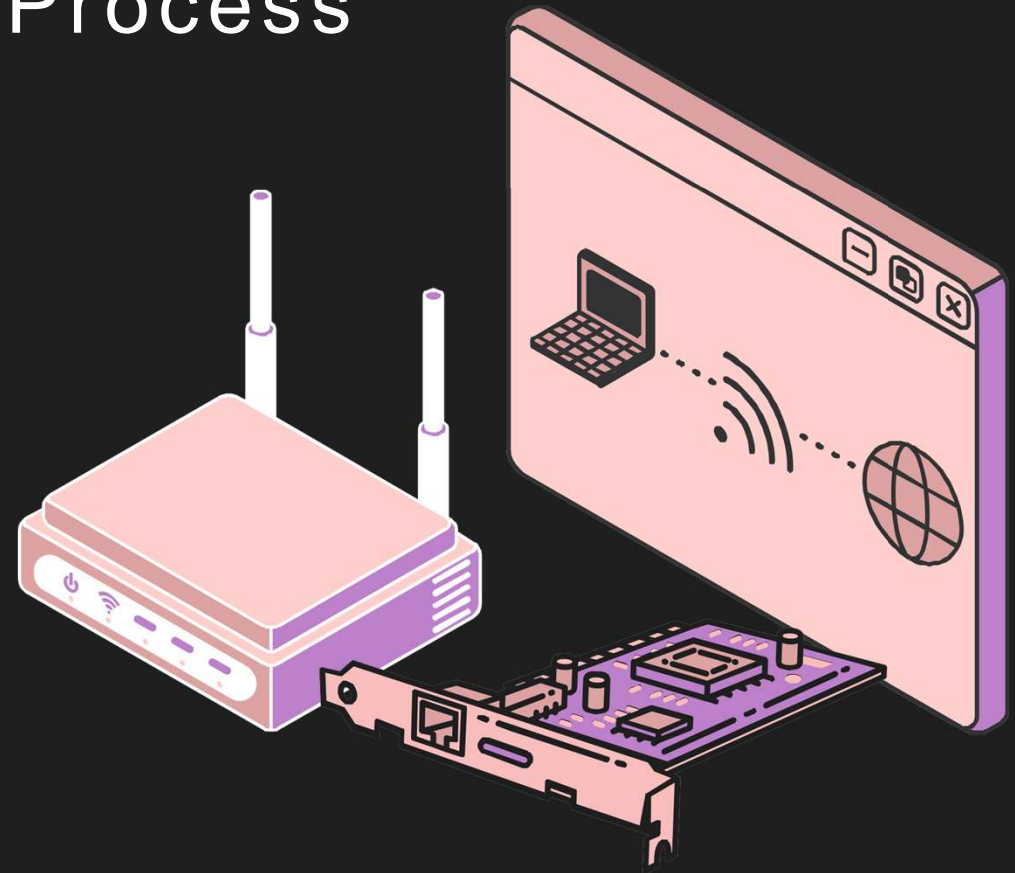
Users authenticate with their email and password.

## 2 Sign In

Users authenticate to access their accounts and data securely.

## 3 Session Management

Secure session management protects user data and ensures authorized access.



# Voice Input Functionality

## Speech Recognition



The app uses speech recognition to convert speech into text.

## Language Support



The application supports Hindi language and converts into text as a combination of Hinglish .

## Noise Cancellation



Noise cancellation ensures accurate transcription in noise.

# Impact on Productivity and Efficiency

Time Savings

60%

Voice input speeds up  
form completion

Error Reduction

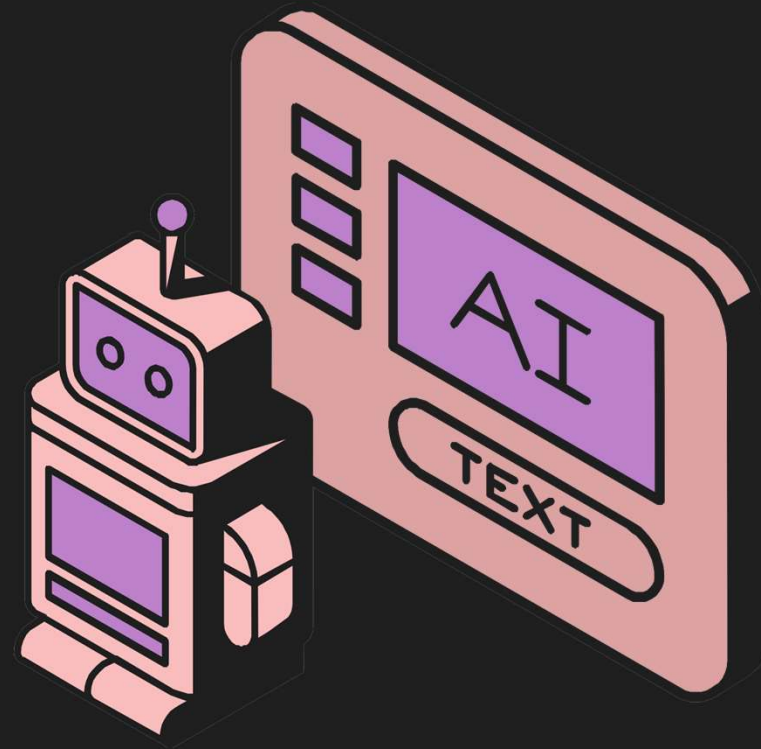
85%

Speech recognition reduces  
typing errors

User Satisfaction

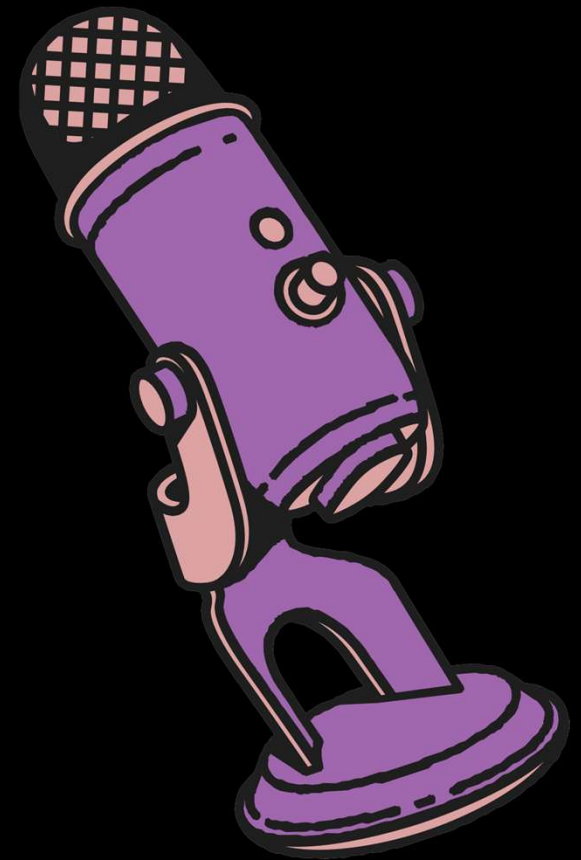
92%

Voice interaction enhances  
accessibility and user satisfaction

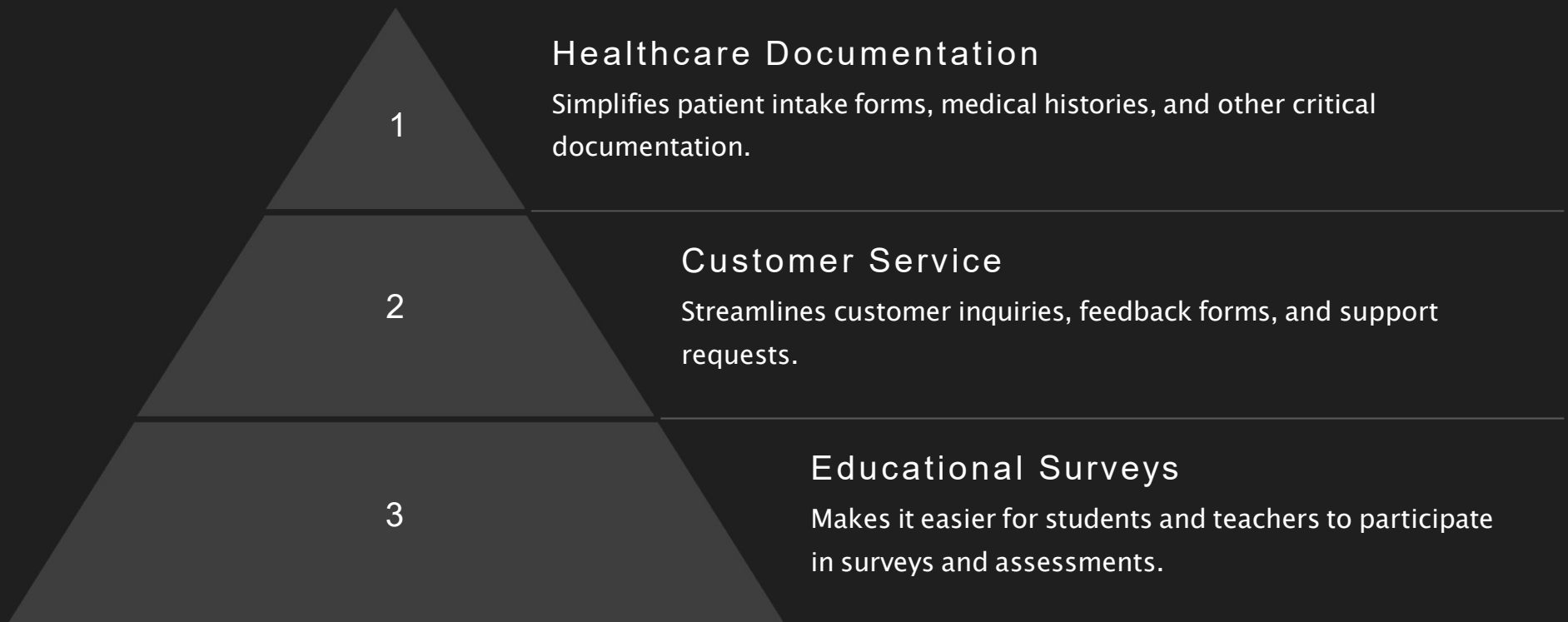


# Advantages of the Voice-Enabled Bank Form Application:

- **Faster Form Completion** – Voice input accelerates the process by eliminating manual typing.
- **Error Reduction** – Speech recognition minimizes typing mistakes and incorrect entries.
- **Improved Accessibility** – Voice interaction makes forms accessible to users with disabilities.
- **Enhanced User Experience** – Streamlined, hands-free interaction makes form-filling more convenient.
- **Higher User Satisfaction** – Easier and faster form submission increases overall satisfaction.



# Real-World Applications



# Future Improvements

1

## Adaptive AI Learning

The system continuously learns and adapts to improve speech recognition accuracy and user experience.

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2

## Expanded Language Support

Support for additional languages and dialects will make the system more inclusive and accessible globally.

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3

## Personalized User Settings

Users can customize the system to match their preferences, such as voice recognition settings and form layouts.

## Voice-Enabled Bank Form

Secure and convenient banking at your fingertips.



### Sign Up

Username:

aryan

Email:

aryan@gmail.com

Password:

\*\*\*\*\*

**SIGN UP**

By signing up, you agree to our terms and conditions.

Already have an account? [Sign In](#)

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## Voice-Enabled Bank Form

Secure and convenient banking at your fingertips.



### Sign In

Email:

aryan@gmail.com

Password:

\*\*\*\*\*

Forgot your password? [Reset Password](#)

**SIGN IN**

By signing up, you agree to our terms and conditions.

Don't have an account? [Sign Up](#)

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## BANK APPLICATION FORM

**SIGN OUT**

### 1. Personal Information

First Name

John

Middle Name

Michael

Last Name

Doe

Date of Birth

DD-MM-YYYY

Gender

e.g., Male, Female

Marital Status

e.g., Married, Single

Nationality

e.g., Indian

Mother's Maiden Name

For security purposes

### 4. Account Details

Type of Account

e.g., Savings, Checking

Initial Deposit Amount (R)

e.g., 1000.00

Account Purpose

e.g., Savings, Payroll

Mode of Operation

e.g., Single, Joint

### 5. Nominee Information

Nominee Name

e.g., Jane Doe

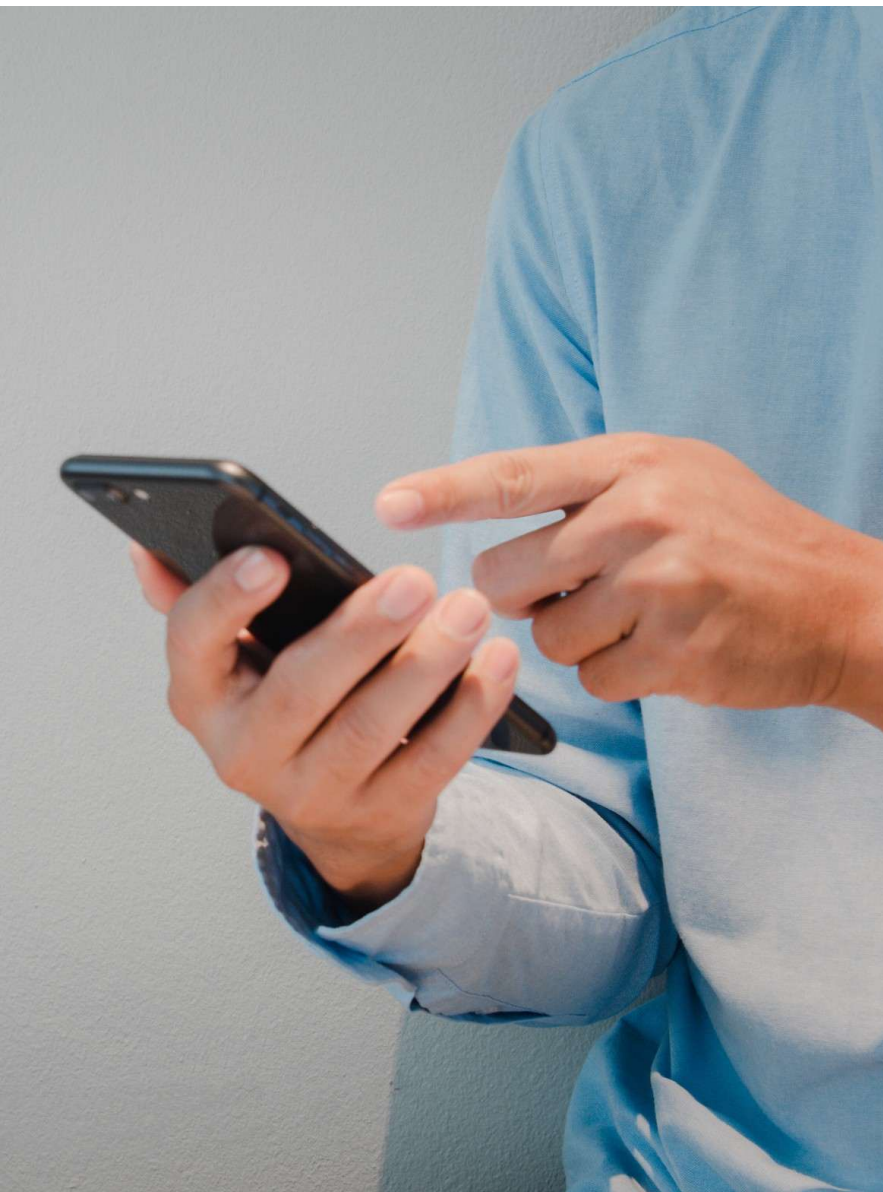
Relationship

e.g., Spouse, Child

Nominee Contact Information

e.g., 9876543210

**SUBMIT APPLICATION**



# Conclusion

1

## Transformation

Voice-based form filling streamlines data entry, making it faster and more efficient.

2

## Productivity

Enhances accuracy, saving time and boosting productivity.

3

## Experience

Provides a user-friendly and accessible experience, empowering users to complete tasks with ease.



THANK YOU

