

Voice Based Email

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ABSTRACT

- As the technology is enhancing, people are coming more closer to digital life and digital communication. There are many ways to communicate with others through internet in this new advanced era.
- E-mail is the technology that enables user to contact with others by sending mails and also helps in business world communication.
- The proposed idea is to create a web-based application using speech recognition, thus enabling everyone to control their mail accounts using their voice only and to be able to read, send, and perform all the other useful tasks like attachment of files.
- The technology stack used is Python, HTML, CSS, JavaScript, MySQL database.



INTRODUCTION

- Electronic mail (email) is a method of exchanging messages ("mail") between people using electronic devices.
- This project aims to develop a voice based email system that would help people to access email in a hassle-free manner.
- In the busy world sometimes, there would no proper time to clearly read emails. So, our project voice-based email uses text to speech.
- To send long written emails faster a lot of typing is needed and keyboard practice, but the voice based system does it faster and makes it reliable.



INTRODUCTION

Existing System:

- To send long written emails a lot of typing and keyboard practice is needed.
- People often send emails of a regular format to many people and our system uses default templates to reduce the effort of the sender.
- It's time taking to read long emails, text to speech is not available.



INTRODUCTION

Proposed System:

- The proposed system uses speech recognition, interactive voice response, and a click of the mouse.
- The main benefit of this system is that the use of keyboard is completely eliminated, the user will have to respond through voice and mouse click only.
- The three primary components of our system are: User validation, Speech recognition, Email services.
- This system will be prompting the user to perform specific operations to avail email services like read, send emails.



SOFTWARE REQUIREMENTS SPECIFICATION

Functional Requirements:

- New users must register in order to proceed further.
- Users must log in to access the voice email system.
- Users must enter the Gmail password.
- The text-to-speech voice command should be realistic.
- A microphone Button is available at each text input to change the text whenever needed.



SOFTWARE REQUIREMENTS SPECIFICATION

Non-Functional Requirements:

- System use shall not cause any harm to human users.
- System will use a secured database.
- Every user is provided with a unique ID with their password.
- Every user is authenticated before accessing their account.



SOFTWARE REQUIREMENTS SPECIFICATION

Software Requirements:

- Operating System : Windows 10, Linux or MAC OS.
- Programming Language : Python, JavaScript.
- IDE : Visual Studio Code, Python.

Hardware Requirements:

- Microphone : High-Definition audio device.
- Internet : 1 Mbps or above.



LITERATURE SURVEY

- SURVEY PAPER-1: “**Voice Based Email for Blind People**”, K. Jayachandran, P. Anbumani

DESCRIPTION: This paper contributes in such a way that enables people to send and receive voice-based email messages. It also consists of two main modules these are: (a) Speech-to-text converter (b) Text-to-speech converter

- SURVEY PAPER-2: “**Voice based e-mail System for Blinds**”, Pranjal Ingle, Harshada Kanade, Arti Lanke

DESCRIPTION: In this paper, the proposed email system provides registration module firstly that helps in logging in by entering username and password.



LITERATURE SURVEY

Also, user's voice gets recorded and stored in database. After this, the main app page shows the options of inbox and compose which is guided through IVR technology. There is contact us page where the user can suggest any suggestion.

- SURVEY PAPER-3: "**Speech Based E-mail System for Blind and Illiterate People**", Saurabh Sawant, Amankumar Wani, Sangharsh Sagar, Rucha Vanjari, M R Dhage

DESCRIPTION: In this paper, along with STT and TTS API, PHP Mailer is used for sending and fetching mails. For searching mails in inboxes, pattern matching algorithm is used. So, in this system Knuth Morris-Pratt algorithm is implemented.



Flask:

- Flask is a micro web framework written in Python.
- It is classified as a microframework because it does not require particular tools or libraries.
- It has no database abstraction layer, form validation, or any other components where pre-existing third-party libraries provide common functions.
- However, Flask supports extensions that can add application features as if they were implemented in Flask itself.



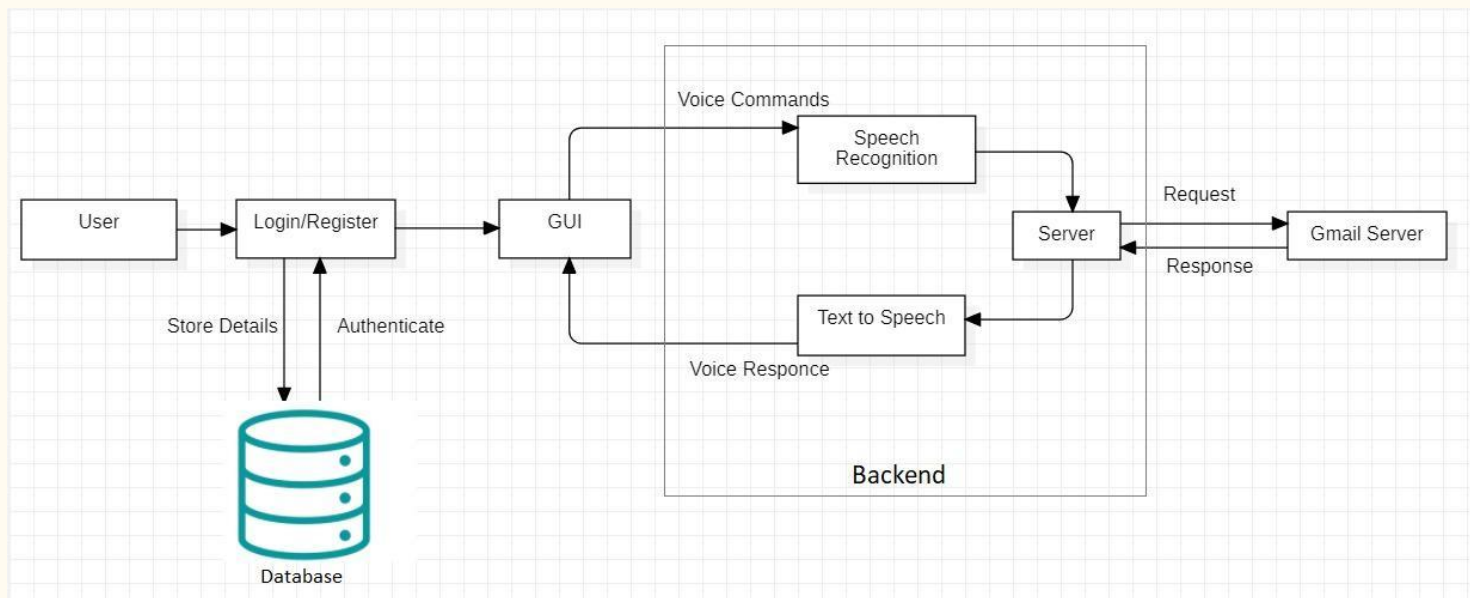
Software Technologies

MySQL:

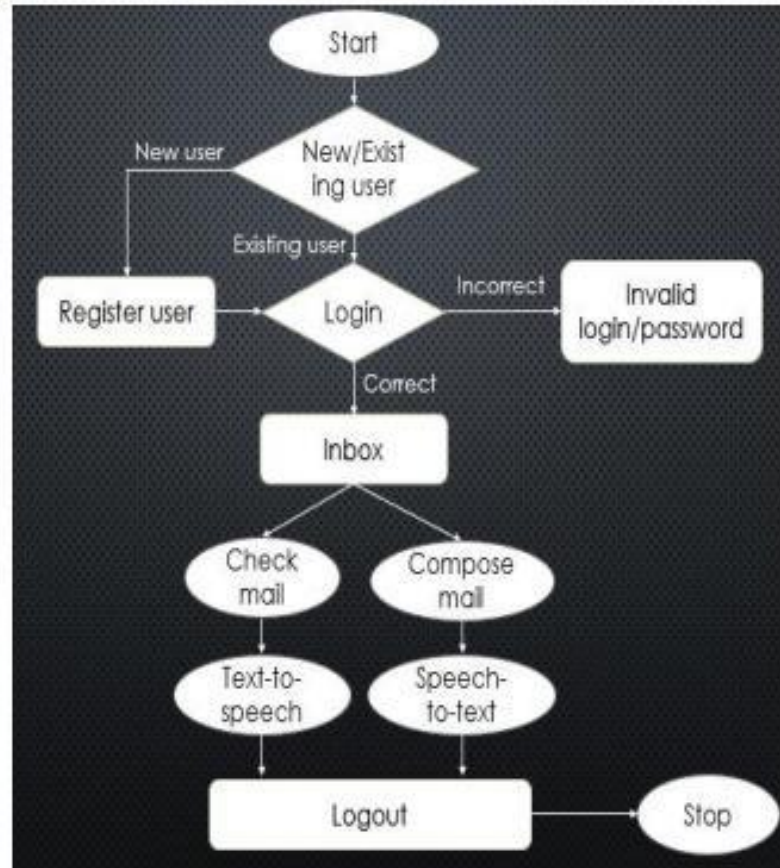
- MySQL is an open-source relational database management system.
- A relational database organizes data into one or more data tables in which data types may be related to each other; these relations help structure the data.
- SQL is a language programmers use to create, modify and extract data from the relational database, as well as control user access to the database.
- MySQL is used with other programs to implement applications that need relational database capability.



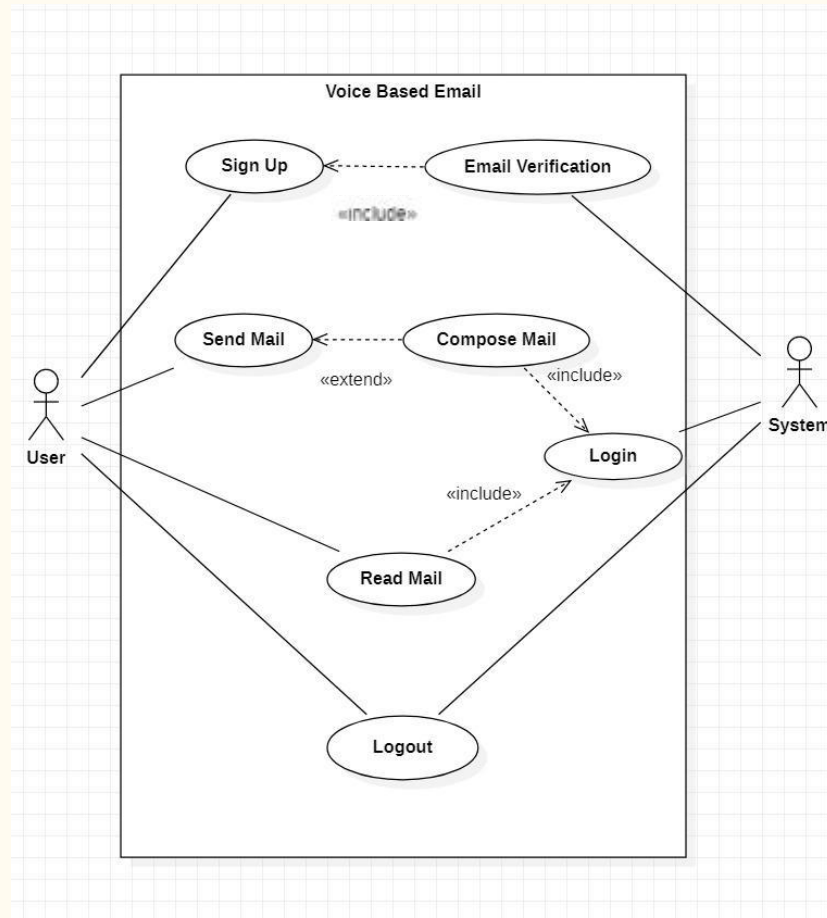
System Design



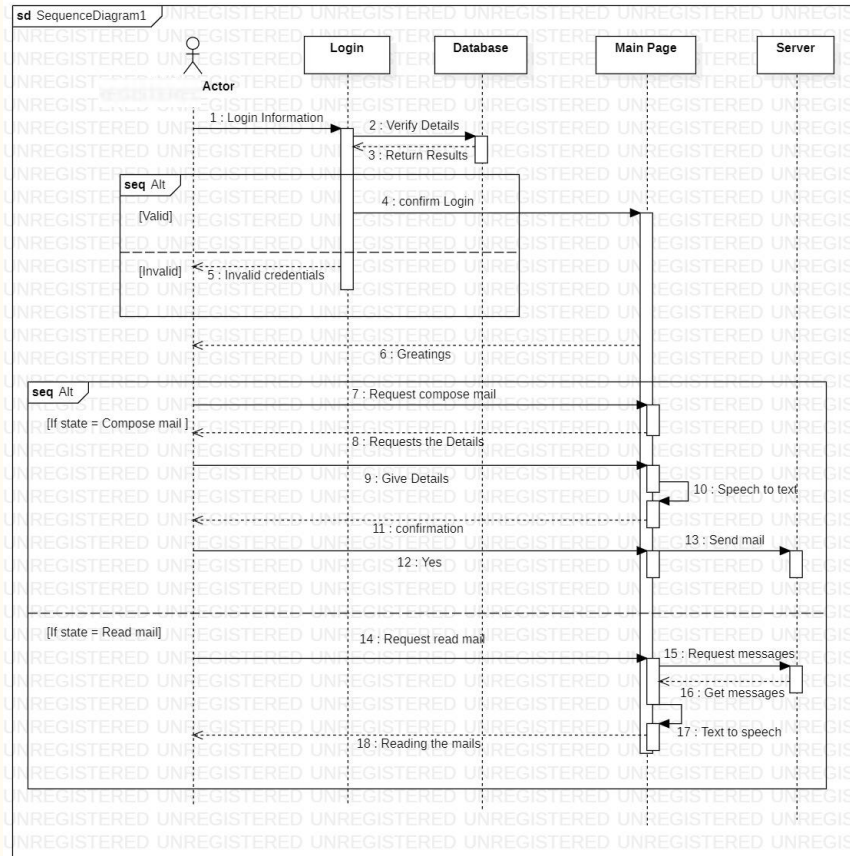
Architecture Design



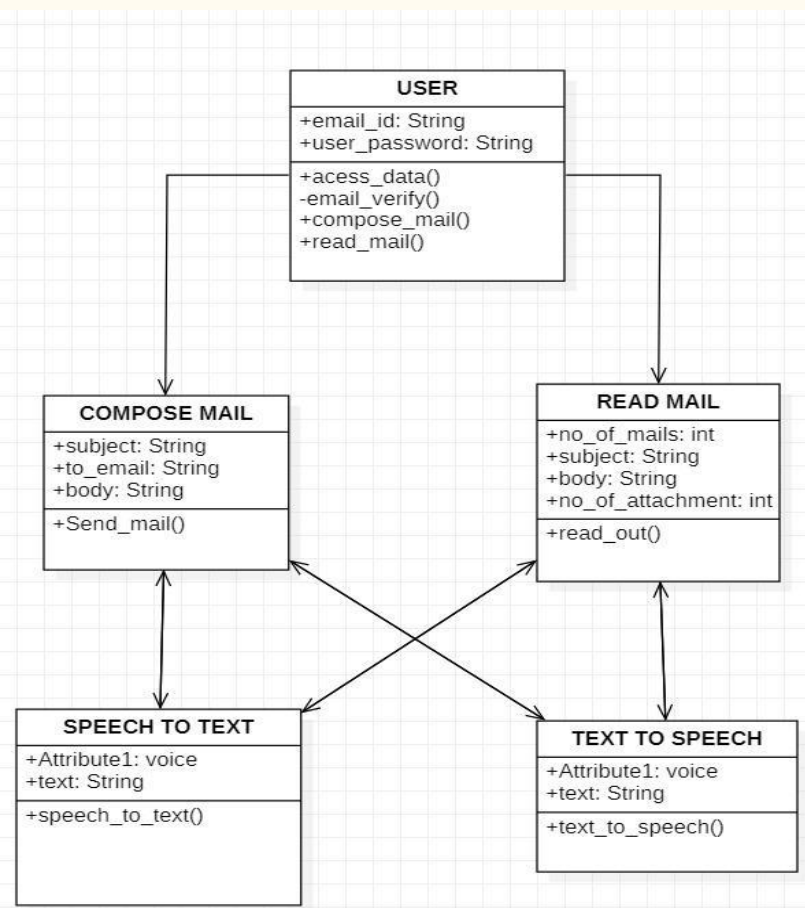
Flow Chart



Use Case Diagram



Sequence Diagram



Class Diagram



Implementation

```
from flask import Flask, request, render_template, session, redirect
from flask_session import Session
import random
from flask_mysqlldb import MySQL
import hmac
import hashlib
import base64
import smtplib
```

Python Modules

```
s = smtplib.SMTP('smtp.gmail.com', 587)
s.starttls()
s.login(email, password)
message = 'Subject: {}\n\n{}'.format("OTP for Voice Mail registration", "OTP for Voice Mail registration is " + string)
s.sendmail(email, email, message)
s.quit()
```

Send Email

```
var speech = new SpeechSynthesisUtterance();  
speech.text = 'Hello, World!';  
speech.lang = 'en-US';  
speechSynthesis.speak(speech);
```

Text-to-speech

```
var recognition = new webkitSpeechRecognition();  
recognition.lang = "en-US";  
recognition.start();  
recognition.onresult = function(e){  
    document.getElementById('email').value = e.results[0][0].transcript;  
    recognition.stop();  
};
```

Speech-to-text

Voice Mail

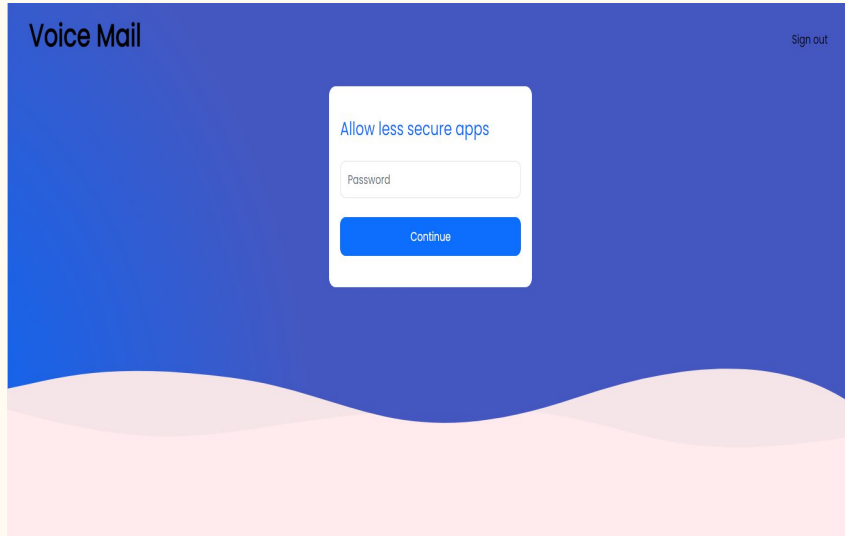
Log In



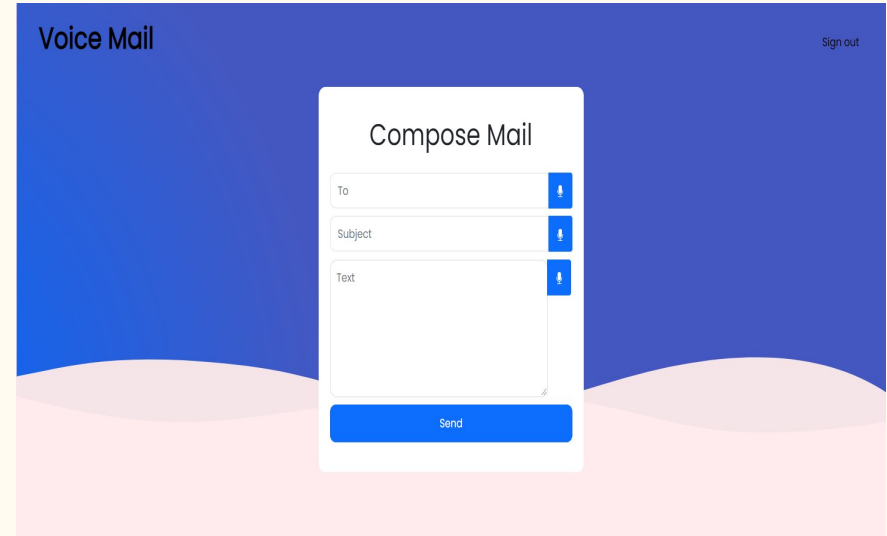
Log In



Log In Page



Log In page (Cont.)



Compose Mail Page



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- K. Jayachandran, P. Anbumani, “**Voice Based Email for Blind People**”, International Journal of Advance Research, Ideas and Innovations in Technology, ISSN: 2454-132X, Volume 3, Issue 3, 06 June, 2017
- Pranjal Ingle, Harshada Kanade, Arti Lanke, “**Voice based e-mail System for Blinds**”, International Journal of Research Studies in Computer Science and Engineering (IJRSCSE) Volume 3, Issue 1, 2016, PP 25-30 ISSN 2349-4859
- Saurabh Sawant, Amankumar Wani, Sangharsh Sagar, Rucha Vanjari, MR Dhage, “**Speech Based E-mail System for Blind and Illiterate People**”, International Research Journal of Engineering and Technology (IRJET), e-ISSN: 2395-0056, Volume: 05 Issue: 04, Apr-2018



Module 1: Front-end Development, Back-end Development

Module 2: Send Email Module

Module 3: File Attachment & Default Templates

Module 4: Read Unseen mails

THANK YOU