VOICE MAIL FOR BLIND PEOPLE

Project report submitted in partial fulfillment of the requirements for the degree of

BACHELOR OF TECHNOLOGY IN

COMPUTER SCIENCE AND ENGINEERING

UNDER SUPERVISION OF

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By

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DISTRICT SOLAN

HIMACHAL PRADESH

June 2020

CERTIFICATE

Candidate's Declaration

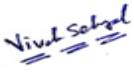
I hereby declare that the work presented in this report entitled "**Voice Mail For Blind People"** in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** submitted in the department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology Waknaghat, Solan is an authentic record of my own work carried out over a period from August 2019 to June 2020 under the supervision of **Dr. Vivek Sehgal** (Associate Professor, Department of CSE & IT)

The matter embodied in the report has not been submitted for the award of any other degree or diploma.

(Student Signature) Shobhit Marwaha, 161220

(Student Signature) Shivam Jagota, 161375

This is to certify that the above statement made by the candidate is true to the best of my knowledge.



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Supervisor Name: Dr. Vivek Sehgal

Designation: Associate Professor

Department Name: Department of Computer Science Engineering & Information Technology

Dated:09/June/2020

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ABBREVIATIONS

Abbreviations:

ASR Automatic Speech Recognition

IVR Interactive Voice Response

STT Speech to Text

TTS Text to Speech

ML Machine Learning

API Application Programming Interface

VRU Voice Reaction Unit

DTMF Dual Tone Multi Frequency

DFD Data Flow Diagram

SSL Secure Socket Layer

TLS Transport Layer Security

SMTP Simple Mail Transfer Protocol

PHP Hypertext Preprocessor

LIST OF FIGURES

ABSTRACT

To build up a voice basically based email framework that will encourage outwardly debilitated individuals to get to email in an issue free way.

Visually impaired find very difficult to access technology due to the very fact that using them requires beholding .Unlike normal people they require practice for using the available technologies.

This application aims at developing an email system that will help visually impaired to use the services for communication without prior training.

We can use API like : IVR,ARS,TTS,STT

And the concept of speech recognition.

Still a huge area of outwardly debilitated individuals in various nations especially in sub-landmass like INDIA , can't utilize this application capably because of the utilization of English language. So we might want to diminish the utilization of English language so that even ignorant can be profited by this and can convey in their mother tongue as they like.

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CHAPTER 1

INTRODUCTION

1.1 MACHINE LEARNING:

This Application depends on Machine learning Concept . So right off the bat, we will talk about about the idea of Machine Learning.

ML is the field of concentrate that gives PCs the ability to learn without being expressly customized. ML is one of the most invigorating advances that one would have ever run over. As it is evident from the name, it gives the PC that which makes it progressively like individuals: The ability to learn. ML is effectively being utilized today, maybe in a lot a bigger number of spots than one would anticipate.

1.1.1 Classification of Machine Learning:

ML executions are arranged into three significant classes, contingent upon the idea of the learning "sign" or "reaction" accessible to a learning framework which are as per the following:-

a) **Supervised learning** : When a calculation gains from model information and related objective reactions that can comprise of numeric qualities or string names, for example, classes or labels, so as to later foresee the right reaction when presented with new models goes under the classification of Supervised learning. This methodology is without a doubt like human learning under the supervision of an educator. The educator gives genuine guides to the understudy to remember, and the understudy at that point gets general guidelines from these particular models.

b) **Unsupervised learning** :Whereas when a calculation gains from plain models with no related reaction, leaving to the calculation to decide the information designs individually. This kind of calculation will in general rebuild the information into something different, for example, new highlights that may speak to a class or another arrangement of un-corresponded values. They are very valuable in furnishing people with bits of knowledge into the significance of information and new helpful contributions to managed ML calculations.

As a sort of learning, it takes after the strategies people use to make sense of that specific items or occasions are from a similar class, for example, by watching the level of comparability between objects. Some proposal frameworks that you find on the web through promoting computerization depend on this kind of learning.

c) **Reinforcement learning** : When you present the calculation with models that need marks, as in unsupervised learning. In any case, you can go with a model with positive or negative criticism as indicated by the arrangement the calculation proposes goes under the class of Reinforcement realizing, which is associated with applications for which the calculation must decide (so the item is prescriptive, not only illustrative, as in unaided learning), and the choices bear results. In the human world, it is much the same as learning by experimentation.
Mistakes assist you with learning since they have a punishment included (cost, loss of time, lament, torment, etc), instructing you that a specific game-plan is less inclined to prevail than others. An intriguing case of fortification learning happens when PCs figure out how to play computer games independent from anyone else.
For this situation, an application gives the calculation instances of explicit circumstances, for example, having the gamer stuck in a labyrinth while evading an adversary. The application tells the calculation the result of moves it makes, and learning happens while attempting to stay away from what it finds to be dangerous and to seek after endurance. You can examine how the organization Google DeepMind has made a fortification learning program that plays old Atari's videogames. When viewing the video, see how the program is at first awkward and incompetent yet relentlessly improves with preparing until it turns into a hero.
d) **Semi-administered learning** : where a fragmented preparing signal is given: a preparation set with a few (frequently huge numbers) of the objective yields missing. There is an exceptional instance of this guideline known as Transduction where the whole arrangement of issue occurrences is known at learning time, then again, actually some portion of the objectives are absent.

1.1.2Categorizing ways- Output essentials :

a).Categorizing : The point where sources of info are isolated into at least 2 types and student create a prototype which will dole out unobtrusive share to minimum one (poly-name clustering) of such types. Its regularly managed in an organized manner. Detecting a spam is a type of arrangement, the origin of facts are electronic mails and types are either "spam" or "not spam".

b).Retrogression : Which is additionally a directed issue, A situation when the yields are constant as opposed to discrete.

c).Clustering : At the point when a lot of information sources is to be partitioned into gatherings. Not at all like in order, the gatherings are not known previously, making this regularly a solo assignment.

1.2 APPLICATIONS OF ML:

ML is one of the most invigorating headways that which can be encountered by person in his lifetime. As it is obvious that its meaning and significance from the this term which will make today's computing machines capable of having abilities where they can perform and act like people ,many similar algorithms are embedded by programming into these machines which make them artificially intelligent like humans. Today on this date ML is being introduced in every possible aspect which is possible be it automating the boring stuff or using machine learning to process huge unprocessed datasets and with the help of these techniques we can process such data sets and derive useful insights from them which humanly is almost impossible and its done in significantly very small amount of time and uses of machine learning in every field are going to increase be it medical industry, automobile, space missions or simple automation or building complex intelligent commercial ready systems . We most likely utilize a learning calculation many time without knowing it. Utilizations of Machine Learning include:

a) Web Search Engine: One of the reasons why web search tools like google, bing and so on work so well is on the grounds that the framework has figured out how to rank pages through a perplexing learning calculation.

b) Photograph labeling Applications: Be it facebook or some other photograph labeling application, the capacity to label companions makes it considerably all the more occurring. It is all possible considering a face affirmation estimation that runs behind the application.

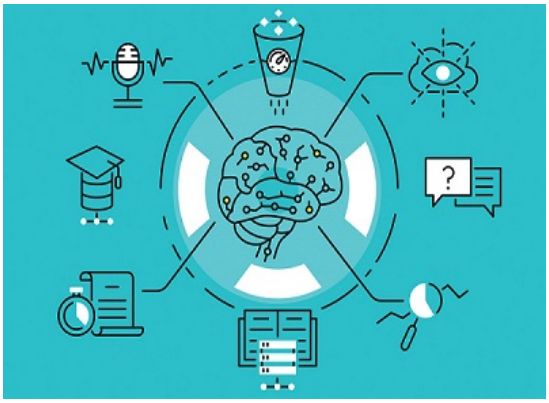

Fig 1: Overview of ML Applications

1.3Deep Learning:

Deep learning could also be a explicit AI that accomplishes significant force and versatility by figuring out how to speak to the earth as a settled gathering of ideas, with every idea characterized concerning less complex ideas.

1.3.1Architectures :

a).Deep Neural Arrangement – It is a neurological system with a specific degree of confusion (having various covered layers in the middle of information and yield layers). They are prepared for showing and taking care of non-straight associations.

b).Deep Belief Arrangement – This is an extension of above mentioned Arrangements. It is multi-layer belief .

Steps for performing DBA :

(i) Taking in a layer of features from clear units of Contrastive deviation figure.

(ii) Taking care of activations of previously trained features as visible unit then gain knowledge of features.

(iii) Finally, the whole Deep Belief Network is schooled when the training for the ultimate obscured level is achieved.

c)Periodic (do the similar task for every element of a string) Neural Network – Allows for comparable and consecutive count. Like the human psyche (gigantic analysis arrangement of related neurons). They can recollect significant things about the information they got and consequently empowers them to progressively exact.

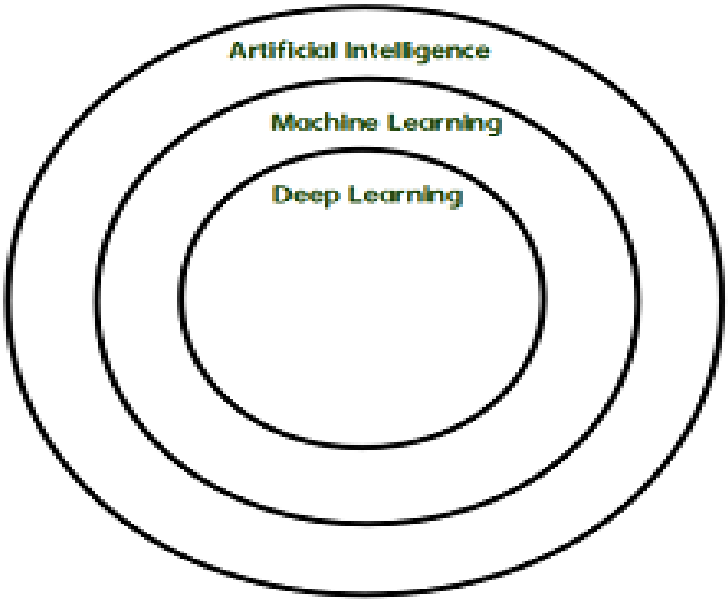

Fig.2: Deep learning a subset of ML

1.3.2Applications :

a)**Repeated Manuscript Creation** – Corpus of content is found out and from this new content is created, word-by-word or character-by-character.

At that point this model is fit for figuring out how to spell, intersperse, structure sentences, or it might even catch the style.

b)**Healthcare** – With this we can diagnose different infections and cure them.

c) **Regular Device Conversion** – definite words, sentence or expressions in a single tongue is changed into a different dialect (Deep Learning is accomplishing pinnacle outcomes of content, pictures).

d)**Image Recognition** – recognize and distinguishes people groups and articles in pictures just as to get substance and setting. This territory is as of now been utilized in gaming, trade, tourism, and so on.

e)**Predict Earthquake** – teach a PC to carry out viscoelastic calculations which are utilized in foreseeing tremors.

CHAPTER 2
VOICE RECOGNITION

2.1 Introduction:

Otherwise called PC discourse acknowledgment, programmed discourse recognition (ASR) or discourse to content, voice acknowledgment is a PC programming framework or gear contraption with the capacity to translate the human voice. Voice affirmation is commonly used to work a contraption, perform headings, or make without using a comfort, mouse, or press any gets. Today, this is done on a PC with ASR programming programs. Various ASR programs require the customer to "train" the ASR program to see their voice with the objective that it can even more unequivocally convert the talk to content. For example, you could state "open Internet" and the PC would open the Internet program.

The first ASR contraption was used in 1952 and saw single digits spoken by a customer (it was not PC driven). Today, ASR programs are used in various organizations, including human administrations, military (warrior planes), media communications, and individualized computing (for example without hands registering).

2.2 Requirements:

For speech recognition to work, you should have a PC with a sound card and whichever a delegate or a earphones. Diverse gadget like smart phones have the entirety of the fundamental tools integrated with the tool. Likewise, the result you use needs voice recognition sustain, or in the event that you need to operate speech recognition all over, you need a plan like shade logically speaking to be introduced.

In case you are using Microsoft Windows Vista, 7, 8, or 10, you can in like manner use the included Windows Speech Recognition program.

2.3 Examples:

Robotized telephone frameworks - Many organizations today use telephone frameworks that help direct the guest to the right division. In the event that you have been ever asked something like "Say or press number 2 for help" and we answer "two," we utilized speech acknowledgment.

Google Speech - Google speech is an assistance that empowers us to look and posture requests on our PC and smart phone.

Advanced associate - Amazon Echo, Apple's Siri, and Google Assistant use voice acknowledgment to connect with computerized collaborators that helps answer questions.

Vehicle Bluetooth - in support of autos with Bluetooth or Hands free telephone matching, we can use voice affirmation to make bearings, for instances, "call my significant other" to make calls without taking our eyes off the road.

2.4 Type of Speech acknowledgment system:

Programmed discourse detection is one case of Speech acknowledgment. The following are different instances of speech detection system.

Orator subordinate scheme - The speech detection need preparing before it tends to be utilized, which expects you to peruse a progression of terms and expressions.

Orator free scheme - The speech detection programming perceives most clients' voices with no preparation.

Distinct discourse System - The client must delay amid each word with the goal that the discourse detection can recognize each different word.

Nonstop discourse System - The speech detection can grasp an ordinary pace of discussion.

Characteristic language - The speech recognition not exclusively can understand the voice, yet can likewise return answers to questions or diverse inquiries that are been asked.

2.5 Applications:

- In automobile Systems
- Body Care
- Army
- Telegraphy and other dominions
- Use in Education and lifestyle
- People with ailments

2.6 Voice Recognition API:

2.6.1 API INTRODUCTION It is an application or correspondence show in various parts of a PC program wanted to modify the utilization and upkeep of programming.

Application assurance can take various structures, anyway routinely joins subtleties for plans, are occasions of different types of applications. Testimony for the Programming for the most part is given to enable use and usage.

Even more starting late, the appellation has been as frequently as possible given to insinuate certain kind of connection halfway a clientele & the computer server, depicted as "contract" halfway - with the ultimate objective that if client makes a deal in a certain company, it will get a feedback in a particular setup or start a portrayed activity. This is a specific type of application however, more definitely characterized as a WEB API.

Fig 3: A General Voice Recognition API

2.6.2 PURPOSE: In making apps, an interface rearranges programming by withdrawing the basic execution & just uncovering articles or activities the engineer wants. While a visual depicted link for a mail customer may give the customer a catch which plays out every method to bring and include the latest messages, an Application to archive transfer/yield may provide the specialist kind of limit that duplicates the record beginning with single territory then onto the following originator estimate the report exercises going on off camera.

2.7 Some Voice Recognition API:

As per a recent Survey the following are the best Voice Recognition API used:

- Google Cloud voice API.
- Google Docs voice Typing.
- Siri.
- Amazon Lex.
- Microsoft Bing voice API.
- Cortana.
- Speech Finger.
- Dragon Anywhere
- Dragon Naturally Speaking

Fig.4:Some Examples of Voice Recognition API

2.8 Text To Speech:

2.8.1 Introduction:

Discourse union is the in phone formation of person voice. A workstation utilized in this way for existing is called talk computer or talk maker, and can also be utillized in program designing and gear things. A book to-talk (TTS) structure transforms over conventional written text content into talk; various systems rephrase symbolic linguistic depictions like phonetic translations into discourse.

Mixed voice is also synthesized by connecting parts of recorded voice that are taken care of in a dataset. Systems distinguished in the dimensions of the put aside voice metres; a database that stores phones , diaphones provides appropriate output go, in any case may require clearness. For express use spaces, the limit of entire words or sentences thinks about incredible yield. On the other hand, a synthesizer can compose a model of voice discourse and other human voice characteristics to make a completely "produced" tone output.

Accuracy of a voice maker is measured on the basis of its closeness to the human tone.

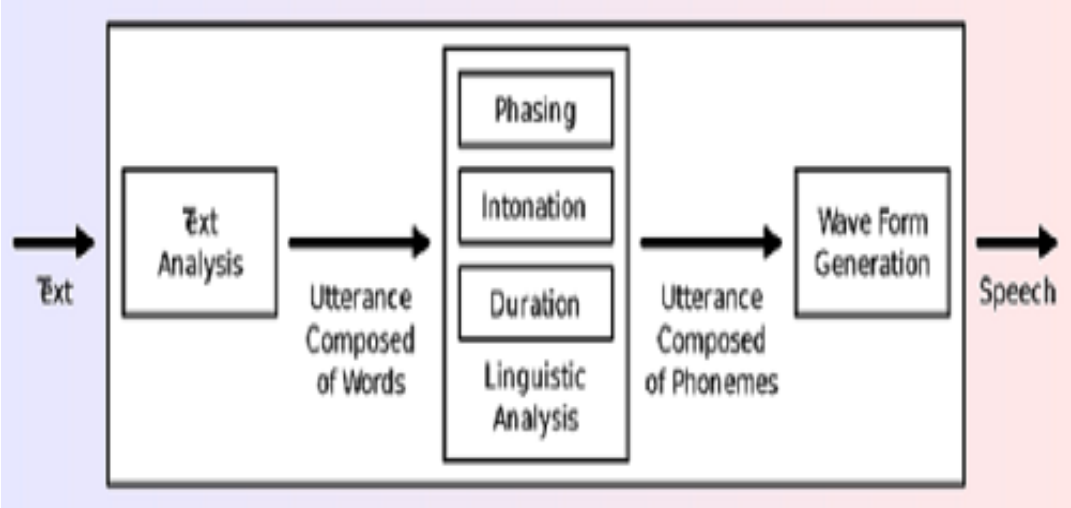

Fig 5. An Overview *of TTS Working*

2.9 Interactive Voice Response :

2.9.1 Introduction:

Interactive voice response (IVR) is a mechanism which helps computing machines to set and build connections with people to interface it through their voice samples and dual tone multi frequency system tones . In broadcasting channels this framework connects people with company's receiver structure through methods for telephone so that company may have facts about this framework trade. These responsive frameworks mostly deal in advancement with huge communication sets and are also used in later stages because it is more advance than most of other available options.

These frameworks are utilized in many applications such as versatile buys, funding installments, administrations, arrangement of goods which can be used for consuming, essential items, mobile data , climate. A run of the mill confused judgment implies a robotized authority as a response of this framework. These words have different inputs and understanding of them which can be variable and specific to customary media communications experts—the motivation behind this framework is to create responsive result by fetching facts and manipulating them. Help of voice reaction unit is also taken in achieving the result in this process.

2.9.2 Usage:

- Banking
- Surveying
- Medical
- Agriculture
- Community Based Entertainment
- Civic Engagement

2.9.3 Advancements:

Visuals: The presentation of SIP implies that dot to dot interchanges never again confined however are able with stretching out to sight and sound advancements, for example, video. Producers broad their frameworks into more advance frameworks which are capable of both visuals and voice responses. Utilizing visuals enables frameworks in executing many window cooperation to guest.

SIP Contract Centre: Presentation of contract focuses, controlling of contracts focus are actualized with the help of scripting language which is C.C.X.M.L. which is an assistant to the V.X.M.L. for creating current framework discoursed. The calls are in queue stacked in container focus ,the framework corrects this by computerization to an interval. Frameworks are used in supplant operators straightforwardly.

Give and Take Communication System :

Because of presentation related to texting focuses, specialists deal with maximum six diverse system discussions simultaneously, which expands operator efficiency. IVR innovation is being utilized to computerize system discussions utilizing existing regular language handling programming. This varies from email taking care of as email mechanized reaction depends on watchword spotting and IM discussions are conversational. The utilization of content informing shortened forms and smiles requires various punctuations to those as of now utilized for discourse acknowledgment. IM is additionally beginning to supplant content informing on media portable communication systems.

In Air V Ground Framework Implementations:

Presentation of internet administrations on the front of community, so the coordination is largely improved , permitting framework implementations are made from far places . Therefore implied framework implementations utilizing discourse currently accessible in littler contract habitats over this planet which tends the way to prompt a development of companies which make and design specific implementation software.

2.9.4 Criticism:

IVR has generally gotten analysis for its trouble of utilization and a shortage of valuation for the guest's needs additionally as issues with giving a voice reaction to a programmed framework. Nonetheless, present day IVR frameworks are prepared to incorporate guest setting and gracefully customized choices. Associations have moreover been scolded because this framework was involved in cutting back operational extra expenses considering unique ways that course of action replaces the requirement for human administrators to oversee voice demands. Moreover, as fundamental data is currently accessible on the web, the communication made to control hubs generate surprise and complex issues.

CHAPTER 3
SYTEM DEVELOPMENT

3.1 System Specifications:

- Windows 10
- 8 GB RAM
- Core i5 Processor or above
- PLATFORM

  ANACONDA NAVIGATOR 3

  SPYDER (For Python Code)

3.2 PIPELINES AND COMMANDS USED:

Before Executing the code we first installed some pipelines commands in anaconda prompt.

They are described as followed:

3.2.1 PYTTSX3: This is a text-to-speech conversion library in python which is compatible with python 2 or 3.

On Conda Prompt we use this command, *pip install pyttsx3.*

And in the Spyder platform we use, *import pyttsx3*.

Engines compatible with PYTTSX3

- Saphi 5
- Nsss
- Espeak

Still Feel Free to Use any Engine for PYTTSX3.

3.2.2 PLAYSOUND: This module contains only one function i.e. *playsound* itself.

On Conda Prompt we use this command, *pip install playsound*.

And in the Spyder platform we use, *import playsound.*

It requires the path to file which sound you had like to play.

3.2.3 DATE TIME: In this module, the current Date Time will be displayed.

On Conda Prompt this module is already installed.

And in the Spyder Platform we use, *import datetime.*

3.2.4 SPEECH_RECOGNITION: This module is used for Voice Recognition.

Engines/API Supporting this module are as follows:

- *CMU SPHINX*
- *GOOGLE SPEECH RECOGNITION*
- *GOOGLE CLOUD SPEECH API*
- *WIT.AI*
- *BING VOICE RECOGNITION*
- *Python speech recognition*
- *IBM SPEECH TO TEXT*
- *SNOWBOY HOTWORD DETECTION*

Basic command for this module is, *pip install speechRecognition.*

And in the Spyder platform we use, *import speech_recognition as sr.*

3.2.5 PYAUDIO: This is required if and only if we want to use the microphone, which we do especially in this project.

Basic Command is, *pip install pyaudio*.

In conda prompt we use, *conda install -c anaconda pyaudio.*

And in the Spyder platform we use, *import pyaudio.*

3.2.6 WIKIPEDIA: This helps in getting information while being connected to internet info could be about anything.

Basic Command is, *pip install Wikipedia.*

And in the Spyder platform we use, *import Wikipedia.*

3.2.7 WEBBROWSER: Opening of web browser.

Already Installed in conda Prompt(In –Built).

And in the Spyder platform we use, *import webbrowser.*

3.2.8 OS: Module used basically for playing music and video which is already installed in the PC. Basically, it provides the platform for os dependent functionality.

Already Installed in conda Prompt(In –Built).

And in the Spyder platform we use, *import os.*

3.2.9 SMPTPLIB: This module is used for sending e – mail and stuff.

Already Installed in conda Prompt(In –Built).

And in the Spyder platform we use, *import smtplib.*

3.3 System Functions used and some definitions**:** In this we will explain some functionalities. First we will talk about the specific system , API , Protocols we used.

3.3.1 API Used : We used Microsoft Sapi. The voice programming interface can be seen as boundary or bit of intermediary function between *computer programs* or software subsystems. SAPI variants , software can directly speak to motors. Programming interface incorporated a theoretical middleware statement in which software with motors are adjusted . software can likewise utilize disentangled more significant level items as opposed to straightforwardly call strategies on the motors.

In SAPI 5 be that as it may, software with subsystems can't directly communicate with each other. Rather, single discussion to a execution part .There is a Programming interface realized with this portion used by software, sequences of middleware for subsystems

Typically in programming interface 5 software place calls through the Programming interface (example stack an affirmation sentence structure; start affirmation; or offer content that needs coordination). The execution time part detangles the requests , techniques , which needs essential approaching the subsystem via subsystem middleware (example, stacking a sentence structure an archive is processed during the execution time, anyway the punctuation data is send to

affirmation subsystem truly use during acknowledgment). Acknowledgment , combination subsystems additionally produce occasions while handling (for instance, to demonstrate an articulation has been perceived or to show word limits in the incorporated discourse). These go the contrary way, via execution time, and on to an occasion. also, execution time , different segments are dispatched with all forms of SAPI to convey a total Discourse Programming Advancement Pack. The accompanying segments are among those remembered for most forms of the Discourse Software Development Kit:

- Programming Interfaces definition documents - in Microsoft Interface Definition Language C or C++ records.
- Execution time parts - for example .dll part.
- Authority Board application - to choose and arrange default discourse recognizer and synthesizer.
- Content-To-Discourse motors in various dialects.
- Voice Acknowledgment subsystems various dialects.
- Redispensing parts to permit designers to bundle subsystems and execute them with particular application instruction to make single introduced software.
- Demo subsystems - executions of essential motor middleware yet evident discourse handling which could be utilized as an example for those sending a subsystem to programming interface.
- Notation(Scripting).

Programming Interface family

SAPI 1

Primary adaptation of this interface discharged during year 1995, was bolstered on Windows 95 and NT 3.51. adaptation added small-level Straight Discourse Acknowledgment , Quick Content

To Discourse Programming Interfaces in which softwares are used to legitimately manage subsystems.

SAPI 3

Programming Interface version 3.0 was discharged during 1997. It included constrained help transcription discourse acknowledgment (distinct discourse, non consistent), with extra example software and sound sources.

SAPI 4

SAPI 4.0 was discharged in 1998. This rendition of SAPI included both the center COM Programming interface; along with C++ wrapper classes to make programming from C++ simpler; and ActiveX controls to permit simplified Visual Essential turn of events. This was sent as a major aspect of a SDK that included acknowledgment and blend motors. It additionally transported (with blend motors just) in Windows 2000.

The primary parts of the SAPI 4 Programming interface (which were all accessible in C++, COM, and ActiveX flavors) were

- Voice Correspondence - elevated level items for nonstop transcription discourse acknowledgment
- Voice Talk - elevated level articles for discourse amalgamation
- Voice Communication - objects for composing phone discourse applications
- Direct Discourse Acknowledgment - objects for direct control of acknowledgment motor
- Direct Content To Discourse - objects for direct control of combination motor
- Audio objects - for perusing to and from a sound gadget or document
- Voice Order - significant level articles for order and control discourse acknowledgment

SAPI 5 API family

The Discourse SDK form 5.0, joining the SAPI 5.0 runtime was discharged in 2000. This was a finished overhaul from past renditions and neither motors nor applications which utilized more established adaptations of SAPI could utilize the new form without extensive adjustment.

The plan of the new Programming interface incorporated the idea of carefully isolating the application and motor so all calls were steered through the runtime sapi.dll. This change was planned to make the Programming interface more 'motor autonomous', keeping applications from accidentally relying upon highlights of a particular motor. What's more, this change was planned for making it a lot simpler to fuse discourse innovation into an application by moving some administration and introduction code into the runtime.

The new Programming interface was at first an unadulterated COM Programming interface and could be utilized effectively just from C/C++. Backing for VB and scripting dialects were included later. Working frameworks from Windows 98 and NT 4.0 upwards were upheld.

Significant highlights of the Programming interface include:

- **Shared Recognizer**. For work area discourse acknowledgment applications, a recognizer item can be utilized that runs in a different procedure **(sapisvr.exe)**. All applications utilizing the mutual recognizer speak with this single occasion. This permits sharing of assets, evacuates conflict for the receiver and takes into account a worldwide UI for control of all discourse applications.
- **In-proc recognizer**. For applications that require unequivocal control of the acknowledgment procedure, the in-proc recognizer item can be utilized rather than the common one.
- **Grammar objects**. Discourse sentence structures are utilized to determine the words that the recognizer is tuning in for. SAPI 5 characterizes a XML markup for determining a syntax, just as components to make them progressively in code. Strategies additionally exist for educating the recognizer to stack an implicit transcription language model.
- **Voice object**. This performs discourse amalgamation, delivering a sound stream from a book. A markup language (like XML, however not carefully XML) can be utilized for controlling the blend procedure.
- **Audio interfaces**. The runtime incorporates objects for performing discourse contribution from the receiver or discourse yield to speakers (or any stable gadget); just as to and from wave records. It is likewise conceivable to compose a custom sound item to stream sound to or from a non-standard area.

- **User vocabulary object**. This permits custom words and elocutions to be included by a client or application. These are added to the acknowledgment or blend motor's worked in vocabularies.
- **Object tokens**. This is an idea permitting acknowledgment and TTS motors, sound items, vocabularies and different classifications of an article to be enrolled, counted and started up in a typical way.

  The API we used is Sapi 5 but this API takes a lot of time to learn and display the content or text we speak. So we should recommend the usage of Google API for better working of project. there are two voices by default male and female so can choose one of them and can install many more

  [0].id is David voice & [1].id is Zira voice the user input i.e. their voice.

  The speak function we mentioned above will be used in this again and again this will be comprised of sub –functions like

  r=sr.Recognizer()

  with sr.Microphone() as source:

  server=smtplib.SMTP('smtp.gmail.com',587)#port no. is 587

  server.login("persierahul@gmail.com","Chemistry22")

  server.sendmail('persierahul@gmail.com',to ,content)

Above Functions describe, the port no. used in smtp. The user login credentials which will send the mail. We have used password in arguments for confidentiality purposes, we can create a file and save the password in that and can put the file location in that argument. Only less secure mail can be sent.

3.4: SMTP :

- Full form of SMTP is simple mail transfer protocol.
- This protocol has a lot of correspondence rules that permit programming to transfer a particular email throughout the whole web is known as Basic Mail Move Convention.
- This program is used to send mails to other systems depending on a particular direction.
- This gives a mail trade halfway clients over a variety number of PCs, also additionally underpins::
    - That protocol can transmit a single text to at least one of its benefitting clients
    - Transmitting note can put together content, speech, media and illustrations.
    - In this way messages can also be transmitted beyond the web server.

- Primary reason behind this protocol is used to provide different correspondence runs to midway servers. The servers can distinguish themselves by declaring what kind of correspondence runs are going to perform by which server. Likewise, Servers have a method of dealing with the mistakes.

3.4.1 :Components of SMTP:

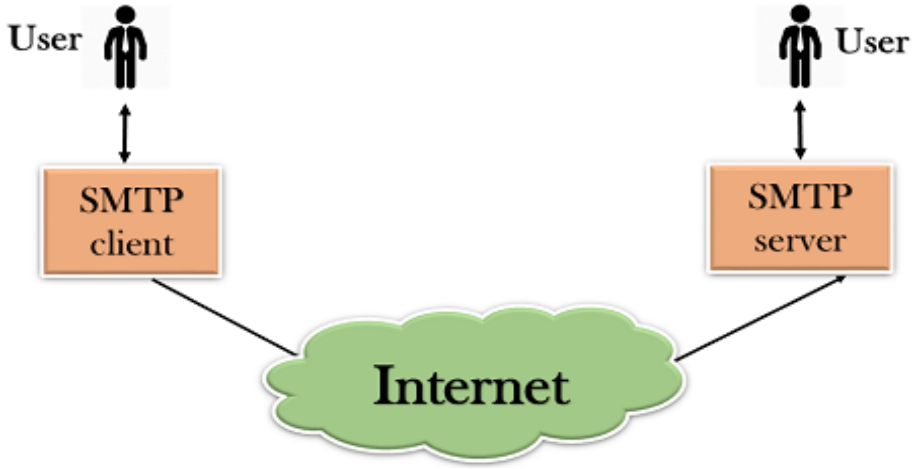

Fig 6. A simple SMTP system.

- First, we will break the SMTP client and SMTP server into two components such as user agent (UA) and mail transfer agent (MTA). The client operator (UA) readies the

message, makes the envelope and afterward places the message in the envelope. The mail move specialist (MTA) moves this mail over the web.

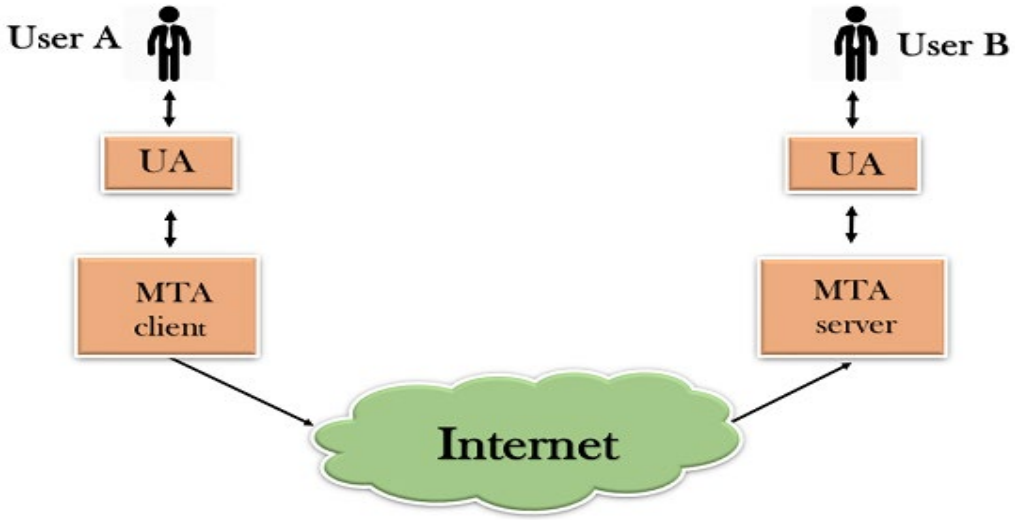

Fig 7. Using User Agent System

- SMTP permits an increasingly perplexing framework by including a handing-off framework. Rather than simply having one MTA at sending side and one at getting side, more MTAs can be included, acting either as a customer or server to transfer the email.

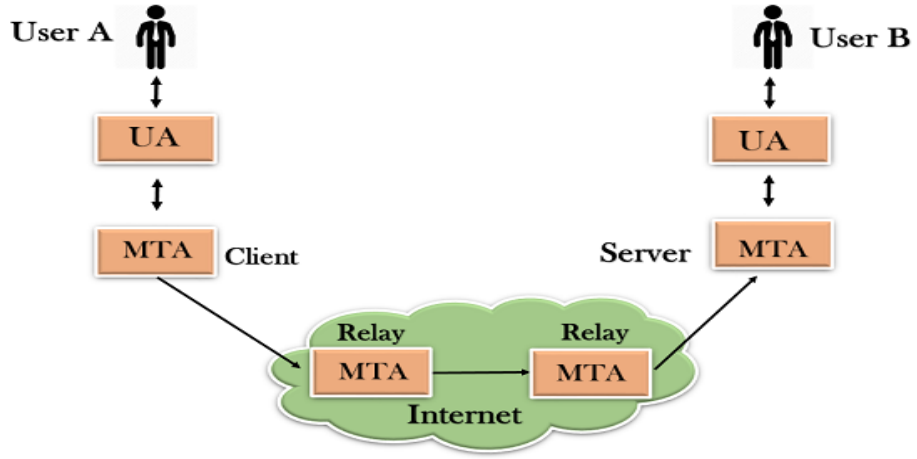

Fig 8. Using Relay System

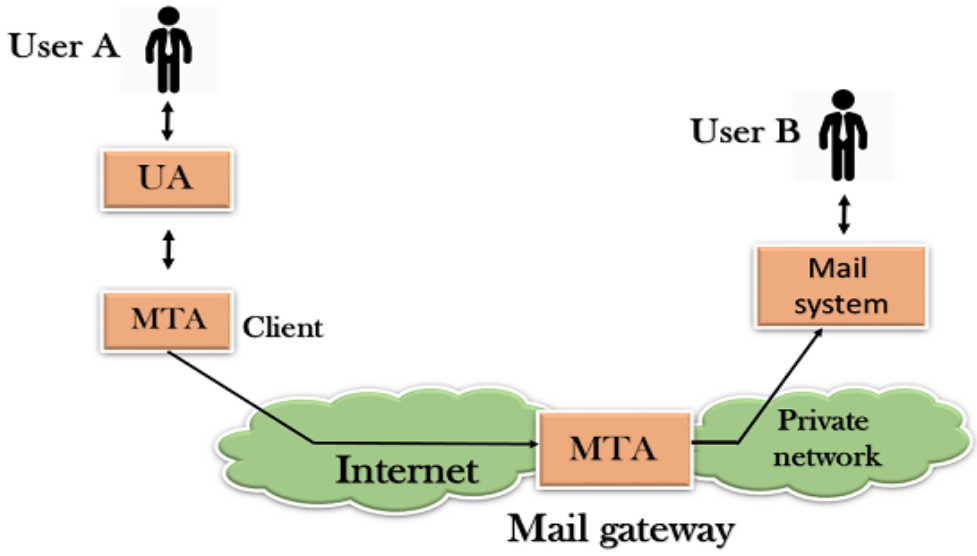

Fig 9. Without Utilizing TCP/IP Convention (Mail Door)

3.4.2 HOW DOES SMTP WORK?

a)Composition of Mail: A client sends an email by creating an electronic mail message utilizing a Mail Client Specialist (MUA). Mail Client Specialist is a program which is utilized to send and get mail. The message contains two sections: body and header. The body is the principle part of the message while the header incorporates data, for example, the sender and beneficiary location. The header additionally incorporates illustrative data, for example, the subject of the message. For this situation, the message body resembles a letter and header resembles an envelope that contains the beneficiary's location.

b)Submission of Mail: In the wake of creating an email, the mail customer at that point presents the finished email to the SMTP server by utilizing SMTP on TCP port 25.

c)Delivery of Mail: Email addresses contain two sections: username of the beneficiary and area name. For instance, vivek@gmail.com, where "vivek" is the username of the beneficiary and "gmail.com" is the space name.

In the event that the area name of the beneficiary's email address is unique in relation to the

sender's space name, at that point MSA will send the mail to the Mail Move Specialist (MTA). To hand-off the email, the MTA will discover the objective space. It checks the MX record from Space Name Framework to acquire the objective area. The MX record contains the space name and IP address of the beneficiary's area. When the record is found, MTA associates with the trade server to transfer the message.

d)Receipt and Handling of Mail: When the approaching message is gotten, the trade server conveys it to the approaching server (Mail Conveyance Specialist) which stores the email where it trusts that the client will recover it.

e)Access and Recovery of Mail: The put away email in MDA can be recovered by utilizing MUA (Mail Client Specialist). MUA can be gotten to by utilizing login and secret word.

f) After all, we used SMTP PROTOCOL which is less Encrypted or less Authenticated so the message or the Mail we Sent Would be Expose so there is one way to Authenticate the message which is By Using SSL(Secure Socket Layer) for SMTP Connection. There is another Extension of SSL called (Transport Layer Security). We will discuss both of them but first what is used in G-Mail??

The Answer to that is TLS is always used which is more secured than SSL in G- Mail.

3.5 SSL And TLS: SSL and TLS are cryptographic conventions that verify information move between servers, frameworks, applications and clients. For instance, a cryptographic convention encodes the information that is traded between a web server and a client. There is a requirement for secure framework that encode information stream from either side. A SSL/TLS testament assists with that. It goes about as an endpoint encryption framework that encode information forestalling unapproved access by programmers.

Difference between them,

- SSL utilizes Message Validation Code (MVC) in the wake of encoding each message while TLS then again utilizes HMAC — a hash-based message verification code after each message encryption.

- In SSL, the hash figuring likewise includes the ace mystery and cushion while in TLS, the hashes are determined over handshake message.

- SSL message confirmation appends the key subtleties and application information in specially appointed manner while TLS variant depends on HMAC Hash-based Message Validation Code.

- SSL has the "No endorsement" ready message. TLS convention expels the alarm message and replaces it with a few other alarm messages.

3.6 PORT No :

Default Ports	Server	Verification	Port
SMTP	Non-Encoded	AUTH	25
	Secure(TLS)	Start TLS	587
	Secure(SSL)	SSL	465
POP3	Non-Encoded	AUTH	110
	Secure(SSL)	SSL	995
G-Mail	**Server**	**Verification**	**Port**
SMTP	smtp.gmail.com	SSL	465
	smtp.gmail.com	Start TLS	587
POP3	pop.gmail.com	SSL	995

In the Code, we used SMTP with port no. 587.

SMTP is for OUTGOING MESSAGES. POP3 is for INCOMING MESSAGES.

3.7 Output:

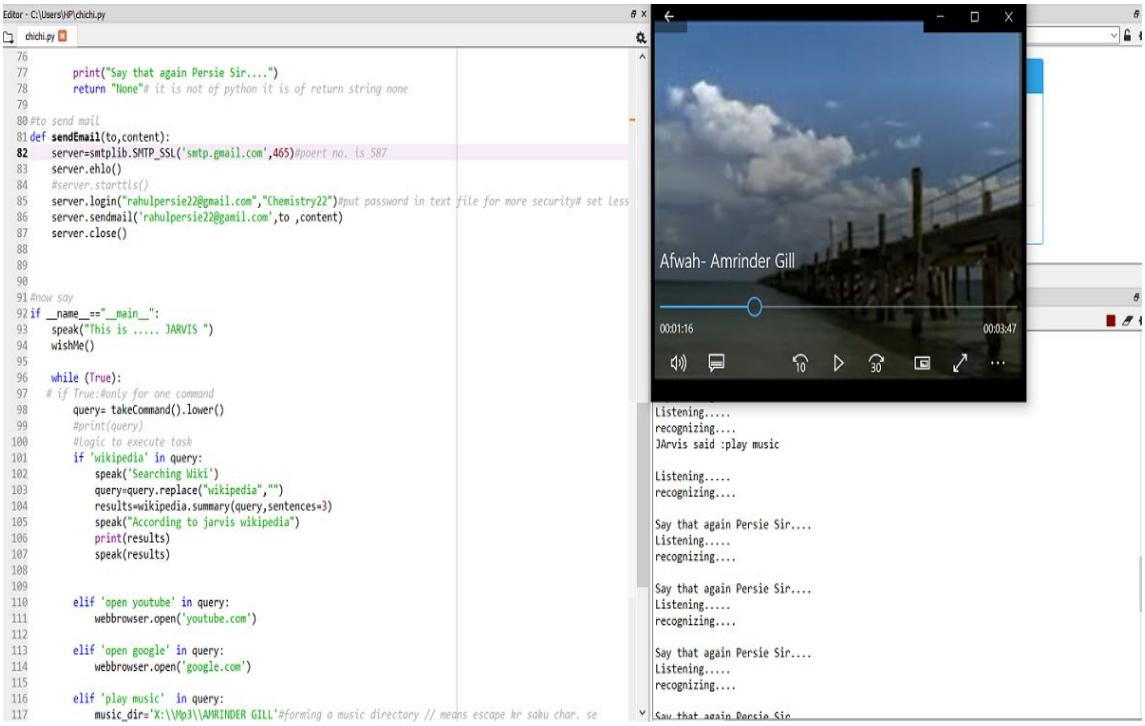

Fig 10. PlayMusic

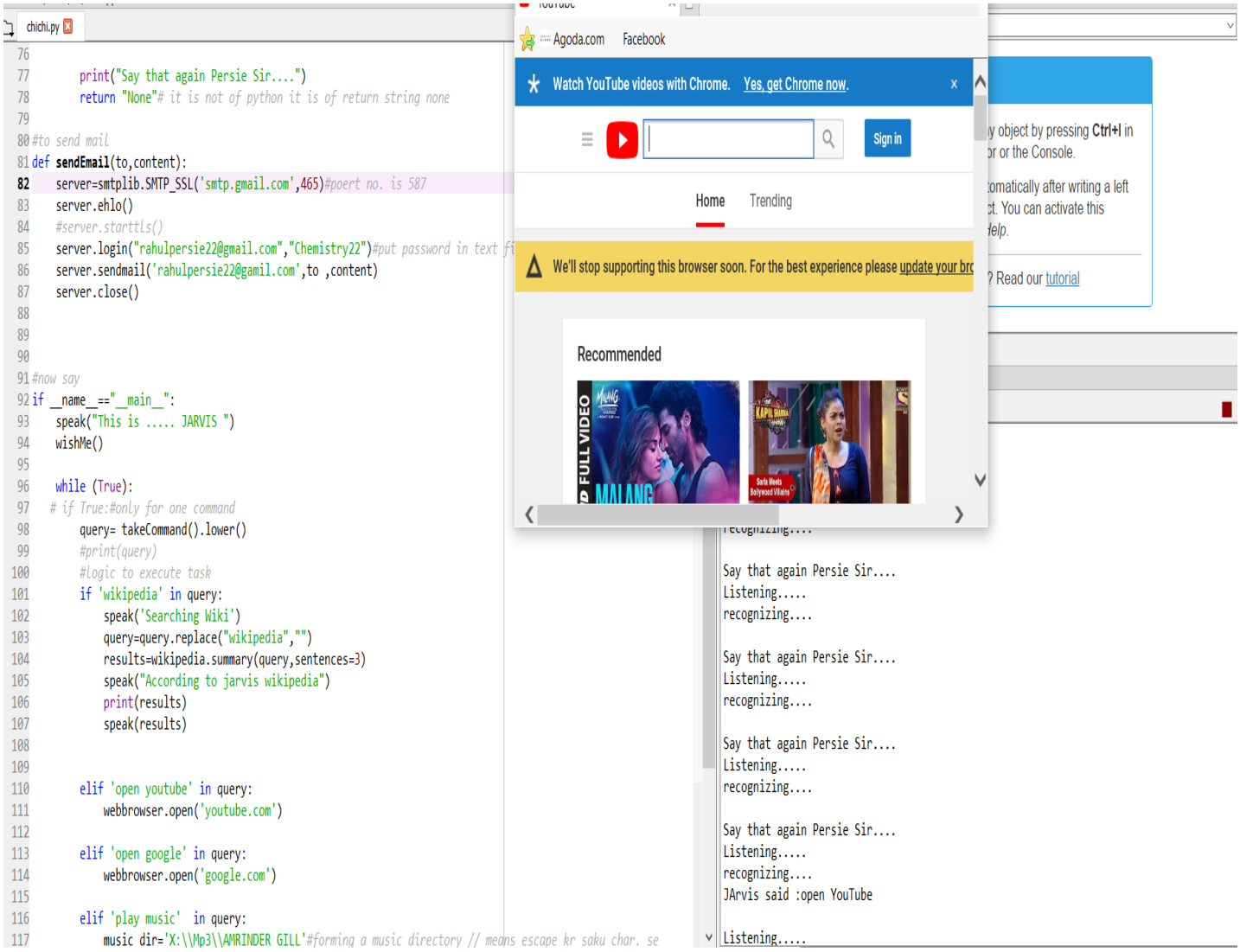

Fig 11. Open You Tube

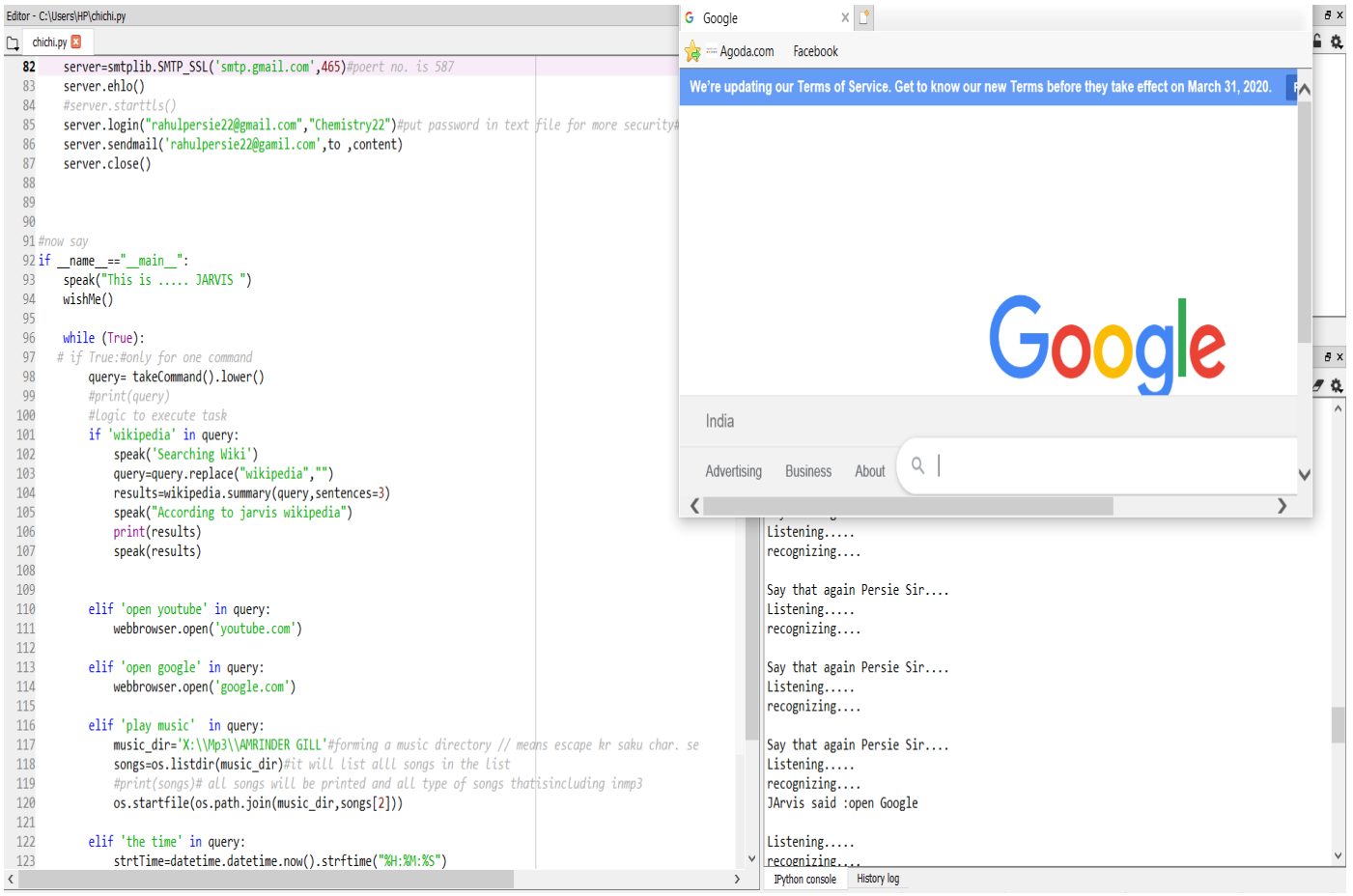

Fig 12. Open Google

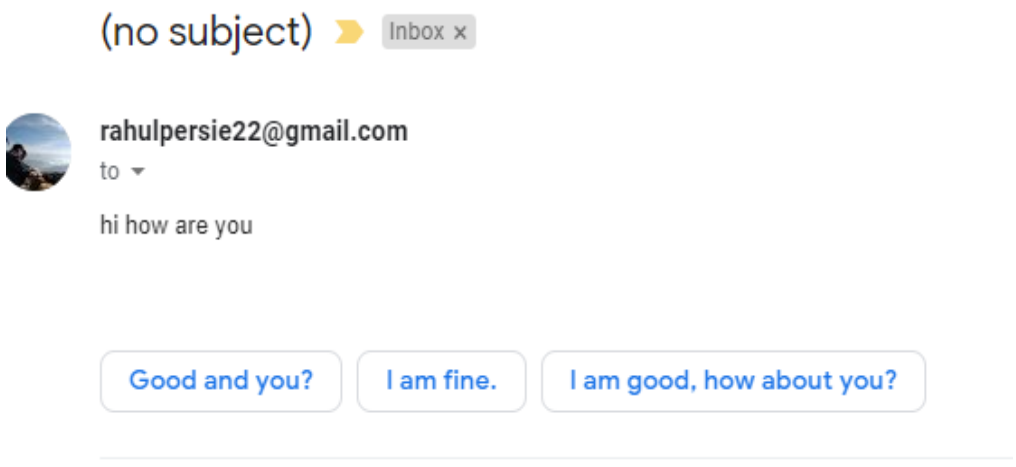

Fig 13. Send Mail

CHAPTER 4

LITERATURE SURVEY

4.1 Review of Literature:

In this We will discuss about some research papers made by some people who studied and made this research on Voice Mail for Visually Impaired possible but in their own different prospects. [1] We proposed an android application by structuring consciously for externally tested voices of a persons. It provides a message sending service based on the voice of a person where he can attain or transmit letters personally , without any address. Clients needs to learn some phrases which will help the user to perform some tasks like read, compose, send etc This system can be used by any blind people to communicate with other people through texts expertly.

The significant disadvantages of the application can be utilized as the future improvements for this task. There are two significant downsides in this application i.e.., the accurate voice acknowledgment and the picture or report connection. So later on upgrade, we can include the picture or report connection for the sender.

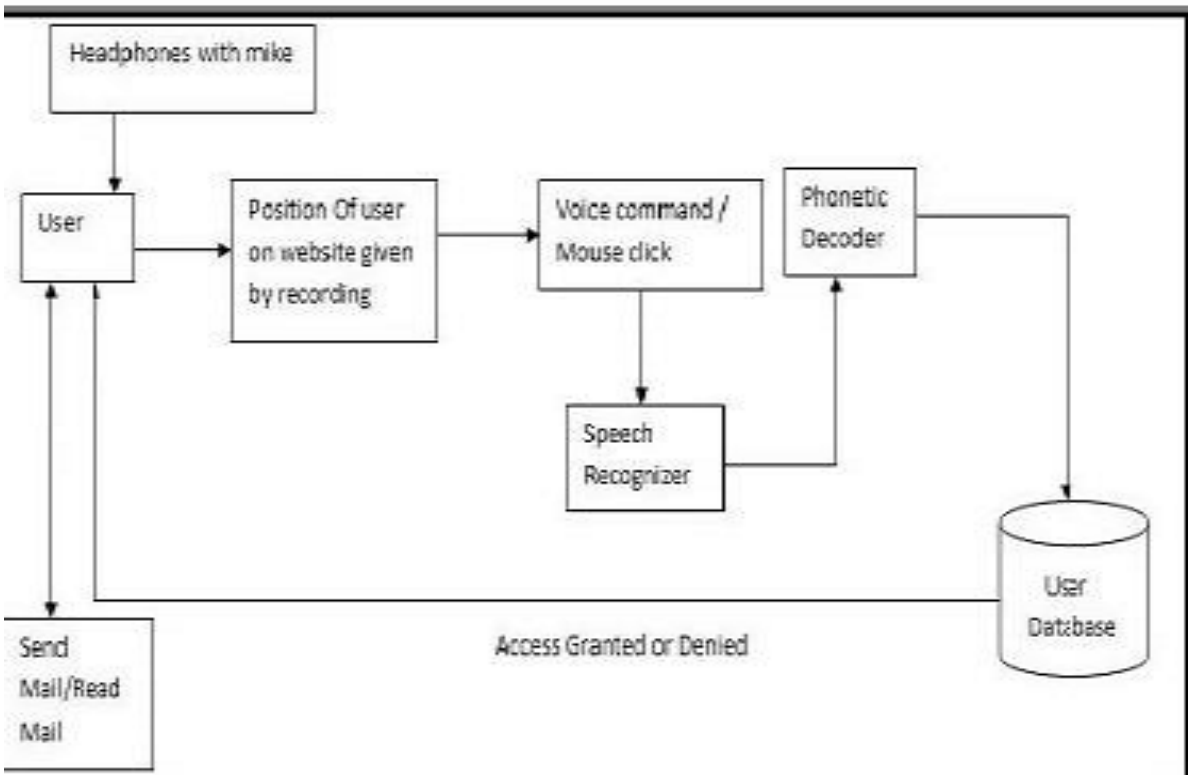

Fig 14. System Architecture

[2] The Voice Mail framework design, introduced in this paper, is an endeavor to cross over any barrier between the Blind populace to get to basic electronic correspondence modes like email. We present both work area just as portable based design for the equivalent. The framework helps impaired people to transmit messages using there voice. This will lessen the broad subjective burden taken by a impaired person to recall the position of characters using a keyboard. Further, as messages are sent by means of voice, it kill the absence of English language capability of a Blind individual. We have assessed our proposed design by looking at the presentation of our proposed GUI with that of the current Gmail GUI. Our primer outcome shows that, for a Blind individual, the GUI of the proposed VoiceMail framework performs obviously superior to that of the current G-Mail GUI.

Mouse Click	GUI Operations
Left, single	NOP
Left, double	Compose Mail
Left, triple	Cancel Mail
Middle single	Send Mail
Middle double	NOP
Right single	Check Inbox
Right double	NOP
Right triple	NOP
Mouse Scroll Up	Select Next Mail
Mouse Scroll Down	Previous Mail

Fig 15. Mouse Click Operations

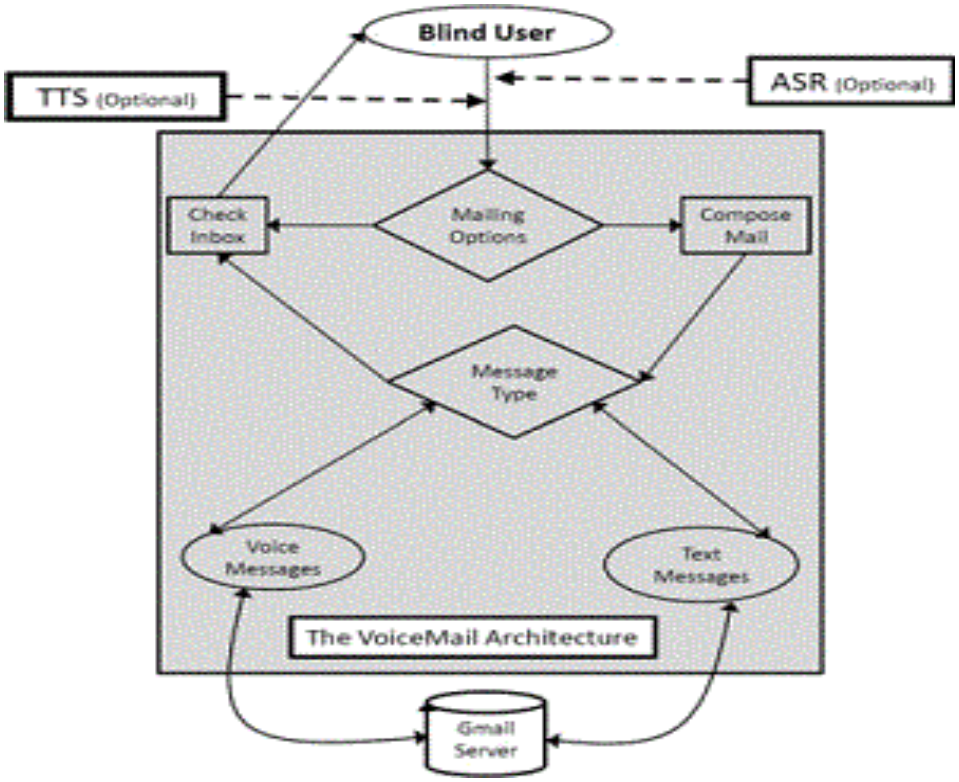

Fig 16. System Architecture

[3] We delineate the voice message system plan that can be used by an outwardly weakened individual to get to messages adequately and capably. The dedication made by this investigation has helped the outwardly grown people of our society to transmit and receive voice messages in there native language on their particular computer system or mobile. This framework engineering performs obviously superior to that of the current GUIS. This structure can be used by any person of any particular age group. It contains a part of voice to text and text to voice which makes this framework successful for outwardly weakened people just as blind individual.

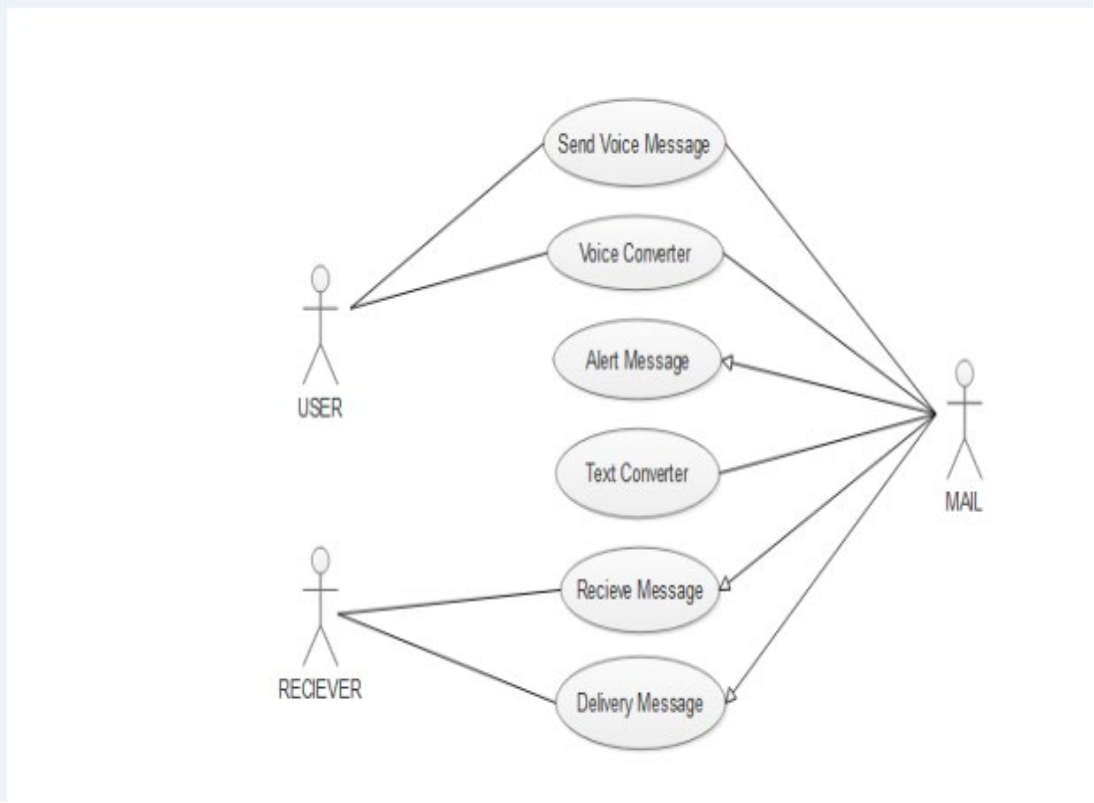

Fig 17. Use case Diagram

[4] Voice based Design encourages daze individuals to get to email with no trouble. The proposed framework entirely focuses on the advantage of the visually impaired making use of advanced innovation for their development and improvement. This system will particularly lower the tension of users to recall the buttons of console or portable keyboard . It additionally helps incapacitated and uneducated individuals. This undertaking will be particularly valuable for the present age either visually impaired or physically tested to move a step forward in their manner in a simple way to accomplish their task.

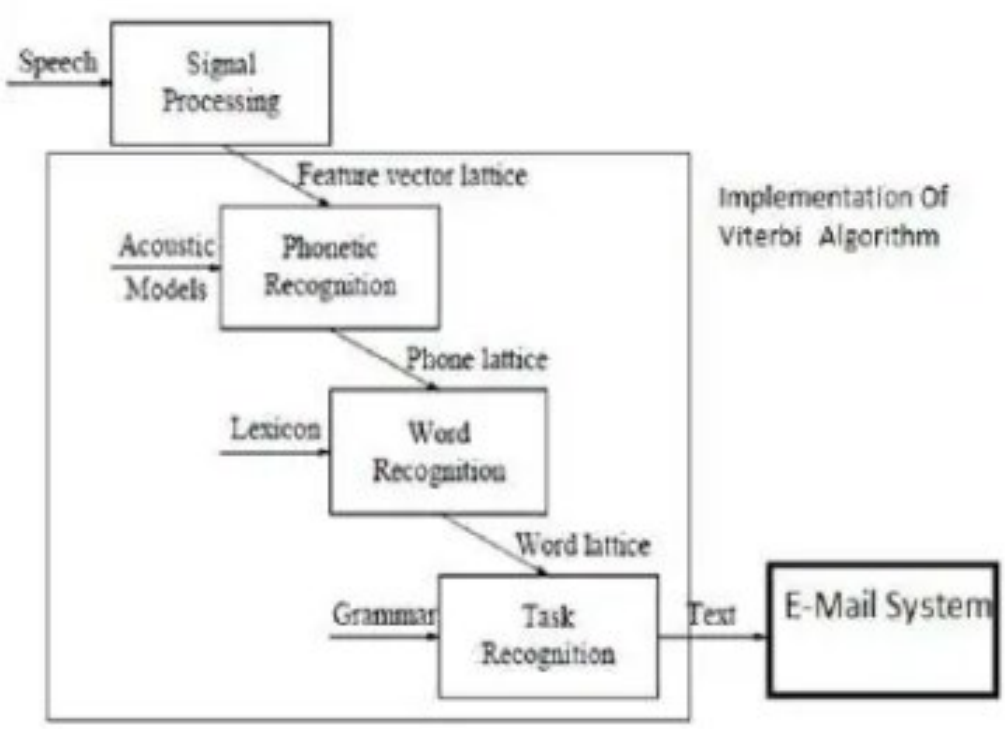

Fig 18 : Implementation of voice mail based system

[5] The reason behind developing this wonderful system is to help outwardly weaker people and impaired people of our society with the most persistent communication tool i.e. e-mail. It will overcome all the difficulties faced by these people during communication because this system works on improving the vocal features. It decreases the burden of utilizing screen per users and programmed discourse and furthermore the client intellectual heap of recollecting console alternate routes. This system is very much user friendly as it guides the user when and which operation should be performed to get particular results. Proposed system is going to be implemented firstly on desktop screens. Slowly with time we will facilitate it on mobile screen in application form. New security features are going to be installed in the login phase which will help in making the system more stable.

[6] Speech synthesis and speech recognition is currently something which is ordinarily utilized. Significant purpose for is that we simply need to talk the direction and let the machine do rest of the work for us. In each field its utilization is turning out to be famous step by step. Every day schedule assignments which require a ton of exertion to be finished by hand would now be able to be effectively finished by PCs. And such can be conceivable with our voice. Because of every one of these reasons we have attempted our best to cause this voice empowered intelligent framework in which we to have joined speech recognition. Our system comprises of various modules. Every one of them which will chip away at voice directions just as on mouse click. Modules included are created in light of an idea that they are utilized nearly on regular routine. So by utilizing our intelligent structure it will be a lot of simple to perform such undertakings. So its client can be any individual either who needs to utilize it by mouse click or by voice directions. In this way it is useful for everybody in the general public. In future we might want to upgrade our framework by making the recognition of our framework all the more better and including all the more significant level and usable modules to it.

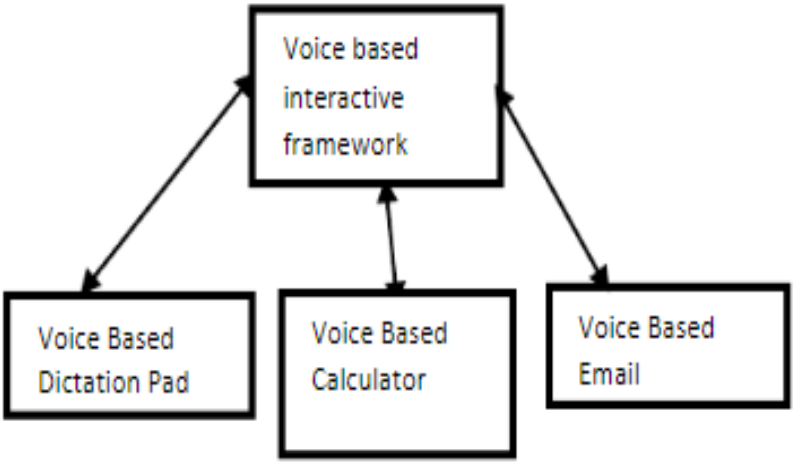

Fig 19: Application framework

[7] It has highlight of voice to text and text to voice with screen reader so that it can help the outwardly weakened people as like blind individual in our society. We have dropped the idea of using keyboard, console with the screen readers so that it will reduce the burden of recalling many different buttons . The user must need to learn the mouse clicks in a particular manner to get the work done or the user can use voice commands to give user input.

[8] Another web index empowered with voice recognizing and voice synthesis systems is proposed. From the Experiments and perceptions it is comprehended that the precision of the voice recognition can be further improved when we include extra equipment and programming. Different methods referenced in segment 2 can be applied in planning voice web index to expand its exhibition and exactness.

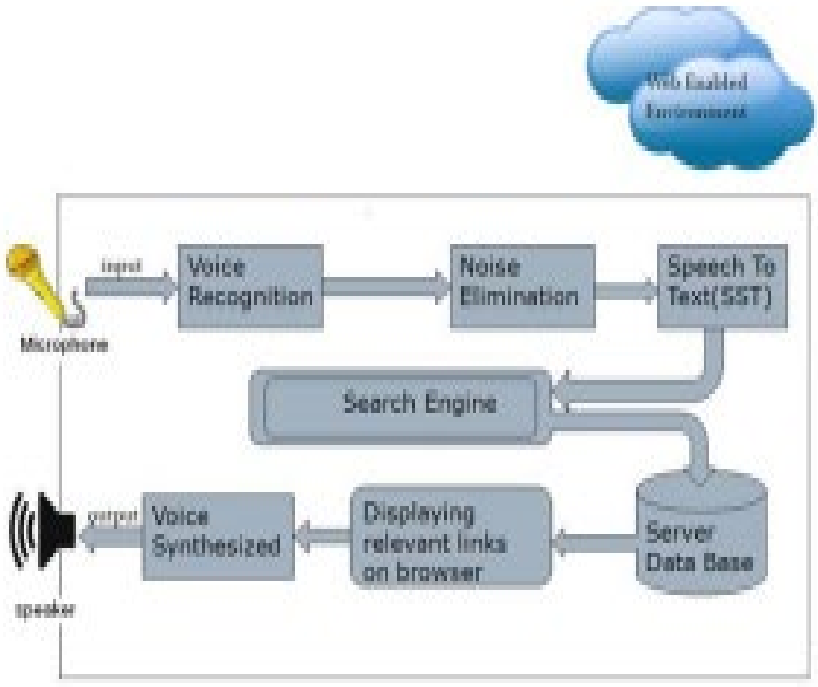

Fig 20: Proposed Framework

[9] Suggested framework will provide a way to overcome some of the downsides that were previously used by defected people to transmit the messages. We have wiped out the idea of using console and portable keyboards with screen readers so that users don't need to recall the routes or positions of buttons to transmit the message. Moreover if any customer who don't even know the territory of the keys need not worry as support use is discarded. The client just needs to follow the directions given by the IVR and use mouse clicks to provide input message. Another way user can give voice commands to provide input as indicated. It likewise helps impaired and uneducated individuals.

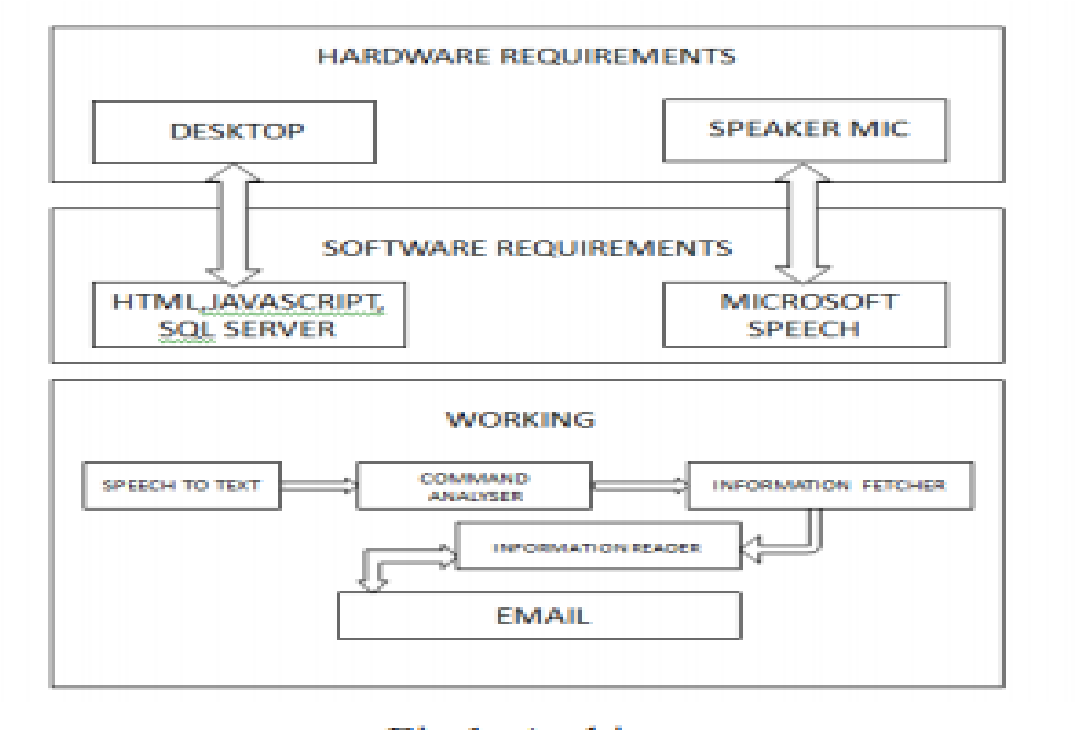

Fig 21: Architecture

[10] For those people who are not blind messaging is not a big concern for those people, yet for those people who can't see this system acts as a big profitable deal ,they can handle various professional works . This framework has incredible feature as it is utilized by dazzle individuals as they can comprehend where they may be. For example at whatever point cursor moves to any symbol on the site say Register it will seem like "Register Button". There are many screen readers accessible. In any case, individuals needed to recall mouse clicks. Or maybe, this venture will diminish this issue as mouse pointer would peruse out where he/she lies. This framework concentrates more on ease of use of a wide range of people including regular persons, outwardly undermined individuals just as ignorant. Suggested framework can be used by any person of any group age as there is no difficulty in operating this system because it incorporates voice to text and text to voice features with screen readers which will help the user in every possible way to generate the input message or receive messages.

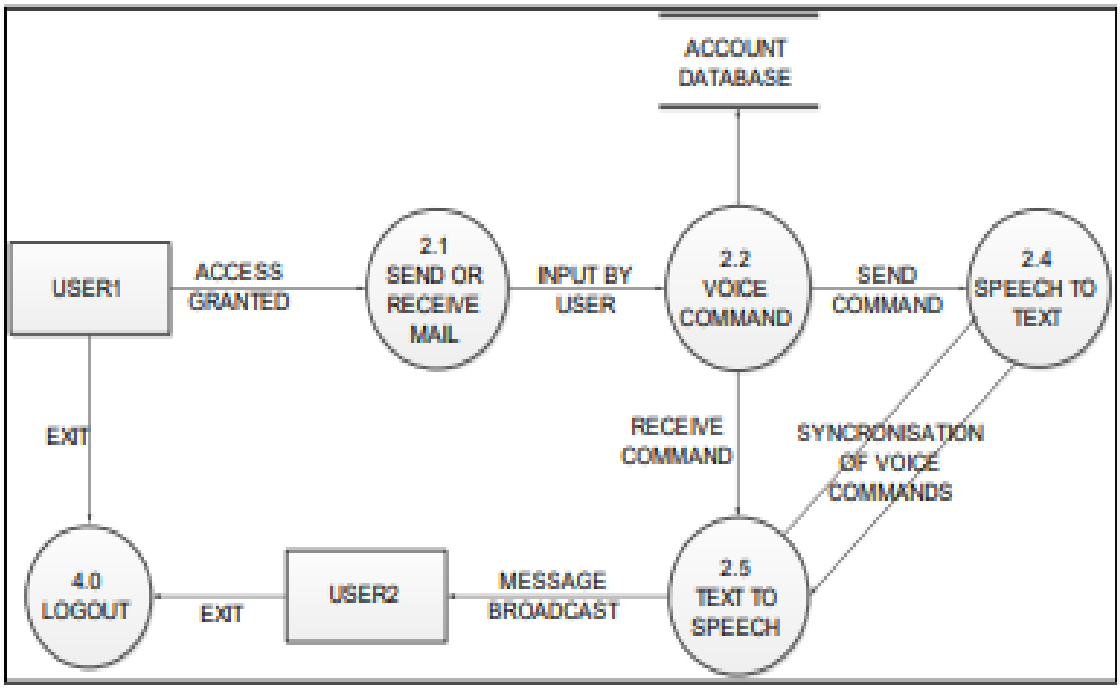

Fig 22: DFD

[11] This paper contains a suggested framework which will contain a system which will operate on human voice and will the uneducated people as well as impaired people of our society. Suggested framework will provide a way to overcome some of the downsides that were previously used by defected people to transmit the messages. We have dropped the idea of using keyboard, console with the screen readers so that it will reduce the burden of recalling many different buttons. Likewise, client who don't even know the territory of the keys need not worry as support use is discarded. The client just needs to follow the directions given by the IVR and use mouse clicks to provide input message. Another way user can give voice commands to provide input as indicated. It likewise helps impaired and uneducated individuals.

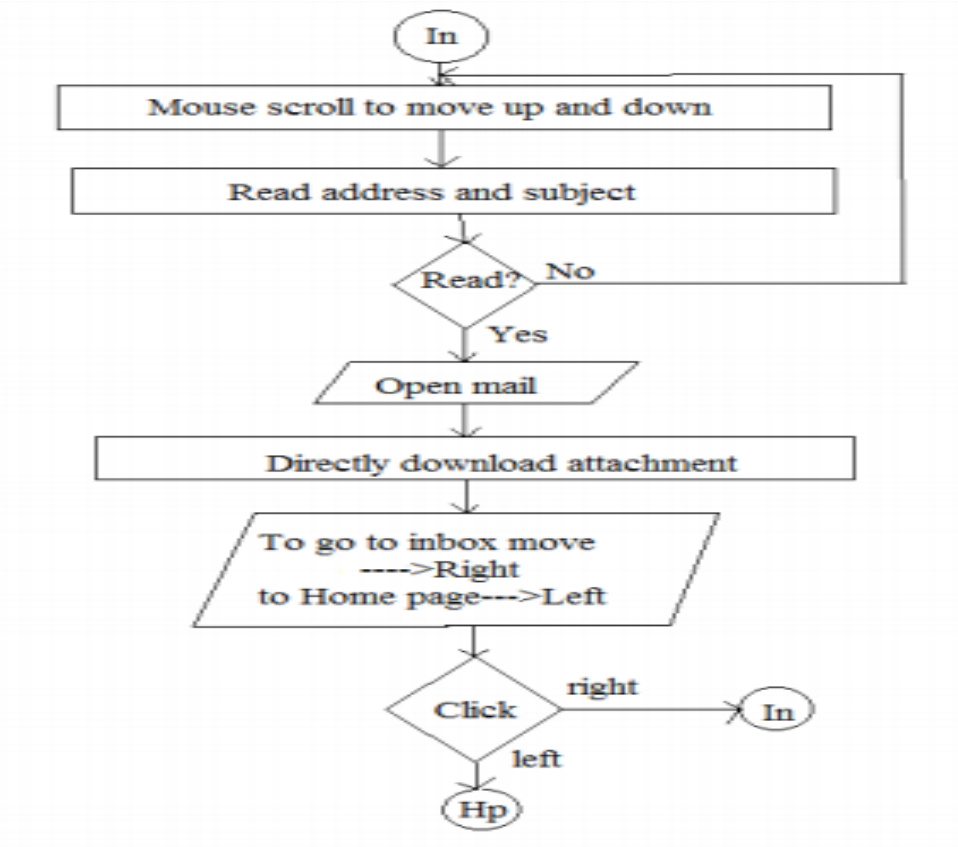

Fig 23: Flow chart of inbox

[12] Voice based connection of records in mail encourages dazzle individuals to get to email with no trouble and productive .The proposed framework totally centers around the advantage of the daze in utilizing cutting edge innovation for their development and improvement. This proposed system will reduce the heap taken on by many users to recall the buttons used to transfer a particular message. It additionally helps impaired individuals. This venture will be especially helpful for the present age either visually impaired or physically tested to push a stage ahead in their manner in a simple way to
accomplish their craving.

[13] This paper contains a suggested framework based on human voice which will help the uneducated people as well as impaired people of our society by helping them to deliver and receive the messages using their own voice commands. Suggested framework will provide a way to overcome some of the downsides that were previously used by defected people to transmit the messages. We have dropped the idea of using keyboard, console with the screen readers so that it will reduce the burden of recalling many different buttons. Likewise, any gullible client who don’t even know the territory of the keys need not worry as support use is discarded. The client just needs to adhere to the guidelines given by the IVR and use mouse clicks as needs be to get the individual administrations advertised.

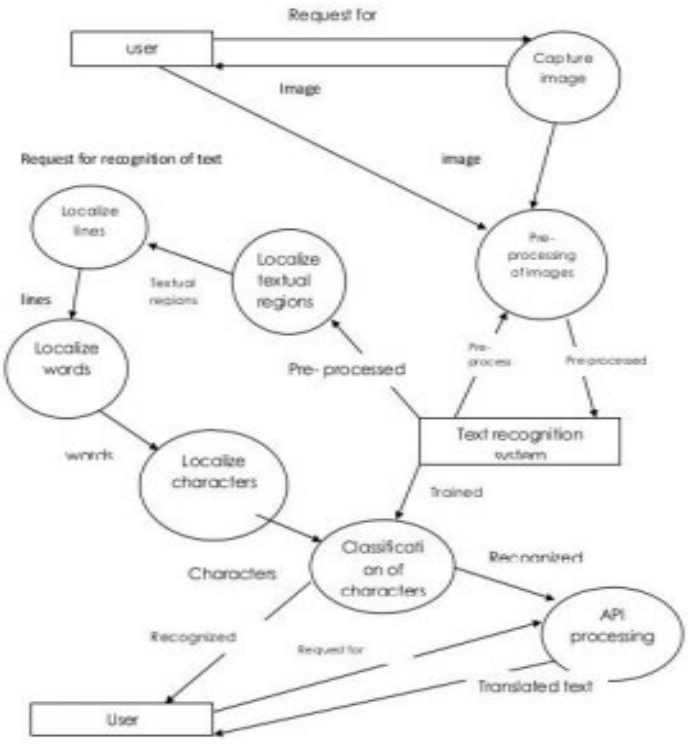

Fig 24:Text Recognition Process

[14] The title of our project justifies that that our framework suggests a electronic application for uneducated as well as blind people of our society using IVR which will strengthen every user to communicate effectively by using there own voice commands. This system will tell one client to send particular message with his own voice commands whereas in response the other client will respond to him in his message by using his voice commands. The main advantage of this system is that there is no need to learn the positions of buttons on the console or keyboard, all the user is need to is to learn mouse clicks or to compose the input message using his own voice commands. Imagine how a visually impaired person will perform the task of mouse clicks on which part of the screen. Proposed system will perform tasks based on the position of snaps as it is right snap or left snap. It does not depend on the position of the snap. All the user is need to do is to place the pointer before the snap and click aimlessly anywhere or any part of screen.

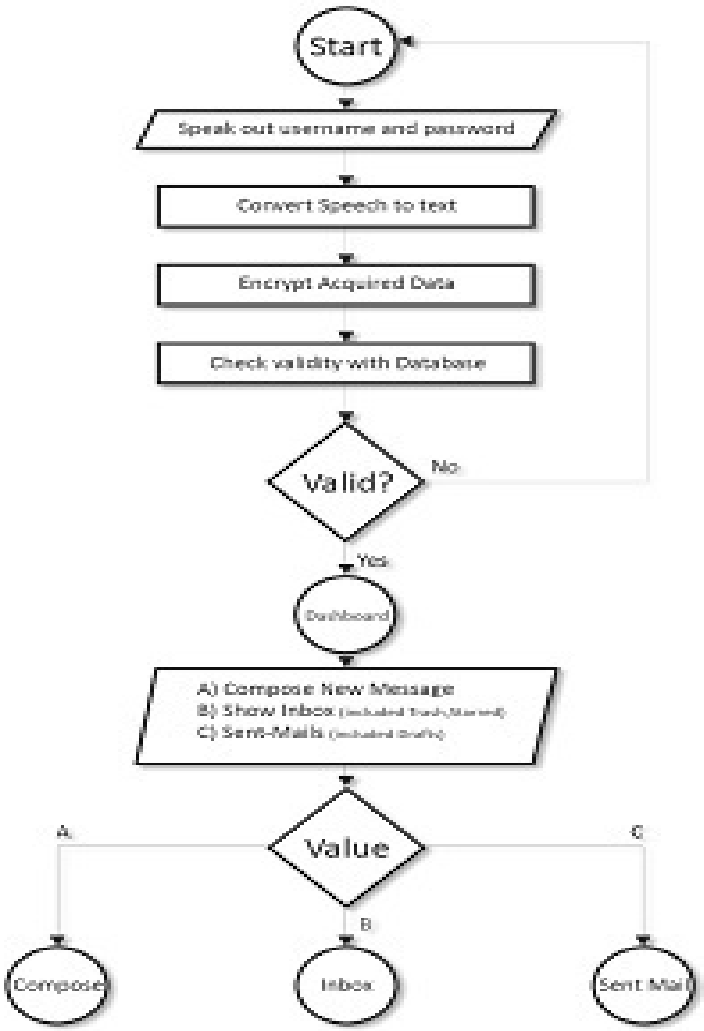

Fig 25: Login and Dashboard Flowchart

[15] This framework concentrates more on ease of use of all kinds of people including customary people, outwardly bargained individuals just as uneducated people groups. This voice based email framework has extraordinary application all things considered utilized by dazzle individuals as they can get where they are. For those people who are not blind messaging is not a big concern for those people, yet for those people who can't see this system acts as a big profitable deal, they can handle various professional works. There are many screen readers accessible. In any case, individuals needed to recollect mouse clicks. Or maybe, this venture will lessen this issue as mouse pointer would peruse out where he/she lies. For example, at whatever point cursor moves to any symbol on the site say Register it will seem like "Register Button".

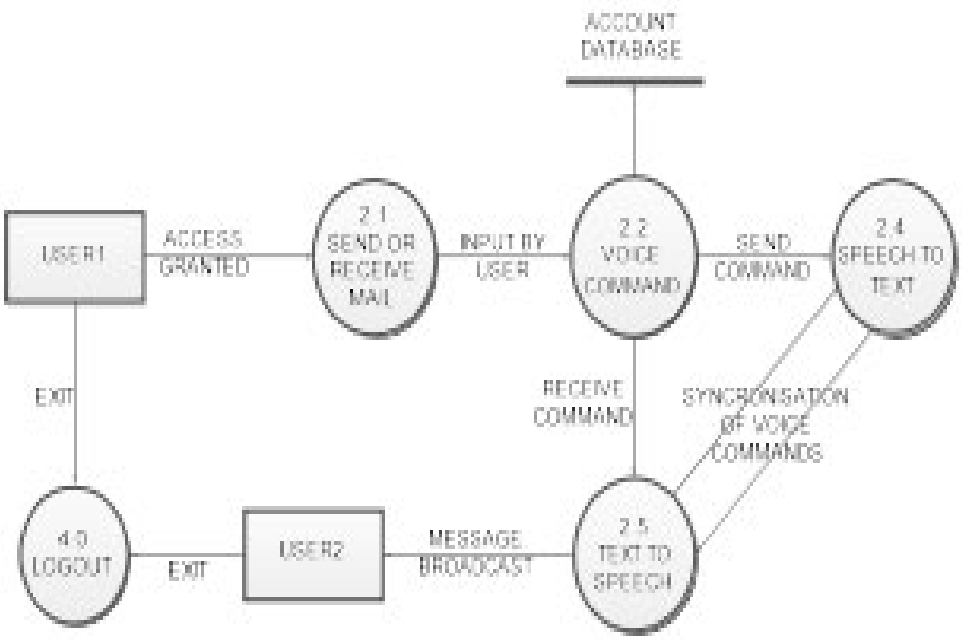

Fig 26 : System Architecture

CHAPTER 5
CONCLUSION

5.1 Conclusions:

In our undertaking our project will help the people who are visually challenged to get advantages of an e-mail profitably. Our project theme basically tells is that it will remove the limitations of visually challenged people to receive the information.

We have disposed of the idea of utilizing console easy routes alongside screen readers which will aid in reducing the intellectual heap recollecting terminal alternate paths. Guidelines provided as needs to be publicized in a specific authority. Except this the customer should provide the information through speech input when asked.70% percent of visually challenged people of whole world live in India. Our project will enable such people to get an E-mail and resound and vision elements proficiently. This will reduce the effort done by terminal who was doing the much hard work earlier. It likewise help.

5.2 Application:

Our project will definitely make our localities much better. This will help in digitization of each and every information and medium which were earlier accessed manually by visually challenged people and It will also give a big boost to our aim and target of making India completely digital. So seeing this opportunity It will encourage engineers to build better equipment for visually challenged people who can't understand technology easily so that an easy to go device is ready.

5.3 Future Scope:

You know there is a proposal of clubbing sound with image channels like RGB AND BGR etc. and alignments and style which are available in electronic mails identification system. We can Use Google VOICE API instead of Microsoft sapi 5.0 as it has fast processing and have better capacity to learn (Machine Learning).

Instead of using SMTP With SSL we can use TSL for more encrypted communication as it is more secure. We could also have embedded our system in an application (APP) by using Android.

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