

VOICE BASED EMAIL WITH GOOGLE API

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Degree of Bachelor of Science in Computer Science and Engineering

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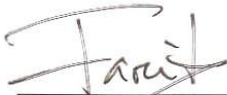


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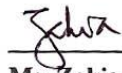
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We hereby declare that, this project has been done by us under the supervision of **Ms. Zakia Zaman, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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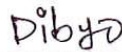
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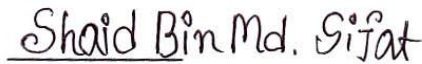


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ABSTRACT

Internet has become one of the basic computer networks through the world for information and communication facilities. Without internet it is impossible to do any kind of work. There are many ways to communication through internet. Where email gives the best facilities for communication. But if we want to use Internet we have to read, see and write. That's why if the user visually impaired or disabled to do anything internet is totally useless for him/her. For them we want to develop our project. With this project anyone can send email as usual blind and disabled user. This project basically based on voice. When u use it u will hear some instructions. And u have to follow this instruction answering through your voice. With these facilities it is easy to use for visually impaired and disabled users.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Internet is the global system who interconnected computer networks. Not of a single work can be done by without of internet in this modern era. Internet has become the mote useful for communication.

Internet has changed the world with his facilities. Internet has revolutionary change in many ways. Internet has made our life so easy that anyone can find any kind of information through internet. Communication is the best revolutionary things aspects others by internet.

Emails are the most useable way of communication through over the internet. Through email we can send and receive information. But there are certain humans who can access the internet and must able to see.

However, everyone can't use the internet. Mostly if u want access the internet you need to know how to write and read also most important thing is u have to see. If u visually impaired internet is totally waste for you.

That's how it's make the internet totally useless for the visually impaired people and also who are illiterate. But there are some people who is not gifted everything we have in our society. For them also internet is useless. Mainly who is blind for them this it's hard to live in this modern era.

Also, there are around 240 million people around the world who is unaware of internet and email. All the facilities like internet, email can used by the people who can see. For visually impaired people they need help of others. But it's hard to get help everytime.

In earlier emailing system, it is a tedious job to type the whole email text which increases the time taken to send the mail. Although there is much advancement done in this

field, there is no such facility provided to the naive users to use the mail system efficiently.

On the other hand, there is a need to look at new innovative tools to make the Internet a more reliable media for all types of users, particularly, the physically disabled ones. In the past, efforts of building such a mailing system, a few advancements in addition to the conventional mailing system have been tried to put into effect.

The existing technologies like screen readers, speech recognizers, speech to text and text to speech which came into picture, made it easier for the visually impaired, though only partially. Voice based email system with these technologies alone pose privacy and security problems for a visually impaired person.

So, it will need to create a complete voice-based application for the blind which can send or receive mail with security and privacy. Mostly we see that the current version of screen readers like TTS and ASR do not provide full efficiency to the blind people and not so user friendly to use the internet and email. So around of 285 million people who is visually impaired for them we have to make internet facilities of communication usable for them.

We use computer everywhere. But the information access and computer handling has to be done by the use of mouse and keyboard also have to see to read all the things presents on the screen and have to decide what to do like if we want to read news we have open the browser first and then type the text that's why user have to be see. The decision making depends upon the eye sight and by reading everything that arrive on the screen. So the computer and information is not useful and user friendly for the blinds. The blind people can't read the information and can't view the mouse cursor to give command. They also can't access the mail and can't send a mail. This how computer is useless thing for the blind people. So for them we are going to launch a project that's transform the information into voice so that they can hear the message and access the mail easily. Where we are researching for without a browser and how easily we can access the mail without the use of keyboard and mouse.

From our project user does not need to know any kind of basic information regarding keyboard shortcuts or where the keys are located.

All these functions are based on simple mouse click operations make it very easy any type of user to use this system. So the user need not worry about remembering which mouseclick operation he/she needs to perform in order to avail a given service as the system repeat all the instruction own-self.

With this application the g-mail can be access by a blind person to easily and smoothly. The application is a web-based application for blind persons using their voice only and they able to perform all the useful tasks. This system has some instruction that user have to respond it with their voice. The main advantages of this system that it's reduces the use of keyboard and the user have to respond through their voice only.

For people who can see, emailing is not a big deal, but for people who are not blessed with gift of vision it postures a key concern because of its intersection with many vocational responsibilities. This voice-based email system has great application as it is used by blind people as they can understand where they are whenever cursor moves to any icon on the website say Register it will sound like "Register Button". There are many screen readers available. But people had to remember mouse clicks. This system will reduce this problem

as mouse pointer would read out where he/she lies. This system focuses more on user friendly of all types of user including regular users, visually impaired users and also

illiterate users. They can hear the recent received message through IVR technology. This technology proves very effective for all users in the terms of guidance.

1.2Motivation

[1] Internet is the source of knowledge and information where visually impaired people face difficulties in accessing text-based material. The idea is to develop audio feedback based virtual environment like screen reader, text to speech, etc.

[2] Voice mail architecture helps blind people to access info. In form of audio, text, self-read system. Idea focuses on helping visually impaired and illiterate people to access technology by reducing cognitive load. Decision making depends on eyesight and everything that happens or appears

1.3 Objective of Study

1. The main destination of this project to create an IVR so useful.
2. To develop a voice-based email system that help the blind people can use email easily.
3. When we use this system computer will give the user some information of specific operation to get services and if the user wants to use this system he/she needs to follow and perform the respective information.
4. Main thing is we want to develop our project user friendly and the system design will be very easy to use like user don't need to use any kind of keyboard shortcuts.

1.4 Definition of Terms

ElectricalAided: An electronic device that help particular disable been to achieve a setting goal

IVR: Interactive Voice Response

GPS: Global Position System: Is a radio navigation system.

Phonetic: Relating to the sounds of spoken language

Receiver: Person or thing who receives something.

Speech: The ability to speak or to use vocalization to communicate.

System: A collection of organized things.

CHAPTER 2

BACKGROUND STUDY

2.1 Introduction

This chapter give u all the information of our project background study. Also it's problem and scope of the study.

Our proposed project is we-based application which helps a user to send and receive mails.

The purpose of our project is a visually impaired user can send email easily. With this project it will help all the visually impaired user.

2.2 Existing System

Today's existing mail systems are suite of supported applications give users benefit of accessing and managing email via web facilities. This makes email the popular form of communication. This existing system do not support any means of audio feedback service therefore this system totally useless for visually impaired user. As they are not able to visualize any things which are shown on the desktop screen. So they face some difficulties while performing various operations.

2.3 Proposed System

Our proposed system is totally based on voice. We try to recover all difficulties that's happen in other systems. So we reduce all kind of use of key word. And gives some common instruction. That will help to understand any kind of user what to do.

2.4 Related Works

In our project we have everything that a user can send and receive email. But our project is different from others. Because we just perform all the task with voice. And its have few instruction to use easily.

2.5 Comparative Studies

In the present time there are several voice-based email web applications. In this type application is not user friendly. And not full voice based. If u want to use it u have use some key words. Also they have confusing instruction. So in our project we try recover all the small issues that's provide all facilities and user friendly.

2.6 Statement of Problem

All over the world there are 3.9 billion active email users according to 2019. And in 2020 it will increase up to 4 billion. Email is mainly the common communication service in this modern era. We use this system in our daily life but who is visually impaired for them it is really tough to use this service. As usual blind people can't see the screen that they can't make out decision where to click in order to perform the required operation.

Those who is visually impaired for them using a computer for the first time is not so easy as it is for the normal user even though computer is user friendly. There are many screen readers available in internet but these applications have some difficulties. Mainly screen readers read out whatever content on the screen and to use the functions the users have to use the keyboard shortcuts and also mouse. But for him it's tough to find the where key is located and where he uses his mouse pointer to click. That means screen reader have two problem one is user cannot make decision where to take the mouse pointer and where to click. Another one is visually impaired people can't find out the key location.

CHAPTER 3

SOFTWARE REQUIREMENT SPECIFICATION

3.1 Introduction

This chapter gives a scope of description and overview of everything that included in the SRS document. Also, the purpose for the document is described and a list of abbreviations and definitions is provided. It's describes how user must follow. It's describes how user can enter data by providing his username and password to confirm his identity and also show that user can it through using use case.

3.2 Overall Description

This web application will have one access one for the user only. User can use it and sent mail with voice-based system through Google API which is very helpful for blind person or physically lamed person. In below here we describe who will use this and how.

3.2.1 User

While we firstly saw the homepage we see the colorful page it. The homepage give user some instruction and after following the instruction this we can found username and password option after that sign in we can send mail to the user.

3.3 Use Case Diagram

Diagram will show all the project work in the below. Our diagram will visualize the user what a user can do here we can see.

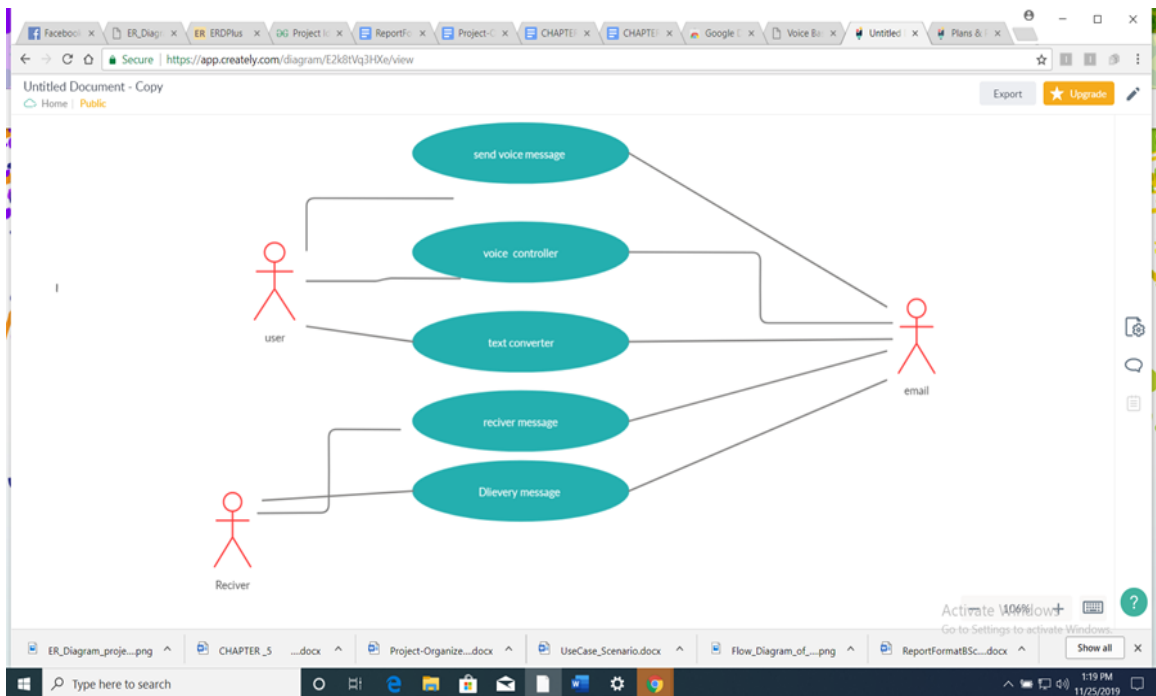


Figure 3.3: Use case diagram

3.4 E-R Diagram

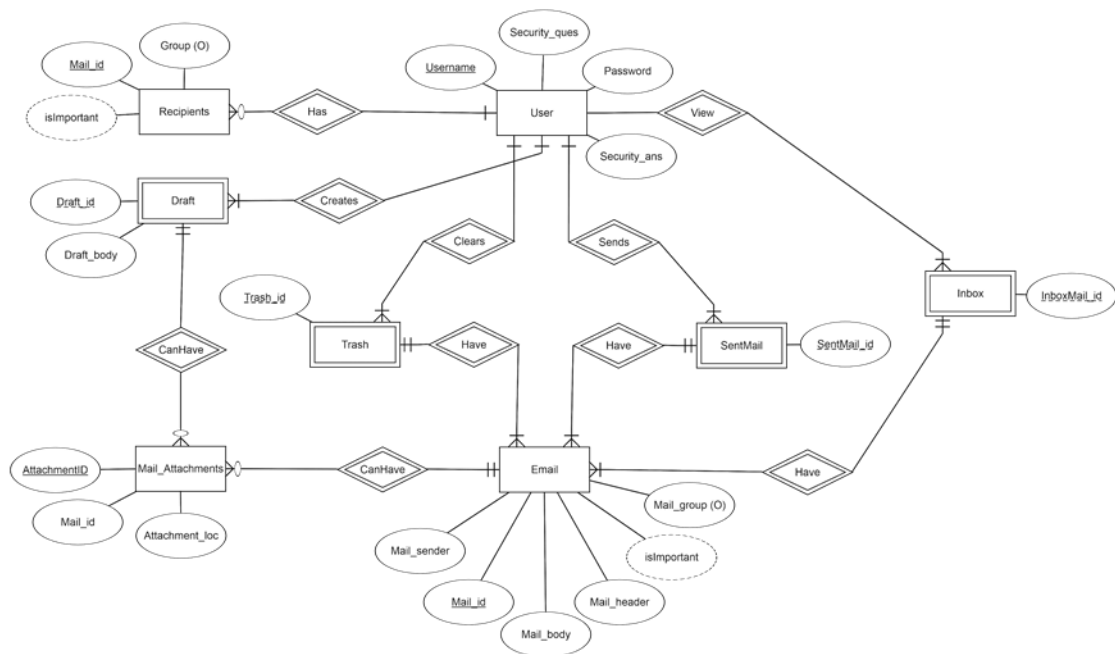


Figure 3.4: E-R diagram

CHAPTER 4

DESIGN ANALYSIS

4.1 Introduction

Our provided application will be a web-based application for blind peoples using IVR- Interactive voice response. Everyone can control their mail accounts and able to perform all the other useful tasks using their voice only. This system will give instructions to the user with voice commands that what to perform in the certain action and user will just respond with his/her own voice. Comparison with other system the main benefit of our system is that it's reduces the use of keyboard completely and the user have to respond just through their voice and mouse click only.

Now, everyone has the same question in mind that how will a blind person see the correct position on the screen and use the task of mouse. But our system performs this action on the clicks of any button that means it does not matter that it is left click or right click and it does not depend on the screen where the cursor is placed before the click given by the user.

4.2 Design

Our project design is divided into three parts. Given below with described:

4.2.1 UI Design

Our project is web-based project that's why we use UI (User interface) to develop our web. That is, the designing part of the web pages which the user will use to interact fast.

4.2.2 Database Design

We know database is considered to be the main part of every project. Mainly database is used for store details. In our application, we also use databaseto store our user details such as name, age, address, phone no etc.Also, a database can store and keep the information about how many emails at sent box or received box or in draft box. The completedesignof the database is shown in the ER-diagram given below. This DFD diagram will help to shows all the tables with all fields and also help to understand the relationship between different tables.

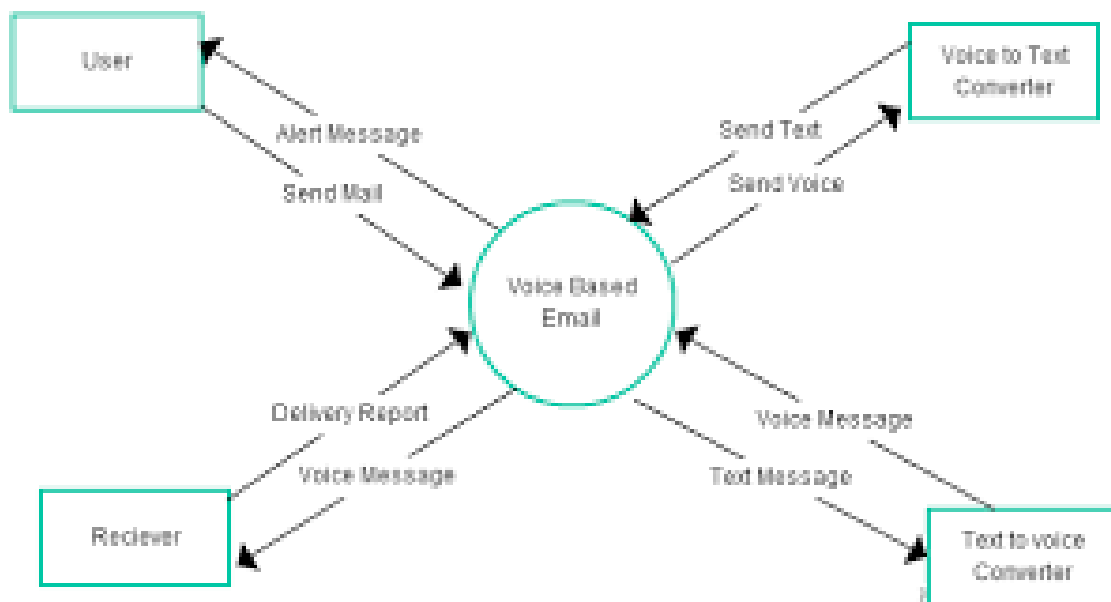


Figure 4.2.2: DFD-1 diagram

4.2.3 System Design

This part is those who is interested about the system how it's work. Here we give u a complete diagram of the system and it's designed. This flow diagram gives u the all actions performed by the system.

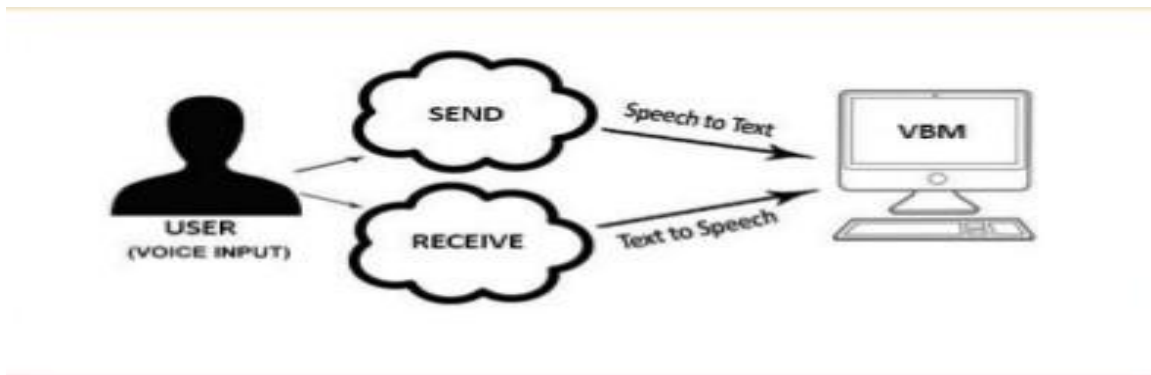


Figure 4.2.3: System Design

After finishing all the parts of design, we will focus to implement our project.

CHAPTER 5

IMPLEMENTATION

5.1 Introduction

Firstly, we will search some project proposal of this topic. Then we will first take a flow chart for how we will work together. We will also help our respectful supervisor. He teaches us that how we can complete this project and how it was easy to finish. We will use PHP, html, MySQL, etc. We point out that Voice based email is an initiative of introducing the mailing system that entirely concentrates on the benefits and comfort of the visually challenged and blind people. However, the advantage of the voice mail is both blind and normal users. But this application is based for blind user that they can send mail easily through their voice. For user satisfaction we bring a desktop application that can be accessible from everywhere if you have internet and any one can use this application. Also, it is supported by windows of any kind of versions from windows Up to windows 8.1. Our proposed system benefits from different platforms, and it is easy to implement. We establish the unique feature of notification that is entirely based on voice to improve the performance of our system. The research-based analysis and experiments determine that it is possible to add more features to the mailing system for benefits of the users. Here our project system firstly asks user 3 question. Then automatically user create his/her account using voice. To open a account user give his/her name, then again confirmed his/her name. After name he has to give the password and again confirm the password. That's how user create a account. This process helps the blind people.

5.2 Implementation Details

5.2.1 Home Page

The user is to this page once log in done successfully. From this page the user can carry out all the operations and instruction that the user wishes to complete. Given below the options:

1. Compose
2. Sent mail
3. Inbox
4. Drafts

Prompting will provide the mouse click operation that needs to be performed for the required service. After login if u want log out from the system u have to use double right click button which is specifically performed to log out from the system at any time when the user wants to. This operation helps blind users.

When all these functionalities have been completed the modules given below need be included in the system and it will be implemented as a part of the proposed system. The complete walkthrough of this system is given as follows:

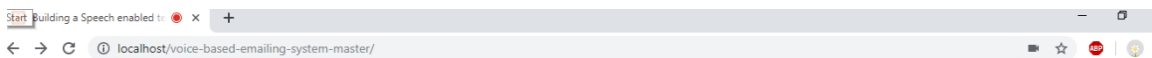


Figure5.2.1: Home Page

5.2.2 Registration

This is the first process of our system. Any of the user who wants to use our system he/she should have to register first by giving the proper information like username and password. This part will collect all the complete information from the user because if u want to enter to the system u have to give all the correct info. Mainly the user needs to speak up with the details that required. Where the system will check all the given information and confirmed by given instruction. If the information is not correct user can't be login as long as he re-enter the required correct information again else the system will verify the operation correctly.



Figure 5.2.2: Registration Page

5.2.3 Login

When the registration is done by the user, he/she can login to the system immediately. So before login, the system will ask some instruction. System will ask the user to give all the required information username and password. User have to give the information through his/her voice. This will be confirmed in speech. Speech conversion will convert into text and user need to give the valid information. After the info the system will check that given info is correct or not. When the entry is done correctly system will check the database that the data is entry or not. If the user is confirmed by the system it will go directly to the homepage.

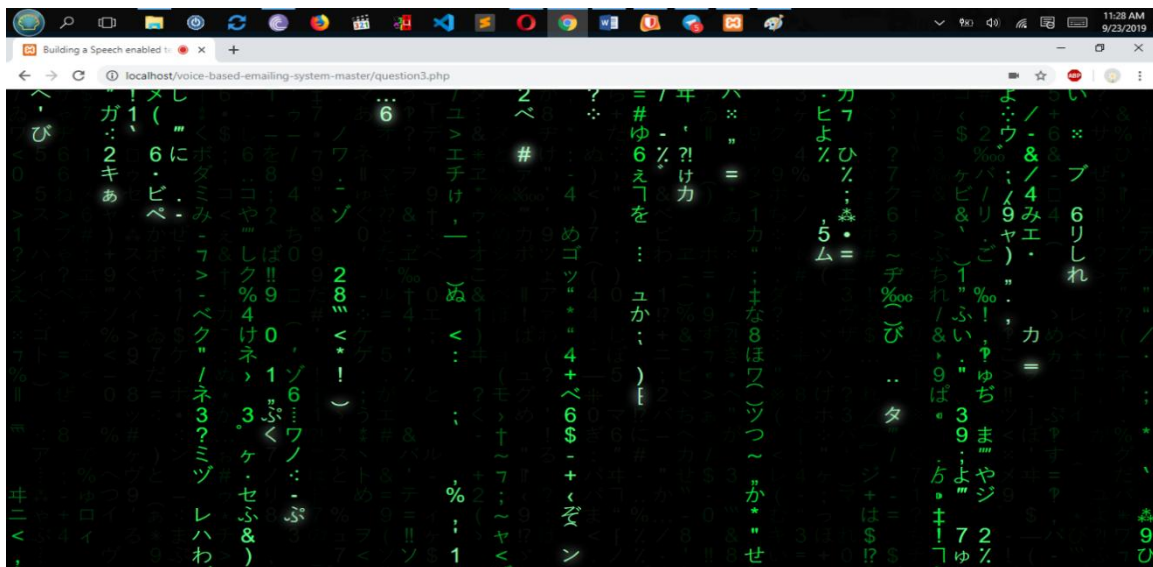


Figure 5.2.3: Login Page

5.2.4 Forget Password

In this part when a registered user forgets the login password and he/she failed to login he/she can select forgot password option. Firstly, in this option the user has to enter his/her username with his voice. After the given username the security question will be searched in database. This question is provided at the time of registration page. The question will be speak-out as a voice from the system. Now user should specify the

correct answer that was provided by him/her during the registration time. If both answers get matched, the system will give option to change the password for the user.

5.2.5 Compose Mail

This is the most important options provided by the any kind of mail services. The functionality, option and facilities of compose mail service option would not match with the others present mail system. Because this system is for the blind people and the use of key-board activities are completely avoided that's why composing mail would only be done by voice input and mouse activities. That's why u can use it without type of keyboard input. Now user can directly record message by his/her voice that what he wants to send.

Then this voice message converted into text and it will go in form of attachment. Then the receiver can hear the text message in recording and get the message what's a sender wants to send. User would not require attaching the file. Record option will be given by the system in the compose window by own self. When recorded text is confirmed perfectly or not by letting the sender with voice message and if the sender confirms it then it will be automatically attached to the mail.

Flow chart of compose mail:

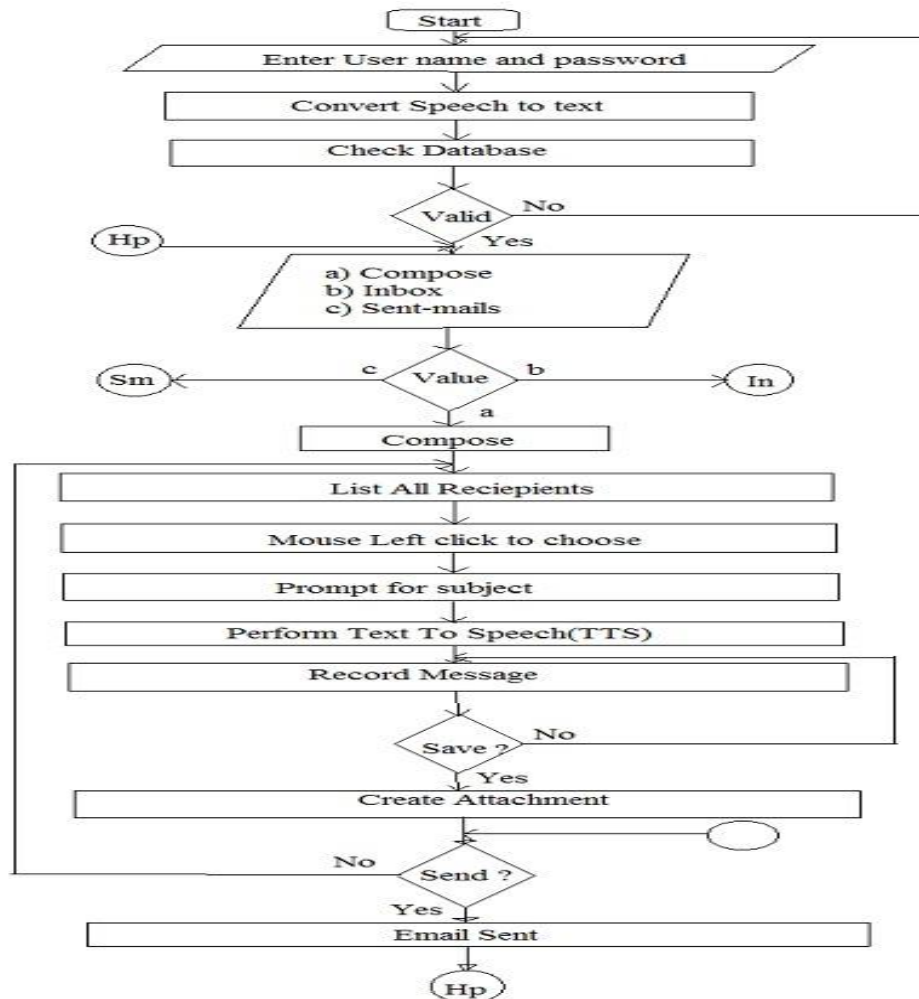


Figure 5.2.5: Flow chart of compose mail

5.2.6 Inbox

This inbox option helps the user to get all the required message. The user gets all mails that has been received to his/her account from the sender. The user can listen to the received mails if he/she wants to hear by clicking and following the operation specified by the system. In order to navigate through different mails rapid will specify which

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operations to perform and instruction to follow. Each time the mail is selected by the user will be rapid as whom the sender is and what is the subject of that particular mail. Accordingly, the receiver can decide whatever the mail needs to be read or not or it should be deleted. Deleted mails will be saved in garbage section.

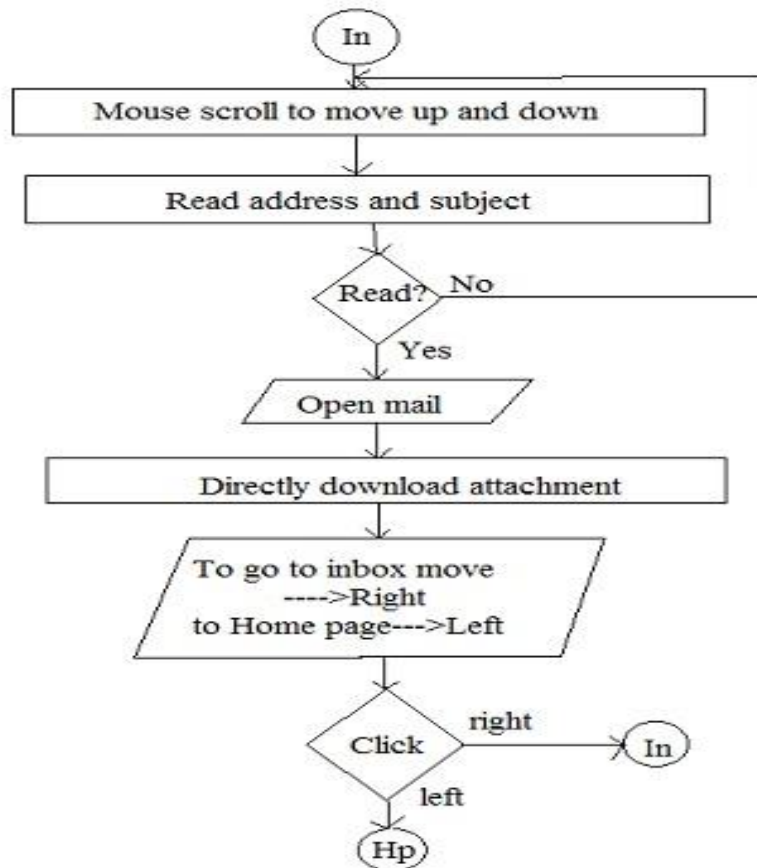


Figure 5.2.6: Flow chart of inbox

5.2.7Drafts

This option will keep a track of all the mails deleted by the user. Deleted mails could be the ones from inbox or sent mail. If at any time the user needs to retrieve a mail which was deleted it can be done from this option.

CHAPTER 6

TESTING

6.1 Introduction

This chapter shows how our web application response in production. How well it's interacted with user and give smooth experience with the help of front-end and back-end.

It's also shows how this web application store user's data in database. This visualize how front-end take data and how back-end store it in database. By giving demo or real-world data we tested our web application and all the test case with its result shown with picture. We also tested either our web application is being able to take those demos or real-world data and handled it properly or not.

6.2 Unit Test

It's a testing method where each component of web application tested separately. It's a process to verify each component works individually. The goal of unit testing is to isolate each part of the program and show that the individual parts are correct. By applying unit test bug can be fixed early phase in development.

6.3 Integration Test

It's an opposite process of unit testing. Rather than testing individual component in integration test all the things are combined. Here, all the developed modules are coupled together to test. In integration testing developed materials are tested together. Testing performed to expose defects in the interfaces and in the interactions between integrated components or systems.

6.4 System Test

It is a level of software testing where a complete and integrated software is tested. The purpose of this test is to evaluate the system's compliance with the specified requirements. System test is performed on a complete integrated system to evaluate the system completely. It's a testing where whole system is evaluated fully.

6.5 Acceptance Test

It's a testing where system is tested for acceptability. Acceptance testing is a test conducted to determine if the requirements of a specification or contract are met. The anticipated result of a successful test execution:

- test cases are executed, using predetermined data
- actual results are recorded
- actual and expected results are compared, and
- test results are determined.

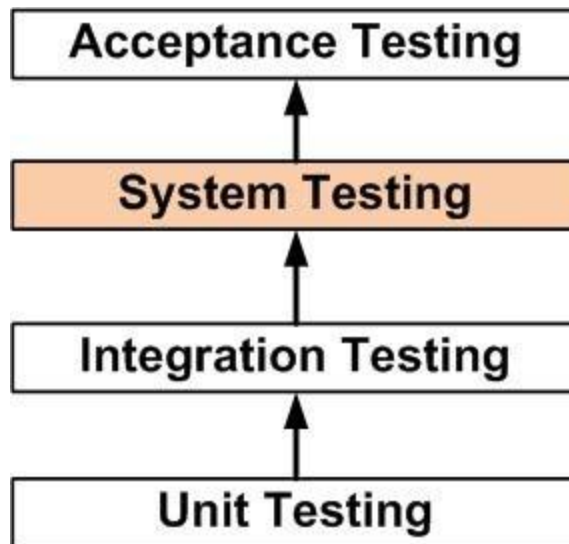


Figure 6.5: Step by step testing process

CHAPTER 7

CONCLUSION AND FUTURE WORK

7.1 CONCLUSION

In this system we proposed that it will help the visually impaired people to use email services efficiently with reduce of time. This system will help in overcome all the drawbacks that the blind people can access email easily. We have eliminated the concept of using keyboard shortcuts and mouse along with screen readers which will help to reduce the cognitive load of remembering all the keyboard shortcuts. The user who does not know the location of keys on the keyboard need not worry to use of keyboard. The user only needs to follow the instructions given by the IVR and use mouse clicks accordingly to the instruction to get the respective services offered by our system. Voice based architecture helps blind people to access e-mail easily. The proposed system focuses on the benefit of the blind people in making use of the advanced technology for their growth and improvement. This design will also reduce cognitive load taken by blind to remember and type characters using keyboard. It also helps handicapped and illiterate people. This project will be very much useful for today's generation. Either blind or physically challenged to move a step forward in their way it is an easy manner to achieve their desire.

7.2 ADVANTAGES

1. This system reduce the times and use of keyboard.
2. Thrashed.
3. This system makes the visual impaired people feel like a normal user.
4. User can hear the recently received mails from the inbox.
5. As well as the IVR technology proves very effective for them in the terms of guidance.

6. The visually impaired people can advance from Desktop application to the web-based application.

7.3 FUTURE WORK

Future enhancements include adding more features to develop our given mailing system with attaching audio, rare files etc. The proposed system includes some where u can compose mail, send a mail and receive a mail through voice-based detection which are the basic features. So further features will be added according to the need of the user and user facilities in the upcoming years.

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