AN INTERACTIVE EMAIL FOR VISUALLY IMPAIRED

A PROJECT REPORT

Submitted by

DHIVYA V (810015104022)

PRAISY EVANGELIN A (810015104063)

In partial fulfilment for the award of the degree
Of

BACHELOR OF ENGINEERING
IN
COMPUTER SCIENCE AND ENGINEERING

UNIVERSITY COLLEGE OF ENGINEERING,

BIT CAMPUS ,TIRUCHIRAPALLI.

ANNA UNIVERSITY CHENNAI 600 025

APRIL 2019

UNIVERSITY COLLEGE OF ENGINEERING,

BIT CAMPUS,

TIRUCHIRAPPALLI-620 024

BONAFIDE CERTIFICATE

Certified that this project report "**AN INTERACTIVE EMAIL FOR VISUALLY IMAPAIRED"** is the bonafide work of **"DHIVYA V (810015104022) AND PRAISY EVANGELIN A (810015104063) "** who carried out the project work under my supervision.

SIGNATURE

DR.D.VENKATESAN
HEAD OF THE DEPARTMENT
DEPARTMENT OF IT,
University College of Engineering,
Anna University-BIT campus,
Tiruchirappalli-620 024

SIGNATURE

MRS.A.JENEFA
SUPERVISOR
DEPARTMENT OF CSE
University college of engineering,
Anna University-BIT campus,
Tiruchirappalli-620 024

Submitted for project viva voice examination held on.....

INTERNAL EXAMINER

EXTERNAL EXAMINER

DECLARATION

We hereby declare the work entitled "**AN INTERACTIVE EMAIL FOR VISUALLY IMPAIRED"** is submitted in partial fulfillment of the requirement for the award of the degree in B.E., Computer Science and Engineering, University College of Engineering(BIT Campus), Tiruchirappalli, is a record of our own work carried out by us during the academic year 2018-2019 under the supervision and guidance of **Mrs.A.JENEFA**, Teaching Fellow, Department of Computer Science and Engineering, University College of Engineering(BIT Campus), Tiruchirappalli. The extent and source of information are derived from the existing literature and have been indicated through the dissertation at the appropriate places.

V.DHIVYA(81001514022)

A.PRAISY EVANGELIN(810015104063)

I certify that the declaration made above by the candidate is true.

SIGNATURE OF THE GUIDE
Mrs.A.JENEFA
TEACHING FELLOW
Department of CSE,
University College of Engineering,
BIT Campus, Anna University,
Tiruchirappalli-620 024.

ACKNOWLEDGEMENT

First and foremost, of all, we would like to thank our Beloved parents and God almighty for giving us the strength, knowledge ,ability and opportunity to understand this project study and to preserve and complete it satisfactorily.

I would like to convey my heart felt thanks to our honorable Dean **Dr. T. SENTHILKUMAR,** Associate Professor for having provided me with all required facilities to complete my project without hurdles.

I would like to express my sincere thanks and deep sense of gratitude to guide **Dr. D. VENKATESANPILLAI,** Assistant Professor and Head, Department of Computer Science and Engineering, for his valuable guidance, suggestions and constant encouragement paved way for the successful completion of this project work.

I would like to thank my project guide **Mrs.A.JENEFA,** Teaching Fellow, Department of Computer Science and Engineering, for his valuable guidance throughout the phase of the project. It is our responsibility to thank our project coordinator **Mr.C.SANKAR RAM** Assistant Professor, Department of Computer science and Engineering , **Mr.P.KARTHIKEYAN,** assistant professor, Department of computer science and Engineering , for their constant inspiration that he has all through the project period.

I would like to thank **Mr. C. SURESH KUMAR,** Teaching Fellow, Department of Computer Science and Engineering, for his encouragement for this work.

I extend my thanks to all other teaching and non-teaching staffs for their encouragement and support. I thank my beloved parents and friends, for their full support in my career development of this project.

TABLE OF CONTENT

ABSTRACT

In today's information age, computer has become an integral part of our daily life. Much of the communication takes place through the internet. Internet is considered as a major storage of information. No single work can be completed without the help of Internet. And out of all the available communication technologies, email is one of the most common and popular medium of communication especially in the business world. In order to access internet and computer handling, one should know what is written on the screen. For this he/she should have visual capabilities. This means that a visually challenged person cannot take the benefits of the facilities provided by the internet. This makes internet a completely useless technology for the visually impaired and illiterate people. Even the systems that are available currently like the screen readers and ASR do not provide full efficiency to the blind people. As we are developing voice-based email system, as the system itself will be prompting them. As a result, system will reduce the cognitive workload of user and help visually impaired people to access email in a hassle-free manner. The main aim of our project is to develop an email application as a webpage which guides the visually impaired people with the help of speech APIs. Google Speech API enables our webpage by providing voice based commands and gets the input from the user and converts it in to text and stores the content captured in to the database.

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION:

We have seen that the inception of Internet has dramatically revolutionized many fields. Internet has made life of people so easy that people today have access to any information they want sitting at their home. One of the main fields that Internet has revolutionized is communication. And talking about communication over Internet, the first thing that comes in our mind is E-mail.

E-mails are considered to be the most reliable way of communication over Internet, for sending or receiving some important information. But there is a special criteria for humans to access the Internet and the criteria is you must be able to see. You must be thinking that what sort of criteria is this, everyone with eyes can see. But there are also specially abled people in our society who are not gifted with what you have. Yes there are some visually challenged people or blind people who cannot see things and thus cannot see the computer screen or keyboard.

1.2 PROBLEM DOMAIN:

A survey shows that there are more than 250 million visually challenged people around the globe. That is, around 250 million people are unaware of how to use Internet or E-mail. The only way by which a visually impaired person can send an E-mail is, they have to dictate the entire content of the mail to a third person (not visually challenged) and then the third person will compose the mail

and send on the behalf of the visually impaired person. But this is not a correct way to deal with this problem. It is very less likely that every time a visually challenged person can find someone for help. Although for these reasons, the specially abled people are criticized by our society.

So, for the betterment of society and giving an equal status to such specially abled people we have come up with this project idea which provides the user with ability to send mails using voice commands without the need of keyboard or any other visual things.

1.3 GOOGLE SPEECH API:

Google Voice Actions let users quickly complete tasks in your app using voice commands. It's another way to drive usage of your app with Google. Users' voice and text action requests can now lead directly to your Android app, so they can get to your native mobile experiences quickly and easily.

ONE API, MANY DEVICES:

Google Voice Actions gives you one API to support Android phones, tablets, and Android Wear watches. The main use of google speech is **GOOGLE VOICE SEARCH,** which is widely used nowadays. Let us describe the importance of **GOOGLE VOICE SEARCH.**

1.3.1 GOOGLE VOICE SEARCH:

Google Voice Search or Search by Voice is a Google product that allows users to use Google Search by speaking on a mobile phone or computer, i.e. have the device search for data upon entering information on what to search into the device by speaking.

Initially named as Voice Action which allowed one to give speech commands to an Android phone. Once only available for the U.S. English locale – commands were later recognizable and replied to in American, British, and Indian English; French, Italian, German, and Spanish. In Android 4.1+ (Jelly Bean), it was merged with Google Now.

Google Voice Search was a tool from Google Labs that allowed someone to use their phone to make a Google query. After the user called (650) 623-6706, the number of Google Voice's search system, they would wait for the words Say your Search Keywords and then say the keywords. Next, they would either wait to have the page updated, or click on a link to bring up the search page the user requested. Google Maps and Google Mobile App, have been developed to use speech recognition technology in various ways.

1.3.2 INTEGRATION IN OTHER GOOGLE PRODUCTS:

Google Maps with voice search:

In the summer of 2008, Google added voice search to the BlackBerry Pearl version of Google Maps for mobile, allowing Pearl users to say their searches in addition to typing them.

Google Mobile App with voice search:

The Google Mobile app for Blackberry and Nokia (Symbian) mobiles allows users to search Google by voice at them touch of a button by speaking their queries. Google also introduced voice search to all "Google Experience" Android phones with the 1.1 platform update, which includes the functionality on board the built-in Google Search widget.

Google Voice Search in YouTube:

Since March 2010, a beta-grade derivation of Google Voice Search is used on YouTube to provide optional automatic text caption annotations of videos in the case that annotations are not provided. This feature is geared to the hearing-impaired and, at present, is only available for use by English-speaking users.

1.4 EXISTING SYSTEM:

The existing systems are fully based on either the use of third party to type the content for the visually impaired user or the use of keyboard or mouse click.

- The input is presented via keyboard or mouse events, the user either performs a right or left mouse click, then it is captured and the operations are performed based on the right/left/single/double click.

- It uses Braille keyboard, which is a special type of keyboard for visually challenged people.

- The existing system is based on screen readers like TTS (text to speech) and ASR (automatic speech recognition).

1.4.1 DISADVANTAGES OF EXISTING SYSTEM:

- With the help of screen readers, it is difficult for visually challenged person to access E-mail system and computer operating easily. Because if

there is noise or some other sounds in the room, it may interpret differently.

- These available systems require use of keyboard which is very difficult for visually challenged people to recognize and remember characters of keyboard.
- One of the special type of keyboard is Braille keyboard. The use of such keyboard requires intensive training to use and it is also expensive.
- Screen readers like TTS and ASR doesn't provide full flexibility to the visually impaired people.

1.5 PROPOSED SYSTEM:

In this we make the mail service interactive for the blind people. For privacy protection or authentication we use finger prints. The input is presented with the help of the keyboard, as a interactive voice response and output for the input given to the user is by means of voice is used to access this service. Till now, only the normal user can access the web based application, but why the visually challenged may not because, they may rely upon others to interact with the web applications, but it is not safe. The information sent to the user may be confidential when they are relied upon other people they lose their privacy of usage.

The main use of using the internet is to communicate with other people and to exchange their information which is provided by means of the email service. So in this project we are providing flexibility of the mail service to the inability people. The visually impaired people cannot view the screen to read out the content. Because all the web application that has been developed till now is on the basis of use of the

normal people. In this we provide access to the email by hearing the content of the mail box. If the user hears the content of the screen then he can interactively provide the input to our application that will be developed with the help of the key board. Web accessibility[2] is concerned about the custom of allowing websites accessed by both people of all abilities and disabilities. When a website is properly prototyped, implemented and edited, all sorts of users can have equal access to its information and functionality.

For example, consider when a semantically meaningful HTML website is developed, with the links named meaningfully and the textual equivalents are provided for images, this assists visually impaired users who are using text-to-Braille hardware and text-to-speech software. When the sites are correctly built and maintained, users with certain kind of disabilities can be accommodated without decreasing the usability of the website. Interfacing System means for human computer interactions plays a major role. All the people can accessing their information through emails using internet. They can send and receive any information in the form of text document, pictures, audio, video, etc. using email in the internet. All users can have equal access of information when the web application is correctly designed and developed. However its very complex for the

visually impaired user to access their email. Nowadays, the vision impaired persons can interact with the computer only on desktop applications but they suffer from interaction with the web based applications. They have more difficulties to select the options and checking the mail and also the important thing is lacking of security. We implement our project to making the disable person, easily accessing their mails in the secured manner.

The goal of this project was to develop an interactive email system for visually impaired person (i.e.) to make visually impaired feel as a normal user. Web application used for accessing the emails through internet by visually impaired users works on:

- Text to speech synthesizer which converts the text format of the emails to synthesized speech. Predicting the correct intonation (how the pitch pattern or fundamental frequency changes during speech), stress and duration from the plain text is a challenging task. The prosodic features also depend on many aspects like the speaker characteristics (gender, age), emotions and meaning of the sentence (neutral, imperative or question)
- Mail Synchronization and Retrieval which synchronizes the application and retrieves the mails from the databases of the email server. Through this Web Application the Vision Impaired user can get a speech synthesized output of the mails in his inbox or can view his email using the magnifier option available. To compose emails he can give a input to the system by using the Braille keyboard. Adequate measures have been taken which makes this Application more effective.
- IVR describes the interaction between the user and the system in the way of responding using keyboard for the respective voice message.
- Interactive voice response (IVR) is an advanced technology which allows a computer to interact with humans using keyboard. IVR allows user to interact with an email host system via a system keyboard, after that users can easily service their own enquiries by listening to the IVR dialogue.

- IVR systems generally respond with prerecorded or dynamically generated audio voice to further assist users on how to proceed.
- IVR applications are able to control nearly any function where the interface can be sub divided into a simple series of interactions. IVR methods implemented in the network are meant to manage large call volumes.
- During authentication, the system needs two query the face recognition which is already stored in the database.

SYSTEM ARCHITECTURE

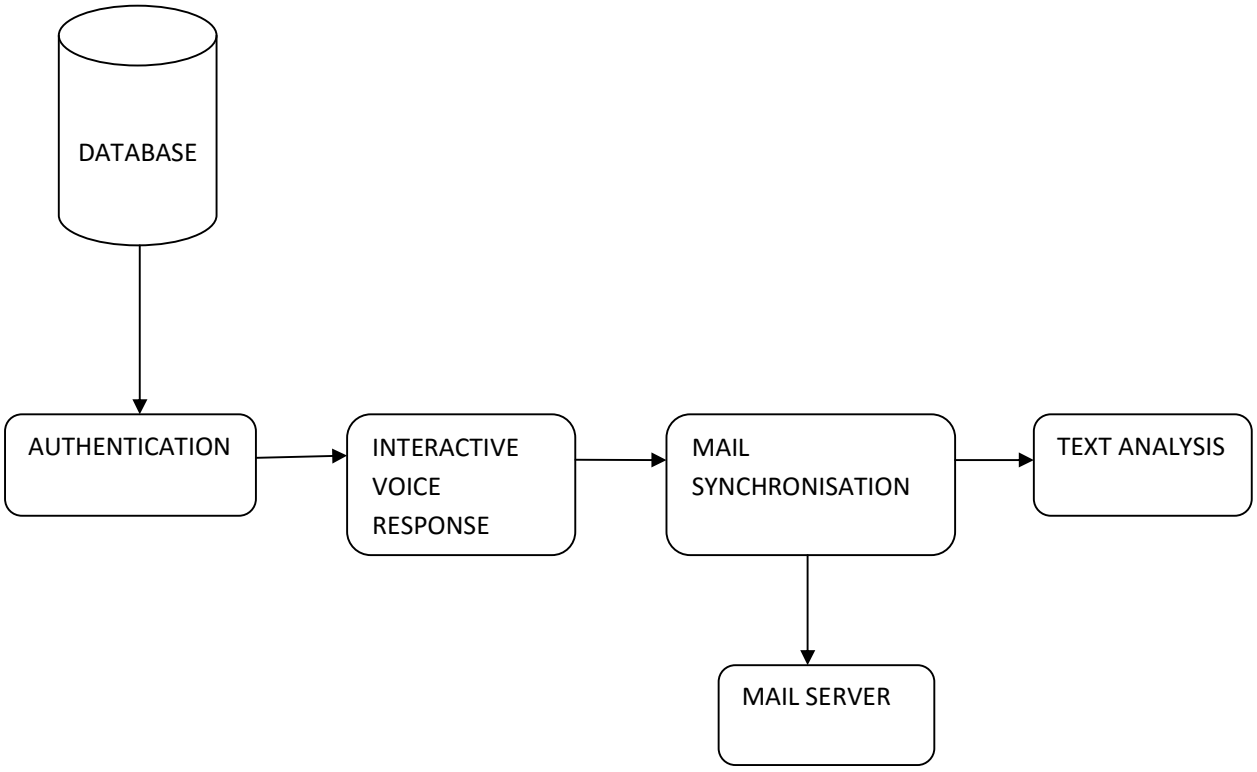

FIG 1.1 SYSTEM ARCHITECTURE

a) TEXT ANALYSIS

It explains the conversion of an ordinary plain text into its linguistic representation with its prosodic information and this process is highly language dependent. This form of text analysis is classified into three subtasks as follows:

- Syntactic processing- It is done on the input text to acquire a phonetic transcription. During this process, the sentences contained in the text are divided into words and the numbers, abbreviations and acronyms are expanded. It is done with the help of regular grammars. Then the correct parts of speech categories are searched for each word in order to identify the probable classes depending on the contextual information of words using techniques such as neural networks, finite state automata or regression trees and classification.
- At once when the ambiguities in text are sorted out, automatic determination of phonetic or linguistic transcription of that text is performed using either dictionary based or rule-based strategies.
- Predicting the correct intonation, stress and duration from the plain text is a challenging task. The prosodic features also depend on many aspects like the speaker characteristics (gender, age), emotions and meaning of the sentence (neutral, imperative or question).

b) AUTHENTICATION MODULE

The authentication module describes the user authentication when they used to access their mail. In our project we implement the Face recognition system for the visually impaired to provide security and privacy.

c) INTERACTIVE VOICE RESPONSE

This module describes the interaction between the user and the system in the way of responding using keyboard for the respective voice message.

- Interactive voice response (IVR) is an advanced technology that permits a computer to interact with humans through keyboard. IVR allows user to interact with an email host system via a system keyboard, after that they can handle their own inquiries by listening to the IVR dialogue. IVR systems make its response through prerecorded or dynamically generated audio to further assist users on how to proceed.
- IVR applications can be used to control almost any function where the interface can be broken down into a series of simple interactions. IVR systems are implemented in the network are in order to service large call volumes.

d) MAIL SYNCHRONIZATION MODULE

Data synchronization technologies are designed to synchronize a single set of data between two or more device automatically copying changes back and forth the coordination of events to operate a system in unison. The familiar conductor of an orchestra serves to keep the orchestra in time. Systems operating with all their parts in synchrony are said to be synchronous. Some systems may be only approximately synchronized or plesiochronous. For certain applications relative offsets between events need to be determined, whereas for others only the order of the event is important.

Advantages

- /The disabilities of visually impaired can be thrashed.
- Makes feel the disabled people as a normal user.

- They can hear the recently received messages to the inbox.
- They can give the input via keyboard without the help of the other people.
- The visually impaired people can advance from desktop application to the web based application.

CHAPTER 2

LITERATURE SURVEY

2.1 INTRODUCTION

The purpose of the literature survey is to give the brief overview and also to establish complete information about the reference papers. The goal of literature survey is to completely specify the technical details related to the main project in a concise and unambiguous manner.

2.2 VOICE BASED EMAIL SYSTEM FOR BLINDS

T. Shabana, A. Anam, A. Rafiya, K. Aisha

2.2.1 DESCRIPTION:

In today's world communication has become so easy due to integration of communication technologies with internet. However, the visually challenged people find it very difficult to utilize this technology because of the fact that using them requires visual perception. Even though many new advancements have been implemented to help them use the computers efficiently no naïve user who is visually challenged can use this technology as efficiently as a normal naive user can do that is unlike normal users they require some practice for using the available technologies. This paper aims at developing an email system that will help even a naïve visually impaired person to use the services for communication without previous training. The system will not let the user make use of keyboard instead will work only on mouse operation and speech conversion to text. Also this system can be used by any normal person also for

example the one who is not able to read. The system is completely based on interactive voice response which will make it user friendly and efficient to use.

2.2.2 TECHNIQUE:

The current systems do not provide this accessibility. Thus, the system we are developing is completely different from the current system. Unlike current system which emphasizes more on user friendliness of normal users, our system focuses more on user friendliness of all types of people including normal people visually impaired people as well as illiterate people. The complete system is based on IVR- interactive voice response. When using this system, the computer will be prompting the user to perform specific operations to avail respective services and if the user needs to access the respective service.

2.2.3 **ADVANTAGES:**

One of the major advantages of this system is that user won't require to use the keyboard. All operations will be based on mouse click events. Now the question that arises is that how the blind users will find location of the mouse pointer.

2.2.4 **DISADVANTAGES:**

Mouse movements is required for making any process. It requires password for login which may not be secured because the user needs to speak his/her password.

2.3. AN INTERACTIVE WEB BASED EMAIL FOR VISUALLY IMPAIRED:

G.Shoba, G.Anusha, V.Jeevitha, R.Shanmathi

2.3.1 DESCRIPTION:

An interactive email system for visually impaired is a concept that assists the visually challenged people to access their email like any other common people. This paper explains the design and implementation of such an interactive system for visually challenged people. Web accessibility stands as the inclusive practice of creating web-based applications that can be used by people of all kind. When web applications are perfectly prototyped, implemented, and edited, all sort of users can have mutual license to information functionality also that can be facilitated without reducing the usability of the application for normal users. The very basic and important need for using the internet is accessing emails. Micro systematic applied research has been done on how a visually challenged user can have an access to his emails and this paper completely concentrates in filling a few gaps in doing that.

2.3.2 TECHNIQUE:

Text to speech synthesizer which converts the text format of the emails to synthesized speech. Predicting the correct intonation (how the pitch pattern or fundamental frequency changes during speech), stress and duration from the plain text is a challenging task. The prosodic features also depend on many aspects like the speaker characteristics (gender, age), emotions and meaning of the sentence (neutral, imperative or question).

2.3.3 ADVANTAGES:

It is efficient and an economical system, which allows a visually challenged to interact with a web-based application, outlining the development and implementation of a real-time email interaction system for vision impaired. This project presents a system for visually challenged user interaction based on real time web applications.

2.3.4 DISADVANTAGES:

The existing mail service does not provide flexible access to the visually challenged people. Because they are in written format and there is no read out option to hear the mail that is received to their mail address. Despite we have screen readers to access the desktop application for the people who have that disability since they do not have application to access the web application.

2.4. ARCHITECTURE OF A WEB FOR VISUALLY IMPAIRED PEOPLE:

Ritwika Ghose, Tirthankar Dasgupta, Anupam Basu

2.4.1 DESCRIPTION:

Internet has brought about an incredible improvement in human access to knowledge and information. However, blind people face difficulties in accessing these text materials. Web browsers for the visually handicapped people in the past have been limited to converting documents to Braille or speech or extracting text and filtering. However, the human aspects of web surfing for blind people have not been adequately addressed. This paper

presents an architecture of an open source, light weight web browser that makes it easy for the visually handicapped people to surf the web.

2.4.2 TECHNIQUE:

The proposed architecture allows a blind person to navigate any web content through simple speech commands and voice feedback to any keyboard operation. The browser will have an integrated text extraction engine that inspects the content of the page to construct a structured representation. The internal nodes of the structure represent various levels of abstraction of the content.

2.4.3 ADVANTAGES:

It helps in easy and flexible navigation of the page so as to rapidly home into objects of interest. Finally, the browser is integrated to an automatic Text-To-Speech and Text-To-Braille transliteration engine that outputs the selected text in the form of speech and/or Braille.

2.4.4 DISADVANTAGES:

The existing mail service does not provide flexible access to the visually challenged people. Despite we have screen readers to access the desktop application for the people who have that disability since they do not have application to access the web application.

CHAPTER 3

3.1 SYSTEM SPECIFICATION:

3.1.1 HARDWARE REQUIREMENTS:

System : laptop

Memory : 2 GB RAM

Software support : Text to Speech and Speech to Text

3.1.2 SOFTWARE REQUIREMENTS:

Operating system : windows 10/XP

Coding language : PHP/JAVASCRIPT

IDE : macromedia Dreamweaver8/wampserver

Database : MYSQL

CHAPTER 4

PROJECT AND DESIGN

4.1 MODULE DESCRIPTION:

1. REGISTRATION

2. LOGIN

3. MAIL STORAGE AND RETRIEVAL

3.1 MAIL COMPOSING

3.2 RECEIVED MAILS

3.3 SENT MAILS

4. LOGOUT

The main page will be our welcome page. In the main page the user can select between two options available. First option in **REGISTRATION** and Second option is **LOGIN.** The user may click on any location on the screen, the speech API will open and it prompts the user and commands for certain options through speech. The commands are

1 FOR REGISTRATION

2 FOR LOGIN

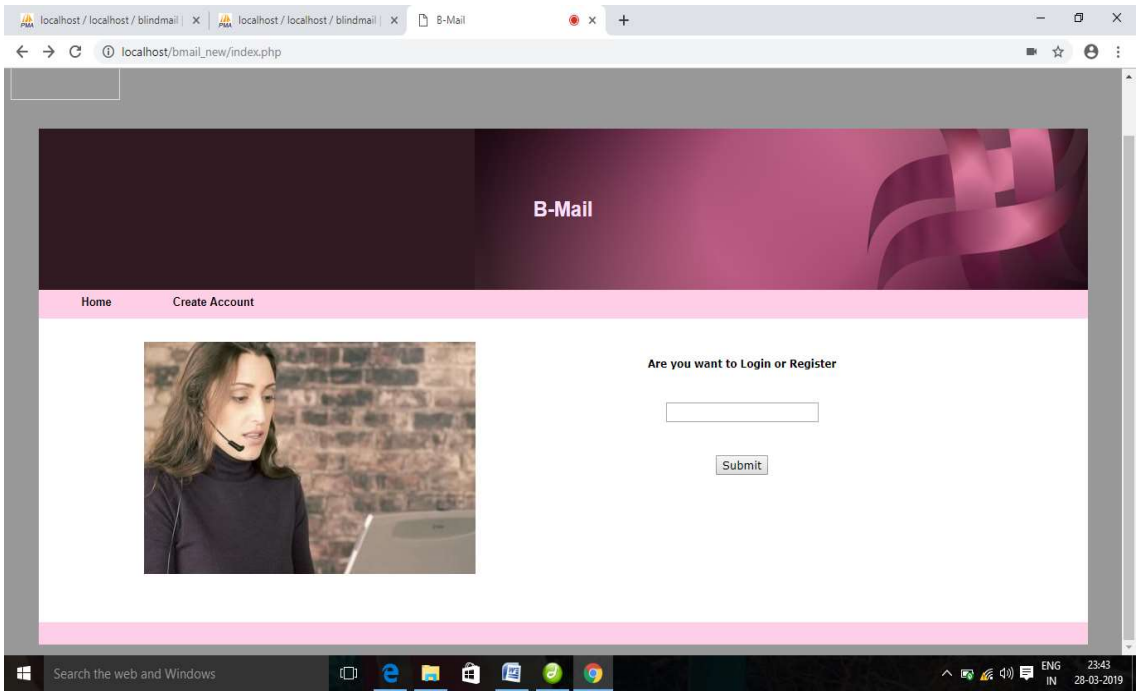

FIG 4.1 LOGIN OR REGISTER

4.1.1 REGISTRATION:

The user need to register his personal details such as:

- ❖ Name
- ❖ Gender
- ❖ username
- ❖ City
- ❖ Password
- ❖ Face recognition

After each registration when the user clicks on the screen, the Speech API opens and prompts the user and directing the user to the next input activity.

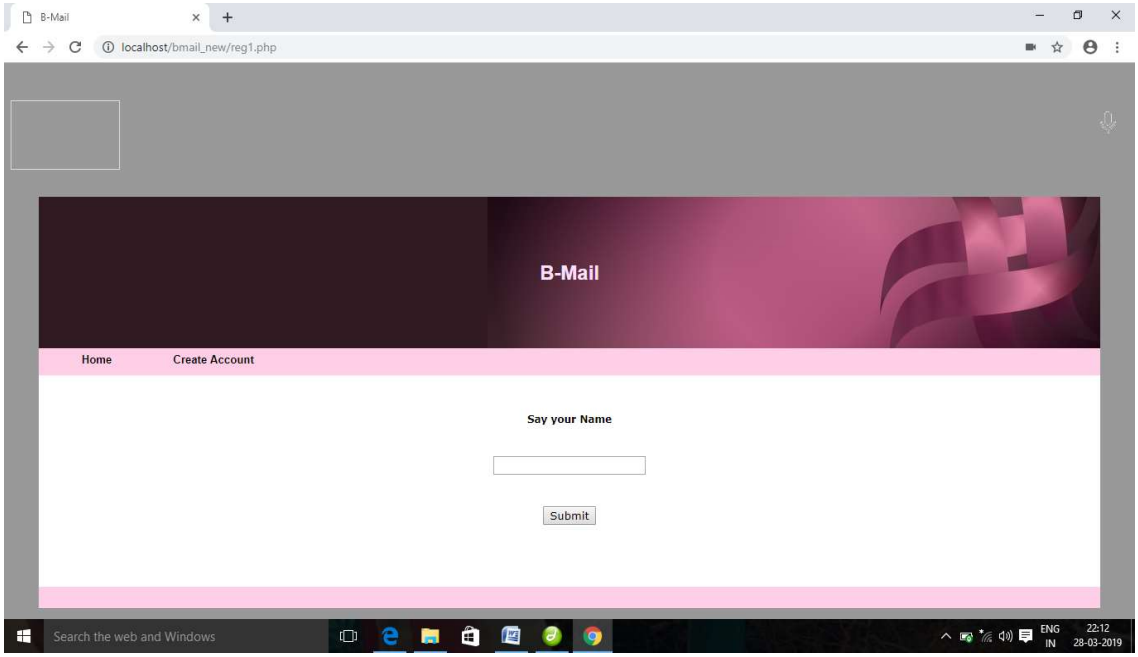

FIG 4.2 REGISTRATION 1

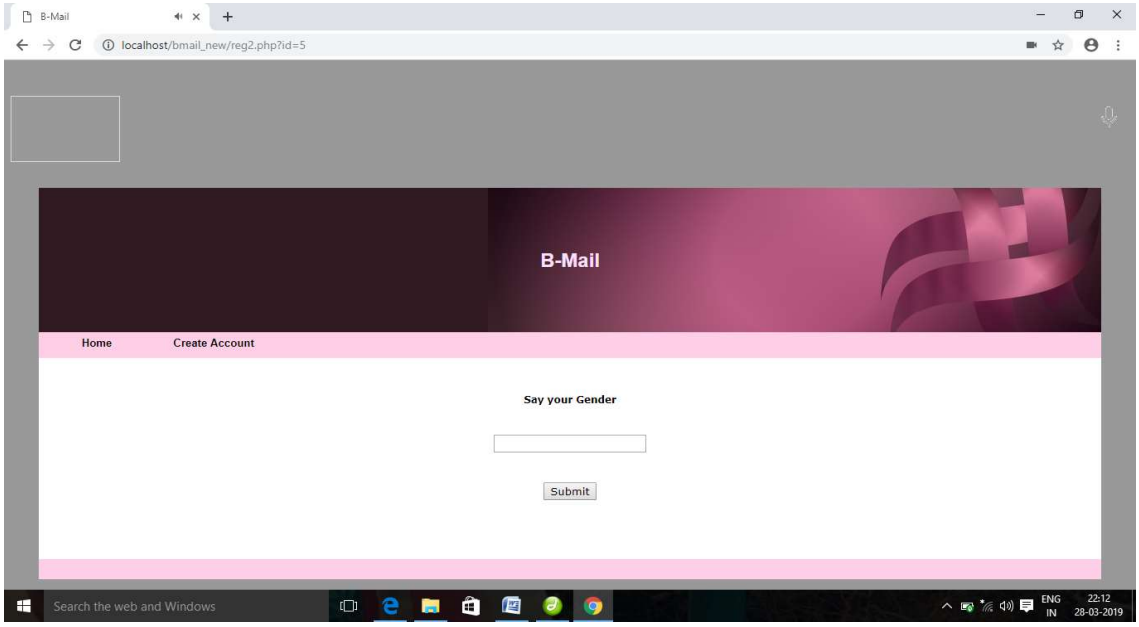

FIG 4.3 REGISTRATION 2

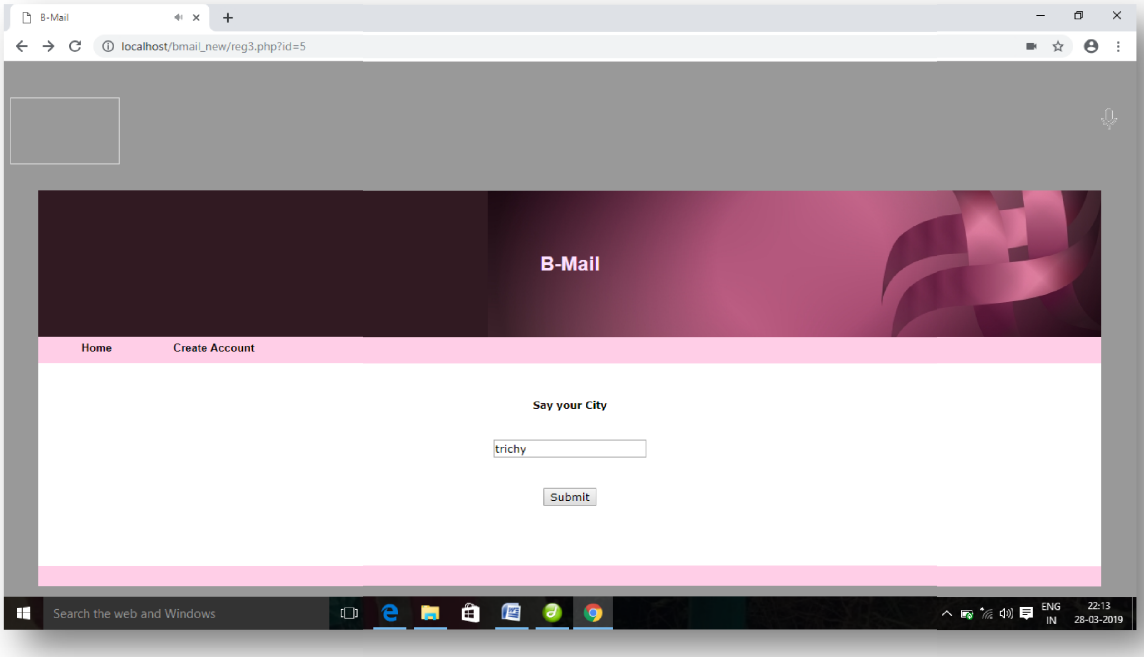

FIG 4.4 REGISTRATION 3

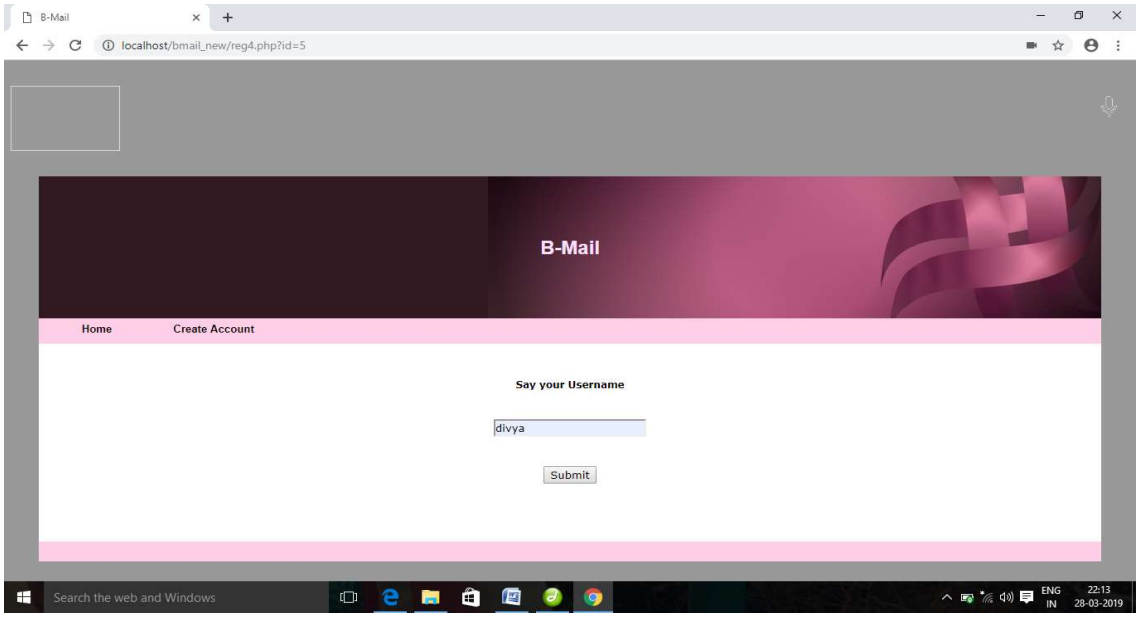

FIG 4.5 REGISTRATION 4

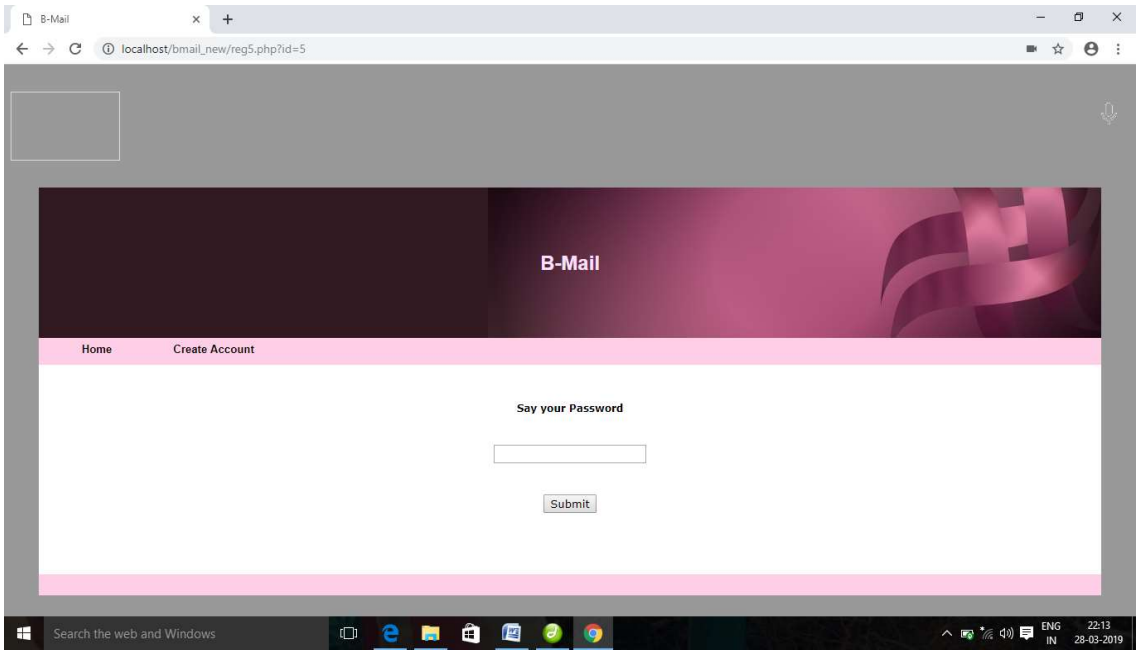

FIG 4.6 REGISTRATION 5

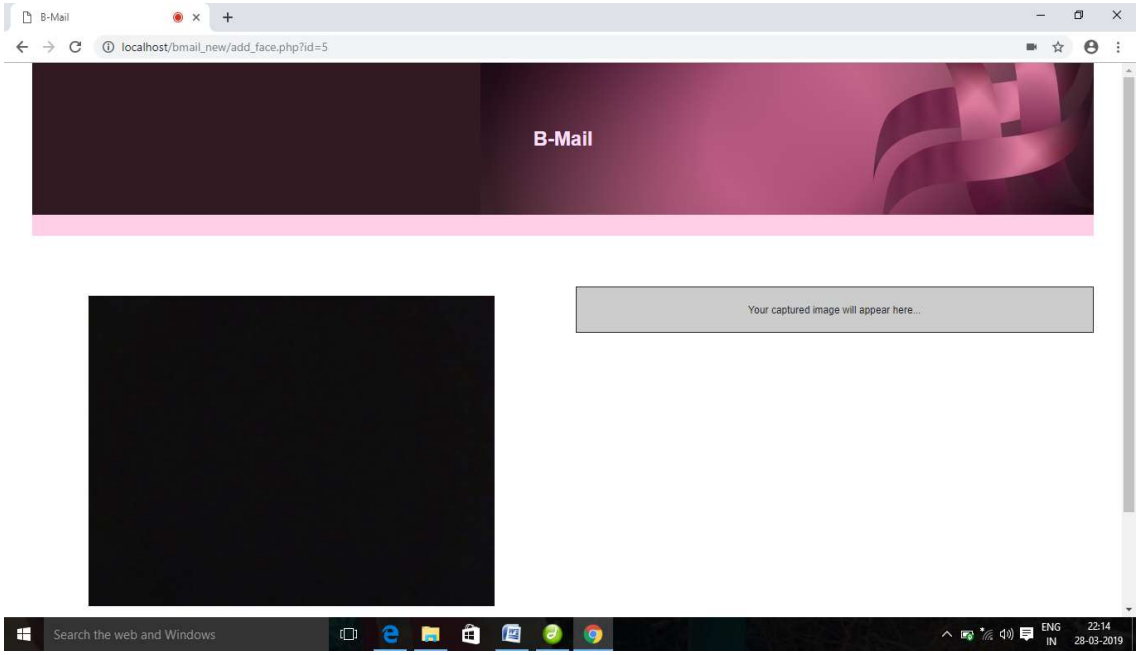

FIG 4.7 REGISTRATION 6

4.1.2 LOGIN:

When the user clicks on the screen, the Speech API opens and prompts the user to specify his **USERNAME** and answers for two **SECURITY QUESTIONS.**

After telling username and answers for security questions, the Speech API prompts the user to tell "**LOGIN"** for logging in.

If the values are matched with the values from the database, then the user is allowed to move to the mailbox activity. If either the username/answers for the security questions is wrong, the answer gets cleared and once again the Speech API prompts the user for his login details.

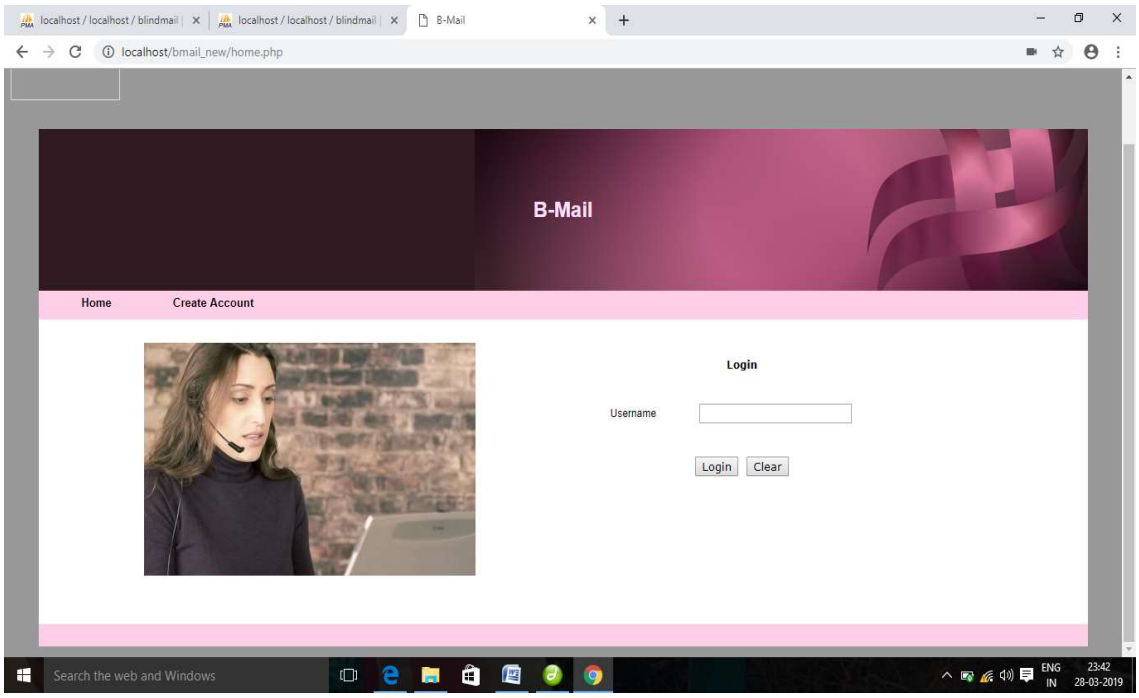

FIG 4.8 LOGIN - USERNAME

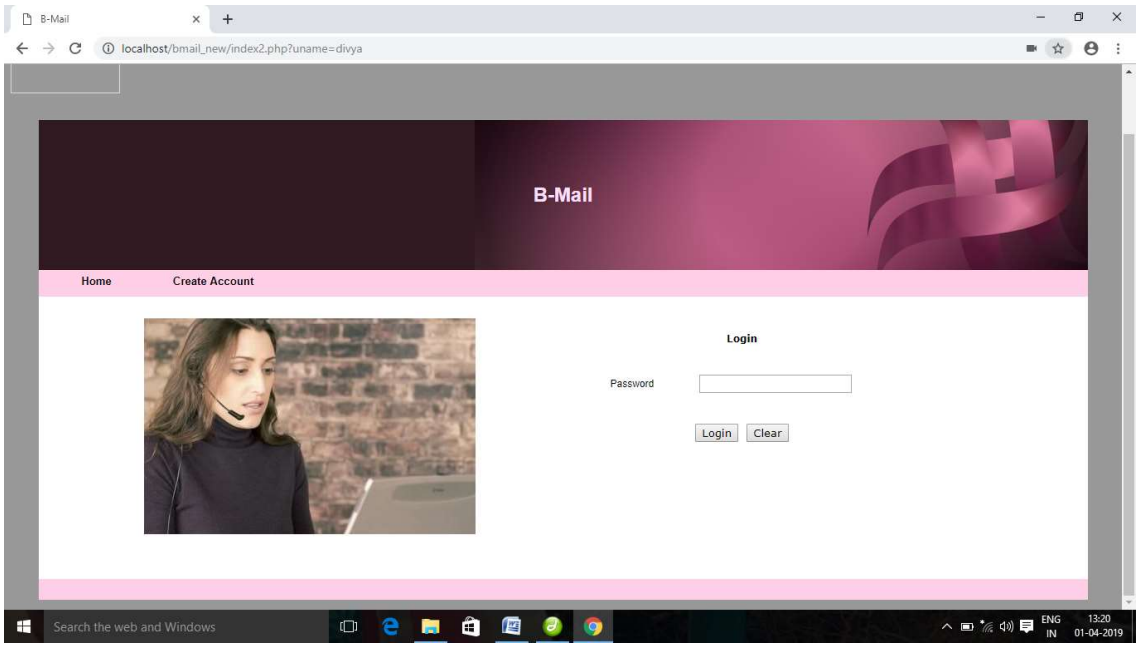

FIG 4.9 LOGIN – PASSWORD

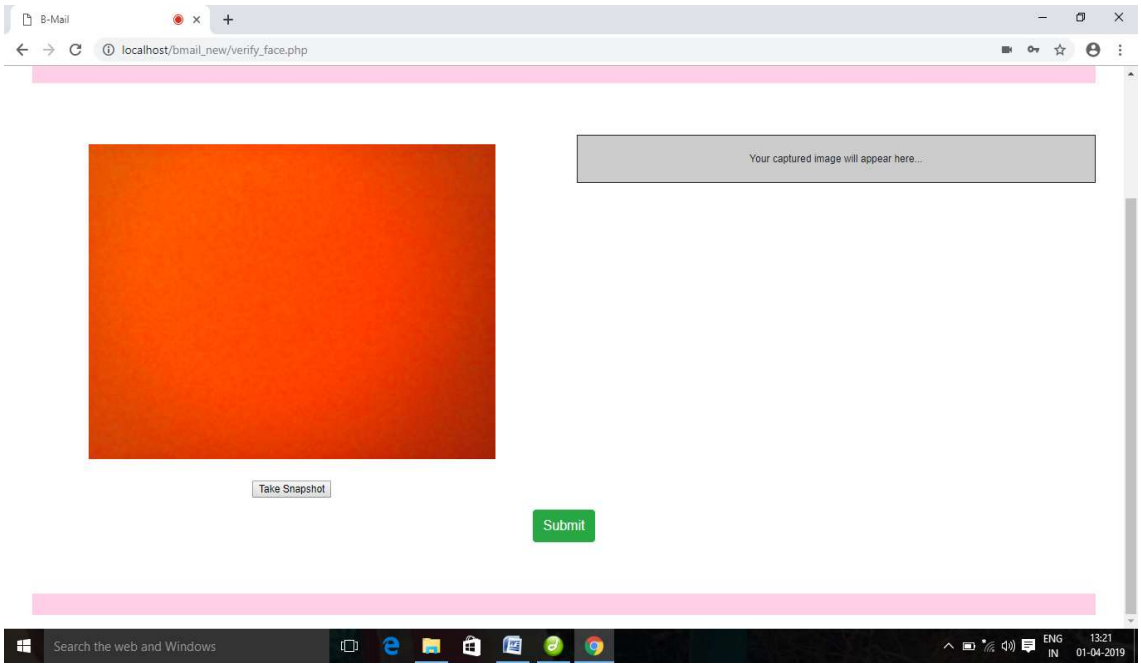

FIG 4.10 LOGIN – FACE RECOGNITION

4.1.3 MAIL STORAGE AND RETRIEVAL:

After logging in, when the user clicks on the screen, the Speech API opens and prompts the user to choose between four options which include:

- **MAIL COMPOSING**
- **RECEIVED MAILS**
- **SENT MAILS**
- **LOGOUT**

The commands for the specified activities are:

- **FOR MAIL COMPOSING**
- **FOR RECEIVED MAILS**
- **FOR SENT MAILS**
- **FOR LOGOUT**

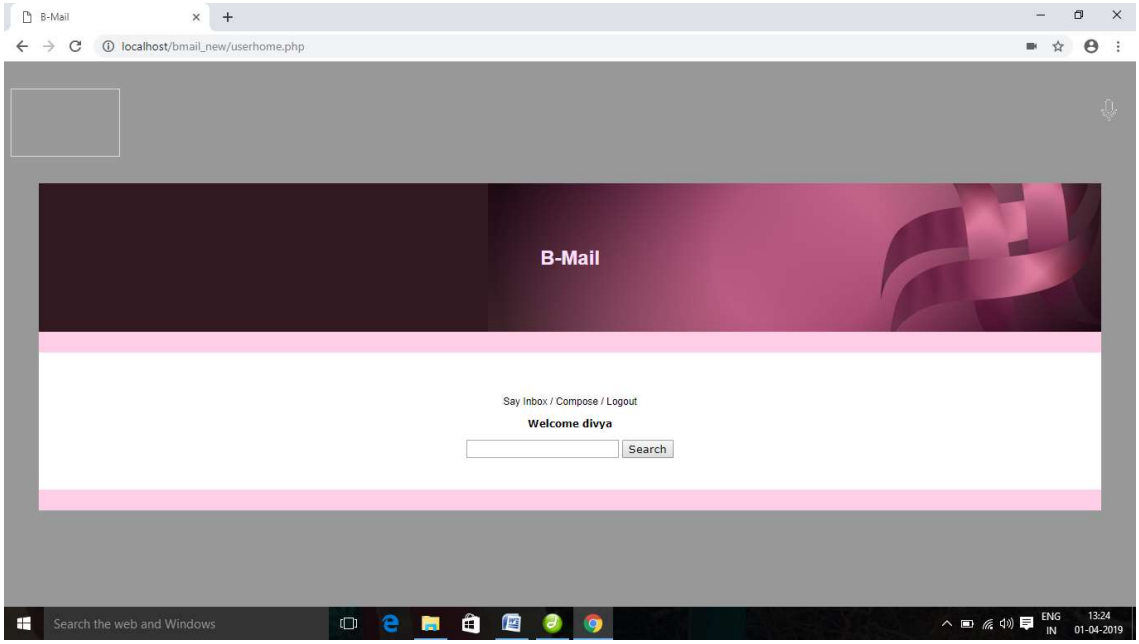

FIG 4.11 MAIL STORAGE AND RETREIVAL

4.1.3.1 MAIL COMPOSING:

For composing the mail, the user needs to specify the **EMAIL** address to which he/she needs to send the mail and then the Speech API prompts the user to tell the **SUBJECT** for the mail and the **MESSAGE** to be sent.

After all the details are specified, the Speech API prompts the user to tell **"SEND"** to send the mail.

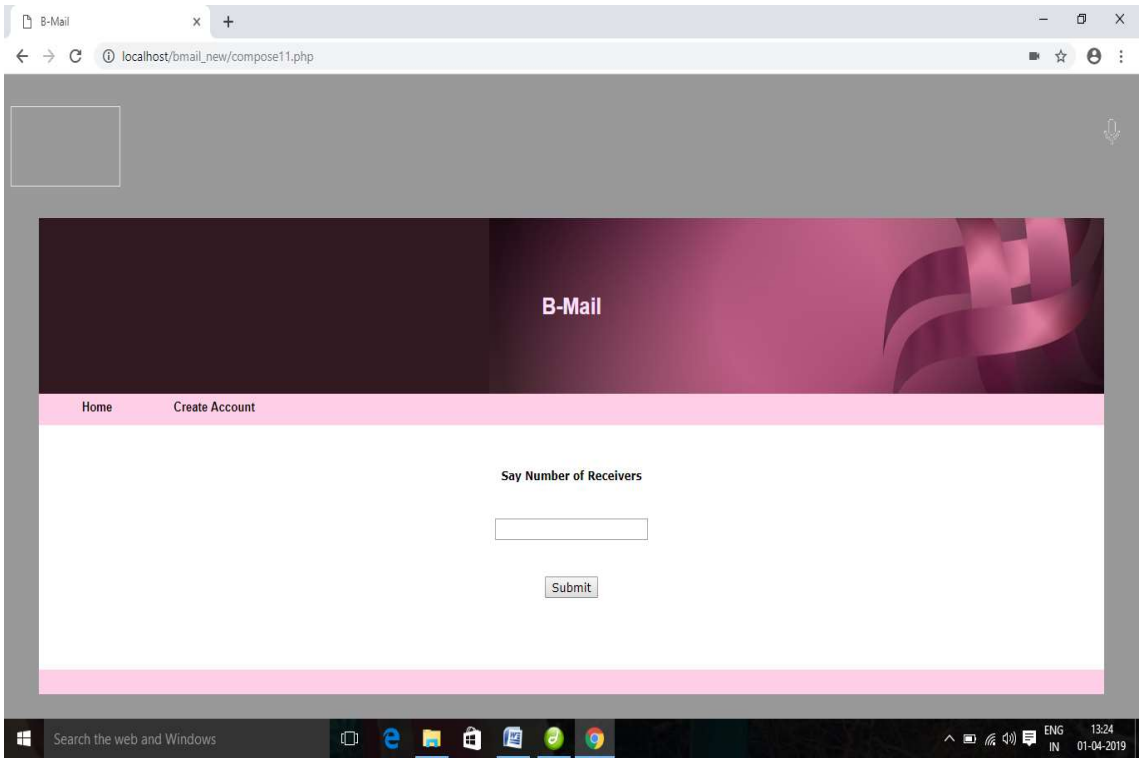

FIG 4.12 COMPOSE – NO. OF RECIEVERS

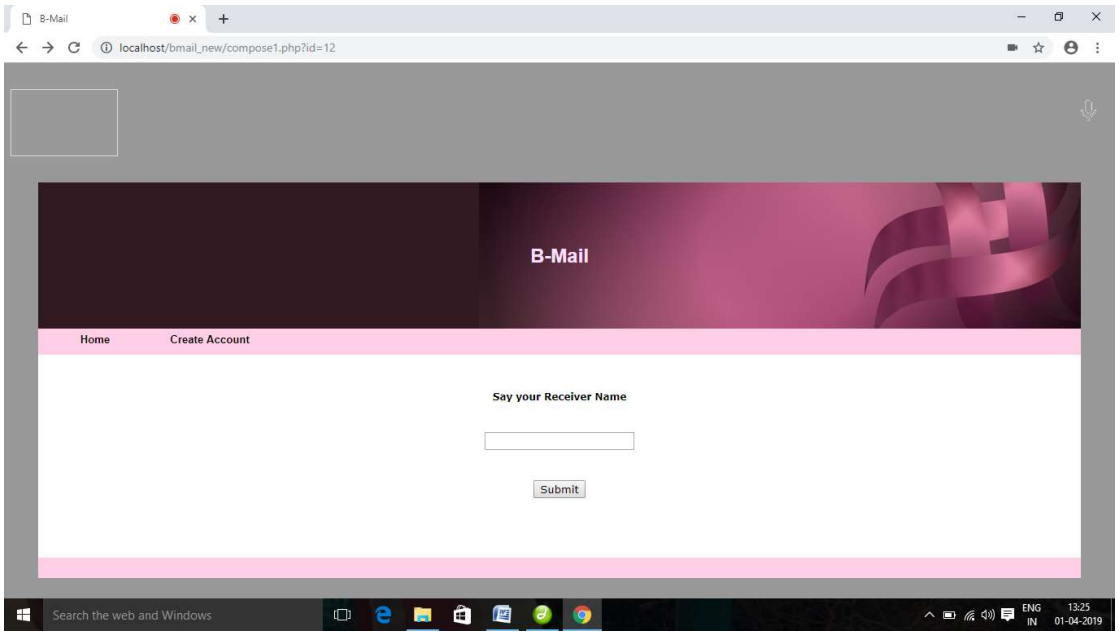

FIG 4.13 COMPOSE – USERNAME

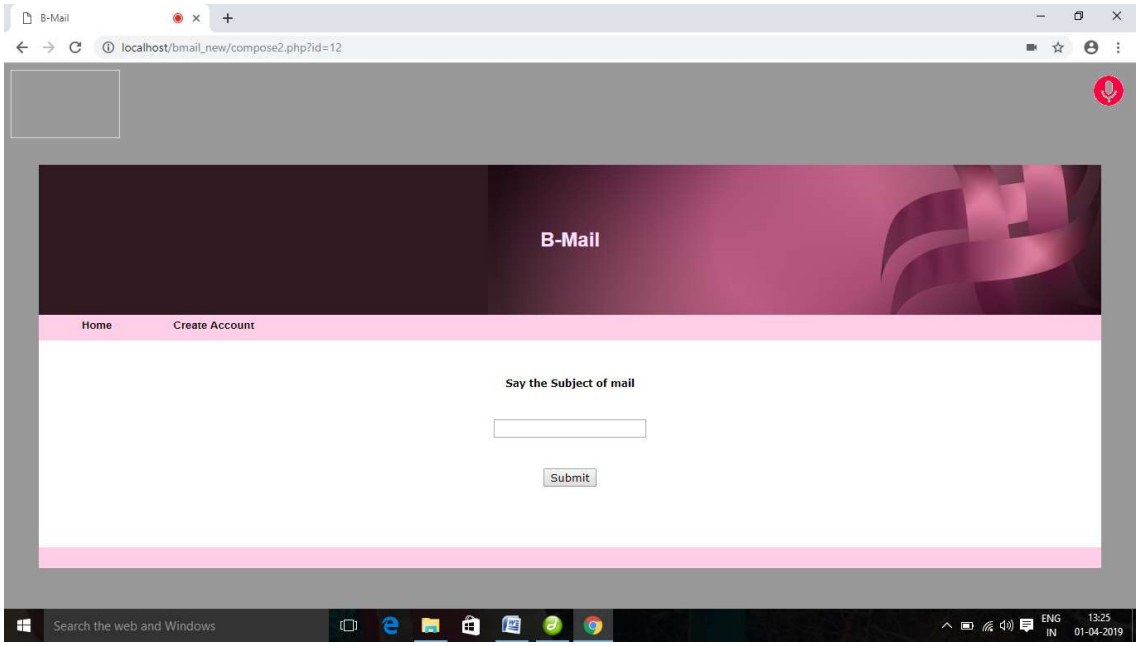

FIG 4.14 COMPOSE - SUBJECT

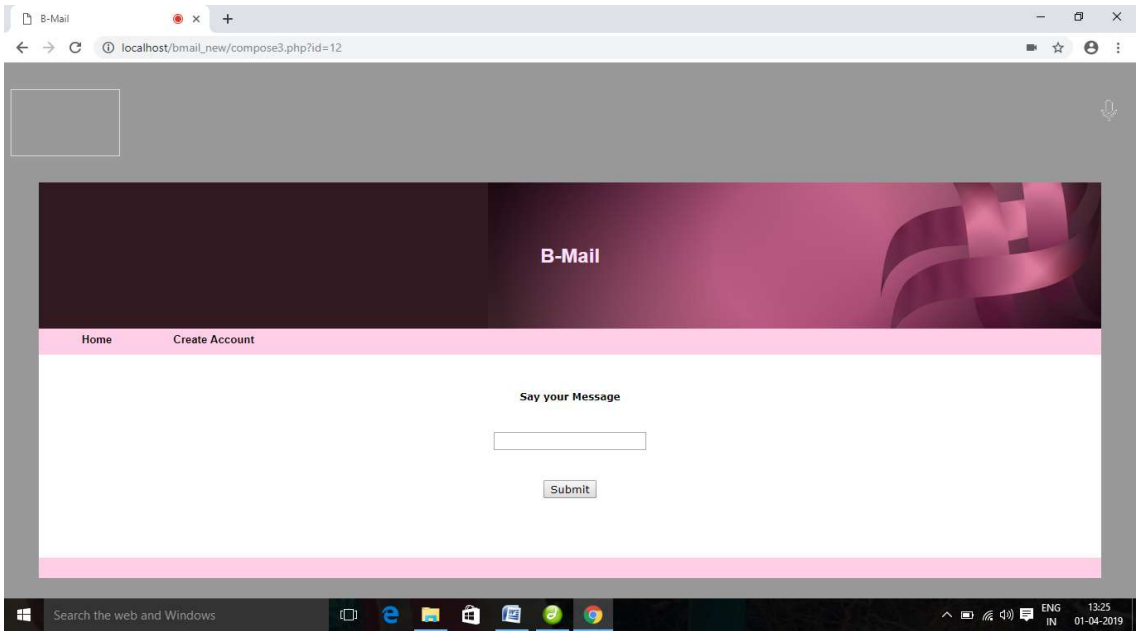

FIG 4.15 COMPOSE - MESSAGE

4.1.3.2 RECEIVED MAILS:

The speech API automatically reads out all the mails in the inbox with the subject, message content, date and time.

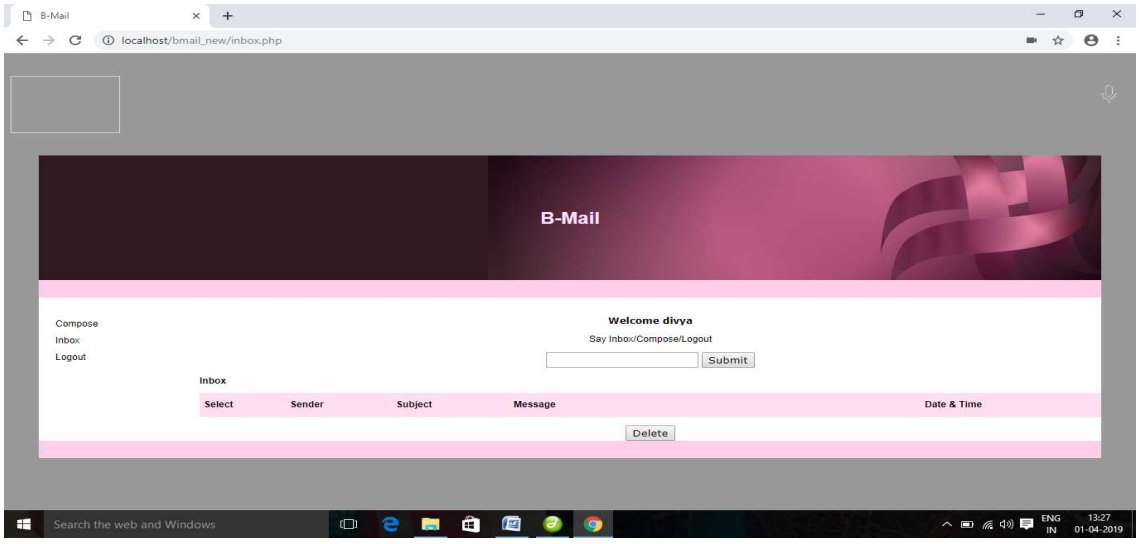

FIG 4.16 RECEIVED MAILS - INBOX

4.1.3.3 SENT MAILS:

The speech API automatically reads out all the mails in the outbox folder with the subject, message content, date and time.

4.1.4: LOGOUT:

When the user clicks on the screen, the Speech API prompts the user to tell the **"LOGOUT" or "4"** for logging out from his/her account.

After logging out the application will direct the user once again to **LOGIN** page.

CHAPTER 5

CONCLUSION

5.1 CONCLUSION:

This project has been implemented successfully according to the committed abstract and all outputs have been verified. All the outputs are generating according to the given input. Data validations are done according to the user input and are checked for the values in the database. The user's user name, answers for the security questions and other details are stored in the online database.

The Speech API guides the user through all the activities by providing commands and what the user needs to do next.

Thus, our android mail application for the visually impaired people is implemented successfully and in an efficient manner.

5.2 FUTURE WORK:

Even though the system has been developed in efficient manner, for security we have included security questions instead of password validation. Even security questions can be replaced with fingerprint in our further versions.

ENHANCEMENTS TO BE MADE:

MOBILE RESPONSIVE:

In future this application can be made as mobile responsive application. We can even further automate the speech process without user intervention.

ENHANCE SECURITY:

Security can be improved by adding, superior security methods like face recognition This makes our application more secured.

APPENDIX

```
<?php
session_start();
include("include/dbconnect.php");
extract($_REQUEST);
$msg="";

$str=explode(" ",$res);
$cnt=count($str);
$cnt2=$cnt-1;
$uname=$str[$cnt2];

if(isset($btn))
{
if(trim($res=="")) { $msg = "Enter the Username"; }
        else
        {
        //      echo "demo";

                $uname=$res;
                        $qry = mysql_query("select * from register where
username='$res'");
                        $num=mysql_num_rows($qry);
```

```
                        if($num==1)
                        {
                        $_SESSION['uname']=$uname;

                        header("location:index2.php?uname=".$uname);
                    //  header("location:inbox.php");
                        }
                        else
                        {
                        echo '<p><embed src="audio/login-wrong.mp3"
autostart="true"  hidden="true"></embed></p>';
                        $msg="Your username, password is wrong!";
                        }
        }
        }//login
else
{
echo '<p><embed src="audio/login.mp3" autostart="true"
hidden="true"></embed></p>';
}
?>
<html>
<head>
<title><?php include("include/title.php"); ?></title>
<link href="style.css" rel="stylesheet" type="text/css">
```

```
<style type="text/css">
<!--
.style5 {font-size: 18px}
-->
</style>
 <style>
        * {
           font-family: Verdana, Arial, sans-serif;
        }
        a:link {
           color:#000;
           text-decoration: none;
        }
        a:visited {
           color:#000;
        }
        a:hover {
           color:#33F;
        }
        .button {
           background: -webkit-linear-gradient(top,#008dfd 0,#0370ea
100%);
           border: 1px solid #076bd2;
           border-radius: 3px;
```

```
    color: #fff;
    display: none;
    font-size: 13px;
    font-weight: bold;
    line-height: 1.3;
    padding: 8px 25px;
    text-align: center;
    text-shadow: 1px 1px 1px #076bd2;
    letter-spacing: normal;
}
.center {
    padding: 10px;
    text-align: center;
}
.final {
    color: black;
    padding-right: 3px;
}
.interim {
    color: gray;
}
.info {
    font-size: 14px;
    text-align: center;
```

```
    color: #777;
    display: none;
}
.right {
    float: right;
}
.sidebyside {
    display: inline-block;
    width: 45%;
    min-height: 40px;
    text-align: left;
    vertical-align: top;
}
#headline {
    font-size: 40px;
    font-weight: 300;
}
#info {
    font-size: 20px;
    text-align: center;
    color: #777;
    visibility: hidden;
}
#results {
```

```
        font-size: 14px;
        font-weight: bold;
        border: 1px solid #ddd;
        padding: 15px;
        text-align: left;
        min-height: 50px;
        width: 100px;
    }
    #start_button {
        border: 0;
        background-color:transparent;
        padding: 0;
    }
</style>
            <script language="javascript">
            function myFunction()
            {
            var txt=document.getElementById("results").value;
            document.form1.uname.value=txt;
            //alert(txt)
            //document.getElementById("myForm").submit();
            }

            /*function test()
```

```
            {
            alert("ok")
            }*/



            </script>
</head>
        <script language="javascript">


</script>


<body  >
 <div id="info">
            <p id="info_start"> </p>
        </div>
         <div class="right">
            <button id="start_button" onClick="startButton(event)">
               <img id="start_img" src="mic.gif" alt="Start"></button>
         </div>
         <div id="results" >
            <span id="final_span" class="final"></span>
            <span id="interim_span" class="interim"></span>
            <p></div>
         <div class="center" >
```

```
<p>
<div id="div_language" style="display:none">
<form name="form2" method="post">
<select id="select_language"
onChange="updateCountry();"></select>
  
<select id="select_dialect"></select>
</form>
</div>
</div>
<form id="form1" name="form1" method="post" action=""
id="myForm">
<table width="95%" border="0" align="center" cellpadding="0"
cellspacing="0" bgcolor="#FFFFFF">
<tr>
<td align="center" class="heading"><?php
include("include/title.php"); ?></td>
</tr>
<tr>
<td><?php include("include/link_home.php"); //
onLoad="startButton(event)" ?></td>
</tr>
<tr>
<td align="center" valign="top"><p class="txt1"> </p>
<table width="80%" border="0" cellpadding="0" cellspacing="0">
<tr>
```

```
        <td valign="top"><img src="images/f3-voic.jpg" width="400"
height="261"></td>

        <td valign="top"><p class="style1"><?php echo $msg; ?></p>

          <table width="318" height="169" border="0" cellpadding="0"
cellspacing="0">

            <tr>

              <td colspan="2" align="center"
class="txt1"><strong>Login</strong></td>

            </tr>

            <tr>

              <td width="94" class="txt1">Username</td>

              <td width="90" class="txt1"><input type="text" name="res"
id="res" onChange="test()" >


                                  </td>

            </tr>

            <tr>

              <td colspan="2" align="center" class="txt1"><input
type="submit" name="btn" id="btn" value="Login"  />

                 

                <input type="reset" name="Reset" value="Clear"></td>

            </tr>

          </table>


          <p></p></td>

        </tr>
```

```
      </table>
      <p class="style1"> </p>
    <p> </p>
    </td>
   </tr>
   <tr>
    <td align="center" class="subhead"> </td>
   </tr>
  </table>
</form>
<!--<script type="text/javascript">
  document.getElementById('res').submit();
</script>-->
</body>
</html>
<script>
   var langs =
         [['Afrikaans', ['af-ZA']],
            ['Bahasa Indonesia', ['id-ID']],
            ['Bahasa Melayu', ['ms-MY']],
            ['Català', ['ca-ES']],
            ['Ceština', ['cs-CZ']],
            ['Deutsch', ['de-DE']],
            ['English', ['en-AU', 'Australia'],
```

['en-CA', 'Canada'],

['en-IN', 'India'],

['en-NZ', 'New Zealand'],

['en-ZA', 'South Africa'],

['en-GB', 'United Kingdom'],

['en-US', 'United States']],

['Español', ['es-AR', 'Argentina'],

['es-BO', 'Bolivia'],

['es-CL', 'Chile'],

['es-CO', 'Colombia'],

['es-CR', 'Costa Rica'],

['es-EC', 'Ecuador'],

['es-SV', 'El Salvador'],

['es-ES', 'España'],

['es-US', 'Estados Unidos'],

['es-GT', 'Guatemala'],

['es-HN', 'Honduras'],

['es-MX', 'México'],

['es-NI', 'Nicaragua'],

['es-PA', 'Panamá'],

['es-PY', 'Paraguay'],

['es-PE', 'Perú'],

['es-PR', 'Puerto Rico'],

['es-DO', 'República Dominicana'],

['es-UY', 'Uruguay'],

['es-VE', 'Venezuela']],

['Euskara', ['eu-ES']],

['Français', ['fr-FR']],

['Galego', ['gl-ES']],

['Hrvatski', ['hr_HR']],

['IsiZulu', ['zu-ZA']],

['Íslenska', ['is-IS']],

['Italiano', ['it-IT', 'Italia'],

['it-CH', 'Svizzera']],

['Magyar', ['hu-HU']],

['Nederlands', ['nl-NL']],

['Norsk bokmål', ['nb-NO']],

['Polski', ['pl-PL']],

['Português', ['pt-BR', 'Brasil'],

['pt-PT', 'Portugal']],

['Româna', ['ro-RO']],

['Slovencina', ['sk-SK']],

['Suomi', ['fi-FI']],

['Svenska', ['sv-SE']],

['Türkçe', ['tr-TR']],

['??????????', ['bg-BG']],

['P??????', ['ru-RU']],

['??????', ['sr-RS']],

```
        ['???', ['ko-KR']],
        ['??', ['cmn-Hans-CN', '??? (????)'],
           ['cmn-Hans-HK', '??? (??)'],
           ['cmn-Hant-TW', '?? (??)'],
           ['yue-Hant-HK', '?? (??)']],
        ['???', ['ja-JP']],
        ['Lingua latina', ['la']]];

for (var i = 0; i < langs.length; i++) {
   select_language.options[i] = new Option(langs[i][0], i);
}
select_language.selectedIndex = 6;
updateCountry();
select_dialect.selectedIndex = 6;
showInfo('info_start');

function updateCountry() {
   for (var i = select_dialect.options.length - 1; i >= 0; i--) {
      select_dialect.remove(i);
   }
   var list = langs[select_language.selectedIndex];
   for (var i = 1; i < list.length; i++) {
      select_dialect.options.add(new Option(list[i][1], list[i][0]));
   }
```

```
    select_dialect.style.visibility = list[1].length == 1 ? 'hidden' : 'visible';
  }

  var create_email = false;
  var final_transcript = '';
  var recognizing = false;
  var ignore_onend;
  var start_timestamp;




  if (!('webkitSpeechRecognition' in window)) {
    upgrade();
  } else {
    start_button.style.display = 'inline-block';
    var recognition = new webkitSpeechRecognition();
    recognition.continuous = true;
    recognition.interimResults = true;
recognition.start();
    recognition.onstart = function() {
      recognizing = true;
      showInfo('info_speak_now');
      start_img.src = 'mic-animate.gif';
```

```
};

recognition.onerror = function(event) {
  if (event.error == 'no-speech') {
    start_img.src = 'mic.gif';
    showInfo('info_no_speech');
    ignore_onend = true;
  }
  if (event.error == 'audio-capture') {
    start_img.src = 'mic.gif';
    showInfo('info_no_microphone');
    ignore_onend = true;
  }
  if (event.error == 'not-allowed') {
    if (event.timeStamp - start_timestamp < 100) {
      showInfo('info_blocked');
    } else {
      showInfo('info_denied');
    }
    ignore_onend = true;
  }
};

recognition.onend = function() {
```

```
    recognizing = false;
    if (ignore_onend) {
      return;
    }
    start_img.src = 'mic.gif';
    if (!final_transcript) {
      showInfo('info_start');
      return;
    }
    showInfo('');
    if (window.getSelection) {
      window.getSelection().removeAllRanges();
      var range = document.createRange();
      range.selectNode(document.getElementById('final_span'));
                        document.getElementById("myForm").submit();
      window.getSelection().addRange(range);
    }
    if (create_email) {
      create_email = false;
      createEmail();
    }
};

recognition.onresult = function(event) {
```

```
        var interim_transcript = '';


        for (var i = event.resultIndex; i < event.results.length; ++i) {
          if (event.results[i].isFinal) {
            //final_transcript += event.results[i][0].transcript;
                                    final_transcript =
event.results[i][0].transcript;
          } else {
            //interim_transcript += event.results[i][0].transcript;
                                    interim_transcript =
event.results[i][0].transcript;


          }
        }


        final_transcript = capitalize(final_transcript);
        final_span.innerHTML = linebreak(final_transcript);
        interim_span.innerHTML = linebreak(interim_transcript);
        //document.getElementById('res').value =
linebreak(final_transcript);
        if (final_transcript || interim_transcript) {
          showButtons('inline-block');
         //  document.getElementById('res').value =
linebreak(final_transcript);
                        if(document.getElementById('res').value == "")
```

```
                        {
                        document.getElementById('res').value =
linebreak(interim_transcript).toLowerCase();;
                        document.getElementById("btn").click();
                        //alert("Ok")
                        }
          //  recognition.onend();


        }
    };
}

function upgrade() {
    start_button.style.visibility = 'hidden';
    showInfo('info_upgrade');
}

var two_line = /\n\n/g;
var one_line = /\n/g;
function linebreak(s) {
    return s.replace(two_line, '<p></p>').replace(one_line, '<br>');
}

var first_char = /\S/;
```

```
  function capitalize(s) {
    return s.replace(first_char, function(m) {
      return m.toUpperCase();
    });
  }

  function createEmail() {
    var n = final_transcript.indexOf('\n');
    if (n < 0 || n >= 80) {
      n = 40 + final_transcript.substring(40).indexOf(' ');
    }
    var subject = encodeURI(final_transcript.substring(0, n));
    var body = encodeURI(final_transcript.substring(n + 1));
    window.location.href = 'mailto:?subject=' + subject + '&body=' +
body;
  }

  function copyButton() {
    if (recognizing) {
      recognizing = false;
      recognition.stop();
    }
    copy_button.style.display = 'none';
    copy_info.style.display = 'inline-block';
```

```
    showInfo('');
}

function emailButton() {
    if (recognizing) {
        create_email = true;
        recognizing = false;
        recognition.stop();
    } else {
        createEmail();
    }
    email_button.style.display = 'none';
    email_info.style.display = 'inline-block';
    showInfo('');
}

function startButton(event) {
    if (recognizing) {



        recognition.stop();
        return;
    }
    final_transcript = '';
```

```
    recognition.lang = select_dialect.value;
    recognition.start();
    ignore_onend = false;
    final_span.innerHTML = '';
    interim_span.innerHTML = '';
    start_img.src = 'mic-slash.gif';
    showInfo('info_allow');
    showButtons('none');
    start_timestamp = event.timeStamp;
}

function showInfo(s) {
    if (s) {
        for (var child = info.firstChild; child; child = child.nextSibling) {
            if (child.style) {
                child.style.display = child.id == s ? 'inline' : 'none';
            }
        }
        info.style.visibility = 'visible';
    } else {
        info.style.visibility = 'hidden';
    }
}
```

```
    var current_style;
    function showButtons(style) {
        if (style == current_style) {
            return;
        }
        current_style = style;
        copy_button.style.display = style;
        email_button.style.display = style;
        copy_info.style.display = 'none';
        email_info.style.display = 'none';
    }
</script>
```

REFERENCES

[1] Jagtap Nilesh, Pawan Alai, Chavhan Swapnil and Bendre M.R."Voice Based System in Desktop and Mobile Devices for Blind People". In International Journal of Emerging Technology and Advanced Engineering (IJETAE), 2014 on Pages 404-407 (Volume 4, issue 2).

[2] Ummuhanysifa U.,Nizar Banu P K , "Voice Based Search Engine and Web page Reader". In Internationa Journal of Computational Engineering Research (IJCER). Pages 1-5.GYVHG

[3] G. Shoba, G. Anusha, V. Jeevitha, R. Shanmathi. "AN Interactive Email for Visually Impaired". In International Journal of Advanced Research in Computer and Communication Engineering (IJARCCE), 2014 on Pages 5089-5092.(Volume 3, Issue 1).

[4] The Radicati website. [Online]. Available:http://www.radicati.com/wp/wp-content/uploads/2014/01/EmailStatistics-Report-2014-2018-Executive-Summary.pdf.

[5]Sheng Li,Kot, A.C.,"Fingerprint Combination for Privacy Protection Information Forensics and Security", IEEE Transactions on (Volume:8 , Issue: 2)

[6] Thatcher, Jim; Cynthia Waddell, Shawn Henry, Sarah Swierenga, Mark Urban, Michael Burks, Paul Bohman (2003). "Constructing Accessible Web Sites" (Reprint ed.). Apress (Previously by Glasshaus). ISBN 1-59059-148-8.

[7] S. Li and A. C. Kot "A novel system for fingerprint privacy protection", Proc. 7th Int. Conf. Inform. Assurance and Security (IAS), pp.262 -266 2011

[4] LiGongjun and Taiyi Huang,."An Improved Training Algorithm in Hmm-Based Speech Recognition," Published in: Spoken Language, 1996. ICSLP 96.Proceedings., Fourth International Conference on (Volume:2)

[8] Carlson, R,Granstrom, B. Hunnicutt, S., "A multi-language text-tospeech module " , Published in Acoustics, Speech, and Signal Processing, IEEE International Conference on ICASSP '82. (Volume:7)

[9] Susanne Wagner (Halle). Intralinguas speech-to-text-conversion in realtime Challenges and Opportunities.MuTra 2005 – Challenges of Multidimensional Translation: Conference Proceedings SAMUEL THOM

[10] A. Basu, S. Roy, P. Dutta, S. Banerjee, "A PC based multi-user Braille reading system for the blind libraries", IEEE Transactions on Rehabilitation Engineering, vol. 6, no. 1, pp. 60-68, March 1998.

[11] A. Lahiri, J. S. Chattopadhyay, A. Basu, "Sparsha: A comprehensive indian language toolset for the blind", *Proceedings of the 7th international ACM SIGACCESS conference on Computers and accessibility*, 2005.

[12] C. Hemphill, P. Thrift, "Surfing the Web by Voice", *Proceedings of ACM Multimedia*, pp. 215-222, November 7–9.

[13] C. Chu, K. Miesenberger, "Two Dimension Interactive Voice Browser for the Visually Impaired" in ICCHP 2004 LNCS 3118, Berlin:Springer, pp. 721-724, 2004.