



A PROJECT REPORT  
on

# “Voice Controlled Email”

Department of Computer Science & Engineering

**IKG PUNJAB TECHNICAL UNIVERSITY**

**MAIN CAMPUS ,KAPURTHALA**

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# **DECLARATION**

We declare that this written submission addresses our ideas in our own words, we have adequately cited and referenced the original sources. We also declare that we have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in our submission. We comprehend that any infringement of the above will be cause for disciplinary activity by the Institute and can likewise inspire punitive activity from the sources which have subsequently not been as expected referred to or from whom appropriate consent has not been taken when required.

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## ABSTRACT

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. the application will be a web-based application for visually impaired persons using IVR- Interactive voice response, thus enabling everyone to control their mail accounts using their voice only and to be able to read, send, and perform all the other useful tasks. The system will prompt the user with voice commands to perform certain action and the user will respond to the same. **The main benefit of this system is that the use of keyboard is completely eliminated, the user will have to respond through voice and mouse click only.**

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.

This project is proposed for the betterment of society. This project aims to help the visually impaired people to be a part of growing digital India by using internet and also aims to make life of such people quite easy. Also, the success of this project will also encourage developers to build something more useful for visually impaired or illiterate people, who also deserves an equal standard in society.

# ACKNOWLEDGEMENT

No undertaking is at any point total without the direction of those master who have effectively exchanged this past previously and subsequently become expert of it and therefore, our chief. Thus, we might want to take this chance to take each one of those people how have helped us in picturing this venture.

We are very grateful to our Head of the Department **Dr. Monika Sachdeva (Assistant Professor)** for extending his help directly and indirectly through various channels in our project work.

We would take this opportunity to thank our Project Mentor **Er. Anupriya Kaushal (Assistant Professor)** for their guidance in selecting this project and also for providing timely assistant to our query and guidance of this project.

We extend our sincerity appreciation to our Class Teacher **Dr. Pooja Sharma (Assistant Professor)** for providing us the opportunity to implement and guidance of this project.

We are truly appreciative to every one of our Teachers of **CSE DEPT. IKG PTU MAIN CAMPUS, KAPURTHALA** for their important inside and tip during the planning of the task. Their commitments have been important from multiple points of view that we think that it's hard to recognize of them person.

THANKING YOU

# TABLE OF CONTENTS

S.NO.	TOPIC	PAGE
	<b>Declaration</b>	II
	<b>Abstract</b>	III-IV
	<b>Acknowledgement</b>	V
	<b>Table of contents</b>	VI
	<b>List of tables</b>	VIII
	<b>List of figures</b>	IX
	<b>List of Symbols, Abbreviations, Nomenclature used</b>	X
<b>1.</b>	<b>INTRODUCTION</b>	<b>1-2</b>
	1.1 Introduction	1
	1.2 Purpose and scope	1
	1.3 Problem Statement	2
	1.4 Future Scope	2
<b>2.</b>	<b>APPROACH USED</b>	<b><u>3-4</u></b>
	2.1 Project Timeline	<u>3</u>
	2.2 Selection of approach	<u>4</u>
	2.3 Application of selected approach	<u>4</u>
<b>3.</b>	<b>Project Design</b>	<b>5-6</b>
	3.1 Block Diagram	<u>5</u>
	3.2 Data Flow Diagram	<u>6</u>

<b>4.</b>	<b>Implementation</b>	<b>7</b>
	4.1 Project Implementation Technology	7
	4.1.1 Hardware Requirement	7
	4.1.2 Software Requirement	7
	4.2 Experimental Setup	7
<b>5</b>	<b>Coding</b>	<b>8</b>
<b>6</b>	<b>Testing</b>	<b>9</b>
<b>7</b>	<b>Snapshot of Result</b>	<b>10-11</b>
<b>8.</b>	<b>Advantage of Model</b>	<b>12</b>
<b>9.</b>	<b>Conclusion</b>	<b>12</b>
<b>10.</b>	<b>Appendices</b>	<b>13</b>
<b>11.</b>	<b>List of references</b>	<b>14</b>

## LIST OF TABLES

Table no.	Name of Table	Page number
1	Project Timeline	3



# LIST OF FIGURES

FIGURE No.	NAME OF FIGURE	PAGE NO.
1.1	Block Diagram	5
1.2	Data Flow Diagram	6

## List of Symbols, Abbreviations, Nomenclature used

S.no.	Symbols, Abbreviations, Nomenclature used	Original word
1.	ASIC chips digital sign processors (DSPs)	Application-specific integrated circuit
2.	FPGAs	Field programmable gate arrays
3.	DSPs	Digital sign processors
4.	DFD	Data Flow Diagram
5.	NLP	Natural Language Processing

# **1. INTRODUCTION**

## **1.1.INTRODUCTION**

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.

The application will be a web-based application for visually impaired persons using IVR- Interactive voice response, thus enabling everyone to control their mail accounts using their voice only and to be able to read, send, and perform all the other useful tasks. The system will prompt the user with voice commands to perform certain action and the user will respond to the same. The main benefit of this system is that the use of keyboard is completely eliminated, the user will have to respond through voice and mouse click only.

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.

This project is proposed for the betterment of society. This project aims to help the visually impaired people to be a part of growing digital India by using internet and also aims to make life of such people quite easy. Also, the success of this project will also encourage developers to build something more useful for visually impaired or illiterate people, who also deserves an equal standard in society.

## **1.2.Purpose and Scope :**

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.

The application will be a web-based application for visually impaired persons using IVR- Interactive voice response, thus enabling everyone to control their mail accounts using their voice only and to be able to read, send, and perform all the other useful tasks. The system will prompt the user with voice commands to perform certain action and the user will respond to the same. The main benefit of this system is that the use of keyboard is completely eliminated, the user will have to respond through voice and mouse click only.

## **1.3.PROBLEM STATEMENT:**

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.

## **1.4.FUTURE SCOPE**

VOICE CONTROLLED EMAIL is a thing of the future which is yet to uncover its potential. Machine learning has changed the way companies were communicating with their customers. With new platforms to build various types of projects, it is of great excitement to witness the growth of a new domain in technology while surpassing the previous threshold.

## 2. Approach Used:

The principal motivation behind the plan is a web-based application for visually impaired persons using IVR- Interactive voice response, thus enabling everyone to control their mail accounts using their voice only and to be able to read, send, and perform all the other useful tasks. The system will prompt the user with voice commands to perform certain action and the user will respond to the same. The main benefit of this system is that the use of keyboard is completely eliminated, the user will have to respond through voice and mouse click only.

This is done with the help of the Natural Language Processing. Natural language processing (NLP) refers to the branch of computer science—and more specifically, the branch of artificial intelligence or AI—concerned with giving computers the ability to understand text and spoken words in much the same way human beings can.

NLP combines computational linguistics—rule-based modelling of human language—with statistical, machine learning, and deep learning models. Together, these technologies enable computers to process human language in the form of text or voice data and to ‘understand’ its full meaning, complete with the speaker or writer’s intent and sentiment.

### 2.1 PROJECT TIMELINE :

	10/09	14/09	20/09	25/09	1/10	8/10	16/10	21/10	26/10
<b>PROJECT INITIALISATION</b>	-----								
<b>PROJECT PLANNING</b>		-----							
<b>REQUIREMENT GATHERING</b>		-----	-----						
<b>UI DESIGN</b>			-----	-----					
<b>CODING</b>					-----	-----	-----		
<b>TESTING</b>							-----	---	
<b>IMPROVEMENTS + FINAL TESTING</b>								-----	-----

## **2.2 SELECTION OF APPROACH:**

The VOICE CONTROLLED EMAIL should be written in python, speech recognition system and the use of NLP in it. The system must provide a capacity for parallel operation and system design should not introduce scalability issues with regard to the number of surface computers, tablets or displays connected at any one time. The end system should also allow for seamless recovery, without data loss, from individual device failure.

This provides the user with ability to send mails using voice commands without the need of keyboard or any other visual things. We need the speech recognition , pip win and yagmail library to perform the audio commands in the system and to convert the speech into the text commands.

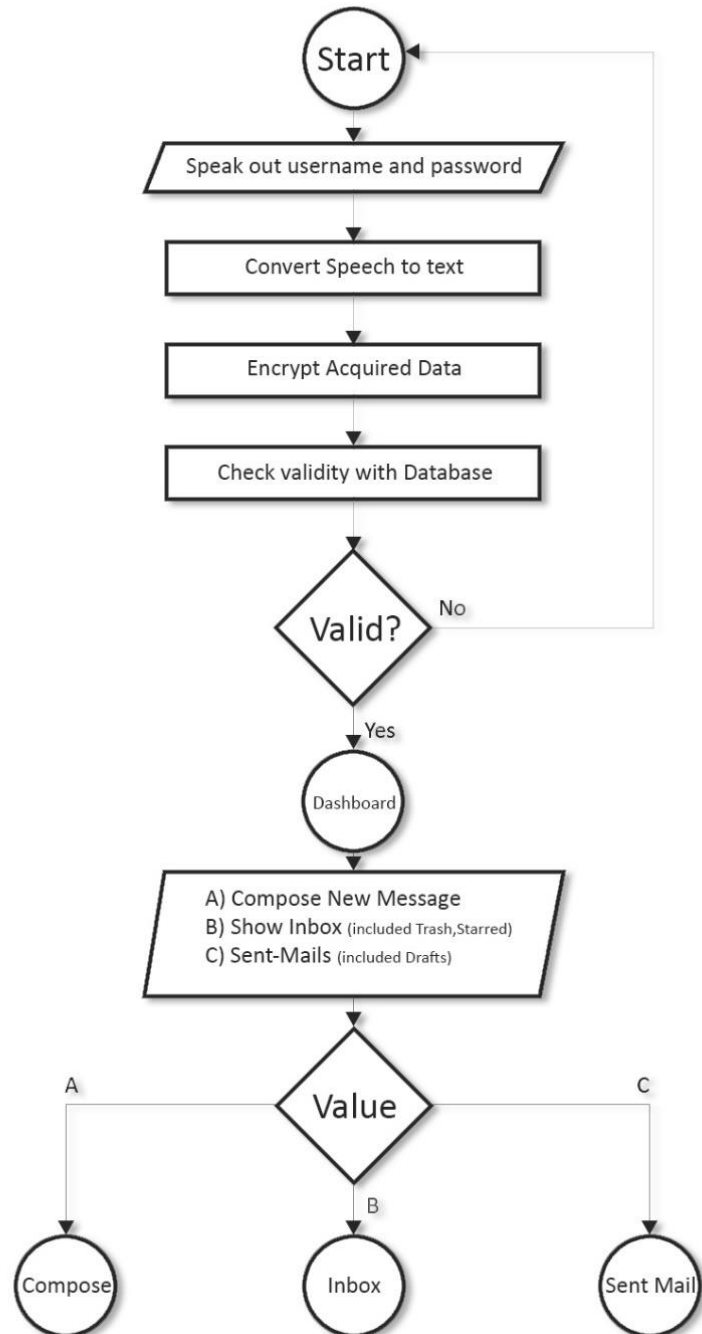
## **2.3 Application of selected approach**

The VOICE CONTROLLED EMAIL should be written in python, speech recognition system and the use of NLP in it. The system must provide a capacity for parallel operation and system design should not introduce scalability issues with regard to the number of surface computers, tablets or displays connected at any one time. The end system should also allow for seamless recovery, without data loss, from individual device failure.

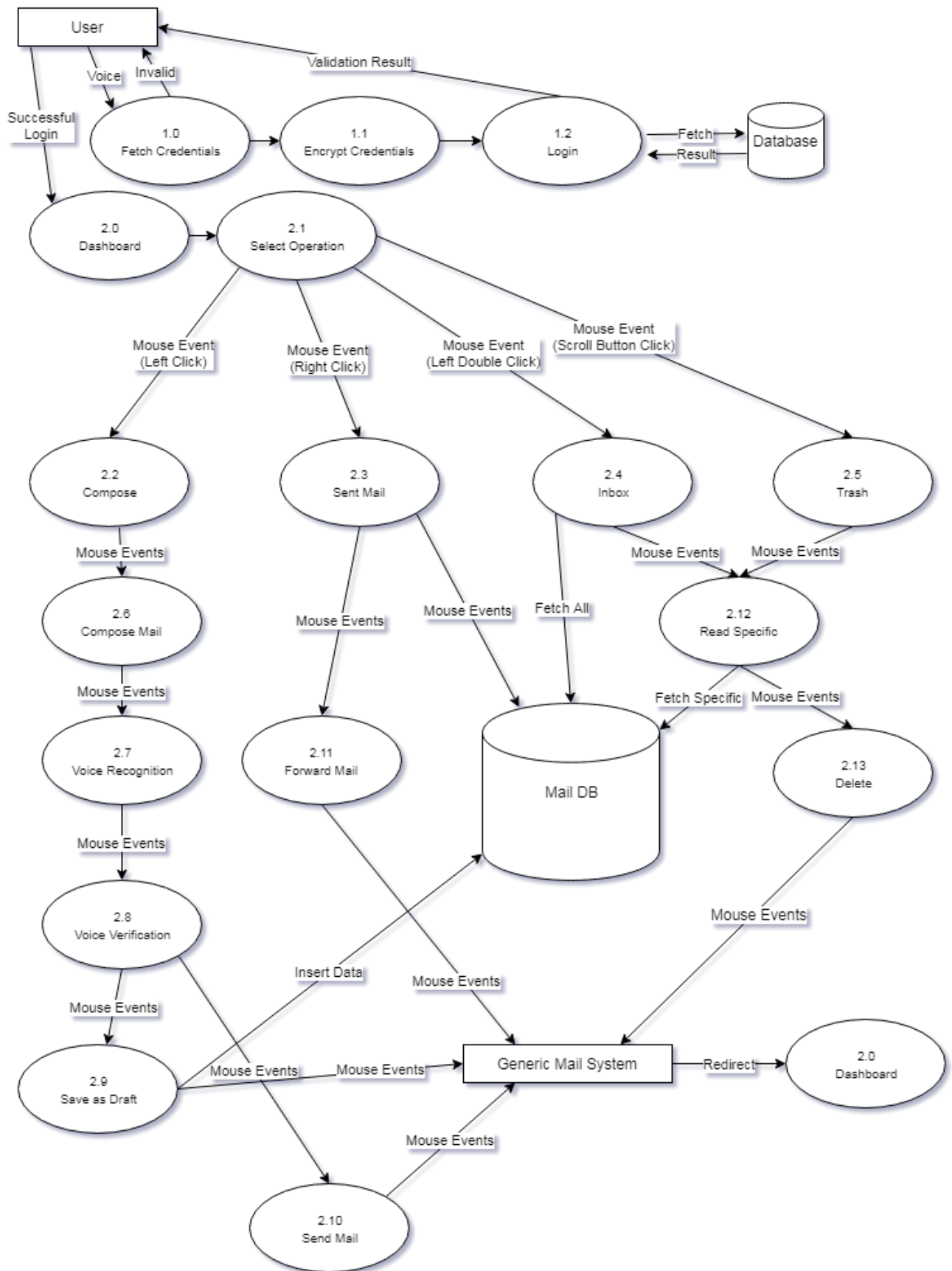
This provides the user with ability to send mails using voice commands without the need of keyboard or any other visual things. We need the speech recognition , pip win and yagmail library to perform the audio commands in the system and to convert the speech into the text commands. The end system should also allow for seamless recovery, without data loss, from individual device failure. There must be a strong audit chain with all system actions logged. While interfaces are worth noting that this system is likely to conform to what is available. With that in mind, the most adaptable and portable technologies should be used for the implementation. The system has criticality in so far as it is a live system. If the system is down, then customers must not notice, or notice that the system recovers quickly (seconds). The system must be reliable enough to run, crash and glitch free more or less indefinitely, or facilitate error recovery strong enough such that glitches are never revealed to its end-users

### 3. PROJECT DESIGN:

#### 3.1 Block Diagram:



### 3.2 Data Flow Diagram :





## **4.Implementation:**

### **4.1 Project Implementation Technology:**

Natural language processing (NLP) refers to the branch of computer science—and more specifically, the branch of artificial intelligence or AI—concerned with giving computers the ability to understand text and spoken words in much the same way human beings can.

NLP combines computational linguistics—rule-based modeling of human language—with statistical, machine learning, and deep learning models. Together, these technologies enable computers to process human language in the form of text or voice data and to ‘understand’ its full meaning, complete with the speaker or writer’s intent and sentiment.

NLP drives computer programs that translate text from one language to another, respond to spoken commands, and summarize large volumes of text rapidly—even in real time. There’s a good chance you’ve interacted with NLP in the form of voice-operated GPS systems, digital assistants, speech-to-text dictation software, customer service chatbots, and other consumer conveniences. But NLP also plays a growing role in enterprise solutions that help streamline business operations, increase employee productivity, and simplify mission-critical business processes.

#### **4.1.1 Hardware Requirement:**

In recent years, a great variety of hardware solutions for real-time TSR has been proposed. These include conventional (general purpose) computers, custom ASIC (application-specific integrated circuit) chips, field programmable gate arrays (FPGAs), digital signal processors (DSPs) and also graphic processing units

#### **4.1.2 Software Requirements:**

In a software-based solution running on a Linux or window system with a 2.4-GHz intel i7 9<sup>th</sup> generation CPU is presented.

#### **4.1.3 Experimental Setup:**

The VOICE CONTROLLED EMAIL should be written in python, speech recognition system and the use of NLP in it. The system must provide a capacity for parallel operation and system design should not introduce scalability issues with regard to the number of surface computers, tablets or displays connected at any one time. The end system should also allow for seamless recovery, without data loss, from individual device failure.

This provides the user with ability to send mails using voice commands without the need of keyboard or any other visual things. We need the speech recognition , pip win and yagmail library to perform the audio commands in the system and to convert the speech into the text commands.

## 5. CODING

### **# Importing the libraries**

```
import speech recognition as sr
import yagmail
```

### **#Creating the output AND Using the Libraries**

```
recognizer=sr.Recognizer()
with sr.Microphone() as source:
    print('Clearing background noise..')
    recognizer.adjust_for_ambient_noise(source, duration=1)
    print("waiting for your message...")
    recordedaudio=recognizer.listen(source)
    print('Done recording..!')
```

### **#Using the TRY & EXCEPT BLOCK**

```
try:
    print('Printing the message..')
    text=recognizer.recognize_google(recordedaudio,language='en-US')
    print('Your message: { }'.format(text))

except Exception as ex:
    print(ex)
```

### **#Automate mails:**

```
receiver='bhuvanasharma0786@gmail.com'
message=text
sender=yagmail.SMTP('kushalmahey@gmail.com')
sender.send(to=reciever,subject='This is an voice controlled mail',
contents=message)
```

## 6. TESTING

Without a well-thought testing effort, the project will undoubtedly fail overall and will impact the entire operational performance of the solution. With a poorly tested solution, the support and maintenance cost will escalate exponentially, and the reliability of the solution will be poor.


Therefore, project managers need to realize that the testing effort is a necessity, not merely as an ad hoc task that is the last hurdle before deployment. The project manager should pay specific attention to developing a complete testing plan and schedule.

At this stage, the project manager should have realized that this effort would have to be accommodated within the project budget, as many of the testing resources will be designing, testing, and validating the solution throughout the entire project life cycle—and this consumes work-hours and resources. The testing effort begins at the initial project phase (i.e., preparing test plans) and continues throughout until the closure phase

## 7. SNAPSHOT OF RESULT :

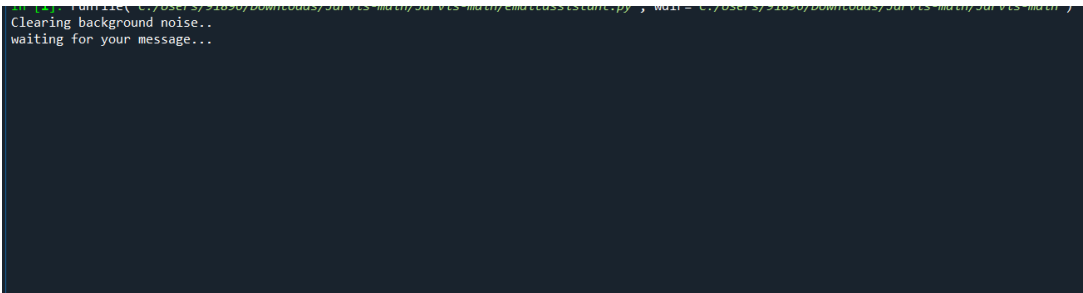
### ❖ CLEARING BACKGROUND NOISE

```
Clearing background noise..
```



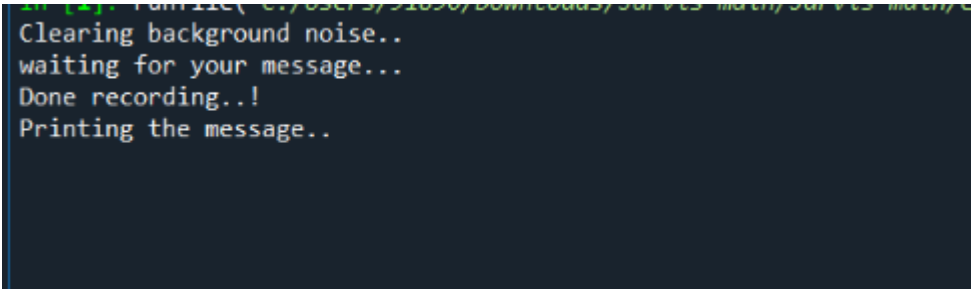
### ❖ WAITING FOR MESSAGE

```
Clearing background noise..  
waiting for your message...
```



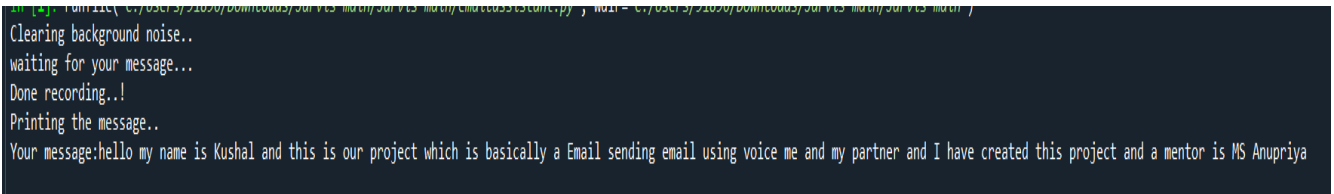
### ❖ DONE RECORDING AND STARTED PRINTING THE MESSAGE

```
Clearing background noise..  
waiting for your message..  
Done recording..!  
Printing the message..
```



### ❖ MESSAGE IS PRINTED

```
Clearing background noise..  
waiting for your message..  
Done recording..!  
Printing the message..  
Your message:hello my name is Kushal and this is our project which is basically a Email sending email using voice me and my partner and I have created this project and a mentor is MS Anupriya
```

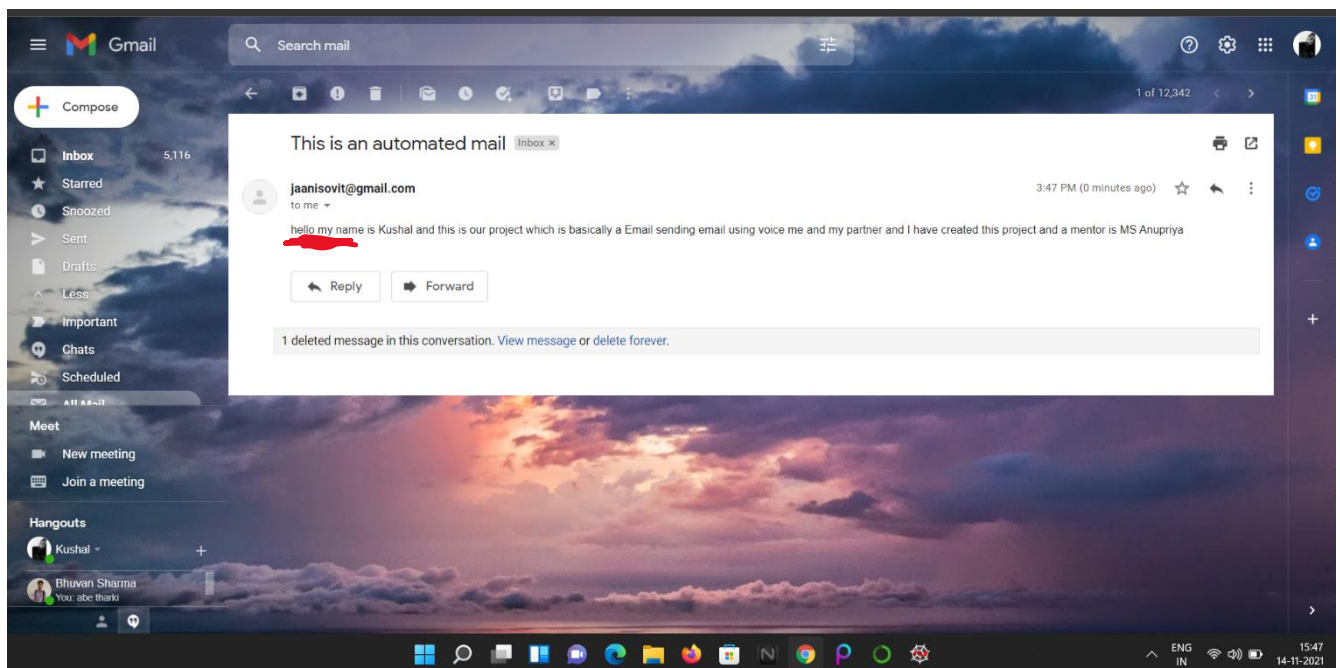


## ❖ ENTERING THE PASSWORD OF THE EMAIL

```
...
Clearing background noise..
waiting for your message...
Done recording..!
Printing the message..
Your message:hello this is Kushal and women we are working on project named email using voice control and we have this is our 7th semester project and we have worked under the mentor miss Anupriya

Warning: QtConsole does not support password mode, the text you type will be visible.
Password for <bhuvansharma0786@gmail.com>: |
```

## ❖ EMAIL SENT AND RECEIVED BY RECIEVER



## 8. ADVANTAGES OF MODEL

- This project is proposed for the betterment of society.
- This project aims to help the visually impaired people to be a part of growing digital India by using internet and also aims to make life of such people quite easy.
- This system makes the disabled people feel like a normal user.
- Also, the success of this project will also encourage developers to build something more useful for visually impaired or illiterate people, who also deserves an equal standard in society.
- USE OF KEYBOARD for typing of emails is completely removed.
- User does not need to press the keys.

## 9. Conclusion

Thus, we can conclude that this system giving the accurate result. 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.

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## 10 .APPENDICES

### APPENDIX1: NATURAL LANGUAGE PROCESSING

Natural language processing (NLP) refers to the branch of computer science—and more specifically, the branch of artificial intelligence or AI—concerned with giving computers the ability to understand text and spoken words in much the same way human beings can.

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### APPENDIX2: SPEECH RECOGNITION

Speech recognition, or speech-to-text, is the ability of a machine or program to identify words spoken aloud and convert them into readable text. Rudimentary speech recognition software has a limited vocabulary and may only identify words and phrases when spoken clearly. More sophisticated software can handle natural speech, different accents and various languages.

Speech recognition uses a broad array of research in computer science, linguistics and computer engineering. Many modern devices and text-focused programs have speech recognition functions in them to allow for easier or hands-free use of a device. Speech recognition and voice recognition are two different technologies and should not be confused:

## 11 .LIST OF REFERENCES

-  <https://www.geeksforgeeks.org/project-idea-voice-based-email-visually-challenged/>
-  <https://cloud.google.com/speech-to-text/docs/quickstart>
-  [https://en.wikipedia.org/wiki/Speech\\_recognition](https://en.wikipedia.org/wiki/Speech_recognition)