
Software Requirements Specification

for

Voice Based E-mail For Blind People

Version 1.0 approved

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Revision History

Name	Date	Reason For Changes	Version
-	-	-	-

1. Introduction

1.1 Purpose

This software requirement specification document relates to the software that helps the blind people to make use of regular E-mail system. This document describes the first release of the software. It also describes the complete software including the functions of its various modules.

1.2 Document Conventions

1.2.1 Definitions

Voice recognition – Through which the user interacts with the system

Speech synthesis – Through which the system response to the user.

1.3 Intended Audience and Reading Suggestions

This intended audience of this document includes all stakeholders of voice-based E-mail system for blind people project who are supposed to review and sign-off this document. The primary stakeholders of the system include registered users, administrator, mail receiver etc.

1.4 Product Scope

This voice-based E-mail system enables the blind people to send, receive the e-mail through the voice command instead of using the regular GUI interface. The purpose of specifically designing to email system is because the e-mail is the standard communication platform work place communication and most of other standard communication are also prefers the e-mails only.

2. Overall Description

2.1 Product Perspective

The main objective of this project is the blind people are not able to interact with the regular GUI system so they are not able work in the existing e-mail system. Through this project the blind people can have the platform through which they can operate the system using the voice commands and communicate with the other users who are all using the regular GUI e-mail system.

2.2 Product Functions

Receives the user credential and use the voice command to authenticate the user. Notifies the user current page or position that the user currently working with. After providing the e-mail contents and requirement the command is issued uses the SMTP protocol and the e-mail delivered through the SMTP server. The system listens whether the new mail is received or not if any mail is received then the system notifies the user and read it out for the user.

2.3 User Classes and Characteristics

<i>User classes</i>	<i>Characteristics</i>
<i>Visually challenged user</i>	<ul style="list-style-type: none"> • <i>user registration'</i> • <i>user login</i> • <i>user navigation</i> • <i>composing new mail</i> • <i>attaching the external media</i> • <i>receiving the mail</i>

2.4 Operating Environment

- *Pentium IV processor or later*
- *1GB of RAM or more*
- *128 GB hard disk space or more*
- *Internet connectivity*
- *Windows 7 or higher versions.*
- *System with mic facility*

2.5 Design and Implementation Constraints

2.5.1 The following are the design and implementation constraints on authentication of user:

- *First the user is need to give the details required for authentication after that the voice command is used for proceeding with the authentication process.*
- *If the provided credential doesn't match the system notifies the user to provide the correct credentials.*

2.5.2 The following are the design and implementation constraints on drafting the new mail:

- *To draft the new mail the user must switch from home page to composing page to do this the voice command is used.*
- *In compose page the user needs to give the requirement like receiver mail id, content of the mail etc.*
- *While providing the content of the mail if the user wants, they can attach the external media file also.*
- *After issuing the appropriate command the SMTP module take care of mail generation and the mail given to the SMTP server then forwarded to the receiver.*

2.5.3 The following are the design and implementation constraints on receiving the mail:

- *To receive the mail the user, need to move to the receive page of the system in order to move from home page to receive page the voice command is used.*
- *While moving from one page to other page the system indicate the user in which page, they are currently present using the speech synthesis ability.*
- *If any new mail is received then the system informs the user that the new mail is received and if the user command the system will read out the content of the mail to the user.*

2.5.4 The following are the design and implementation constraints on maintaining the user and package information

- The database to store the information about the packages should be maintained remotely
- The data required to run the software is maintained locally on each system

2.6 Assumptions and Dependencies

The following assumptions are made on the software usage

- *The user can also use the e-mail id in out side of system and other application.*
- *The e-mail id used is not created by the system.*
- *Each user is given a username and password to access the system.*

3. External Interface Requirements

3.1 User Interfaces

There is only one user interface:

- *Blind user interface.*

3.1.1 Blind user interface

The Blind user interface should contain all the features mentioned in the user classes and characteristics (section 2.3). the features are:

1. *User login - This is the starting point of the system here there is two field to provide user name and password and the voice command is used for authentication*
2. *User navigation - When the user switches from one page to other the system need to indicate the current page.*
3. *Composing new mail – Here there is specific fields provided for receiver mail id and the content of the mail. The mail generation take place within the system boundary only the forwarding of the mail is given to the SMTP server.*
4. *Attaching external media – While composing the mail if there is the content or data which is not able specify in the content field then there is the facility for uploading the external media file from the system.*
5. *Receiving mail – Here there should be specific field for user's mail id and then the fields for user authentication and to provide the received mail content.*

3.2 Hardware Interfaces

- *System with good internet connection.*
- *System with mic facility.*
- *System with windows platform.*

3.3 Software Interfaces

- *A Database Management system is used to store data of the Blind user.*

- The package, and data that are required to run the application is stored in the local system.
- The system uses the internet connection to send the generated mail to the SMTP server for mail forwarding.

3.4 Communications Interfaces

Users can access the application with the help of any system with windows platform. The communication is through standard SMTP protocol.

4. System Features

The voice-based email system is main purpose is to enable the blind people access and work with the existing e-mail services like G-mail etc. this is achieved by providing the interface which enable the blind people interact with system using voice command instead of using the graphical interface.

4.1 Authentication and Navigation

4.1.1 Description and Priority

This provides the security to the user system and it helps the user perceive in which mode or module that they are currently working.

4.1.2 Stimulus/Response Sequences

During the authentication the user need to provide the authentication data after that the user issues command. The voice command is taken as audio input and send it to the speech recognition engine and then the digital is generated using that data the command is identified and execute appropriate task and navigation system is also used to provide the notification to the user in audio format.

4.1.3 Functional Requirements

REQ-1: Invalid data

If the user provides the wrong authentication details the system indicate the user to provide the correct details the system notifies the user using the speech synthesis.

REQ-2: Navigation

After the successful authentication the user is moved to the home page the switch of page is not able to identify by blind people so the navigation feature indicate the user to which page the user is currently moved.

4.2 Sending and receiving the mail

4.2.1 Description and Priority

This feature enables the user to send and receive the mail. The sending the mail and receiving the mail module execute only one at a time so they can't execute simultaneously thus they have equal priority.

4.2.2 Stimulus/Response Sequences

The audio input is taken from the user and the recognition engine convert the audio input into the digital data using the data the command is generated and the task is performed. After receiving the email then system indicate the user that the mail is received and the system can able to read it to the user using speech synthesis.

4.2.3 Functional Requirements

REQ-1: Composing mail

REQ-2: Attaching the local media file

If the want add some other data while composing the mail like word document etc. the user use this feature to upload the file and proceed with mail generation.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Response time- The system will give responses within 2 second after issuing the appropriate voice command.

Capacity- The system support 1 people at a time it is locally store and the system can only process the voice command for single application at time.

User interface- User interface most of the action is based on voice command.

5.2 Safety Requirements

Science after the authentication only the user can access the services provide by the system it is suggested to have backup the of authentication details and also don't unnecessarily share it with other.

5.3 Security Requirements

User login. The user can use the service only if they provide the valid user credential. Other than that, no one is allowed to use this system.

5.4 Software Quality Attributes

AVAILABILITY : Science the system is locally stored and the system database is also store locally so there is no need for other external server to function. The system only need the internet connection to reach the SMTP server as long as the internet connection the system will provide the service to the user.

OPERABILITY : System allows the user to operate using voice command It is a user friendly system, which allows the user to do their task in an easier way.

CORRECTNESS : Various test cases were implemented and checked the accuracy of the system. If any errors are found will correct them before delivering the software to the client.

FLEXIBILITY : After delivering software if a client wants to do any changing will hope to do that change immediately without any charges.

MAINTAINABILITY : Three year maintenance warranty is given to the client .Will fix all trouble within the warranty period. This online courier management system is a portable software and also it is a reusable software for other courier companies. At the software delivery time it will be delivered with a user manual which will detail the use of the system client.

6. Other Requirements

Appendix A: Glossary

Abbreviations

SMTP – Simple Mail Transfer Protocol.

SRS - Software Requirement Specification.

UI - User interface.

GUI- Graphical User Interface.

Appendix B: Analysis Models



