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Talking Buddy

Introduction

In this report, we are going to shortly introduce the first project of the course :**Talking Buddy**, an email platform for visually impaired people. We will explain the pre-designed steps of this project , as well as the methods and languages that we used to achieve the desired result. Furthermore, we will present the progress of the entire project during three weeks. The main idea behind our project is building an application to help visually impaired people in sending and receiving emails by communicating with the app through vocal commands.
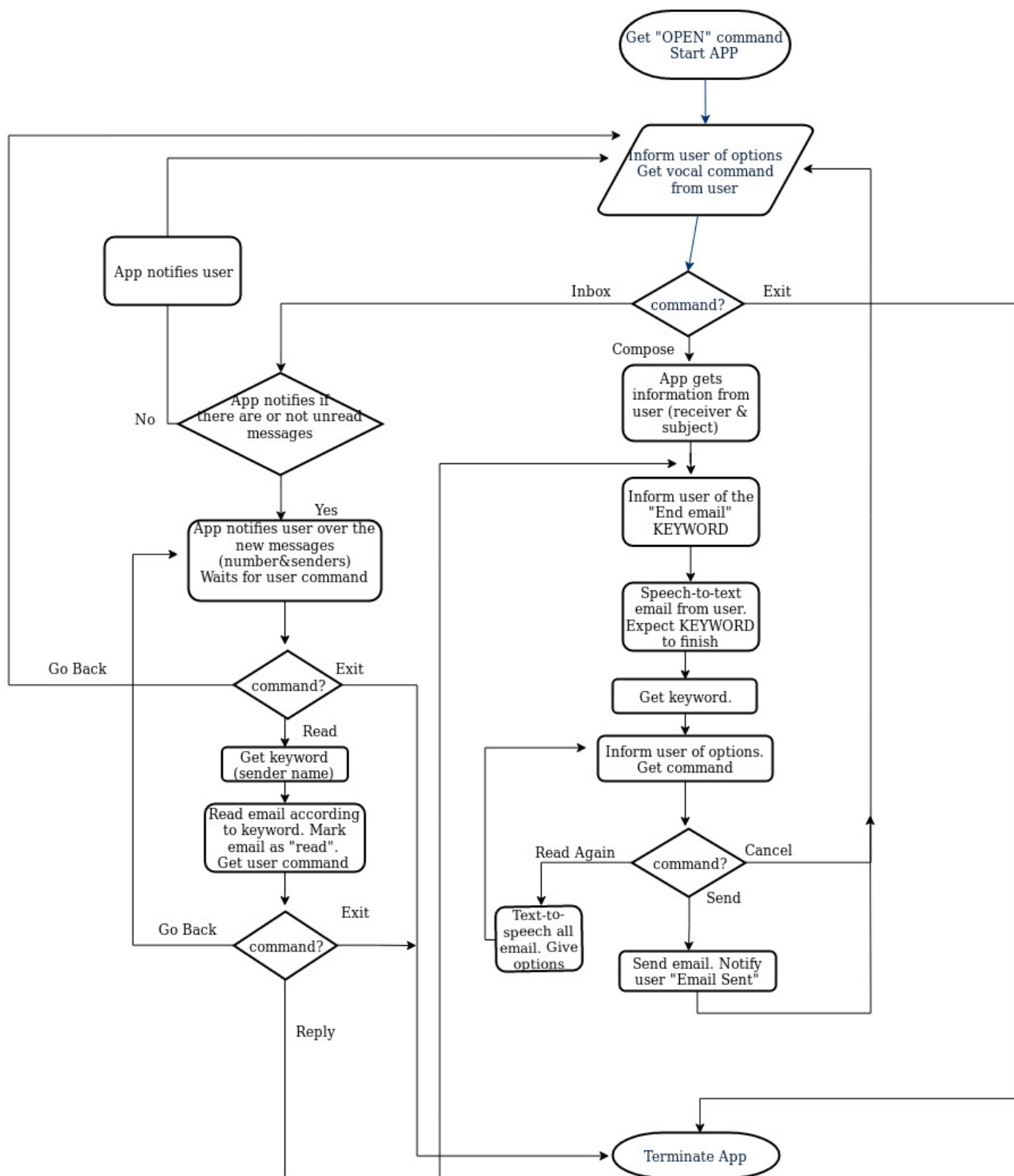
Body

In the first project of this course, we were given the task of implementing an email platform which will aid visually impaired people in performing their virtually communicative tasks easily.
For this project we were given the option to choose our own methods and programming languages, as well as whether to implement a web page or mobile application. We have chosen to create a mobile application using Android Studio. This app will interact with the user in order to complete his/her needs through the following steps:

- The user can access the app via a vocal command.
- App will present three main options to the user: Go to Inbox, Compose an email and Exit.
- App will get user's choice and act accordingly.
- In Inbox, the app will notify the user of present unread emails (if any) and present the following options: Read email, Go back to homepage or Exit app.
- In case of option "Read", the app awaits for a KEYWORD (Sender's name) to read an email of user's choice.
- After reading the email, the user will have the option to reply to the email.
- If the user chooses "Compose" in Home Page, the app will get information of receiver's name and email's Subject, and inform the user of the "End Email" KEYWORD.
- App will do speech-to-text transformation of email until it receives the "End Email" KEYWORD.
- The user will have the option of having the email read again to him/her or send the email immediately.

For a better understanding of the above steps, we provide the following flowchart.

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Get "OPEN" command
Start APP

Inform user of options
Get vocal command
from user

App notifies user

Inbox   command?   Exit

Compose

App gets
information from
user (receiver &
subject)

No

App notifies if
there are or not unread
messages

Inform user of the
"End email"
KEYWORD

Yes

App notifies user over the
new messages
(number&senders)
Waits for user command

Speech-to-text
email from user.
Expect KEYWORD
to finish

Get keyword.

Go Back   command?   Exit

Inform user of options.
Get command

Read

Get keyword
(sender name)

Read email according
to keyword. Mark
email as "read".
Get user command

Read Again   command?   Cancel

Send

Go Back   Exit

command?

Text-to-
speech all
email. Give
options

Send email. Notify
user "Email Sent"

Reply

Terminate App

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For more efficient progress, we divided our project into smaller tasks to be completed throughout the three weeks, the main ones being:

- Login to your gmail account through the app.
- Inbox: Reading, replying and deleting emails through your app.
- Compose: Composing,listening and sending your composed email to the recipient entered.
- Exit and go back in the app by a voice command at all stages.

We have been able to complete the following tasks:

- Research in order to get familiar with Android Studio program and its TTS (Text to Speech) - STT (Speech to Text) libraries and functions as well as Java programming language.
- Complete the layouts of our Login, Menu, Compose and Inbox pages.
- Complete the hardcoded version of Login to our app and move from one activity page to another when receiving a KEYWORD.
- Complete the Exit and Back part of our app.
- Complete the Email Composing, Re-listening and Canceling and Sending
- Complete the Text to Speech and Speech to Text command between user and app.
- Integrating Google Sign In by receiving Gmail's API and configuring in our android app.
- Complete the Open, Reply and Delete Email tasks within the Inbox Activity.
- Using Gmail API for sending emails and reading the inbox
- Integrating the Text-To-Speech and Speech-To-Text methods in the Inbox and Compose Activities
- Complete the Open and Reply tasks within the Inbox Activity
- Integrate Gmail Sign-Out

Conclusion

We faced many challenges during this project, however we managed reach all our expectations and achieved a proper final product. **Talking Buddy** can help visually impaired people in their daily communication by giving them the chance to sign in to their email account, receive emails which they can hear and send emails vocally without other's assistance, thereby achieving satisfying level of independence.

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YOU ARE IN MENU

Choice

YOU ARE IN INBOX

Choice

You Are In Compose

Subject

Recipient   Choice

Compose Email