

**User Guide**

**(UG)**

MailSpeak Application (MSA)

University of Maryland Global Campus (UMGC)

Software Engineering (SWEN) 670

Fall Cohort 2022

Team B

November 5, 2022Approval Signatures

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# Introduction

## Background

MailSpeak (MSA) is a mobile application that works in tandem with a user’s USPS Informed Delivery account and emails received through the USPS Informed Delivery program. With special attention given to vision-impaired users, this application provides users with the ability to navigate through the mail pieces emailed to the user by Informed Delivery. Development began with the previous UMGC SWEN 670 Capstone Summer 2022 cohort and is currently being developed by the Fall 2022 cohort. The application allows users to search through mail pieces Informed Delivery has informed them they will receive by both keyword and date. For visually impaired users, native voice-to-text and text-to-speech functions are compatible. Additionally, gesture commands are available for increased ease of use. The application also has a Chat Bot feature to assist the user with navigating the application.

## Project Documentation

### Project Suite of Documents

This User Guide (UG) is part of a set of essential documents created to adequately manage, control and deliver the Mail Speak Application. Artifacts that are provided within the document package contain vital information for the application’s ongoing support and operation throughout its life cycle. Each document is created within the specific Milestone of the project.

Table 1.2.1 - Project Documentation Package

| Document | Version | Date |
| --- | --- | --- |
| Project Management Plan (PMP) | 4.0 | 11/05/2022 |
| Software Requirements Specification | 4.0 | 11/05/2022 |
| Technical Design Document | 3.0 | 11/05/2022 |
| Software Test Plan | 3.0 | 11/05/2022 |
| Programmer Guide | 2.0 | 11/05/2022 |
| Development and Operations Guide | 2.0 | 11/05/2022 |
| User Guide | 1.0 | 11/05/2022 |
| Test Report | 1.0 | 11/05/2022 |

### Document References

During the process of writing current UG the following documents were referenced:

* Team B. (2022). *United Global Master Coders Team B PMP*. <https://umgcdev361.sharepoint.com/:w:/r/sites/SWEN670Fall2022/Shared%20Documents/Team%20B%20Channel/Milestone%201%20(SAT%20SEP%203)/ProjectManager-Project-Plan-Template.docx?d=w671384dfe89d46d7a2583b60416fb909&csf=1&web=1&e=xeRN2o>
* Team B. (2022). *United Global Master Coders Team B SRS*. <https://umgcdev361.sharepoint.com/:w:/r/sites/SWEN670Fall2022/Shared%20Documents/Team%20B%20Channel/Milestone%201%20(SAT%20SEP%203)/Informed%20Delivery%20Enhancement%20Team%20B%20SRS.docx?d=w9b27ad03c5c145a09edc6b22427bc8ba&csf=1&web=1&e=85qCsH>
* Team B. (2022). *United Global Master Coders Team B TDD*. <https://umgcdev361.sharepoint.com/:w:/r/sites/SWEN670Fall2022/Shared%20Documents/Team%20B%20Channel/Milestone%202%20(SAT%20SEP%2017)/TDD%20-%20Team%20B%20-%20MSA.docx?d=wf0a49ae72fc0497b9dfb0322352b8025&csf=1&web=1&e=fgAyQh>

# System Capabilities

## Overview

The purpose of the MSA is to provide users with easy access to the mail information they received through USPS Informed Delivery.

## General Description

The main goals of this application are to provide accessibility features to visually impaired users. Users can use their native text-to-speech setting within the application, and voice- and gesture-driven commands have been implemented. The search feature can be used to search for specific pieces of mail, using a keyword and/or a date range. Additionally, a Chatbot is available to assist users in navigating the application.

# Specifications

## Software Specifications

Recommended:

* Android: Android 12 (Snow Cone)
* iOS: iOS 16

## Hardware Specifications

MSA can be used on any mobile device or tablet that is able to download applications from either the Google Play Store or Apple App Store. It is not compatible with computers.

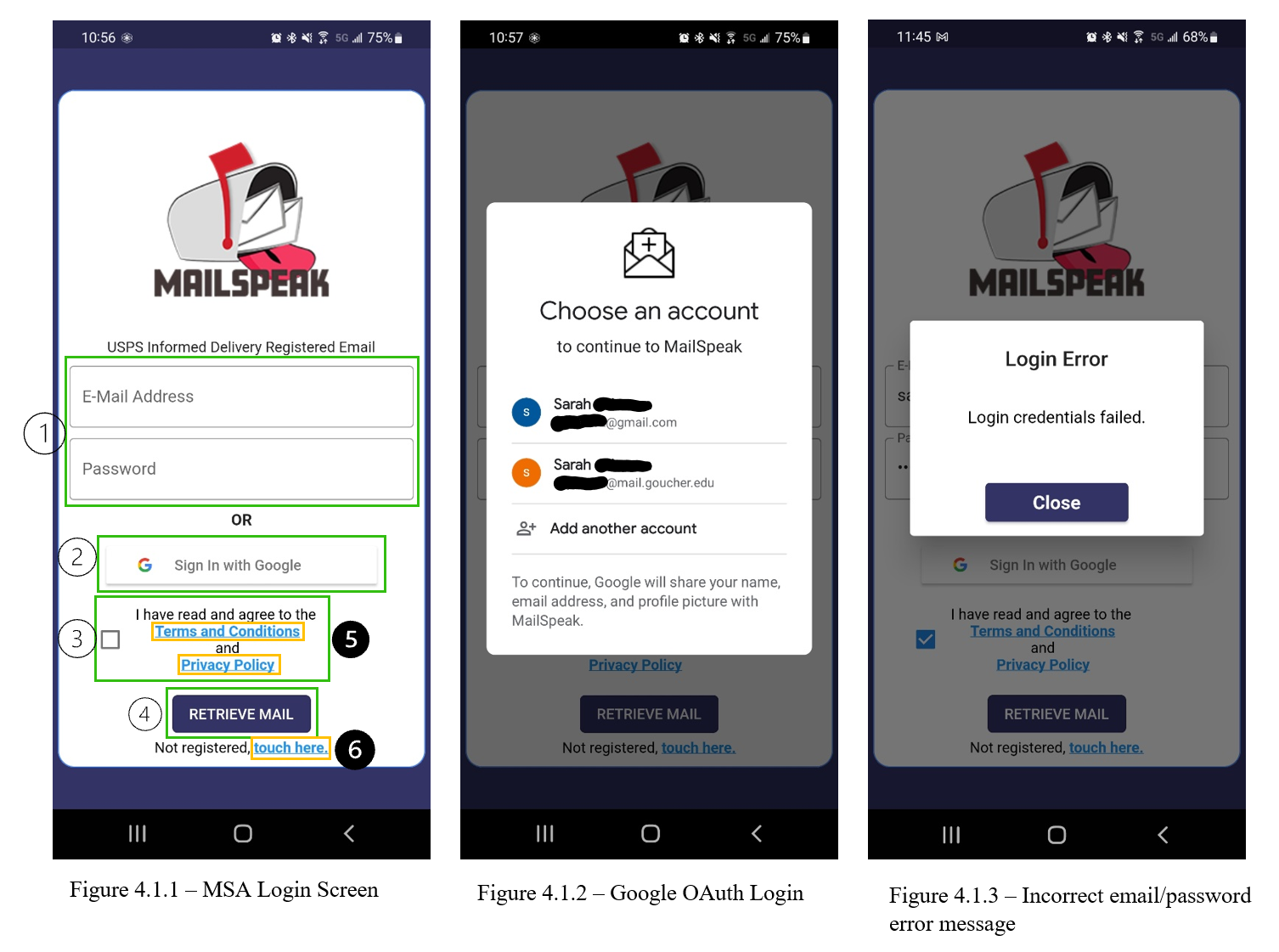
## Technical Specifications

The minimum requirements for using the application are:

* Android: Android 5.0 (Lollipop) with API Level 21
* iOS: iOS 13

# Description of System Functions

## Login



To access the application and their scanned mail, users must login:

* Enter the email address the user has registered with USPS Informed Delivery and enter the email password (Figure 4.1.1 Area 1).
* Confirm that they have read the terms and conditions (Figure 4.1.1 Area 3).
* Click “Retrieve Mail” (Figure 4.1.1 Area 4).
* The user will be logged into the app and will be brought to the main menu.

If the user has registered with a Gmail email account:

* Confirm that they have read the term and conditions.
* Click the Google OAuth button (Figure 4.1.1 Area 2).
* Select the Gmail account (Figure 4.1.2).

If users have not registered for USPS Informed Delivery:

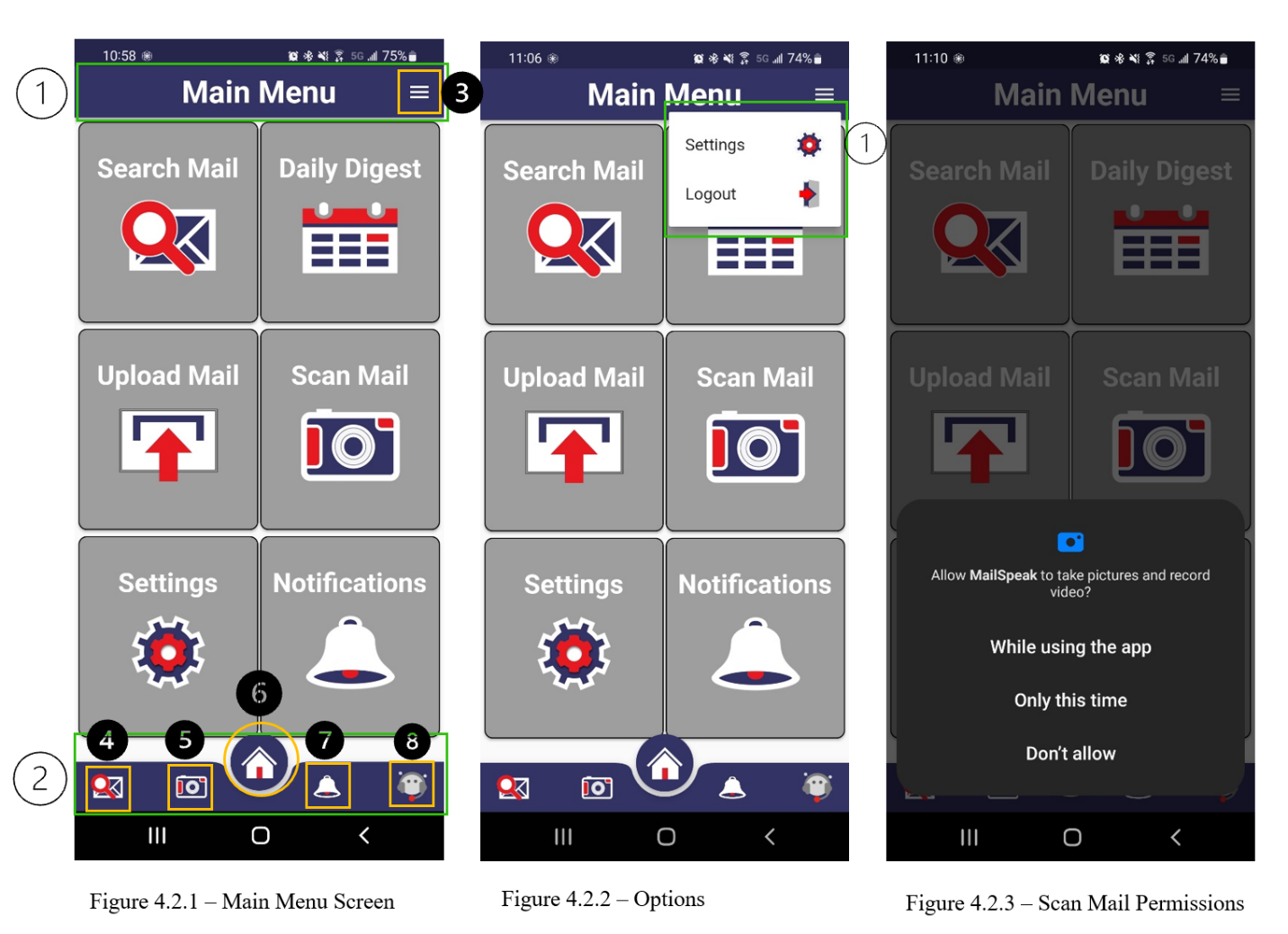
* A link is provided to take them to the registration web page (Figure 5.1.1 Area 6).

There are also links to the Private Policy and Term and Conditions (Figure 4.1.1 Area 5).

If the user enters an incorrect email or password:

* An error message will be displayed, informing them of incorrect login credentials (Figure 4.1.3).

## Main Menu



The main menu is set up in a grid (Figure 4.2.1).

Top Toolbar (Figure 4.3.1 Area 1):

* There is a hamburger button (Figure 4.2.1 Area 3) at the far right.
* When expanded, the hamburger button has two selections: settings and log out (Figure 4.2.2).
* Clicking settings will take the user to the settings screen.
* Clicking logout will log the user out of the application and take the user back to the login screen.

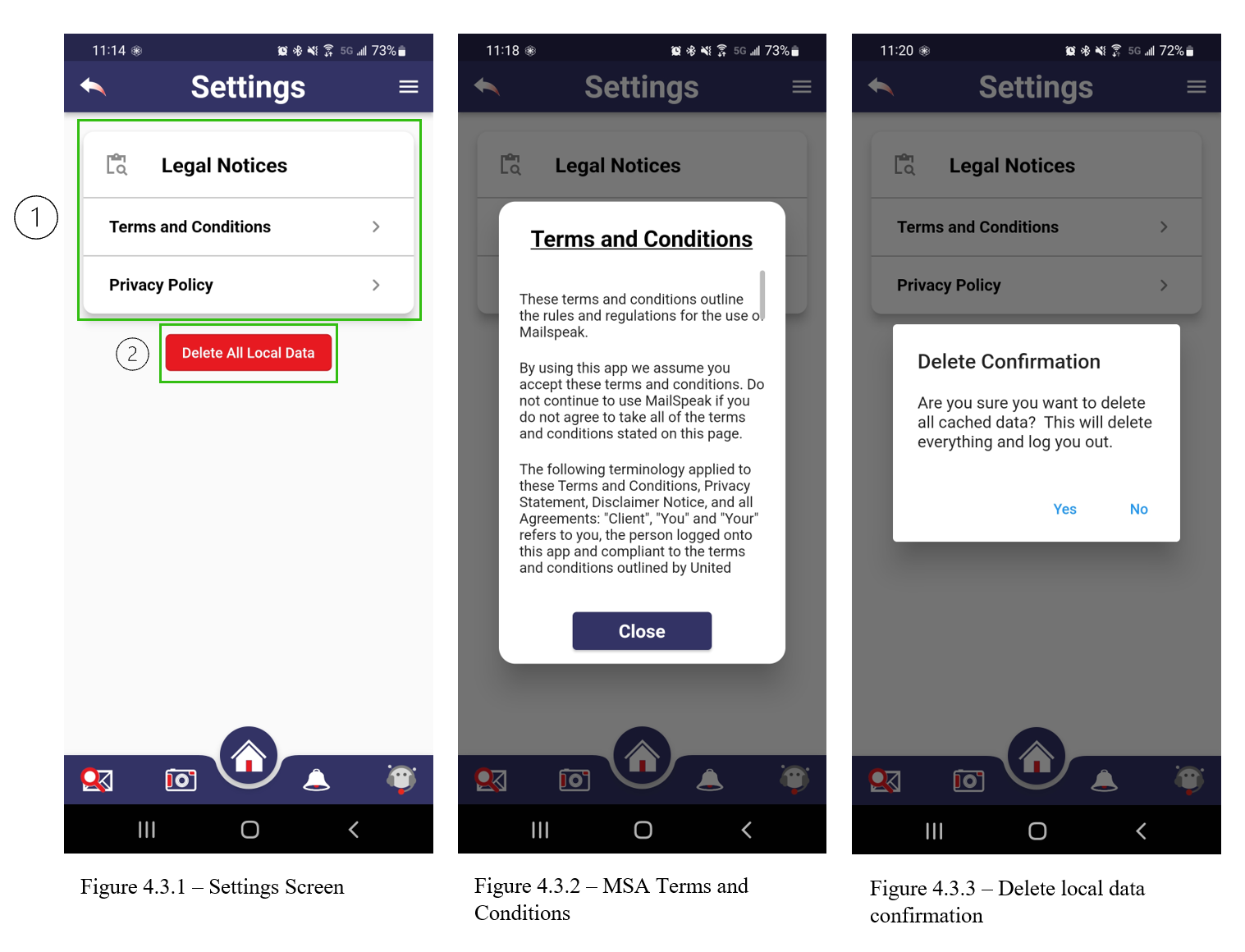
The grid of the main menu is set up in a 3 rows x 2 columns grid.

* From top to bottom, left to right, there are: “Search Mail”, “Daily Digest”, “Upload Mail”, “Scan Mail”, “Settings”, and “Notifications”.
* Clicking “Search Mail”, “Daily Digest”, “Settings”, or “Notifications” will take the user to the respective screens.
* Clicking “Upload Mail” will take the user to their phone’s gallery where they can select a photo to upload.
* Selecting “Scan Mail”, the user will first have to give MSA permission to use the phone’s camera and gallery (Figure 4.2.3). Granting the application permission will then open the phone’s camera and the user can take a photo of the mail piece to upload.

Bottom Toolbar (Figure 4.2.1 Area 2):

* This toolbar is displayed on every screen, allowing the user to navigate to the screens from anywhere in the application.
* From left to right are the icons for “Search Mail” (Figure 4.2.1 Area 4), “Scan Mail” (Area 5), “Main Menu” (Area 6), “Notifications” (Area 7), and “Chat bot” (Area 8).
* Selecting any of these icons will take the user to the corresponding screen.

## Settings

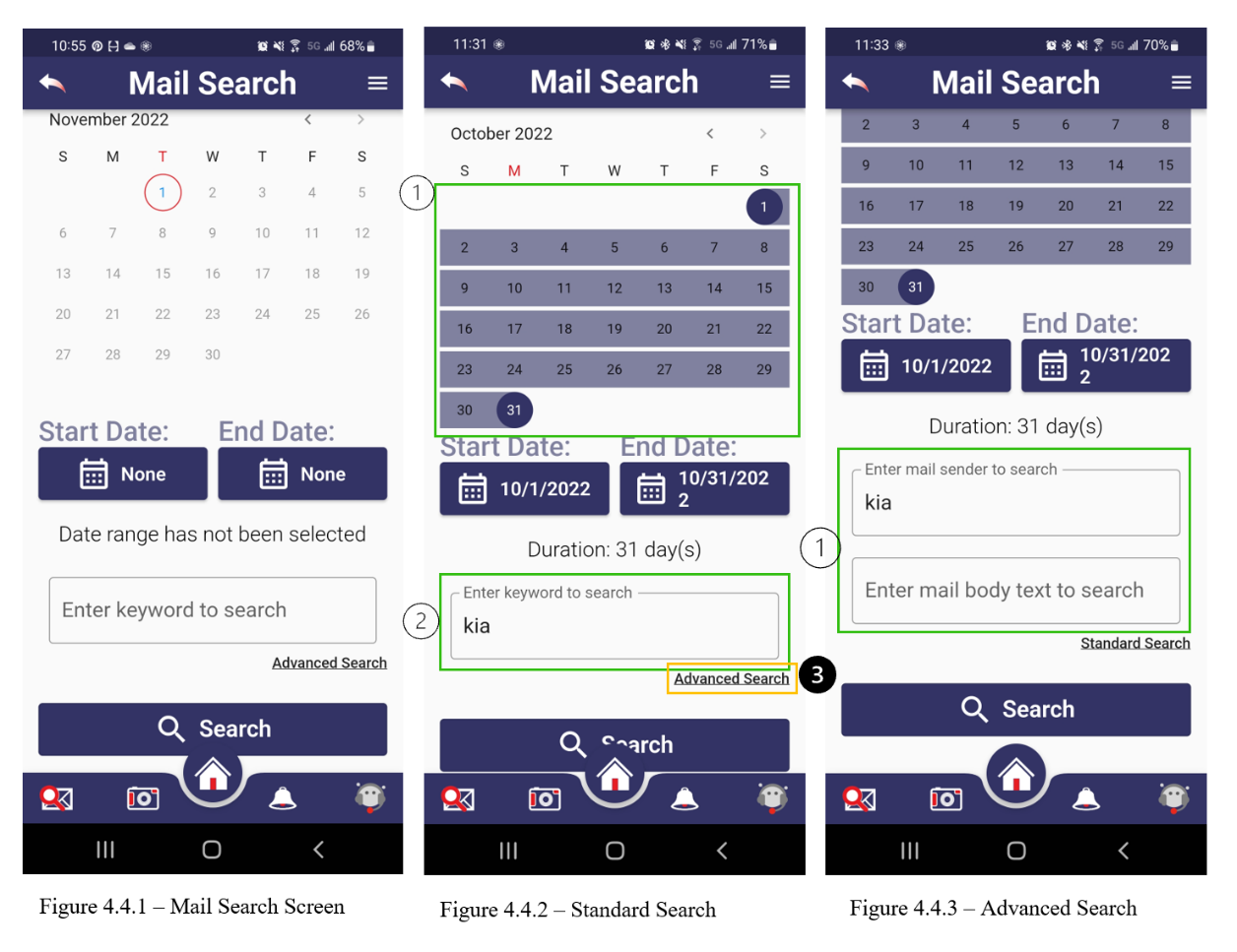


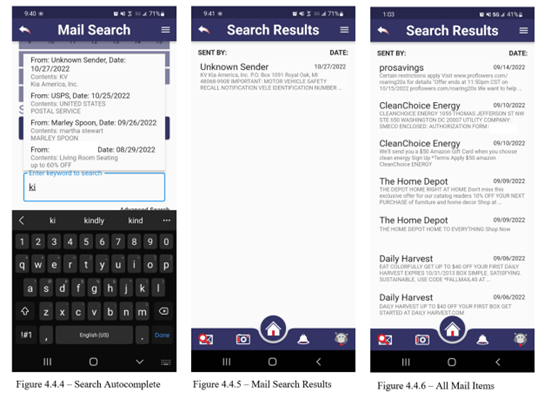
Selecting the “Settings” option from the hamburger icon in the top toolbar from any screen will take the user to the “Settings” screen (Figure 4.3.1).

This screen contains options to:

* View the “Terms and Conditions” and “Privacy Policy” (Figure 4.3.1 Area 1). Selecting either of these options will display the respective text in a dialog box (Figure 4.3.2).
* “Delete All Local Data” (Figure 4.3.1 Area 2): Selecting this button will open a dialog screen where the user is asked to confirm they wish to delete all local data (Figure 4.3.3). Selecting “Yes” will delete all cached data, log the user out of the app, and bring them to the login screen.

## Search



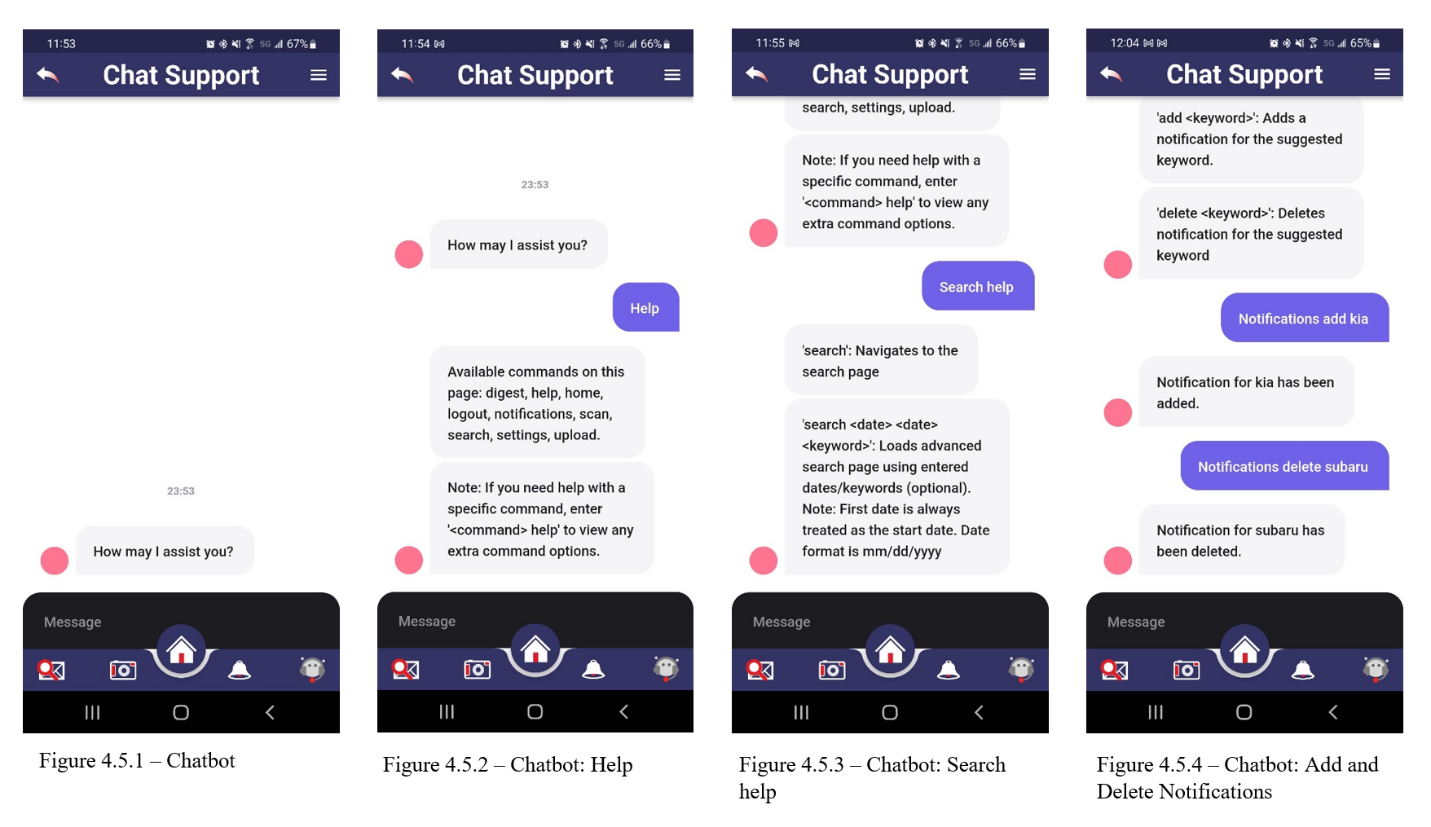


To search for specific mail pieces, the search feature can be used (Figure 4.4.1).

This screen contains:

* A calendar where the user can select a single date or a date range to search between (Figure 4.4.2 Area 1).
* After selecting a start date and end date, the days included in the search are highlighted in the calendar, the start and end dates and the duration of the search are displayed below the calendar.
* Below this, there is a text field where the user can type in a keyword to search by (Figure 4.4.2 Area 2).
* As the user is typing in a keyword, the autocomplete will display suggestions (Figure 4.4.4).
* An “Advanced Search” (Figure 4.4.2 Area 3) allows the user to specify where to search for the keyword. They can search by the mail sender or by the body text (Figure 4.4.3 Area 1).
* Once the user selects the date range and/or keyword and selects the “Search” button, all the mail pieces matching the criteria will be displayed in a list in the “Search Results” screen (Figure 4.4.5).
* The user can also view all the mail pieces in their local storage by leaving the date range unselected, not entering a keyword to search, and selecting the “Search” button (Figure 4.4.6).

## Chatbot



The Chatbot feature assists users in navigating the application (Figure 4.5.1).

Through the Chatbot:

* Users can access the search feature; navigate to the settings page; and view, add, or remove notifications.
* Typing “help” into the chat bot will display the possible commands (Figure 4.5.2). These include: “digest”, “help”, “home”, “logout”, “notifications”, “scan”, “search”, “settings”, and “upload”.
* To find more information about each command, typing in the command and “help” (Figure 4.5.3).
* Simply typing in the basic commands of “digest”, “home”, “notifications”, “search”, and “settings” will take the user to the respective screen.
* Typing in “logout” will log the user out of the application and return them to the login screen.
* Typing in “scan” will open the device’s camera and “upload” will open the gallery application.
* “Notifications” and “search” have child commands to perform more specific actions.
  + Typing in “notifications add [keyword]” will add a notification for the keyword.
  + Typing in “notifications delete [keyword]” will delete the notification for the keyword (Figure 4.5.4).
  + Typing in “search [keyword]” will perform a search for the keyword with the current date selected for the date range.
  + Typing in “search MM/DD/YYYY [keyword]” will perform a search of the keyword with the entered date selected for the date range.
  + Typing in “search MM/DD/YYYY MM/DD/YYYY [keyword]” will perform a search of the keyword with the first date entered being the start date and the second date entered being the end date of the date range.

## Accessibility

Accessibility features rely on a device built-in accessibility tool, which allows users with disabilities to interact with the app in a familiar way. The instructions on how to use specific accessibility tools can be found in the accessibility settings of the user’s device. The current User Guide provides basic accessibility gestures and commands that will allow accessing all main features of the MailSpeak app.

### Android Accessibility Tools

**TalkBack**

TalkBack is a screen reader that speaks screen content to a user. To enable Android Screen Reading tools, follow the instructions below:

* Open the Settings app
* Tap ‘Accessibility’ > ‘TalkBack’
* Enable ‘Use TalkBack’
* Go through tutorial until completion
* Note: To disable, double tap the slider for ‘Use TalkBack’

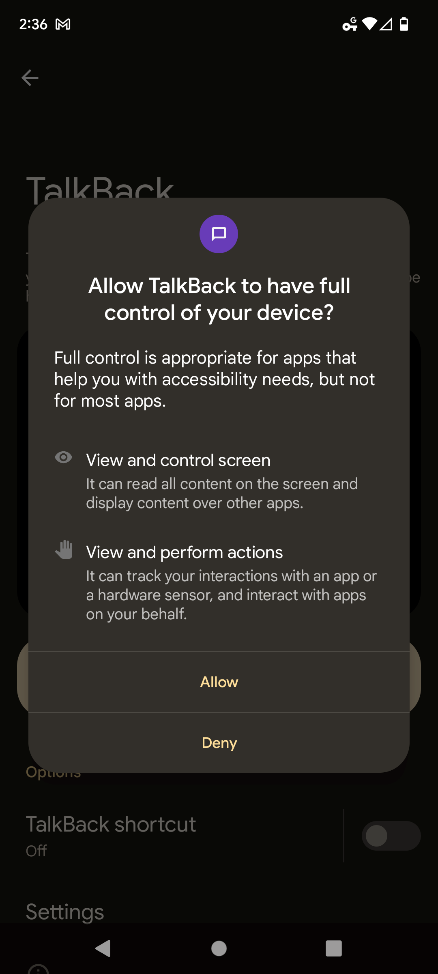
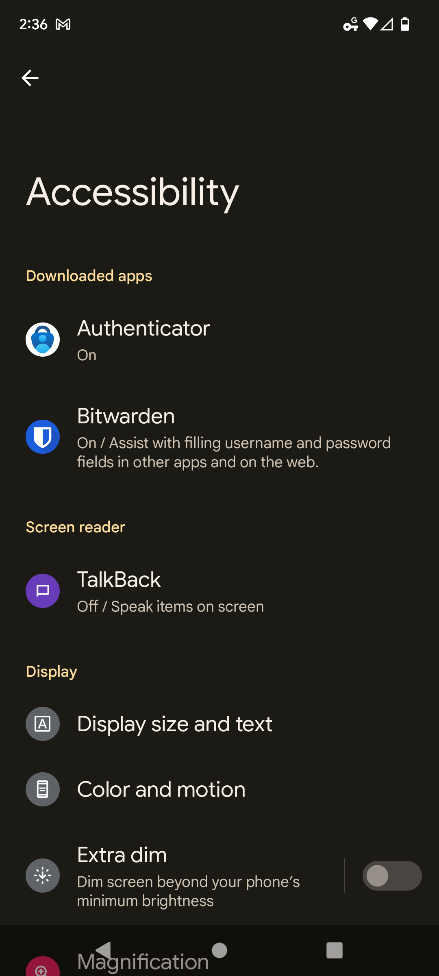
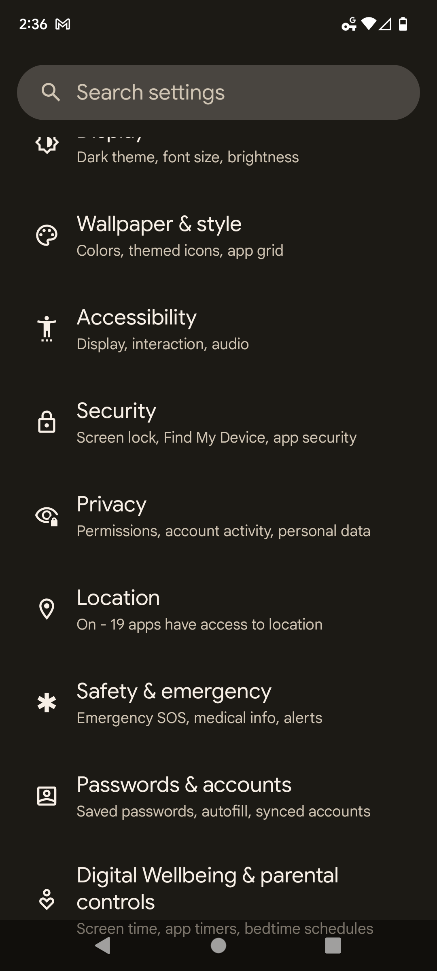


Figure 4.6.1 - How to Enable TalkBack

Common ways to navigate the screen using TalkBack would be:

* Dragging one finger around the screen to hear announcements of icons, buttons and other items.
* Swiping down or up with one finger to hear one item at a time.

When the new screen of the application is opened the TalkBack will automatically highlight and announce the screen heading (Figure 4.6.2). While exploring the screen with TalkBack the selected item will be also highlighted and announced (Figure 4.6.3).

|  |  |
| --- | --- |
| MailSpeak Main Menu Screen Graphical User Interface wit Highlighted Screen Heading on Android | MailSpeak Login Screen Graphical User Interface wit Highlighted "Sign In with Google" Button on Android |
| Figure 4.6.2 – TalkBack: Main Menu with Highlighted Screen Heading | Figure 4.6.3 - TalkBack: Login with Highlighted "Sign In with Google" Button |

Some basic gestures that can be used:

* Single tap with two fingers – pause or resume reading.
* Triple tap with two fingers – read continuously from this point on.
* Double tap with one finger – activate selected element.
* Swipe down / swipe right with one finger – read next item.
* Swipe up / swipe left with one finger – read previous item.

**Voice Access**

Voice Access allows controlling device with spoken commands. To activate Voice Access perform the following steps:

* Open the Settings app
* Tap ‘Accessibility’ > ‘Interaction and dexterity’ > ‘Voice Access’ (prompted to install if not on the device)
* Allow ‘Voice Access’

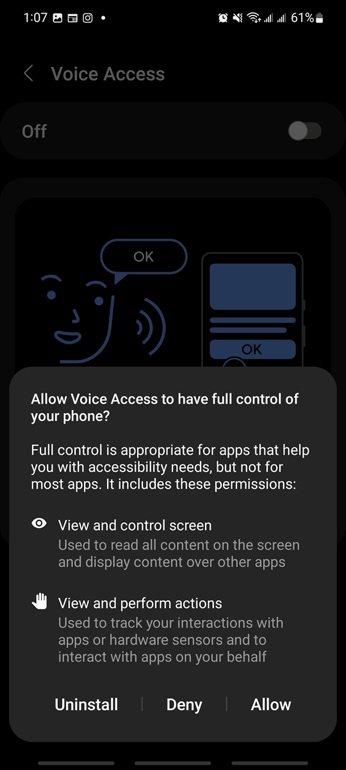
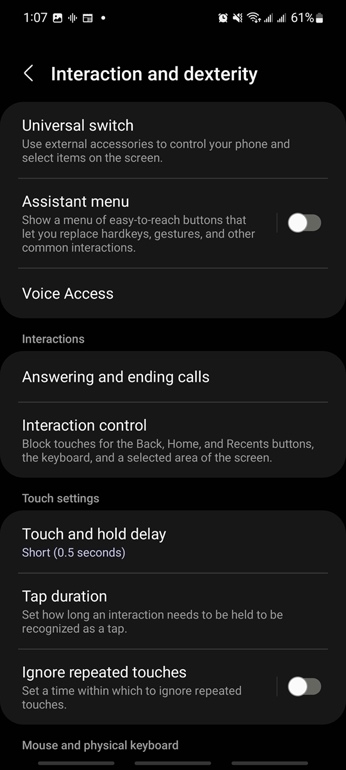
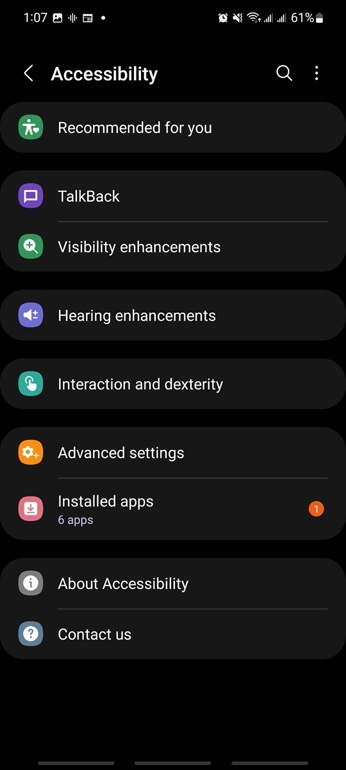
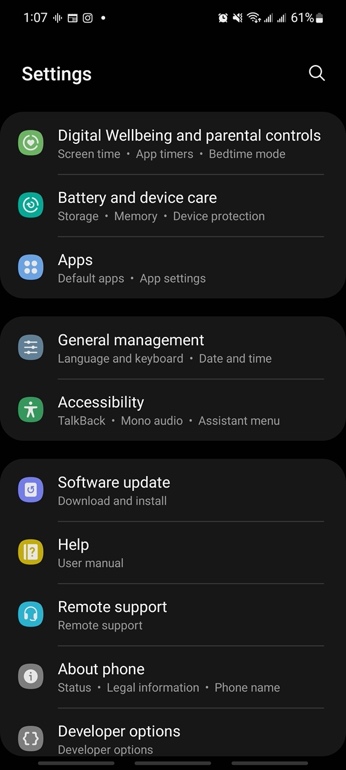


Figure 4.6.4 - How to Enable Voice Access

Elements on the screen can be accessed through the label name or number. Android’s Voice Access on the command “show labels” displays label numbers (Figure 4.6.5 and Figure 4.6.6). The full list of accessibility label names used in the MailSpeak application can be found in Attachment B.

|  |  |
| --- | --- |
| MailSpeak Login Screen with Accessibility Labels Displayed on Android | MailSpeak Main Menu Screen with Accessibility Labels Displayed on Android |
| Figure 4.6.5 - Voice Access: Login with Shown Labels | Figure 4.6.6 – Voice Access: Main Menu with Shown Labels |

Basic voice commands that can be used in the application:

* “show labels” – displays names of the elements on the screen
* “hide labels” – stops displaying names of the elements on the screen
* “tap <label name/number>” – allows to tap any accessible element on the screen
* “scroll up” – scrolls screen up.
* “scroll down” – scrolls screen down.
* “help” – shows commands available on the screen
* “stop listening” – pauses Voice Access

### iOS Accessibility Tools

**VoiceOver**

VoiceOver is a screen reader that allows users to interact with the app without seeing the screen. To enable iOS Screen Reading tools, follow the instructions below:

* Go to ‘Settings’ > ’Accessibility’ > ‘VoiceOver’
* Turn feature On/Off
* Alternatively, you can activate Siri and say ‘Turn on VoiceOver’

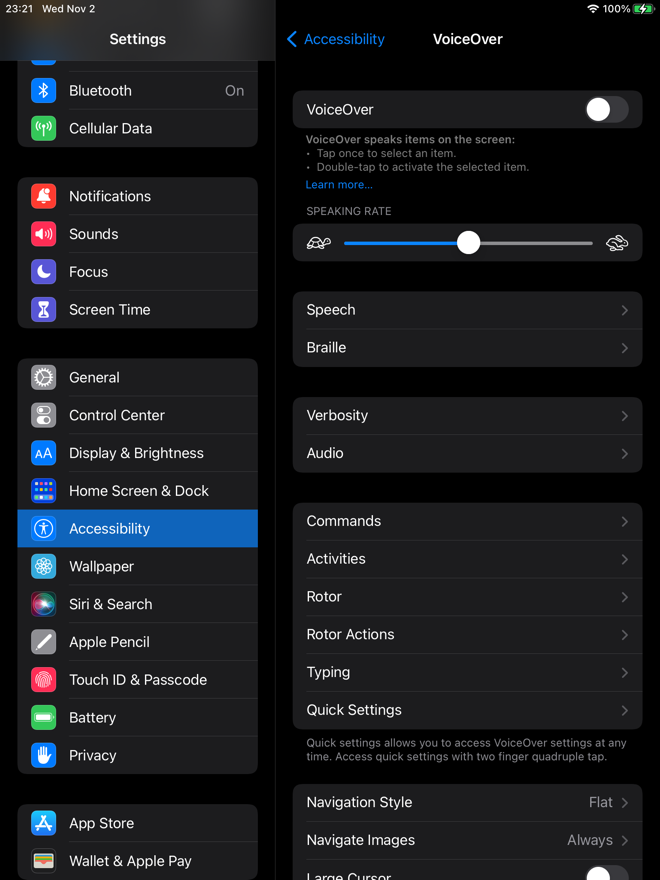


Figure 4.6.7 - How to Enable VoiceOver

To navigate the screen using VoiceOver user can:

* Dragging one finger around the screen to hear announcements of icons, buttons and other items.
* Swiping right or left with one finger to hear one item at a time.

When the new screen of the application is opened the VoiceOver will automatically announce the screen heading and highlight it (Figure 4.6.8). While navigating the screen with VoiceOver each selected item will be highlighted and announced (Figure 4.6.9).

|  |  |
| --- | --- |
| MailSpeak Main Menu Screen Graphical User Interface wit Highlighted Screen Heading on Apple iOS | MailSpeak Login Screen Graphical User Interface wit Highlighted "Sign In with Google" Button on Apple iOS |
| Figure 4.6.8 – VoiceOver: Main Menu with Shown Labels | Figure 4.6.9 – VoiceOver: Login with Shown Labels |

Some gestures that can be used:

* Single tap with one fingers – speak item.
* Two finger swipe up – read continuously from top.
* Two finger swipe down – read continuously from this point on.
* Double tap with one finger – activate selected element.
* Swipe right with one finger – read next item.
* Swipe left with one finger – read previous item.

**Voice Control**

Voice Control allows the user to navigate the app using their voice. To activate Voice Control, perform following steps:

* Go to ‘Settings’ > ’Accessibility’ > ‘Voice Control’
* Turn feature On/Off
* Alternatively, you can activate Siri and say ‘Turn on Voice Control”

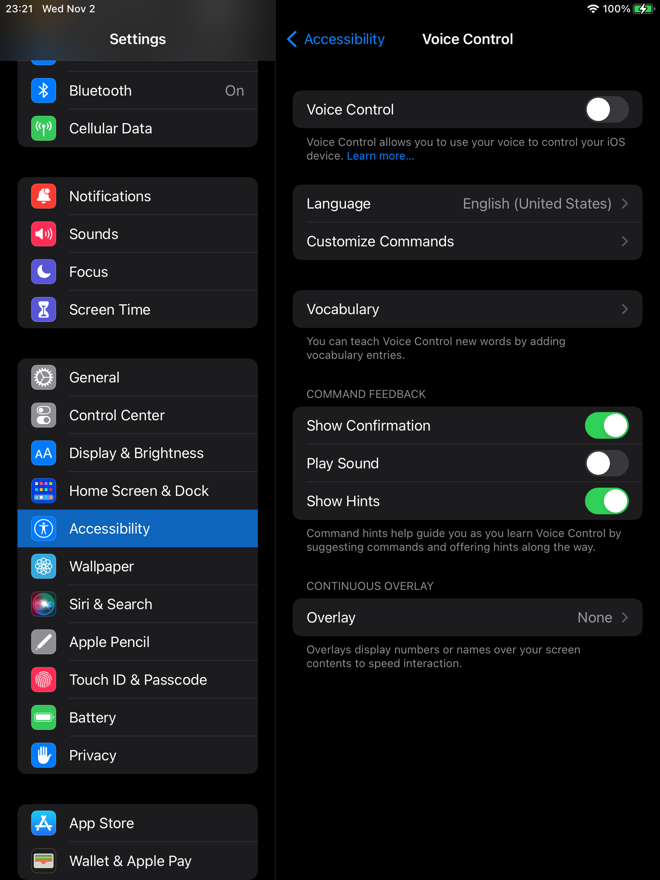


Figure 4.6.10 - How to Enable Voice Control

Voice Control commands “show names” and “show numbers” allow accessing screen elements through their label names (Figure 4.6.11 and 4.6.12) or numbers (Figure 4.6.13). Attachment B contains the full list of elements label names used in the MailSpeak application.

|  |  |  |
| --- | --- | --- |
| MailSpeak Login Screen with Accessibility Label Names Displayed on Apple iOS | MailSpeak Main Menu Screen with Accessibility Label Names Displayed on Apple iOS | MailSpeak Login Screen with Accessibility Label Numbers Displayed on Apple iOS |
| Figure 4.6.11 - Voice Control: Login with Shown Names | Figure 4.6.12 - Voice Control: Login with Shown Names | Figure 4.6.13 - Voice Control: Login with Shown Numbers |

Basic Voice Control commands that can be used within the application:

* “show names” – displays names of the elements on the screen.
* “show numbers” – displays numbers of the elements on the screen.
* “hide names” – stops displaying name of the elements on the screen.
* “hide numbers” – stops displaying numbers of the elements on the screen.
* “scroll up” – scrolls screen up.
* “scroll down” – scrolls screen down.
* “tap <label name/number>” – allows to tap any accessible element on the screen.

# Troubleshooting

This section is to help with issues that may occur while using the application.

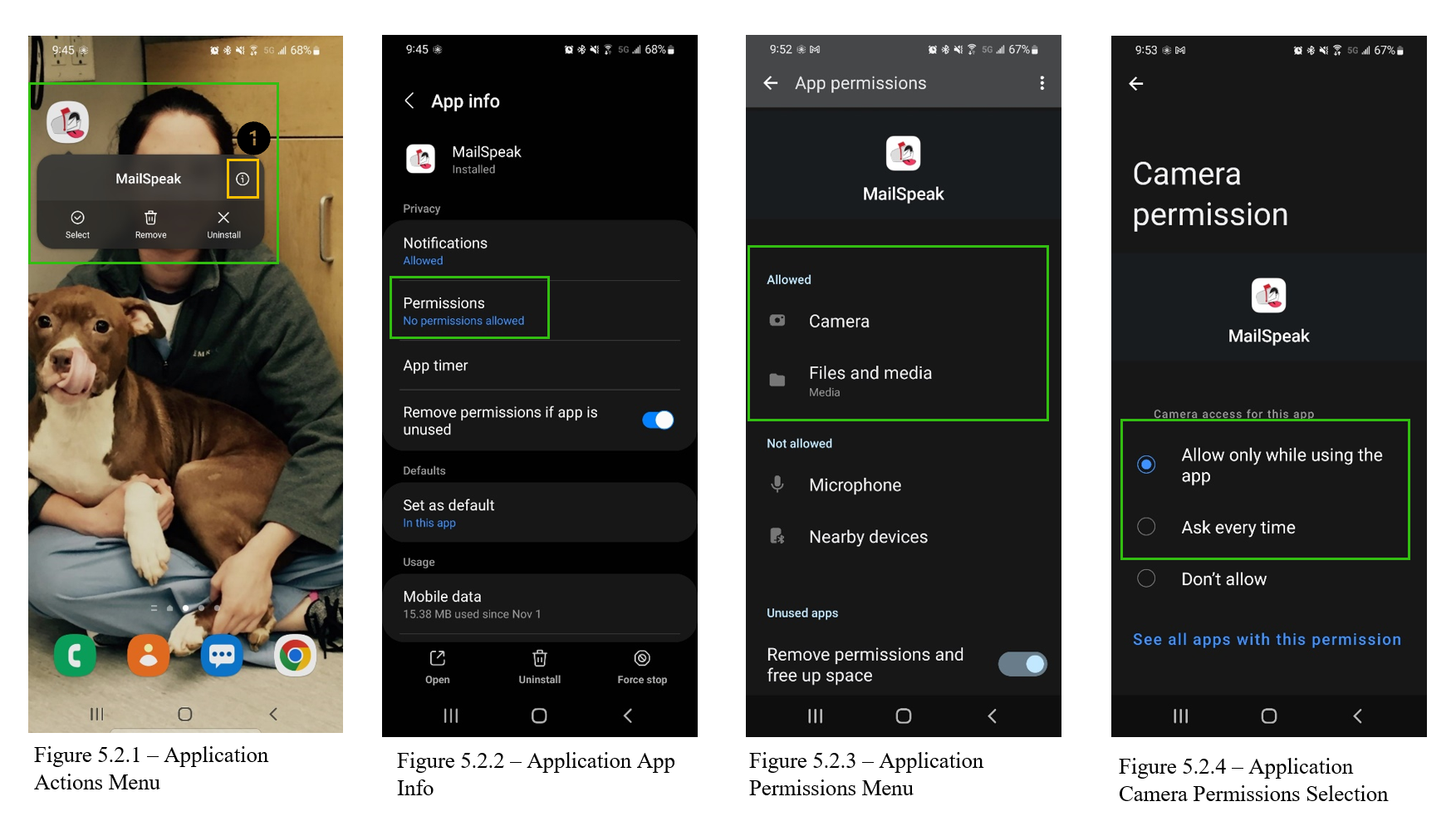
## App Crashes

If the application crashes unexpectedly while in use, it is recommended that the user force quit the application. This can be done by navigating to the recent applications view and closing the application. The user can then reopen the application.

## Unable to Scan or Upload Mail

If a user is unable to scan or upload mail, it is likely the application does not have the proper permission. To check and set the correct permissions:

1. On the device’s home screen, find the MailSpeak application.
2. Press and hold on the application until the actions menu of the app opens (Figure 5.2.1).
3. Press either “App Info” or the Information Icon (Figure 5.2.1 Area 1).
4. Go to permissions (Figure 5.2.2).
5. “Camera” and “Files and media” should be under “Allowed” (Figure 5.2.3)
6. If they are not: select either one and select either “Allow only while using app” or “Ask every time”, then do the same for the other (Figure 5.2.4).
7. Restart the Application.



## Unable to login to email account

Certain email accounts require use of an app password to login to MailSpeak. If you try to log into the application using valid credentials and receive a login error, this is most likely the issue.

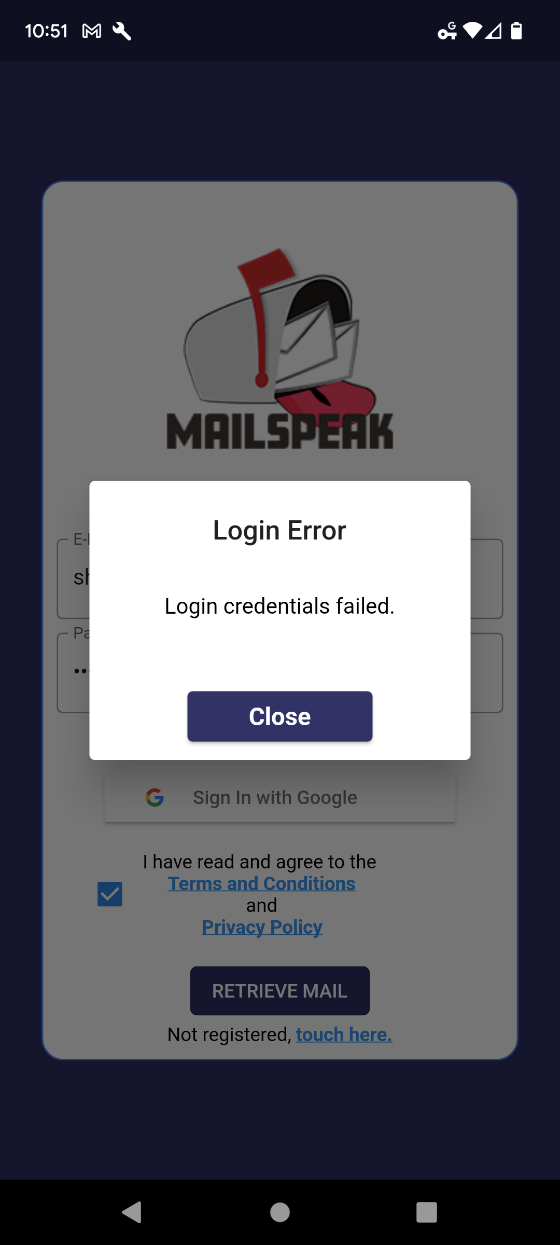


Figure 5.3.1 Login Error with Valid Credentials

To fix this issue, an App Password must be generated for the account. Different mail providers require slightly different processes so do a search on “<your mail provider> app password” and hopefully you can configure it. Below is a list of some common ones.

* AOL: <https://help.aol.com/articles/Create-and-manage-app-password>
* Yahoo: <https://help.yahoo.com/kb/SLN15241.html>
* Gmail: <https://support.google.com/accounts/answer/185833?hl=en>
* Outlook: <https://support.microsoft.com/en-us/account-billing/using-app-passwords-with-apps-that-don-t-support-two-step-verification-5896ed9b-4263-e681-128a-a6f2979a7944>

# Attachment A — Acronyms and Abbreviations

|  |  |
| --- | --- |
| Term | Meaning |
| iOS | iPhone Operating System |
| MSA | MailSpeak Application |
| SWEN | Software Engineering |
| UG | User Guide |
| UI | User Interface |
| UMGC | University of Maryland Global Campus |
| USPS | United States Postal Service |

# Attachment B — Accessibility Elements Label Names

Upload Mail and Scan Mail use native to device features, therefore, their User Interface (UI) elements are left out of this guide.

|  |  |
| --- | --- |
| Label Name | UI Control |
| **Top Bar** | |
| Back | Back button |
| Show Menu | “Hamburger” menu button (top bar menu) |
| **Top Bar Menu** | |
| Settings | Settings button within dropdown menu |
| Logout | Logout button within dropdown menu |
| **Bottom Bar** | |
| Home | Home button |
| Search Mail | Search mail button |
| Scan Mail | Scan mail button |
| Notifications | Notifications button |
| Chatbot | Chatbot button |
| **Login Screen** | |
| E-Mail Address | E-mail address text field |
| Password | Password text field |
| Google Sign-in | Sign in with Google button |
| Conditions | “Terms and Conditions” and “Privacy policy” checkbox allows user to switch between checked and unchecked |
| Terms and Conditions | “Terms and Conditions” link opens dialog with “Terms and Conditions” full text. |
| Privacy Policy | “Privacy Policy” link opens dialog with “Privacy Policy” full text. |
| RETRIEVE MAIL | Retrieve mail button |
| Touch here | Touch here link that transfers user to Informed Delivery sign up page. |
| **Main Menu** | |
| Search Mail | Search mail button |
| Daily Digest | Daily digest button |
| Upload Mail | Upload button |
| Scan Mail | Scan mail button |
| Settings | Settings button |
| Notifications | Notifications button |
| **Mail Search** | |
| Backward | Backward button that shows previous month in the calendar view |
| Forward | Forward button that shows nest month in the calendar view |
| Start Date | Start date button |
| End Date | End date button |
| Keyword | Keyword text field |
| Sender Keyword | Sender keyword text field |
| In-Text keyword | In-text keyword text field |
| Advanced Search | Advances search button |
| Standard Search | Standard search button |
| Search | Search button |
| **Search Results** | |
| Letter from <sender> received on <EEE MMM dd> | Individual mail piece link |
| **Mail Piece** | |
| View <link address> (if any) | View link that was found within the mail piece |
| Learn More | Learn more button |
| Set a Reminder | Set reminder button |
| **Daily Digest** | |
| Links | Links button |
| All Details | All details button opens mail piece screen |
| Backward | Backward button allows navigation to the previous mail piece |
| Forward | Forward button allows navigation to the next mail piece |
| **Settings** | |
| Terms and Conditions | Terms and conditions button that opens dialog pop-up |
| Privacy Policy | Privacy Policy button that opens dialog pop-up |
| Delete Local Data | Delete All Local Data button that triggers confirmation pop-up |
|  |  |
| **Dialog Pop-up** | |
| Close | Close button |
| Yes | Yes button in confirmation pup-up |
| No | No button in confirmation pup-up |
| **Notifications** | |
| *Manage Tab* | |
| Keyword | Keyword text field |
| Add | Add button |
| Delete <keyword> | Delete <keyword> button removes specified notification subscription from the list |
| *Notifications Tab* | |
| Clear All | Clear All button removes all notifications |
| Go to <keyword> Message | Go to <keyword> Message button opens mail piece associated with the <keyword> |
| Clear <keyword> | Clear <keyword> button removes notification associated with the <keyword> |
| **Chat Support** | |
| Message (Android) | Message text field |
| 6 (iOS) | Message text field |
| Send | Send button appears after message is entered into the text field |