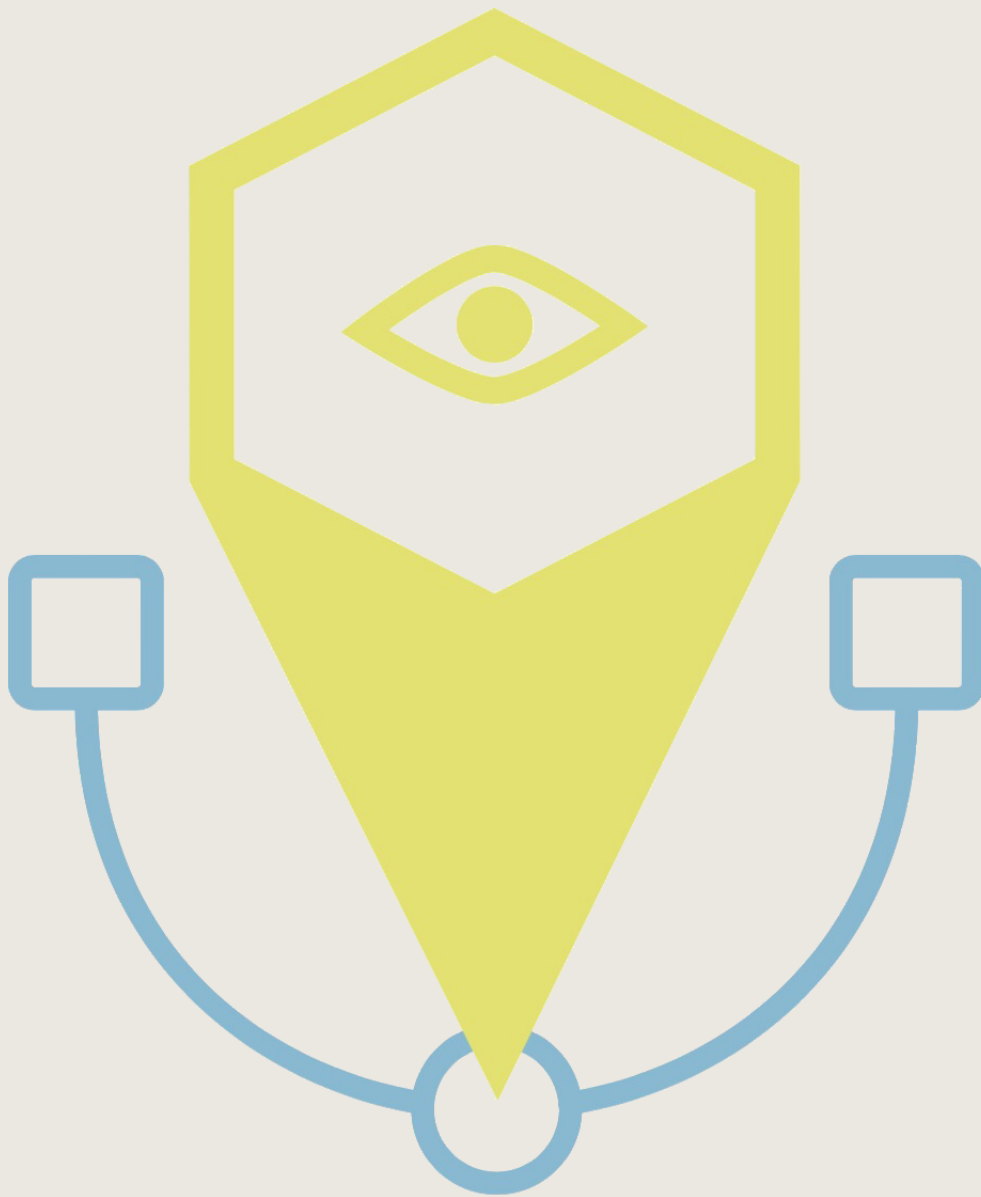# Moderamen App

User Manual

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What is the Moderamen App?

Navigating the world as a blind or visually impaired individual is no easy feat, leading to many choosing to stay close to home, feeling as though the "world is not made for them"[1]. Without proper assistance, the visually impaired risk exposing themselves to a variety of threatening terrains. Some of these risks include unforeseen obstacles on the ground, doorways opening and closing, and even getting lost while trying to navigate a building. The Moderamen team wants to reduce the problems that the visually impaired encounter while navigating the world through our user-friendly mobile application. Our app, Moderamen, provides both visual and vocal directions for anyone who requires assistance while navigating indoors. It will not only provide clear and precise navigation instructions but also provides warning of obstacles not included in a building's blueprints. We hope that anyone who uses our app feels less anxiety when it comes to navigating the world and makes it to all their destinations unharmed and unphased.

Terminology

Moderamen

Management or Direction

Mobile App (Application)

A mobile application, most commonly referred to as an app, is a type of application software designed to run on a mobile device, such as a smartphone or tablet computer.

API (Application Programming Interface)

A set of subroutine definitions, and tools for building software

GUI (Graphical User Interface)

A form of user interface that allows users to interact with electronic devices through graphical icons and visual indicators such as secondary notation, instead of text-based user interfaces, typed command labels or text navigation.

VUI (Voice User Interface)

Makes human interaction with computers possible through a voice/speech platform in order to initiate an automated service or process.

OS (Operating System)

An operating system is system software that manages computer hardware, software resources, and provides common services for computer programs.

Android

Android is a mobile operating system based on a modified version of the Linux kernel and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets.

iOS

iOS is a mobile operating system created and developed by Apple exclusively for its hardware; including the iPhone.

Equipment and Requirements

Mobile Operating System

Whatever device you decide to use must run on either Android or IOS. This is because our application is only available to download through the Google Play Store and the App Store.

Mobile Device

To use our application, you need to have access to some form of a mobile device such as a phone or tablet. We recommend that you use a smaller device such as a phone; since our application is most useful when held in front of your body to enable obstacle detection.

Extra Assistance *(optional)*

While our application is designed to be used without assistance, we always recommend never to navigate alone. Getting assistance from those who are capable of using our GUI is always recommended. We especially urge new users to seek help from friends, family, or caretakers when using the app until you feel genuinely comfortable using it alone.

Voice Commands

Utilizing voice commands is the primary way you can interact with Moderamen. If you ever plan on using our application without assistance from someone who is not visually

impaired, you need to understand how to interact with our VUI. Here is a list of supported voice commands and features.

Search

Where {route} is the desired route you would like to navigate to, or if the destination is valid and supported, then Moderamen will automatically start navigation after exit. This is only done in search screen.

VUI	Options
User Command	"{route} enter that"
App Response	"This route has been found, it is now your current selected route, you can search for another or hit the bottom right corner" if found. Or "This route has not been found, it has been added to the request database if not already there,you can search for another or hit the bottom right corner" if not found.

Cautions & Warnings

⚠️ Pay Attention to Surroundings

Although our app tries its best to provide accurate and safe navigation, errors can still occur. Therefore, it is essential to be aware of your surroundings at all times. Never completely obstruct your ability to hear while using the app. What we mean by this is to never wear headphones/earphones in both of your ears at anytime while using our app. Even though this might provide you with clearer audio, it also restricts your ability to understand your surroundings. We recommend wearing one head/earphone, while

using our app, to provide an excellent VUI experience and also provide the ability to detect your surroundings through audio cues.

⚠️ Never Solely Rely on the Moderamen App

While we desire to have every building correctly mapped out and the ability to warn of all user logged obstacles, we still cannot mitigate all risks. Our app is not to be used as your sole means of navigation and should instead be used in combination with existing tools, infrastructure, and other systems to provide the safest and most efficient means of navigation. We suggest that you also seek assistance from a cane, guide dog, braille, or even a caretaker while also using our app.
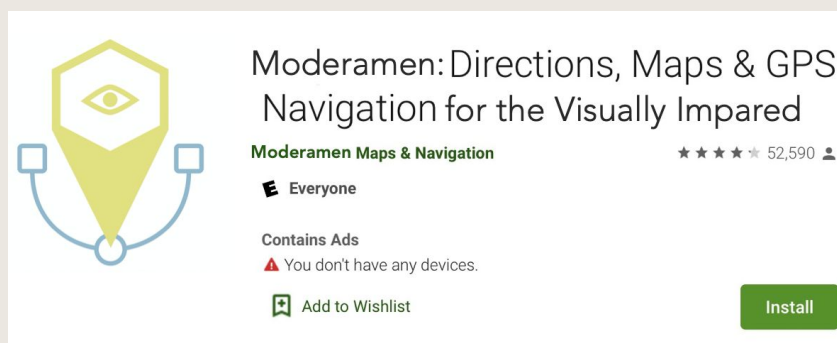
Using the Moderamen App

I. Downloading the App

Android Mobile Device ▶

Users with Android phones can download our application from the Google Play Store. Simply search "Moderamen" in the search bar and scroll down until you see our logo and then select the "Install" button.

Moderamen: Directions, Maps & GPS Navigation for the Visually Impared

Moderamen Maps & Navigation   ★ ★ ★ ★ ☆ 52,590 👤

🅴 Everyone

Contains Ads

⚠️ You don't have any devices.

🔖 Add to Wishlist   Install

IOS Mobile Device 🔵

Users with IOS phones can download our application from the App Store. Simply search for "Moderamen" in the search bar and scroll down until you see our logo and then select the "get" button.

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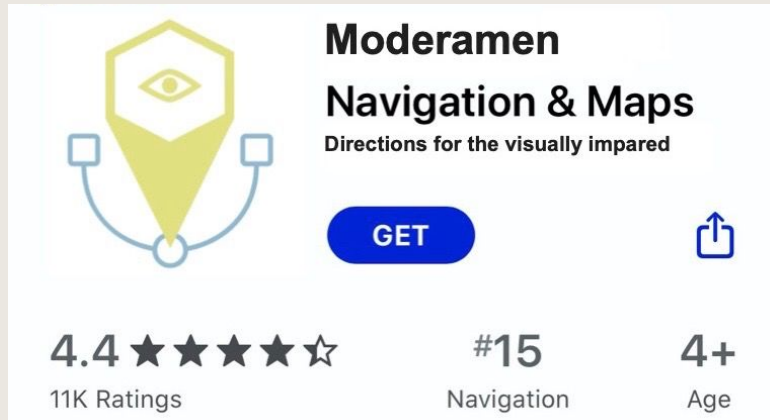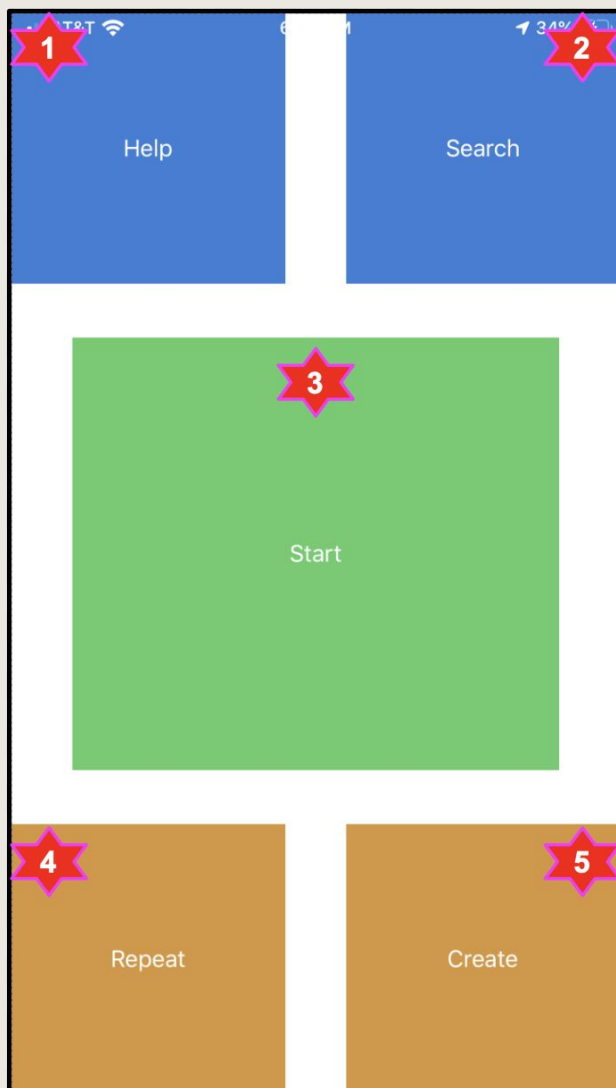
II. Opening/Starting the App

Users can navigate to our app through the use of their mobile devices built-in accessibility features or with the help of a caretaker. Once the app has loaded, users can begin interacting with our GUI and VUI; which, we have specially designed for smooth operation by visually impaired individuals.

III. Using the App

Home Screen

1. This button will provide a breakdown of all the UI elements the user can interact with and what they will do.

2. This will bring up a screen that allows the user to enter the destination they would like to navigate to.

3. If a route has been selected by the user then this button will begin providing the route necessary to guide the user to their destination.

4. This will repeat the last direction provided to the user.

5. This will direct the user to a new screen to be able to create a new route so that other users can use it.

The above screen is the starting screen, which on load up will let you know of the location of the help button. The help button will describe the functionality of the application. To start a route, the user must go to the Search screen, find a route within the database. After that, the HomeScreen will allow you to start the navigation. Hold your phone flat and click the center button, or repeat. When the phone tells you to turn, make sure that the phone is moving similar to your body. You can press the search button to end the navigation at any time.
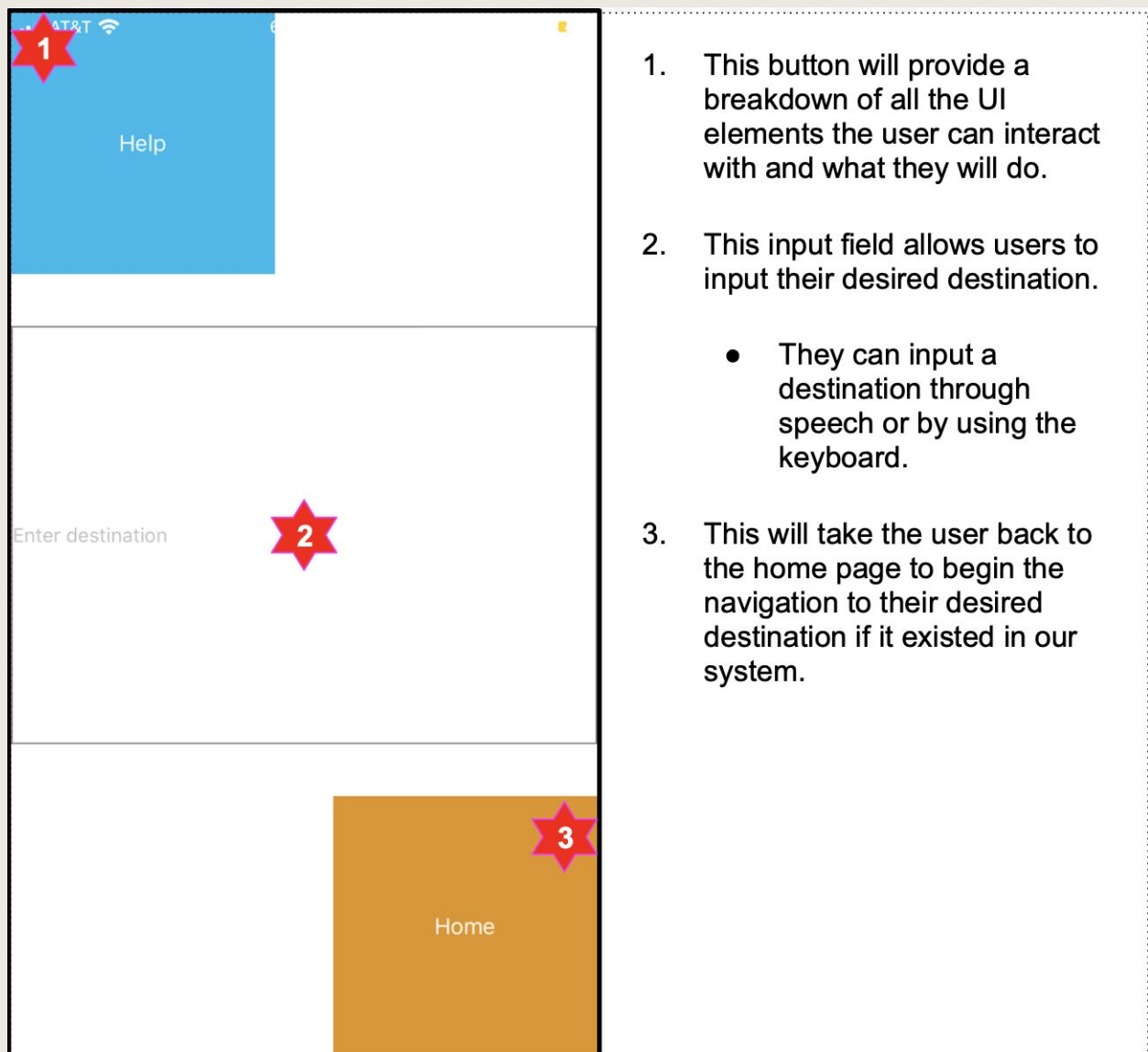
Create Screen

1. This button will provide a breakdown of all the UI elements the user can interact with and will also inform the user what is currently requested.

2. This button will log that the route being created contains a doorway in the next step.

3. This input field allows the user to input further details about the most recent step in the route.

4. This button will log a new step in the route.

5. This input field allows the user to provide a name for the new route.

6. This button will log that the route being created contains a stairway in the next step.

7. Takes the user back to home screen and saves the new route.

This screen is navigated to by hitting the Create button on the Home screen, where it will then notify users that the screen has changed along with home being the same placement as the create button. Help will let users know of the current functionality along with the current routes that are being requested. Users can enter an optional description that will be added along with a step, door or stair, make sure the phone is flat on your hand and is aligned with your body. Keep adding stuff from the start to the end to align with the route you have taken. In the end, give the app a route name, location, this will then save the route to the database and remove it from requests if it was there.

Search Screen

1. This button will provide a breakdown of all the UI elements the user can interact with and what they will do.

2. This input field allows users to input their desired destination.

   ● They can input a destination through speech or by using the keyboard.

3. This will take the user back to the home page to begin the navigation to their desired destination if it existed in our system.

To get to the search screen, users must hit search in the Home Screen. Help will give functionality and direction. Users can search for a route by hitting the center button and typing the input or by saying the route, location followed by 'enter that'. Afterward if we have the route, the app will say "This route has been found, it is now your current selected route, you can search for another or hit the bottom right corner" then you can start by hitting the home button. If the app says "This route has not been found, it has been added to the request database if not already there,you can search for another or hit the bottom right corner" we do not have it, then the route has been automatically entered into our request database. Users can hit home to leave the screen, but cannot start a route.

Conclusion

Our goal at Moderamen is to reduce the anxiety that comes about when a visually impaired individual navigates a new or changing terrain. We hope that our app successfully fulfills this goal and increases the efficiency and safety of navigation indoors for the visually impaired.

Troubleshooting

Incorrect Navigation

If you are ever routed incorrectly, this could be due to improper routes, or we have a bug. Either way, we want to fix it ASAP. Thus, if we provide navigation assistance in a particular building, but you routed incorrectly, please let us know immediately. We take this issue seriously here at Moderamen as we want to reduce the risk of navigating indoors, not add to it.

App not Working Correctly

We strive to create the best user experience possible, but we can't promise always to be perfect. Thus, if you experience any issues while using our app, we recommend you fully close the app and restart it. If the issue still exists after doing so, please reach out to us and let us know so we can try and fix it ASAP.

Any Other Issues

If you experience any other issues not covered above, please reach out to us and let us know as we want to deliver the best user experience possible.

FAQ

- **Does Moderamen cost money?**
  - ➢ We can proudly say that our Moderamen application is 100% free and will never contain any hidden fees.

- **How do I get a particular building added to your app?**
  - ➢ Our hope is to one day have nearly every building mapped out in our application. However, this is a long and tedious process, and with your help, we can make this dream a reality quicker. If you know of a building you would like added to our application, please reach out to us and let us know. Also, you can create a new route within our app so that other users can benefit from places you already know how to navigate.

- **Can I still use your app if I'm not visually imapred?**

➢ Of course! While the focus of our app is to assist those with vision imparities, we welcome all and any users.

References

[1] Crawford, Susan. "The Challenge of Helping Blind People Navigate Indoors." Wired, June 25, 2019. https://www.wired.com/story/challenge-helping-blind-people-navigate-indoors/.