# Indoor Localization App: User Manual

This document serves as a user manual for the mobile application in development for 8th Street Community. The application will allow the user to view his/her location history, watch trends, and view reminders to remain on-task.

This application has been tested on a Google Pixel 5 5G and a Google Pixel 8.

How to Install/Develop

- Install Flutter.
- Install Visual Studio Code.
- Install Android Studio.
    - In Android Studio, navigate to *Settings->Languages and Frameworks->Android SDK.*
    - Ensure that the following packages are installed:
        - SDK Platforms: Android 15.0, Android 14.0
        - SDK Tools: Android SDK Build-Tools 36-rc1, Android SDC Command-line Tools (latest), Android Emulator, Android Emulator hypervisor driver (installer), Android SDK Platform-Tools, Intel x86 Emulator Accelerator (HAXM installer) - Deprecated
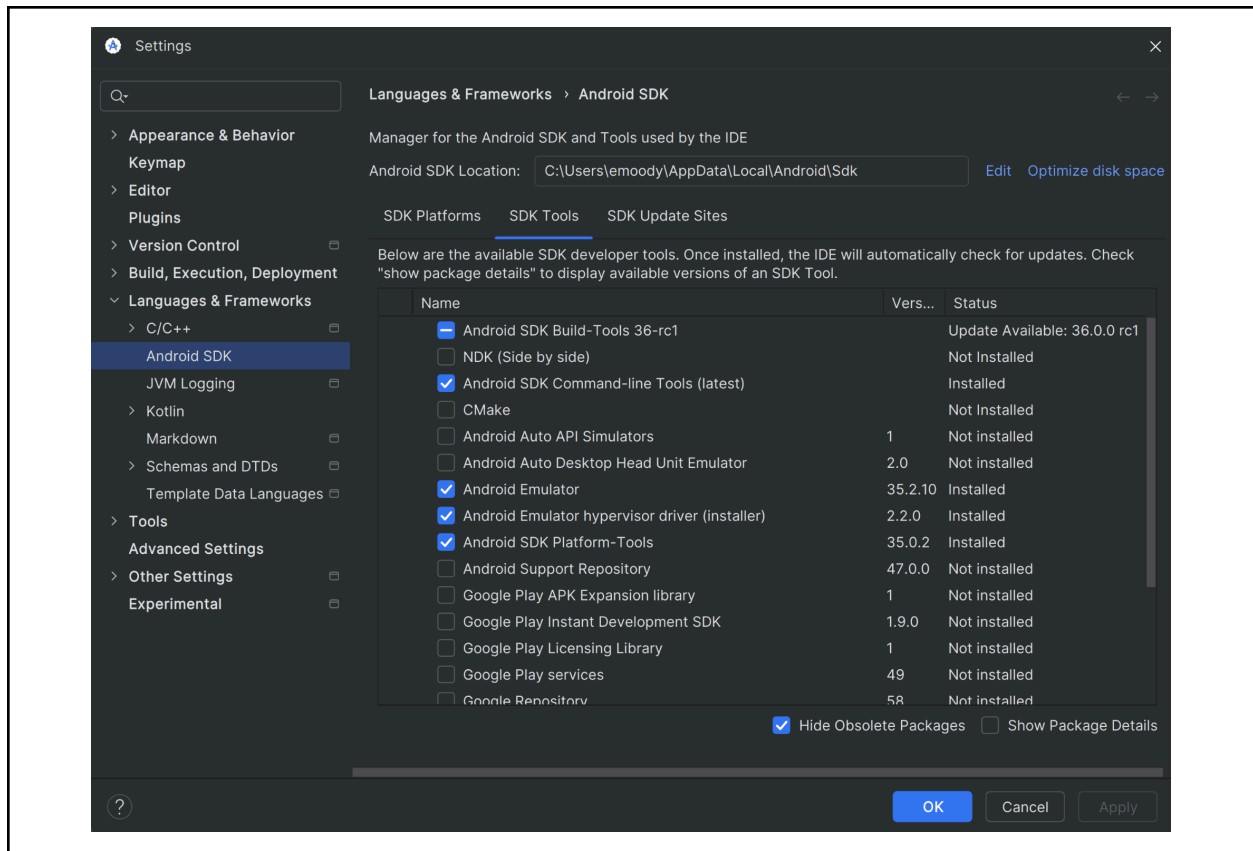
- Install other dependencies:
    - Java Version 17
    - Ensure that the environment variables on your machine (PATH) point to the correct version of Java.

How to run:
- Open Visual Studio Code, open the project.

- In the search bar at the top, type "> Flutter: Run Flutter Doctor" to confirm that your configuration is correct.
- If you would like to test with an Android Emulator, type "> Flutter: Launch Emulator" and select an emulator from the dropdown menu. If one is not listed, you may need to download one from Android Studio.
- If you would like to test with your phone, enable Developer Tools and enable USB debugging on your personal device. Connect to your computer via USB.
- Type "flutter run" in the terminal at the bottom of the screen.

Home Page

The home page serves as a temporary log-in interface for the user. The use of the buttons labeled "Admin Portal" and "Resident Portal" will are used to access the separate interfaces available to each type of user.
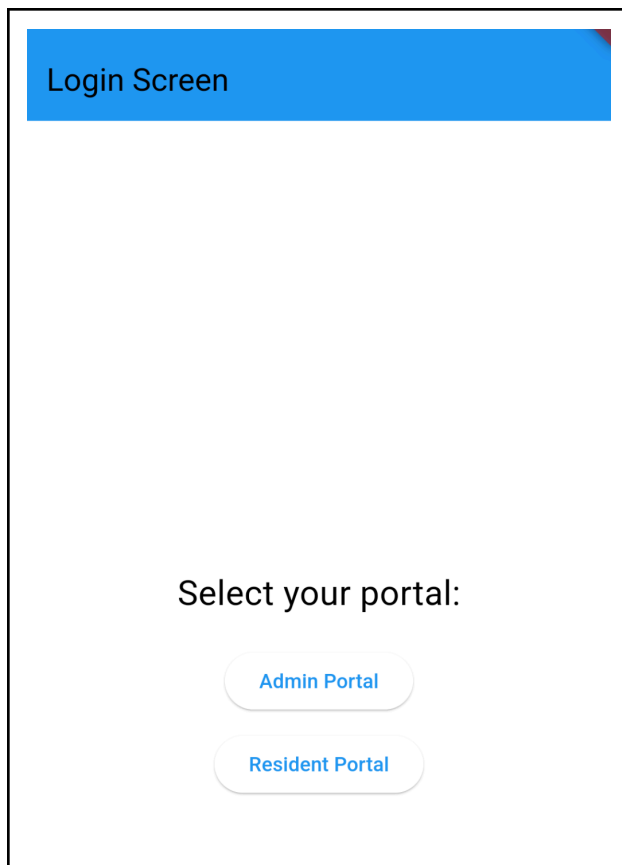
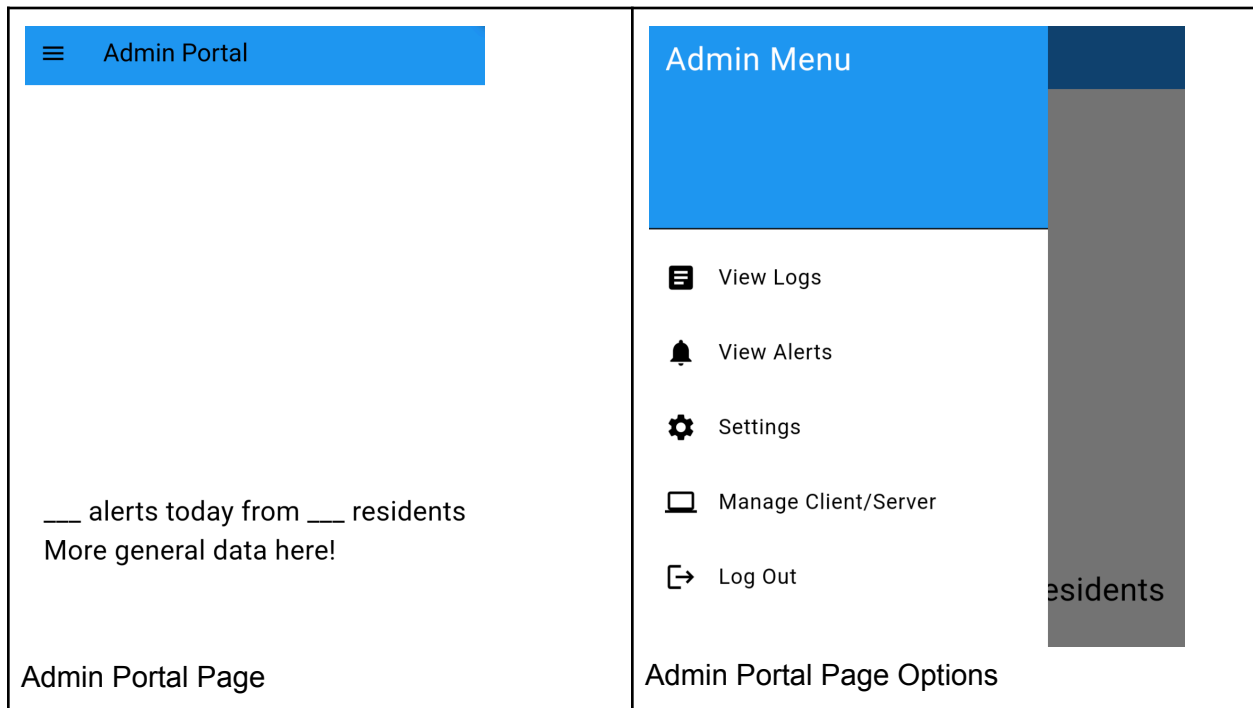# Admin and Resident Portals: Permissions Available

The administrative portal is intended to have data highlights displayed on the page, with a menu bar offering an array of other options. Currently, the options include:
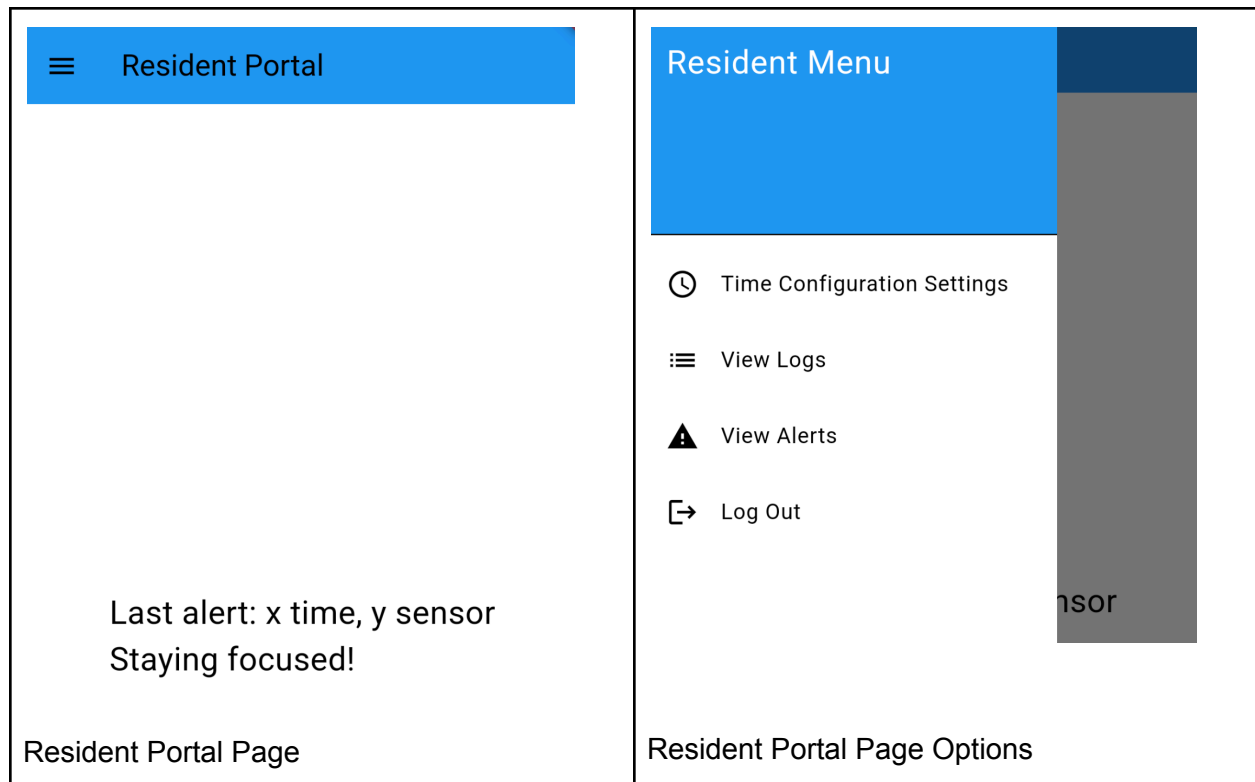- View Logs

- ● View Alerts
- ● Settings
- ● Manage Client/Server
- ● Log Out

The resident interface is designed in the same manner, with highlight data focused on the individual displayed on the page. Options include:

- ● Time Configuration Settings
- ● View Logs
- ● View Alerts
- ● Log Out

☰ Admin Portal	**Admin Menu**
	▤ View Logs
	🔔 View Alerts
	⚙ Settings
___ alerts today from ___ residents More general data here!	▭ Manage Client/Server
	⟶ Log Out
Admin Portal Page	Admin Portal Page Options

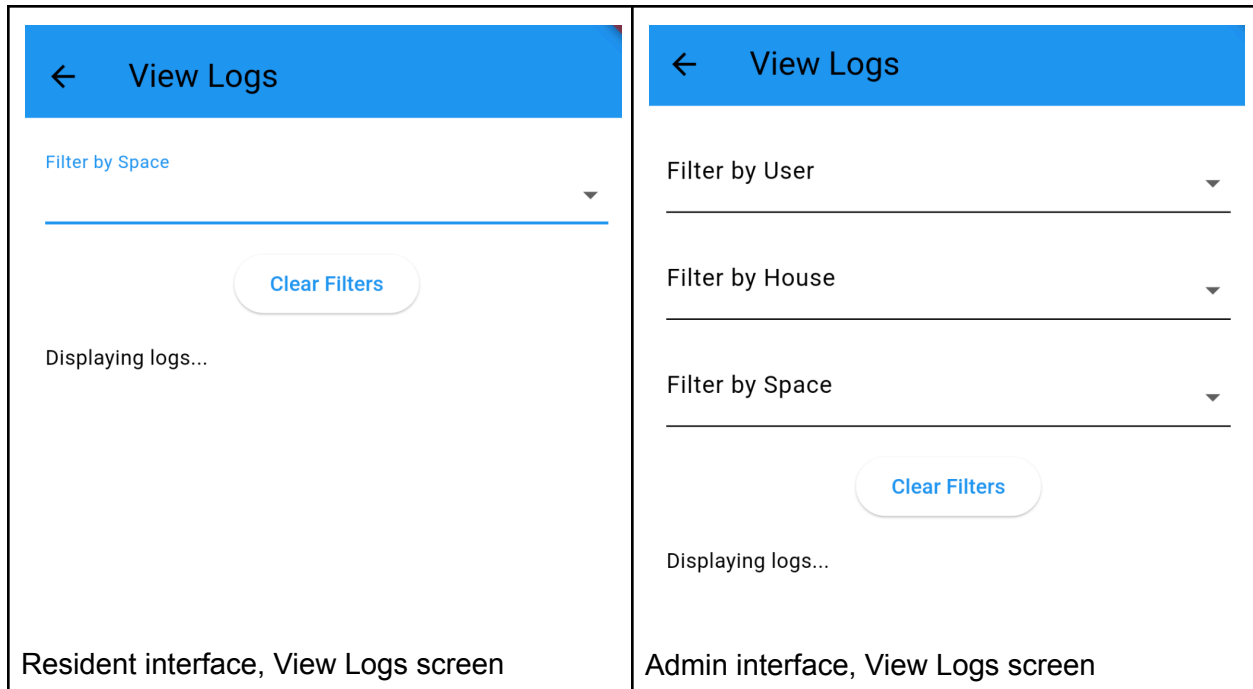| ≡ Resident Portal	Resident Menu
	🕐 Time Configuration Settings
	☰ View Logs
	⚠ View Alerts
	⟶ Log Out
Last alert: x time, y sensor Staying focused!	nsor
Resident Portal Page	Resident Portal Page Options

View Logs and View Alerts Pages

These pages will hold verbose data for the resident and administrator. For the resident, the logs page will be a verbose dataset detailing locations that the resident was pinged at throughout the day. The resident will be able to annotate these log entries at will so that administrators can better understand the use of their time. The alerts page will be less thorough– it will maintain a log of the notifications that the resident received whenever they lingered in one place for too long. Entries can be filtered by space in the house.

The administrative version of this page is identical, with the exception of being able to view every residents' logs and alerts. Entries can be filtered by user, house, and space in the house.

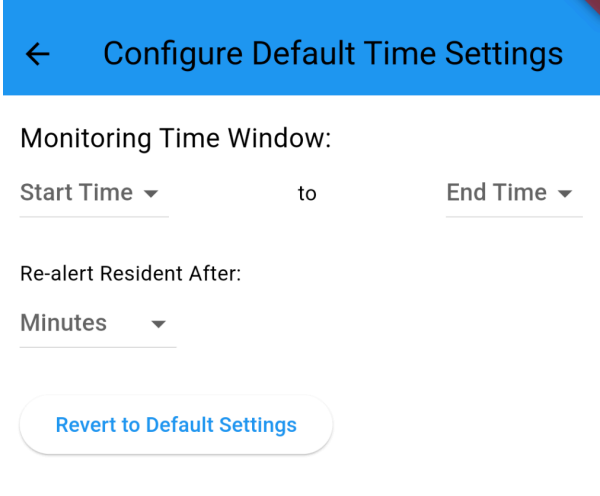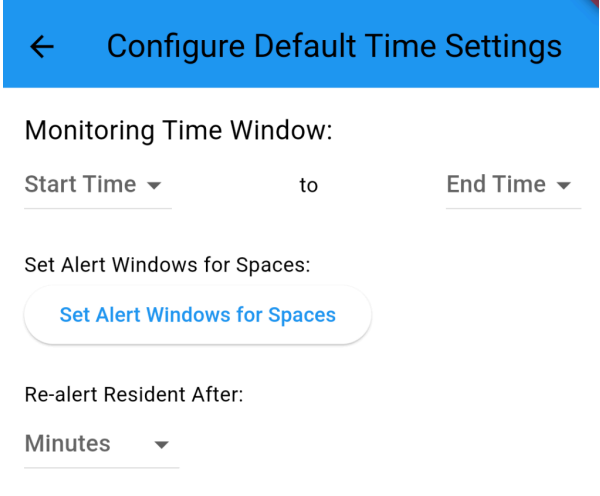|	
← View Logs	← View Logs
Filter by Space ▼	Filter by User ▼
Clear Filters	Filter by House ▼
Displaying logs...	Filter by Space ▼
	Clear Filters
	Displaying logs...
Resident interface, View Logs screen	Admin interface, View Logs screen

Time Configuration Settings Page

Time configuration settings are available for both admin and resident– residents will find this under the menu bar on the resident portal, and administrators will find it under Settings.

Users have the ability to set the active time window in which the sensors will be tracking their location. They can also configure the time in which to be re-alerted if they have not made a change in behavior.

Administrators can control the same abilities, as well as set acceptable time windows for each space in the house (for example, setting 2 hours as an acceptable time window by the couch).

It is important to note that administrators can only set default time windows and re-alert periods. For resident privacy, the resident has the final say for how they are monitored.

← Configure Default Time Settings	← Configure Default Time Settings
Monitoring Time Window:	Monitoring Time Window:
Start Time ▼ to End Time ▼	Start Time ▼ to End Time ▼
Re-alert Resident After:	Set Alert Windows for Spaces:
Minutes ▼	Set Alert Windows for Spaces
Revert to Default Settings	Re-alert Resident After:
	Minutes ▼
Please note: For user privacy, you may configure your own time settings but cannot modify global settings.	Please note: For user privacy, users may or may not configure their own time settings.
Resident interface, Time Settings page	Admin interface, Time Settings page

Settings Page

The administrative page has an additional Settings page that lists additional features for managing the houses, residents, and spaces. Options include:

- Manage Users
- Manage Houses
- Set Default Time Windows

Admin interface, Settings page
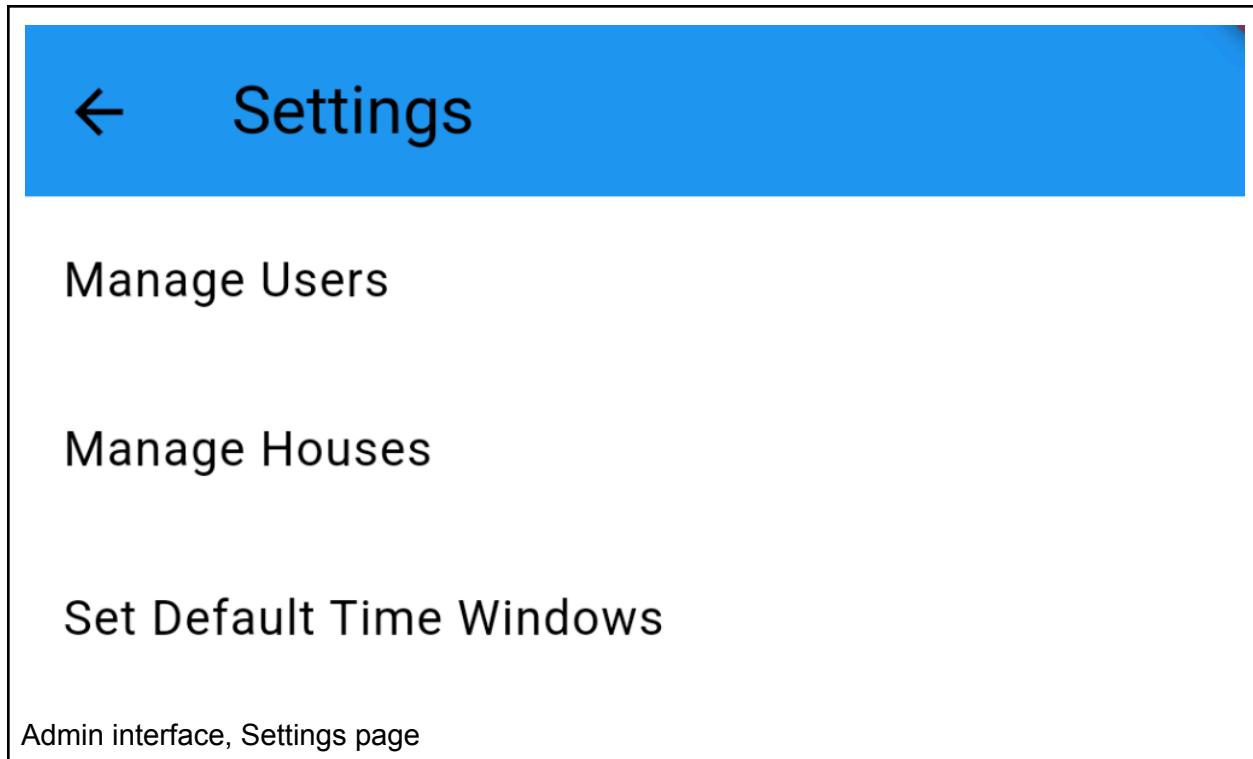
Manage Users Page

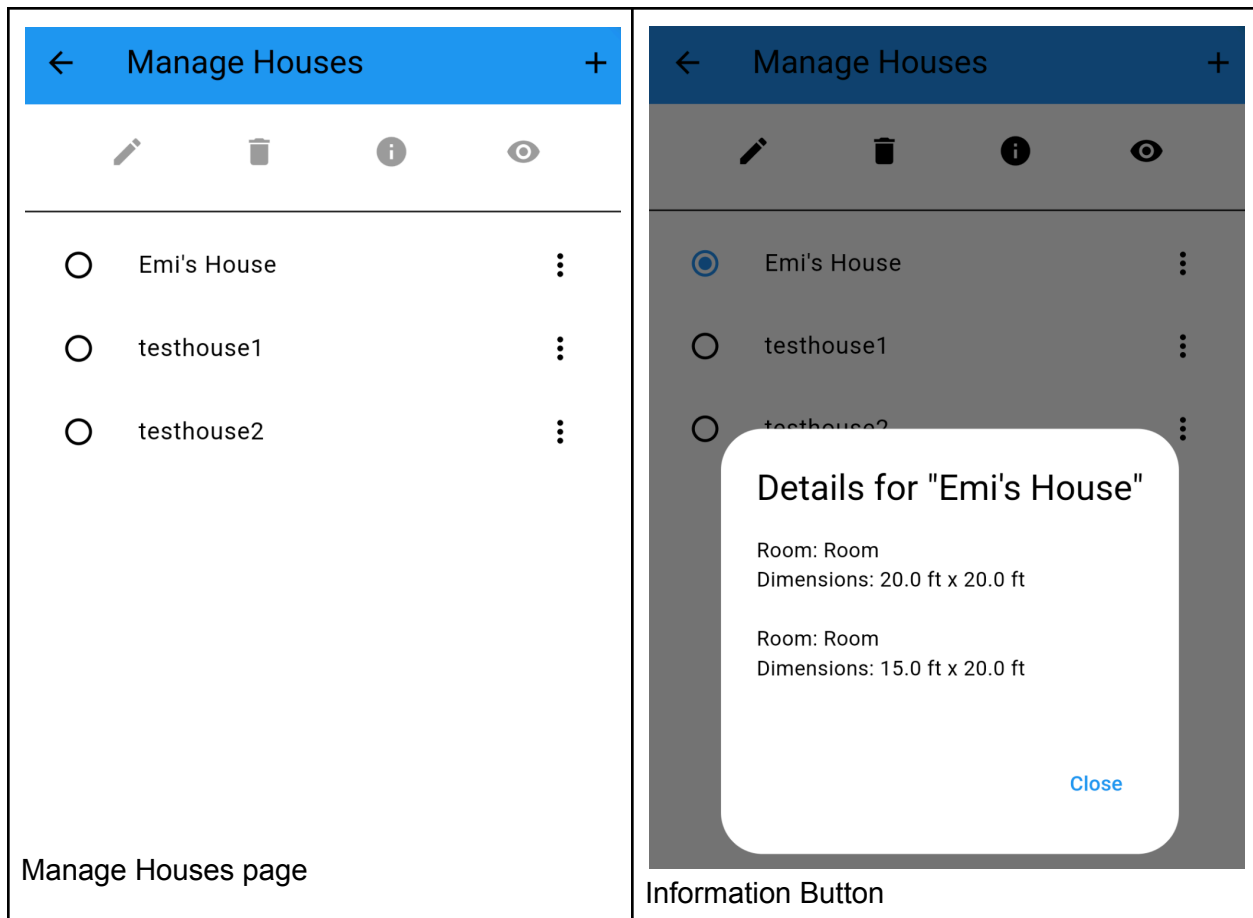The Manage Users page will be integrated into a database containing the following data:
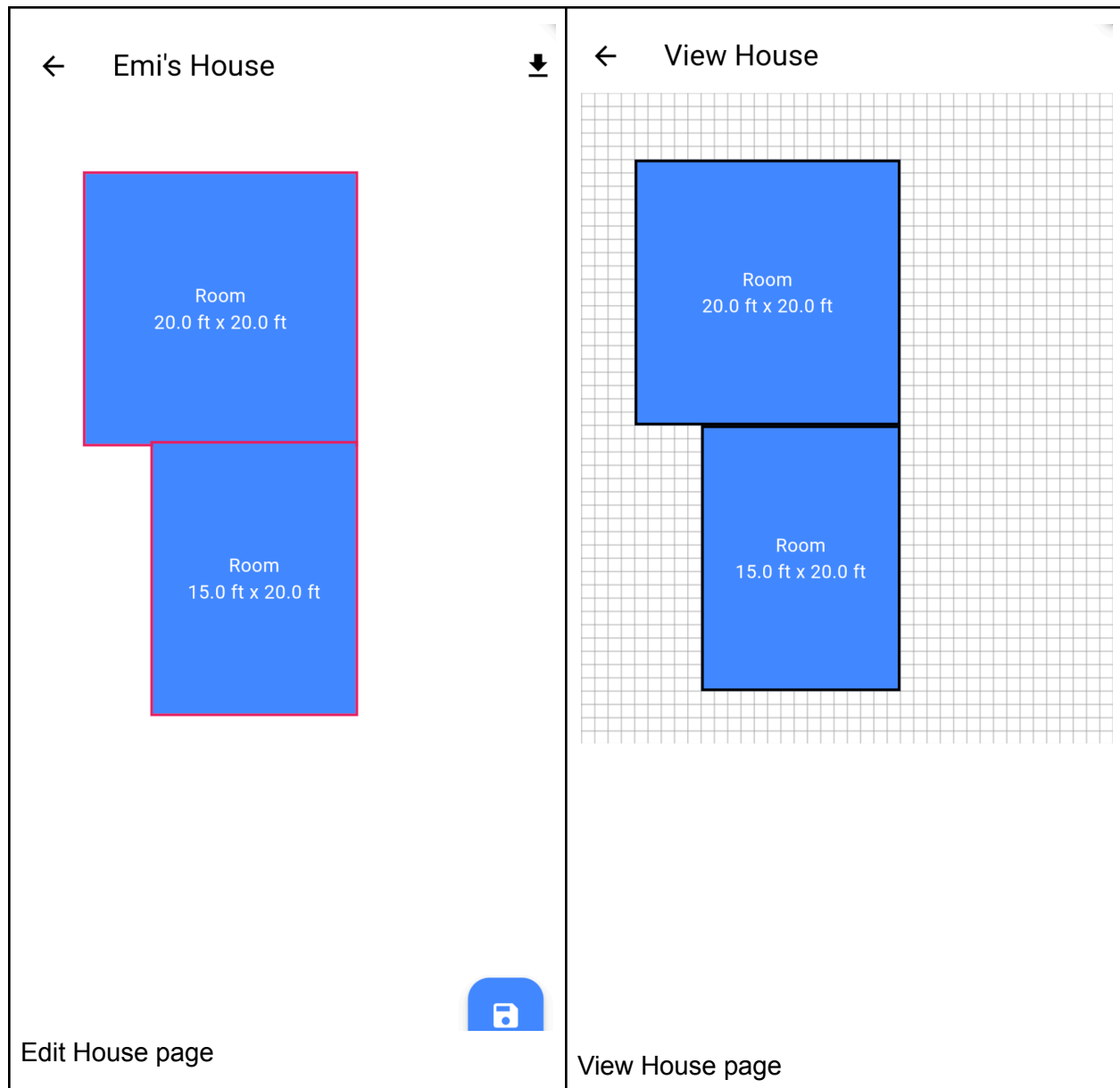- Name
- UserType
- Email
- House

The page implementation currently simulates the full functionality of the database, with pages for adding, editing, viewing and deleting users. Input validation is used to protect the software.

Manage Users

+ 🗑 ✏ ⓘ

◉ User 1   ⋮
○ User 2   ⋮
○ User 3   ⋮
○ User 4   ⋮
○ User 5   ⋮

Manage Users page

Add User

User Type
○ Admin ◉ User

Name

Email (must be gmail.com)

House
Select House ▾

Please select a house

Save

Add User page

Edit User

User Type
○ Admin ◉ User

Name
User 1

Name should only contain alphabetic characters

Email (must be gmail.com)
user0@gmail.com

House
House 1   ▾
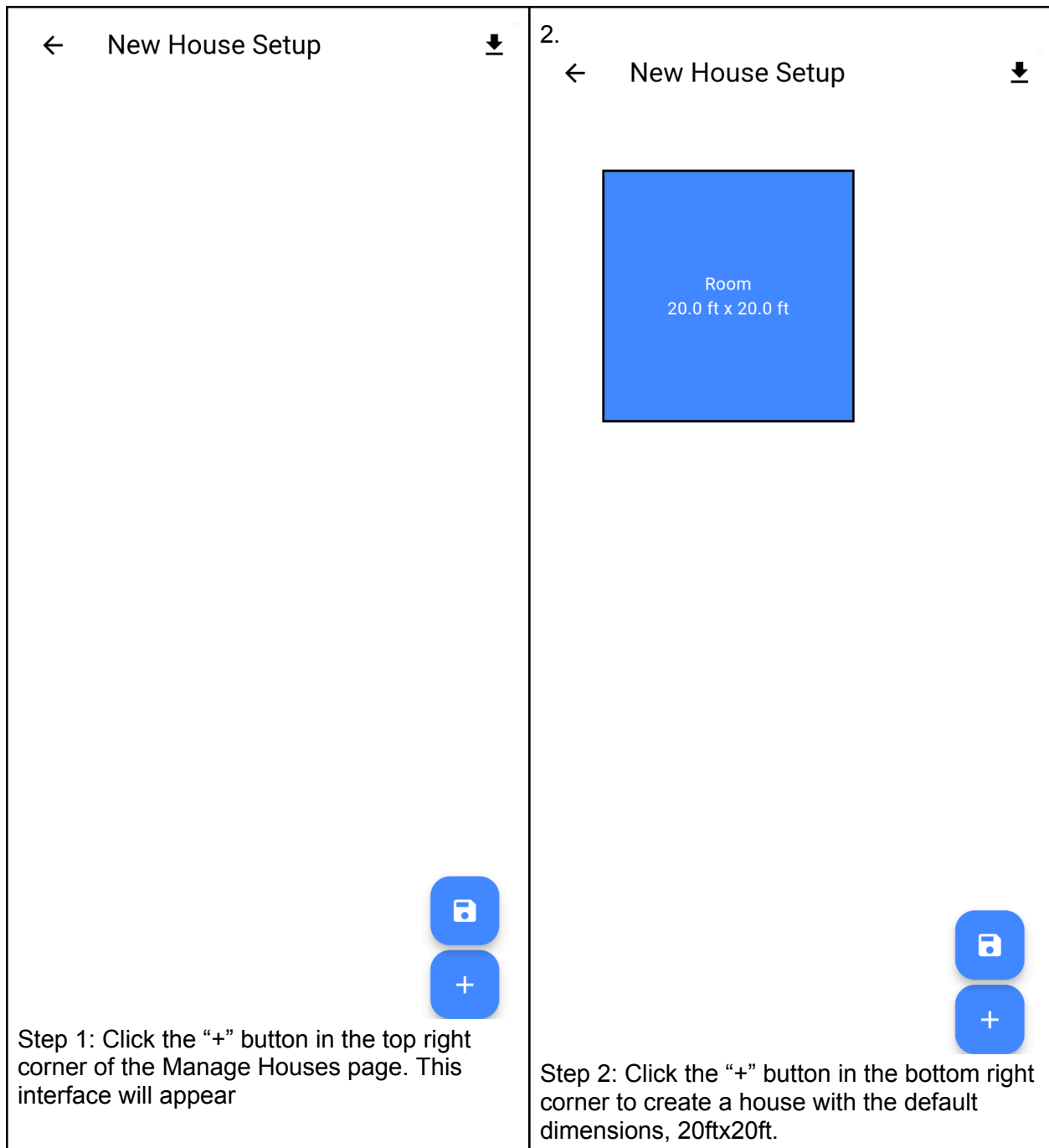
Edit User page

Manage Houses Page

The Manage Houses page allows for administrators to recreate floor plans in the application. Features include creating a new house, editing an existing house, viewing information on the rooms, viewing an uneditable diagram of the house, and deleting a house.

←   Manage Houses   +

✏️   🗑️   ℹ️   👁️

○   Emi's House   ⋮

○   testhouse1   ⋮

○   testhouse2   ⋮

Manage Houses page

←   Manage Houses   +

✏️   🗑️   ℹ️   👁️

◉   Emi's House   ⋮

○   testhouse1   ⋮

○   testhouse2   ⋮

Details for "Emi's House"

Room: Room
Dimensions: 20.0 ft x 20.0 ft

Room: Room
Dimensions: 15.0 ft x 20.0 ft

Close

Information Button
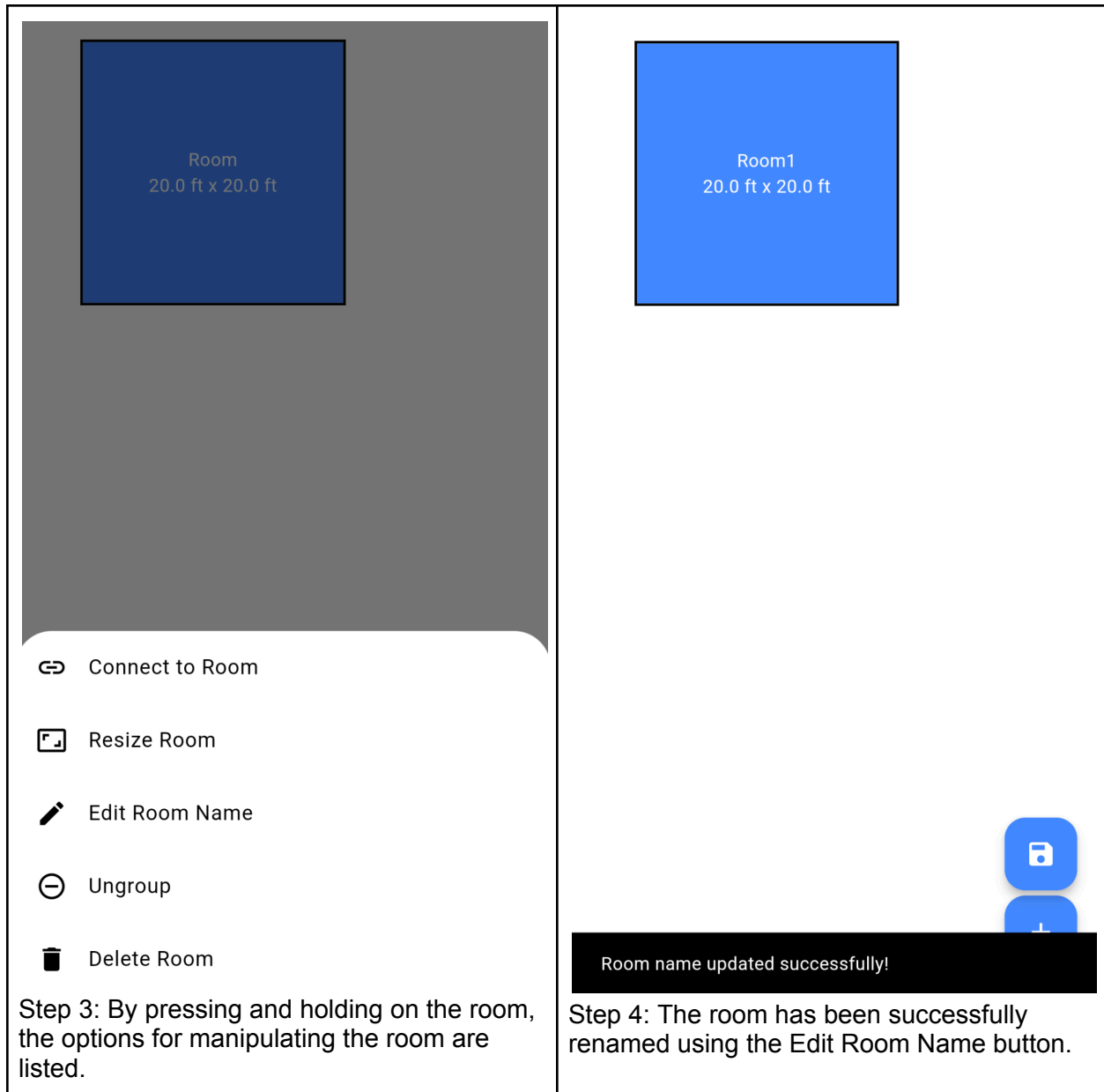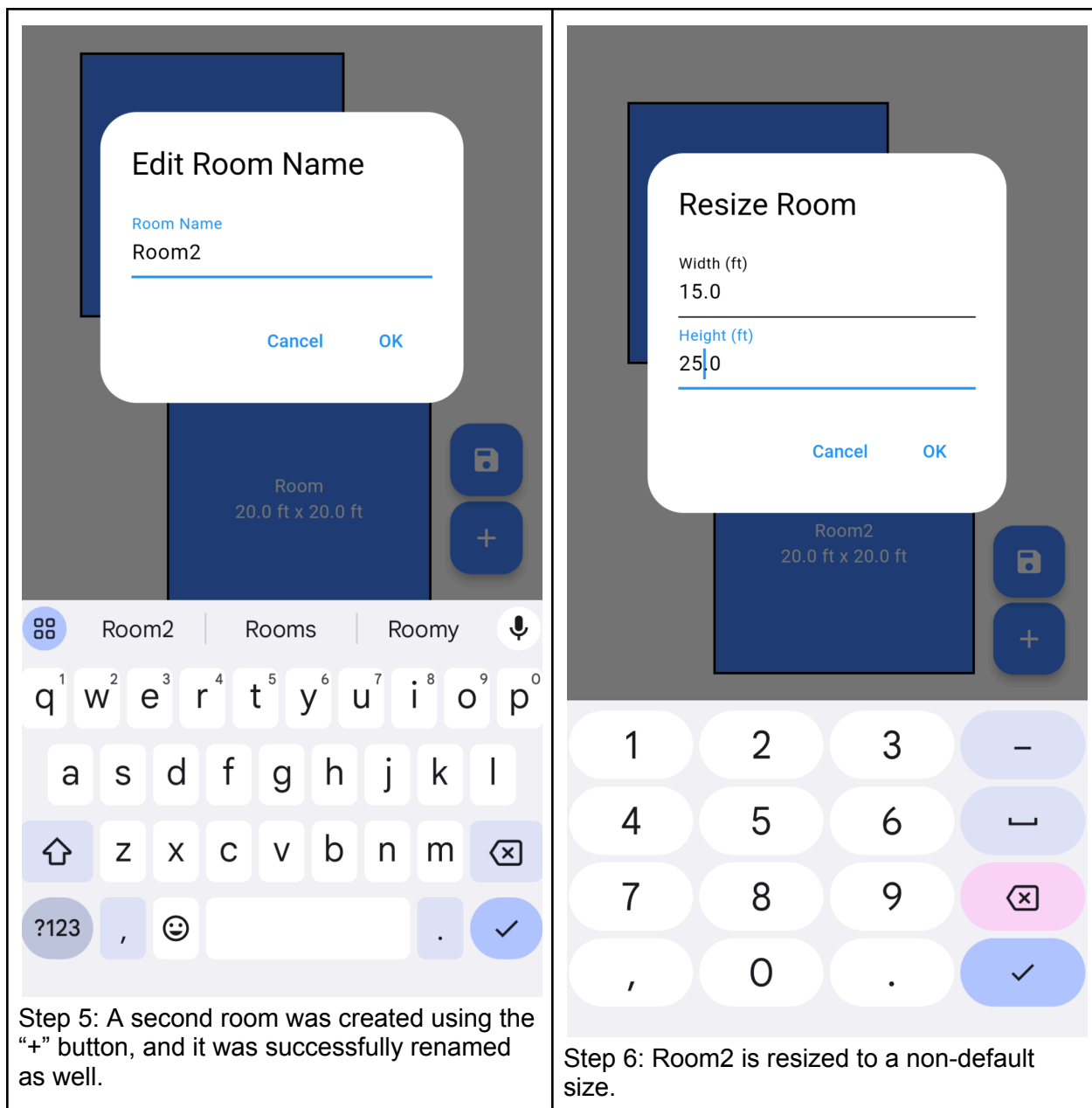
Edit House page

View House page

Create a New House Page

This section will walk a user through recreating a floor plan using the Add House feature.
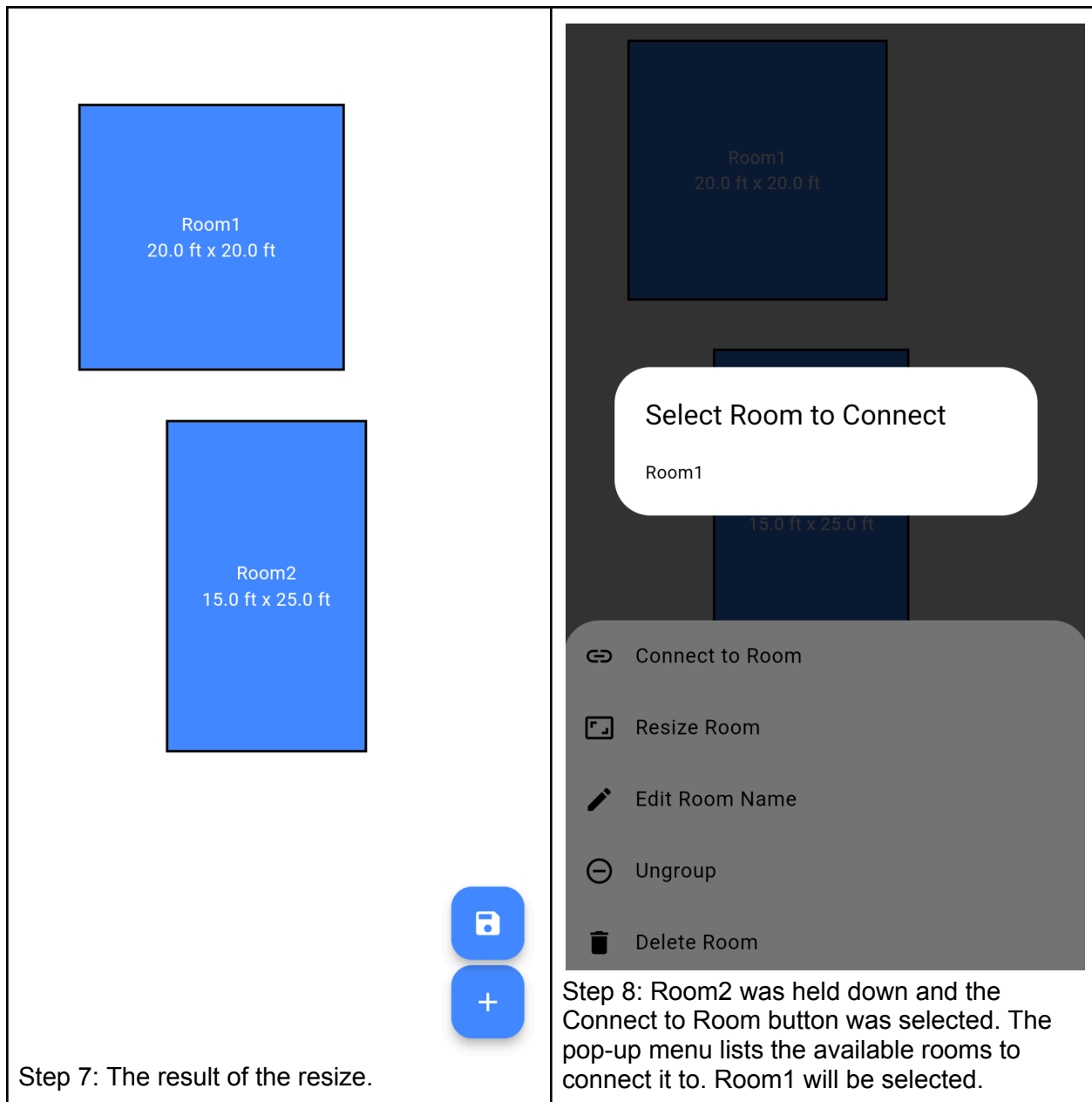
←   New House Setup   ⬇

2.

←   New House Setup   ⬇

Room
20.0 ft x 20.0 ft

[💾]

[+]

Step 1: Click the "+" button in the top right corner of the Manage Houses page. This interface will appear

[💾]

[+]

Step 2: Click the "+" button in the bottom right corner to create a house with the default dimensions, 20ftx20ft.

Room
20.0 ft x 20.0 ft

🔗 Connect to Room

⌐⌐ Resize Room

✏ Edit Room Name

⊖ Ungroup

🗑 Delete Room

Step 3: By pressing and holding on the room, the options for manipulating the room are listed.

Room1
20.0 ft x 20.0 ft

Room name updated successfully!

Step 4: The room has been successfully renamed using the Edit Room Name button.

Step 5: A second room was created using the "+" button, and it was successfully renamed as well.

Step 6: Room2 is resized to a non-default size.

Room1
20.0 ft x 20.0 ft

Room2
15.0 ft x 25.0 ft

Step 7: The result of the resize.

Room1
20.0 ft x 20.0 ft

Select Room to Connect

Room1

15.0 ft x 25.0 ft

🔗   Connect to Room

⬗   Resize Room

✏   Edit Room Name

⊖   Ungroup

🗑   Delete Room

Step 8: Room2 was held down and the Connect to Room button was selected. The pop-up menu lists the available rooms to connect it to. Room1 will be selected.

Room1
20.0 ft x 20.0 ft

Room2
15.0 ft x 25.0 ft

🔗   Connect to Room

Attach to Left Wall

Attach to Right Wall

Attach to Top Wall

Attach to Bottom Wall

Step 9: The options for which side of Room1 to stick Room2 to. The left wall will be chosen.

Room1
20.0 ft x 20.0 ft

Room2
15.0 ft x 25.0 ft

🔗   Connect to Room

🖼   Resize Room

✏   Edit Room Name

Align Top of left Wall

Align Bottom of left Wall

Step 10: The options for which edge of the left wall to stick Room2 to. The top of the left wall will be chosen.

Step 11: The result, Room2 being attached to the top of the left wall of Room1.

Step 12: The process was repeated with Room3; the room was resized and attached to the right of the bottom wall of Room1.

Step 13: Upon pressing the Save icon, the house is renamed.

Step 14: The house is now viewable on the Manage Houses page. Here is the house using the View button.
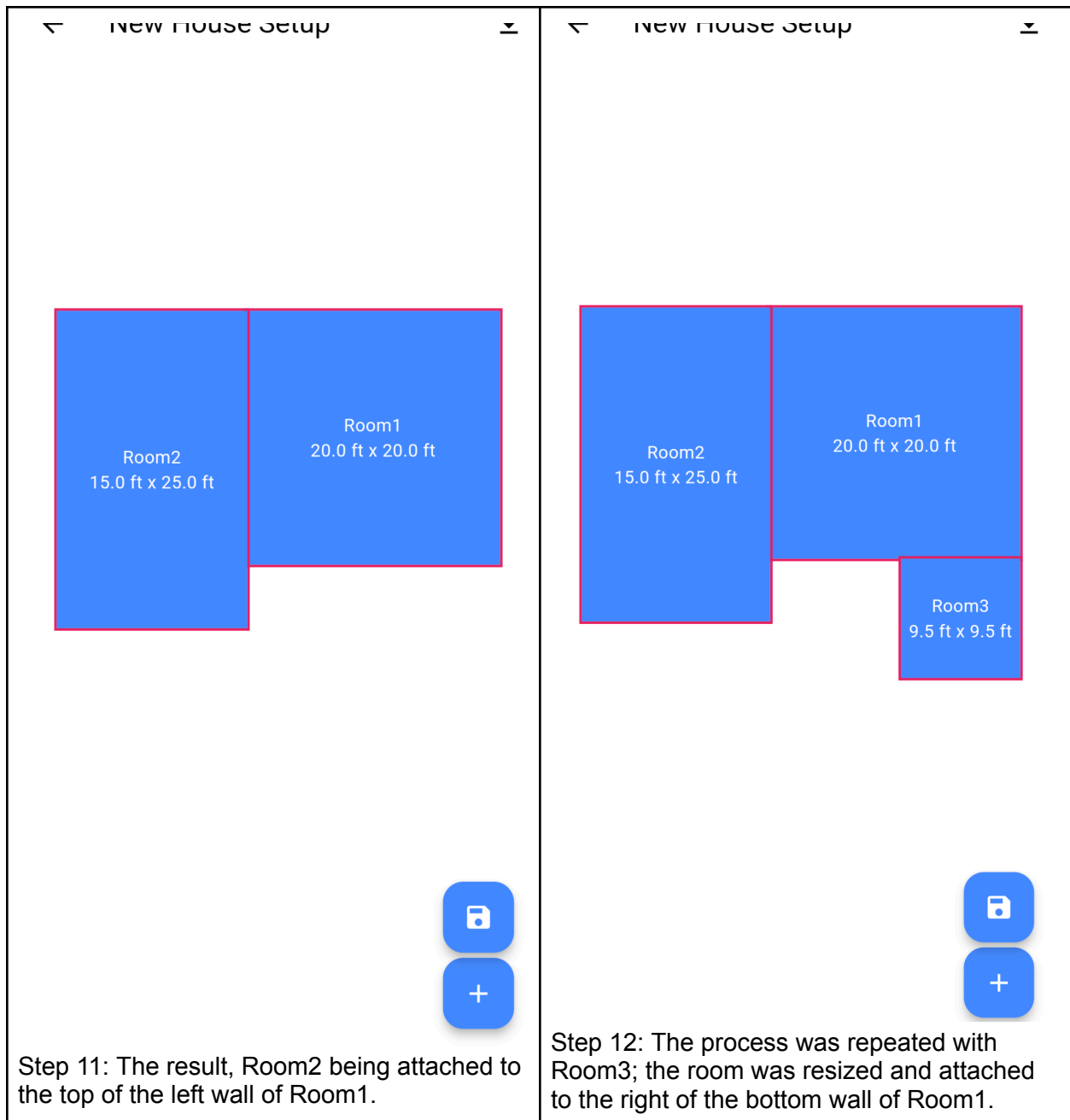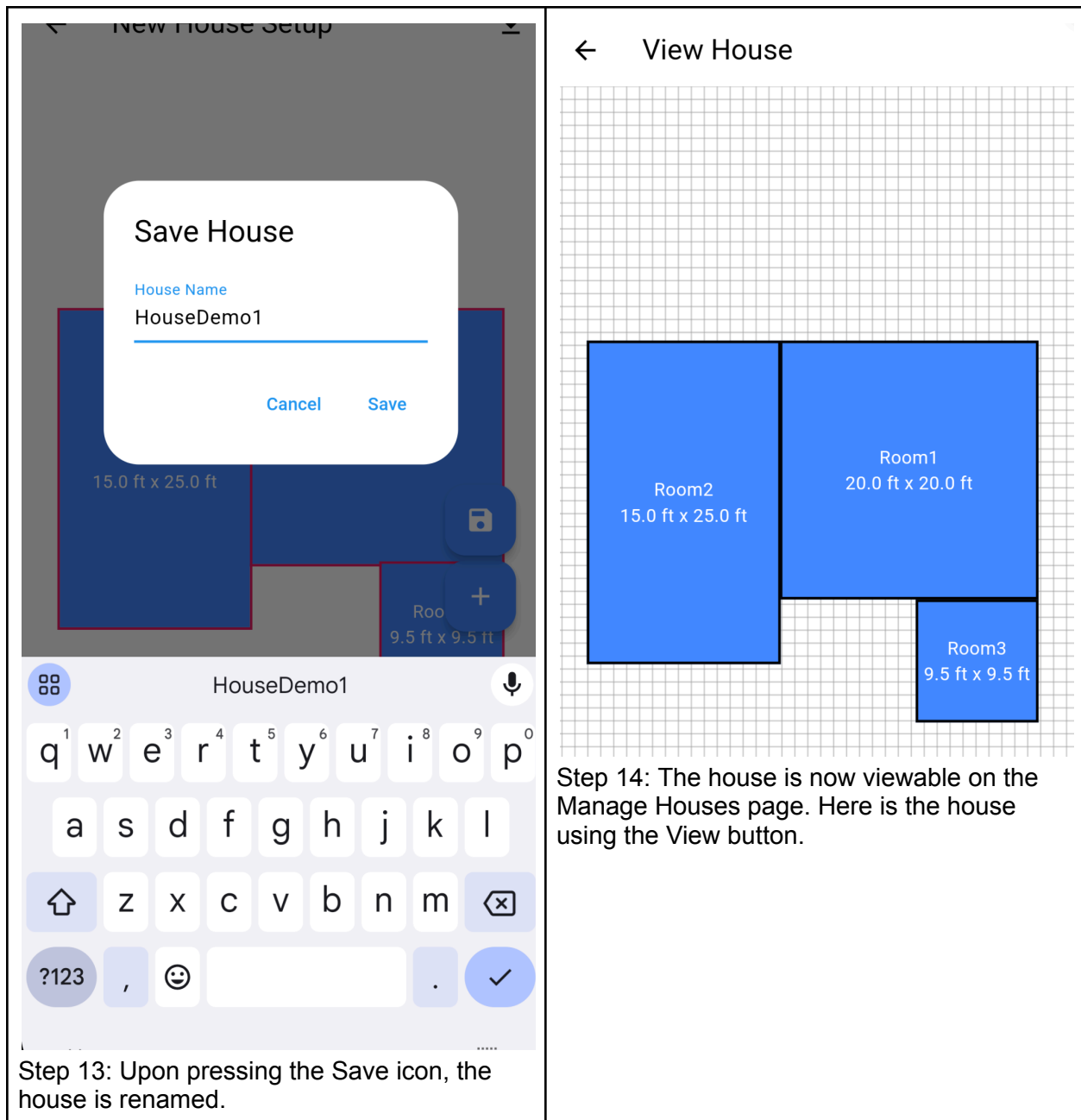
Manage Client/Server Page

The client/server database page is on the application for development purposes. It attempts to connect to a docker containing a test database.

←   Manage Client/Server

Status: Connecting... 🔴

Enter message

Publish Message

Reconnect

Manage Client/Server page