Project 9 Final Prototype- CS 352 Group 4

Alison Jones | Victoria Dmyterko | Jonathan Chen | Zhuohong Gu
Oregon State University, Corvallis, OR

ABSTRACT -- This paper presents the final prototype of our 2D Floor Planner, "RoomSketch". This paper goes over changes in design since our last prototype and why those changes were made according to feedback and user interface design principles. We also provide a storyboard of how the prototype flows and a link to our prototype on Proto.io.

I.   INTRODUCTION AND SUMMARY

Our project was to design a web-based interface for a 2D floor planner. In our initial prototyping we decided to name our project "RoomSketch". The purpose of this website is to provide a quick and easy way to create a basic floor plan of the user's home or future living space. This layout can then be used by the user to plan their furniture arrangements, add new furniture to the home, or discuss the use of shared spaces with roommates or family members. We believe that providing a simple and intuitive 2D Planner we can help save people time and money when they are moving or when they plan to add a new piece of furniture to their home. This 2D Planner should be simple enough to be used by most people, though it will likely appeal the most to people that are college-aged and older who are considering moving in the near future. In this paper we will review the design changes made to our prototype since the last iteration. We will discuss why those decisions were made based on good user interface design principles and feedback from the design gallery. We will then present a flowchart of how our prototype works. Finally, we will provide a link to the interactive prototype.

II.   DESIGN DISCUSSION

During early prototyping we decided to create a web-based 2D Planning website. Originally we had to pick between a website or an application in the "Concepts and Early Prototype" project. At that time we decided to go with a website based planner because of the ample screen space it provides for designing and creating the floor plans. Considering the database of pre-made shapes we would like to provide the user, a larger screen would be ideal to show the large variety of options. Another benefit of a website would be the option to print or save the layout directly to your computer. These options would be more difficult to achieve with a mobile-based interface.

Following our analytical and empirical evaluations we made several changes to our original prototype. One issue that was noted in the prototype was the lack of a delete or undo button on the layout page. This would be an issue falling under the 9th heuristic principle, not providing a solution to errors. We added a trash can to each item in the "My layout" section to provide the user a way to delete items that they no longer want. In order to avoid user error, we made sure to add a pop-up warning window which prevents the user from accidentally deleting all of their work. Another change we made was to label our menu icon. Since it it small and not obvious in the corner of the screen it could be easy for an unfamiliar user to miss it or not know what it is for. By adding a simple

label to the menu, we can make it clear what the purpose of that button is. This would fall under the 6th heuristic principle, having icons that are clearly labeled. Another addition to the prototype made after evaluation is a button or option to make the document strictly private, shared, or public. This follows the idea of having standards and would be one for security and privacy. Later clickable checkboxes were added to improve this design further.

A common theme of the feedback from the most recent design gallery was the lack of measurements given during the construction of the floor plan. In accordance with the feedback received and following the heuristic principles of "Visibility of System Status" and "Error Prevention" we update the floor plan creation panels of our prototype to include feedback on the size of the lines drawn. We have also added a page before floor creation which asks the user what metrics they would like to use for their floor plan. This gives the user the ability to choose what measurements they would like to use, for instance feet vs centimeters. For now, our prototype supports feet. Once the user is done making the layout they can change the screen state to centimeters by clicking on the button at the top of the screen.

A button that we added to the screens after the layout is created is the undo button. This button falls under the heuristic principle of "Help users recognize, diagnose, and recover from errors". By allowing users to undo their previous action we give the user a clear way to diagnose and recover from mistakes. Another way we "Help users recognize, diagnose, and recover from errors" is by providing a close or exit button on the Add Furniture, Search Furniture, and Create Furniture pop-ups. This allows the user to change their mind about adding furniture to the layout, with the exit button they are not stuck with having to create or choose a piece of furniture.

Other things we changed due to teaching assistant feedback is the redundancy of certain buttons. For instance, save and export on the menu led to the same page, so export was removed since they accomplish the same functionality. We also combined the Search Furniture and Add Furniture buttons into just one button called Add Furniture because searching for furniture falls under the umbrella of adding furniture to the layout, so it made more sense to make searching a subchoice of the Add Furniture button.
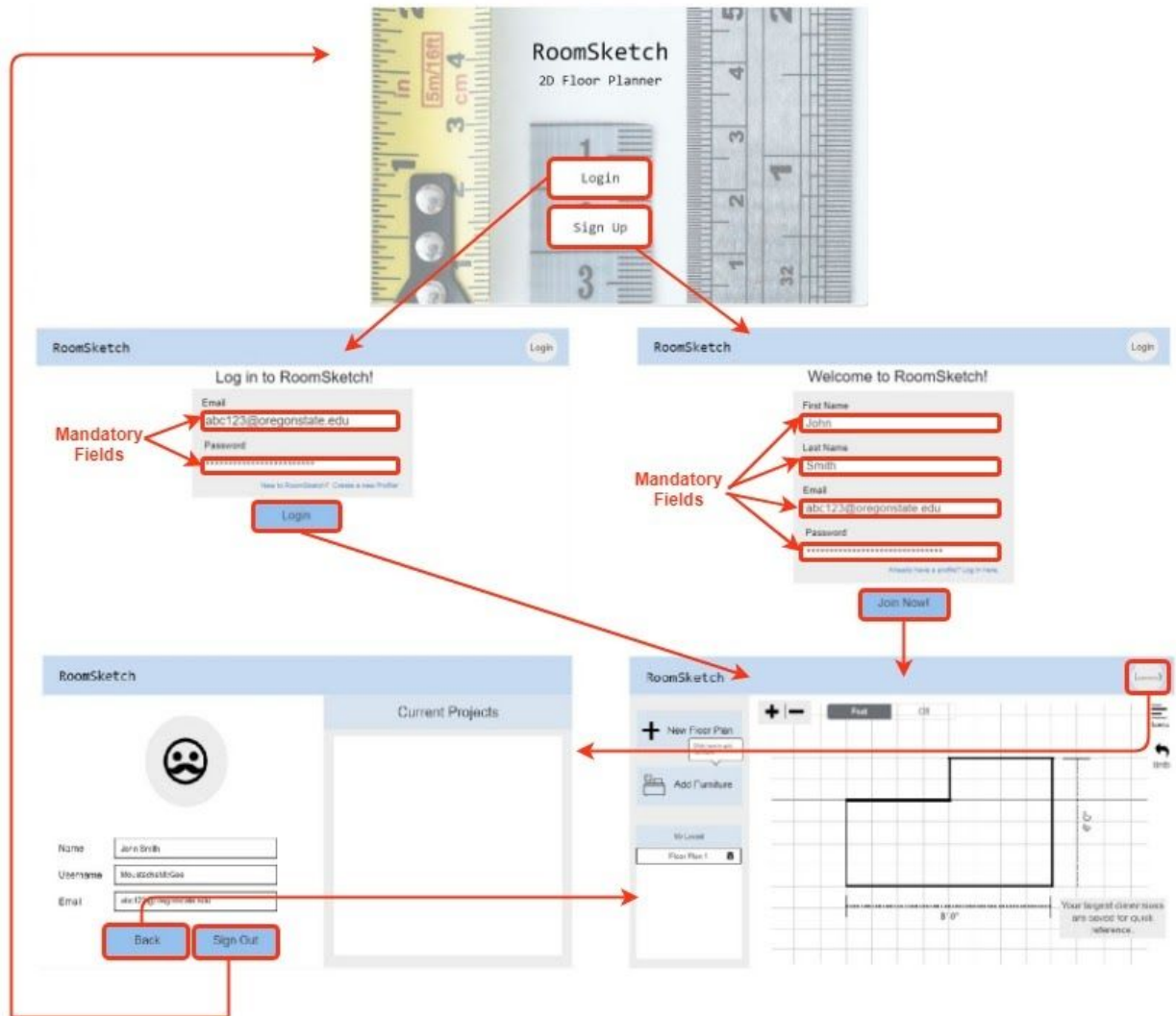
Additionally, we added more guidance to the initial drawing section so that users have a better idea of what to do while creating their layout. This was a suggestion by the teaching assistant; Aashwin's feedback told us that she wasn't sure whether our help text was a tutorial or simply a simple guidance system for the user. She said that we should add a bit more help text to make each step clearer for the user if it was not a full tutorial. Since we did not intend to create a full tutorial, just some help text for a new user we did end up adding a bit more help to each step until a full cycle is complete. We hope this helps guide a new user without having them commit to a full tutorial.

Finally, we have been working on getting our major buttons to work properly. These buttons include "New Layout", "Add Furniture", "Menu" , "Undo" and "Username" and "delete". Aashwin suggested having all buttons redirecting to the correct pages, which we have worked on completing. There will be some disparity between the "My Layout" sections when certain buttons such as menu or save are chosen because we did not have the time to create each iteration of those pages with 1 piece of furniture, 2 pieces of furniture, or no furniture. If this was to be a real site we would of course create those pages and code for those pages.
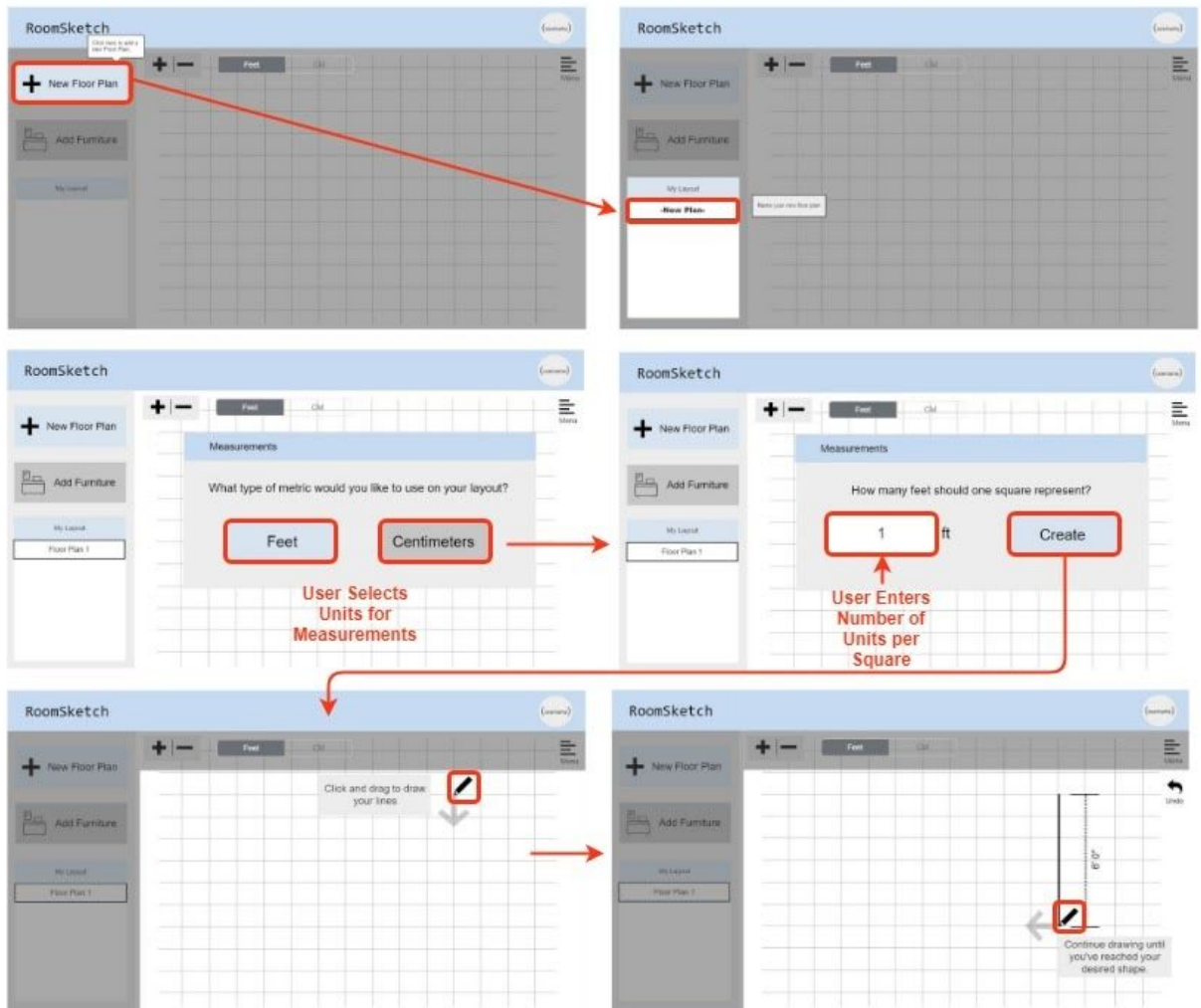
Otherwise, we have tried to stick to our strengths which people seemed to like in the last design gallery. Our strengths were a simplicity in design, a good sharing page, and an easy to create layout. We tried our best to keep these strengths in mind and not stray too much from those principles.
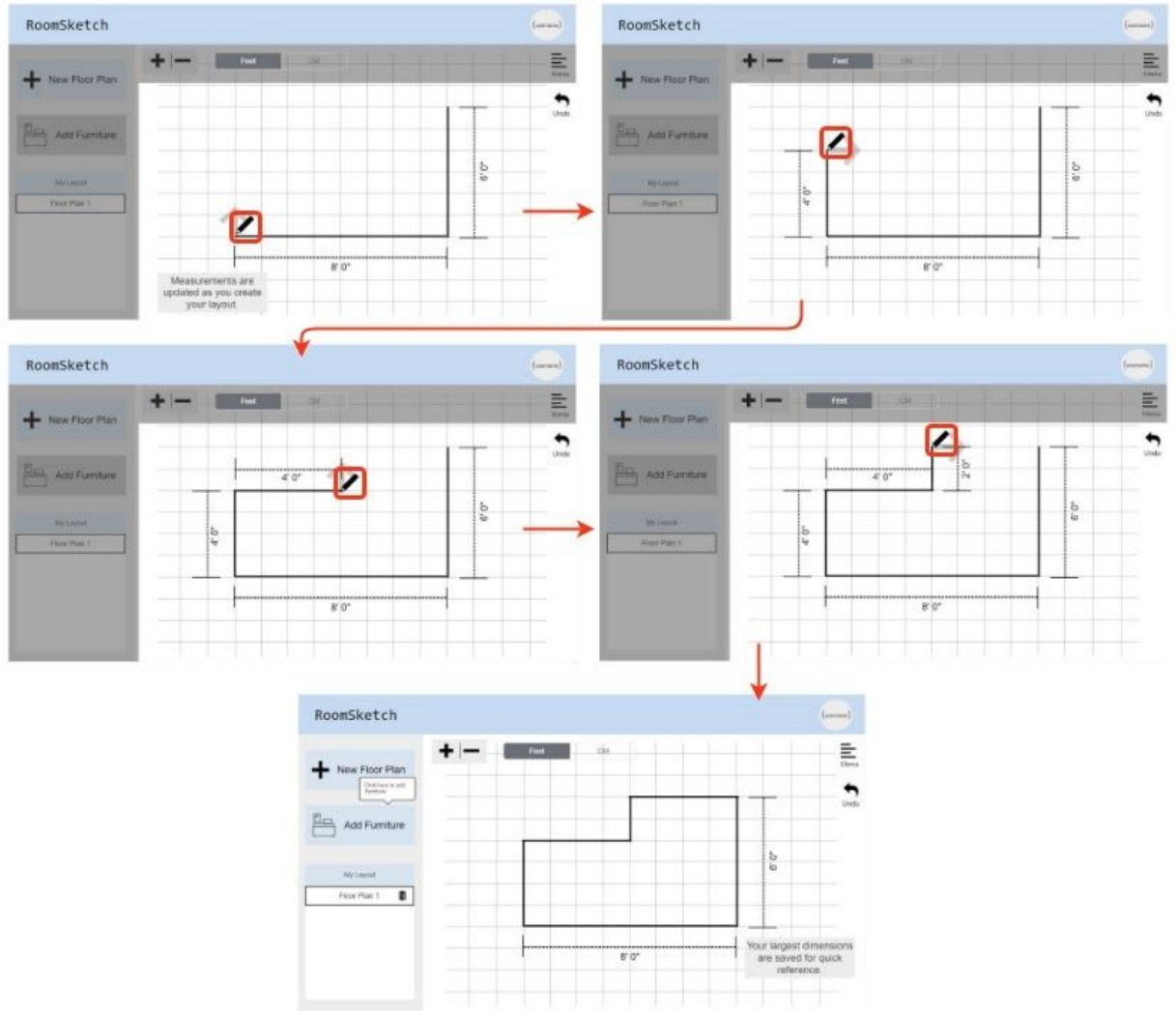

III.   STORYBOARD
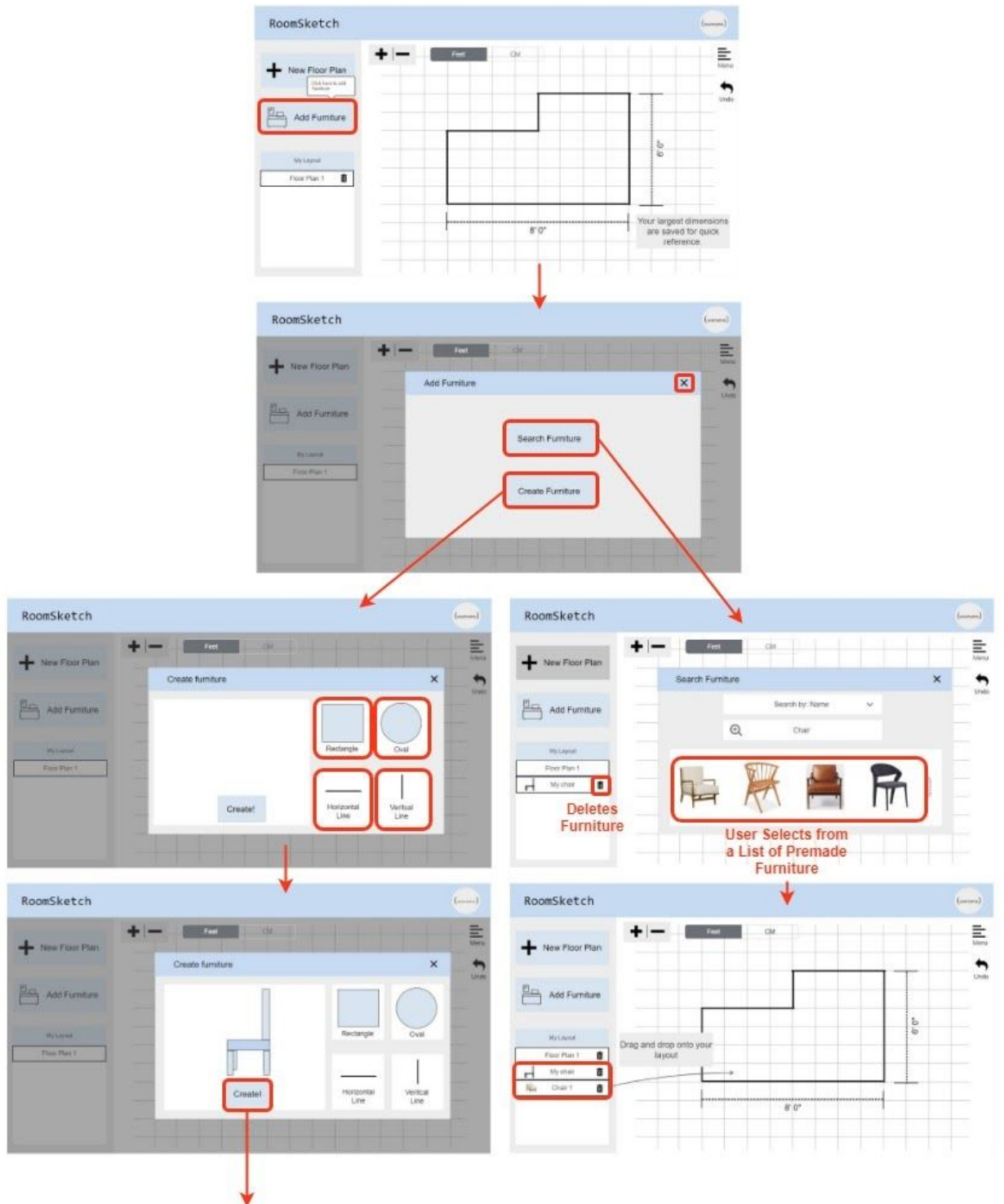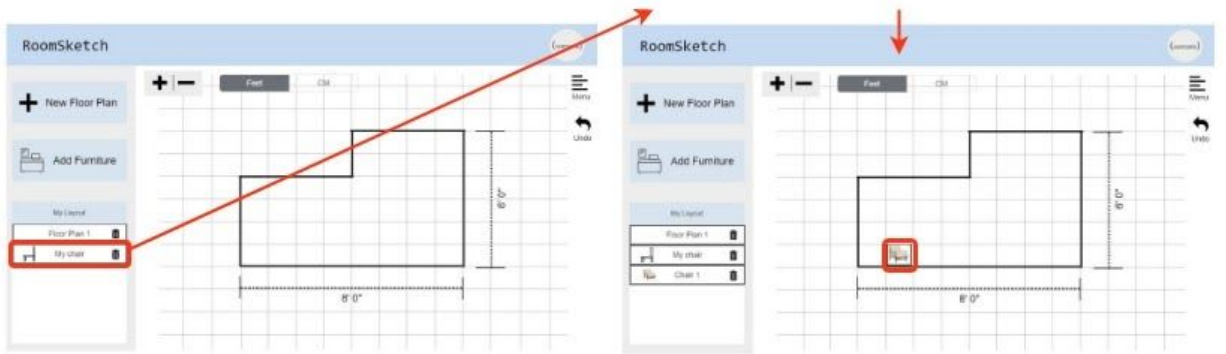
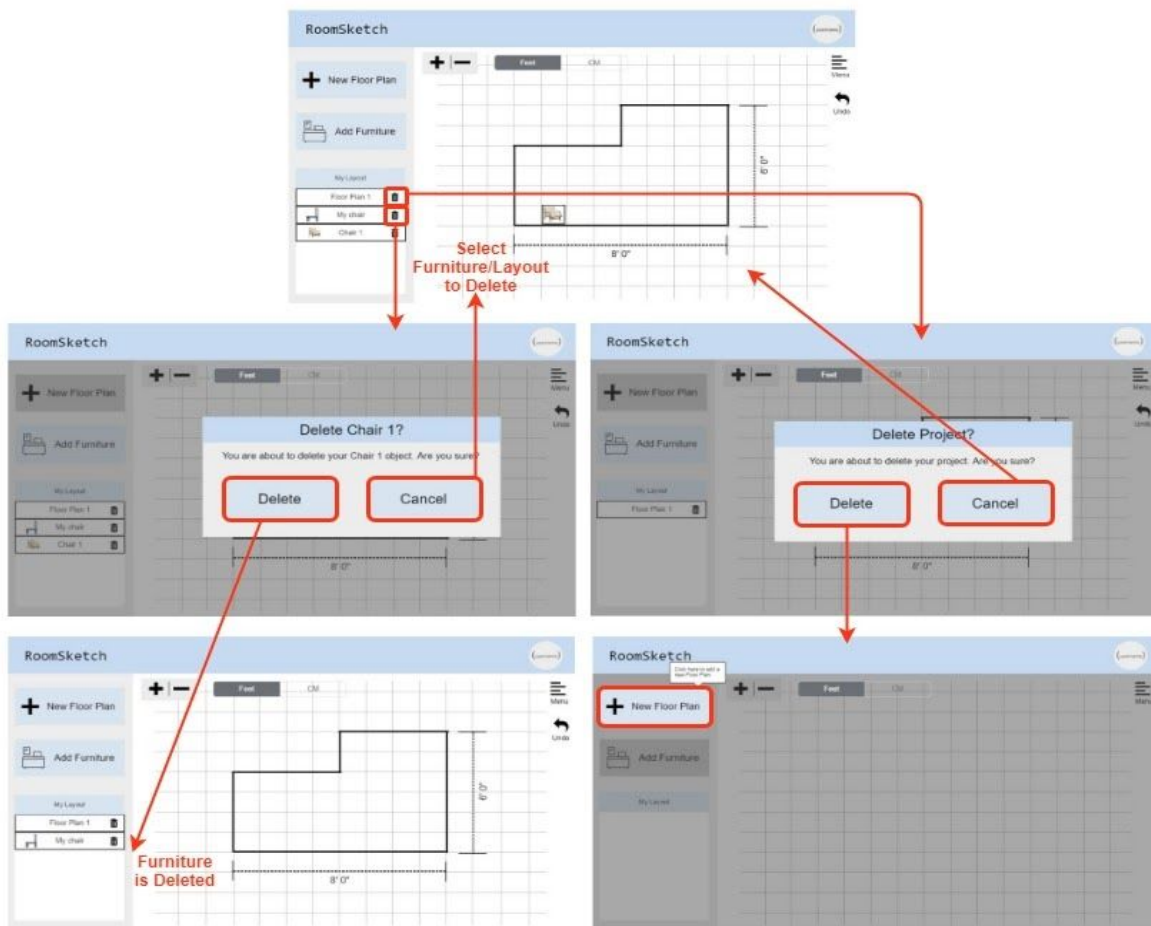### Login/Sign Up for an account

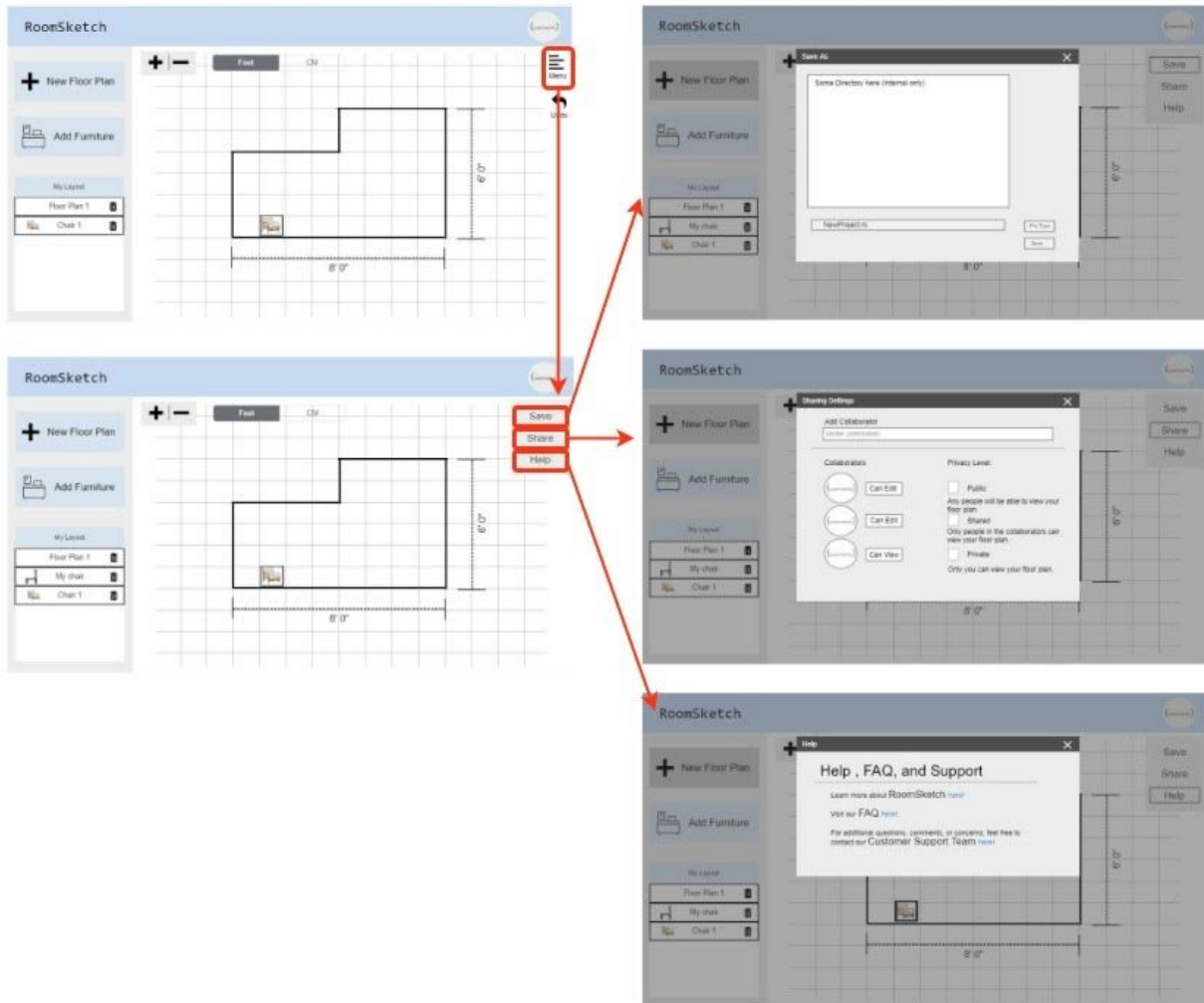# Create New Layout/Draw Layout

Creating/Adding Furniture

Deleting Furniture/Layout

Select Furniture/Layout to Delete

Delete Chair 1?
You are about to delete your Chair 1 object. Are you sure?
Delete   Cancel

Delete Project?
You are about to delete your project. Are you sure?
Delete   Cancel

Furniture is Deleted

Menu Options

IV. PROTOTYPE

Our prototype was created using Proto.io. The interactive version of our prototype can be accessed through this link: https://pr.to/G24SJJ/

CONTRIBUTIONS

Alison Jones, Visual Design:
- Prototype Updates
- Some Design Discussion
- Completeness: 5

Victoria Dmyterko, Leadership:
- Prototype Updates
- Abstract & Intro
- Design Discussion
- Completeness: 5

Jonathan Chen, Writing:
- Storyboard
- Completeness: 5

Zhuohong Gu, User Communication:
- Prototype Updates
- Completeness: 5