Evaluation Plan - CS 352 Group 4

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

ABSTRACT -- This paper discusses the evaluation plan for a 2D planning website. We first outline our analytical plan which will be performed by our group to try and correct early problems in our prototype. Then we plan an empirical evaluation with a potential user so that we can receive feedback on the design.

I. INTRODUCTION AND SUMMARY

This paper focuses on an analytical and empirical testing plan for our 2D Planning website prototype. First, we will perform a heuristic analysis of our prototype. We will review and test the basic tasks necessary to use our potential website. We will evaluate the flow and design to make sure that it is sufficient and easy to understand for the user. After our analysis we will address any issues that are encountered during testing. This would give us the chance to address these issues before the prototype is tested by the user.

Afterwards, we will perform an empirical user test with our updated prototype to get further feedback. We will have the user go through the basic task of creating a profile and creating a layout with furniture. Since these are tasks that all users will have to perform, it will give us a good idea of our website's weaknesses and strengths from a user-perspective. Insights from both the heuristic analysis and the user testing will contribute to a better and more robust product.

II. ANALYTICAL RESEARCH

For the analytical portion of our research we will use heuristics to determine if our prototype follows established principles of good user interface design. For instance, if the user is not sure how to place a piece of furniture on their layout, there should be a clear and simple help option that teaches the user how to perform that task. This could be in the form of a tutorial or a help document.

For our purposes, the tasks that we will test heuristically will include: profile creation, layout creation, furniture creation, furniture placement on the layout, learning using the help documentation, and printing or saving the layout. We chose these tasks because they are essential to the use of our website, and these tasks will be common to most users. During evaluation we will note any issues with the design or contents so that we can update the prototype before it is analyzed by the user.

Heuristic analysis will be performed by each of our team members. This will provide helpful insight because our team members fit the user profile, have experience with the prototype's design, and also understand the goals of our research. During our analysis we will keep the following principles in mind, these principles were developed by Jakob Nielsen and are widely used in the heuristic analysis of user interface design:

1. Visibility of system status
2. Match between system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose, and recover from errors

10. Help and documentation

In order to evaluate each of these principles we will have a series of questions that reflect our goals for the user experience and interface. As we go through each part of the prototype we will record our notes and answer relevant questions. From our answers we hope to target problem areas with our prototype and address those issues proactively so that our final product is effective and user-friendly.

Our questions include the following:

1. Does our system provide feedback to the user so they know what is happening? How so?
2. Does our system use terms and concepts that are common to the real-world? Are we avoiding jargon and system-oriented terms?
3. Is our system easy to navigate?
4. Is our design consistent?
5. Does our system avoid user error when possible? Do we provide enough clear information to the user so they can understand and resolve the issue?
6. Are the icons we use intuitive? Are tasks and icons clearly labeled?
7. Is our site intuitive to use? How long does it take for the user to perform a basic task (i.e. create a layout)?
8. Did we design the website with only the necessary items displayed? Did we avoid the use of irrelevant information?
9. If an error occurs do we provide a solution? Is the solution easy to follow and understand?
10. Can the user find help when they need it? Is the help section concise and complete?

After our evaluation we should be able to notice common themes or issues and come up with potential solutions. These solutions can then be incorporated into the design of our prototype which will then create a better website interface for our future users.

III. EMPIRICAL RESEARCH

Users that have moved recently or often would be a particularly useful for our research, including but not limited to students living off-campus. The majority of these students move into new houses or apartments multiple times while living in Corvallis for school. These users would have experienced moving furniture into different rooms with varying dimensions and space. They would have the most use of our application both for overall helpfulness and usability.

We will be collecting the whole evaluation session by a camera that records both the user and the paper prototype clearly. During the interview we will fill in the evaluation form based on our observations. We will also keep track of the time every tasks is completed, with or without hint.

To ensure the data from empirical evaluation answers our questions mentioned above, we will keep these rules in mind when taking notes on the evaluation form:

1. Take notes when user look confused with the task.
2. Take notes when user ask for definition of words on the UI.
3. Take notes when user perform unintended actions.

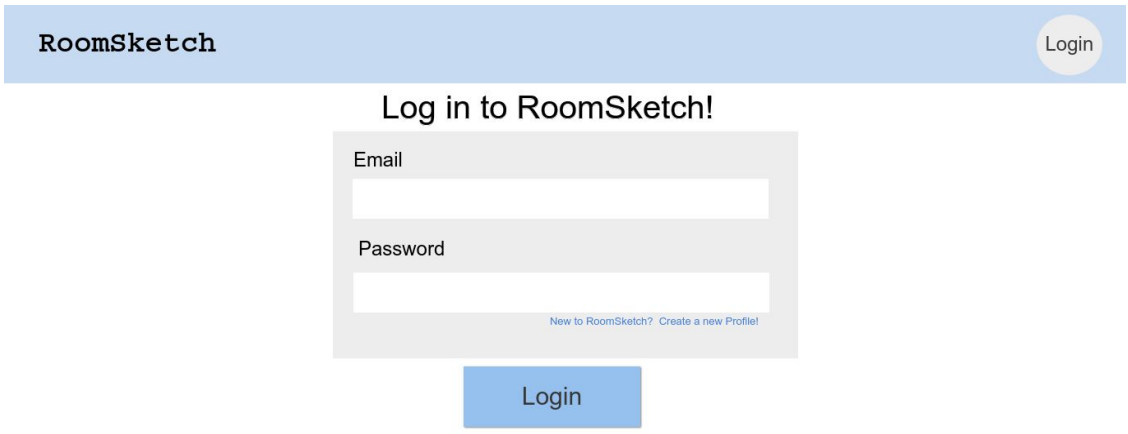
The video record of user evaluation session can also help answer our questions:

1. The way user navigate the UI when interacting with it (possibly tracking their eye/head movement).
2. Record which parts user pays significantly more attention to and which parts user just ignores. Analyze if this is a desired result or not.
3. Record the time user completing different tasks and analyze them. If the time used to solve the different task tend to decrease, it might mean user is learning the UI design while using it. If the task solving time does not show decrease, it might be our problem.

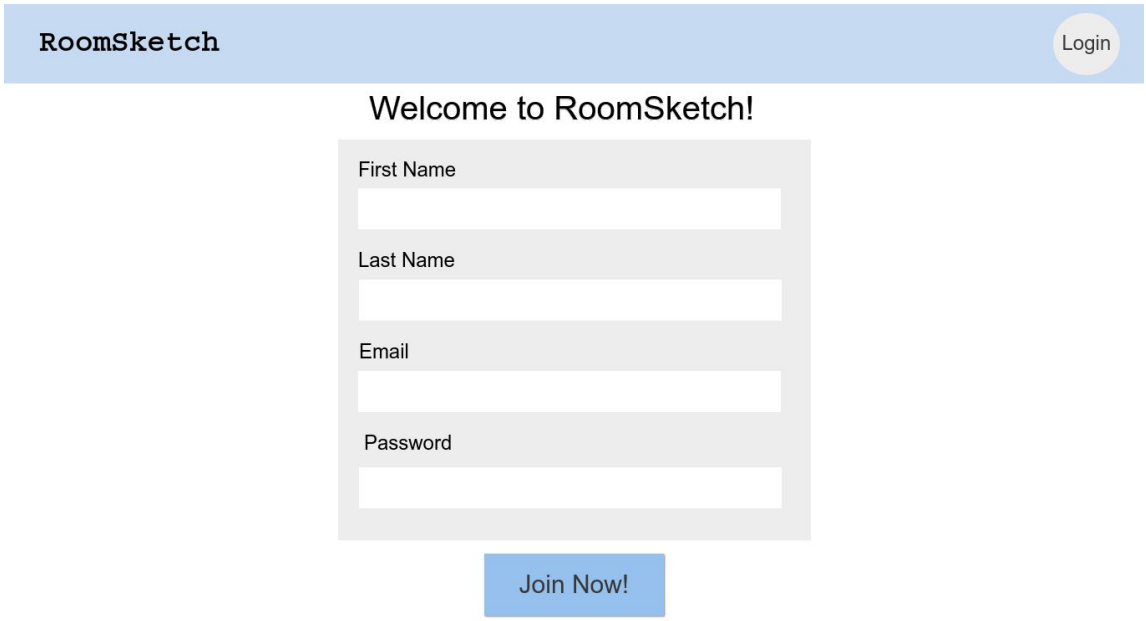
IV. PROTOTYPE

Welcome Page

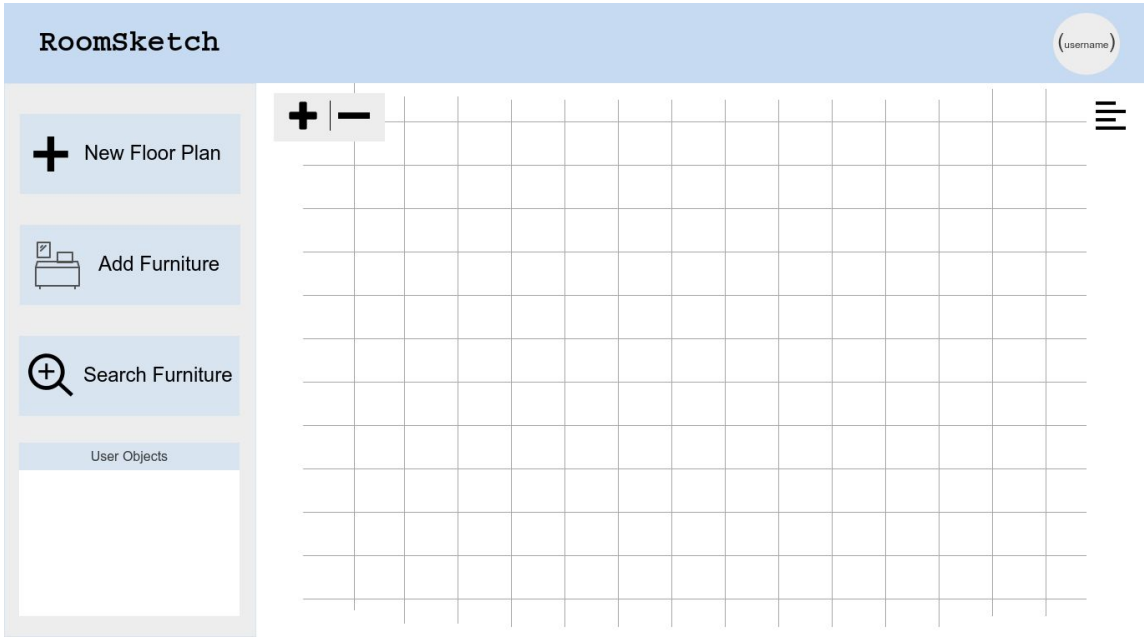
Login Page

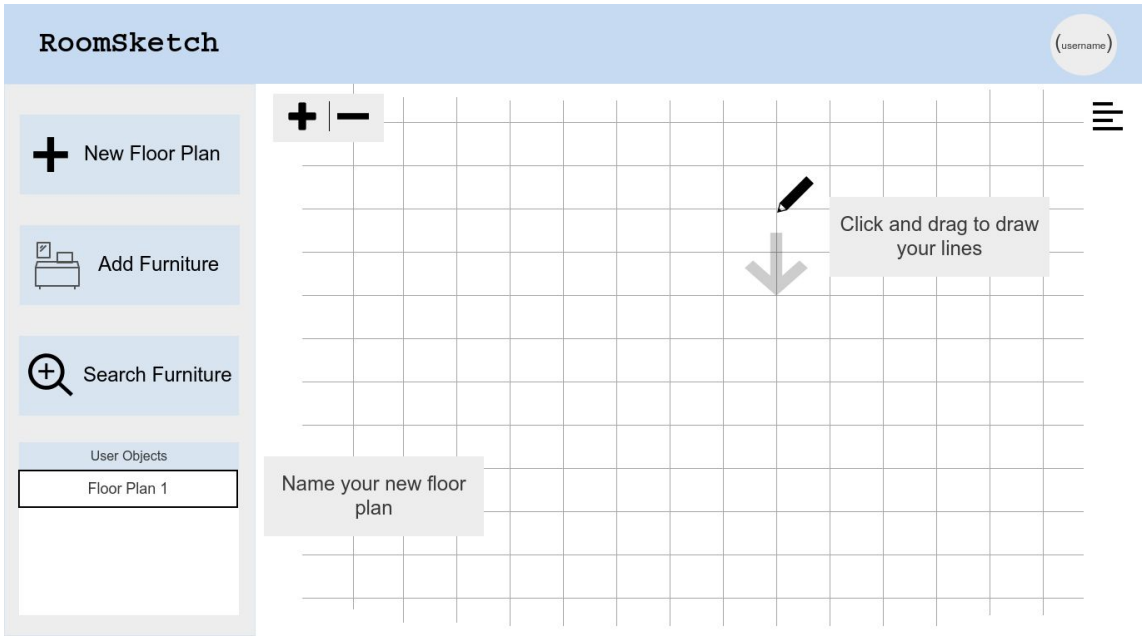


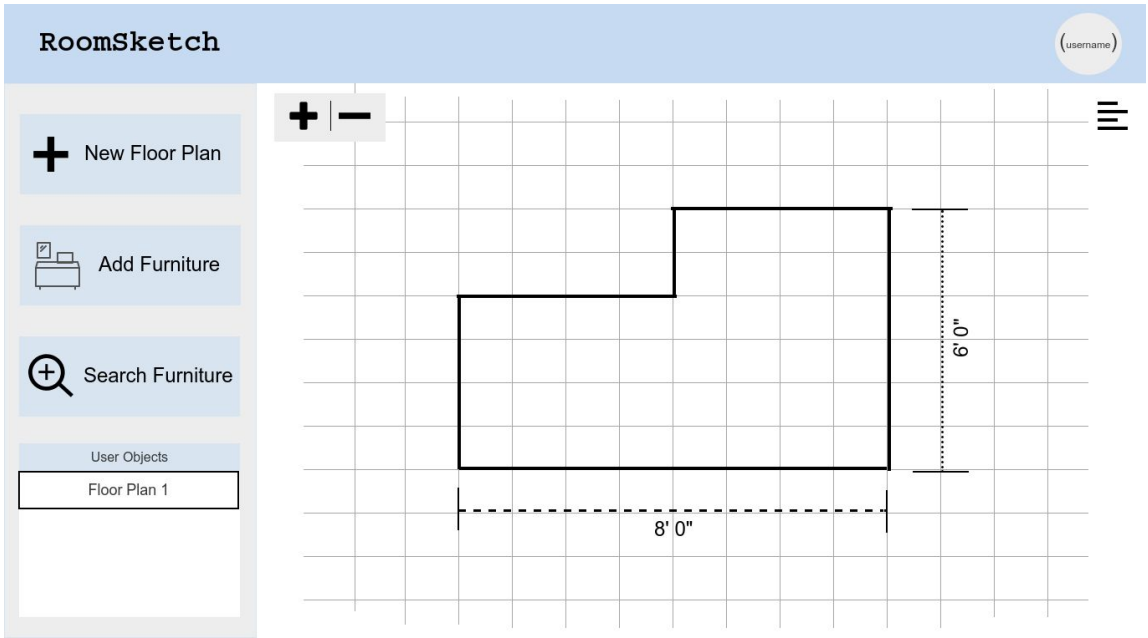
Creating a profile



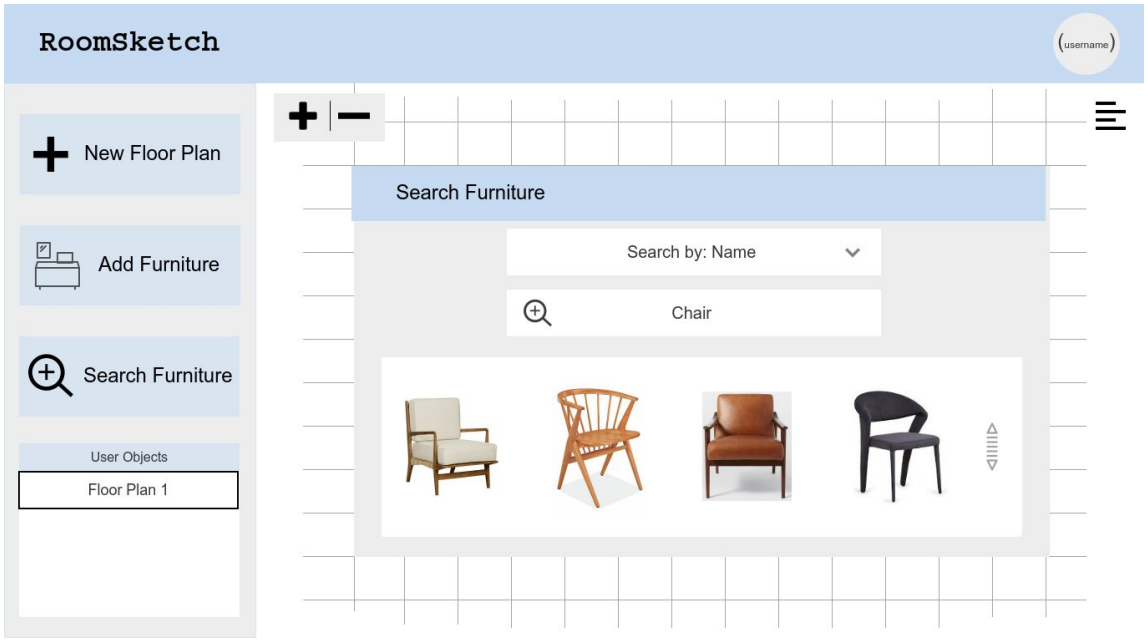
Creating a new floor plan



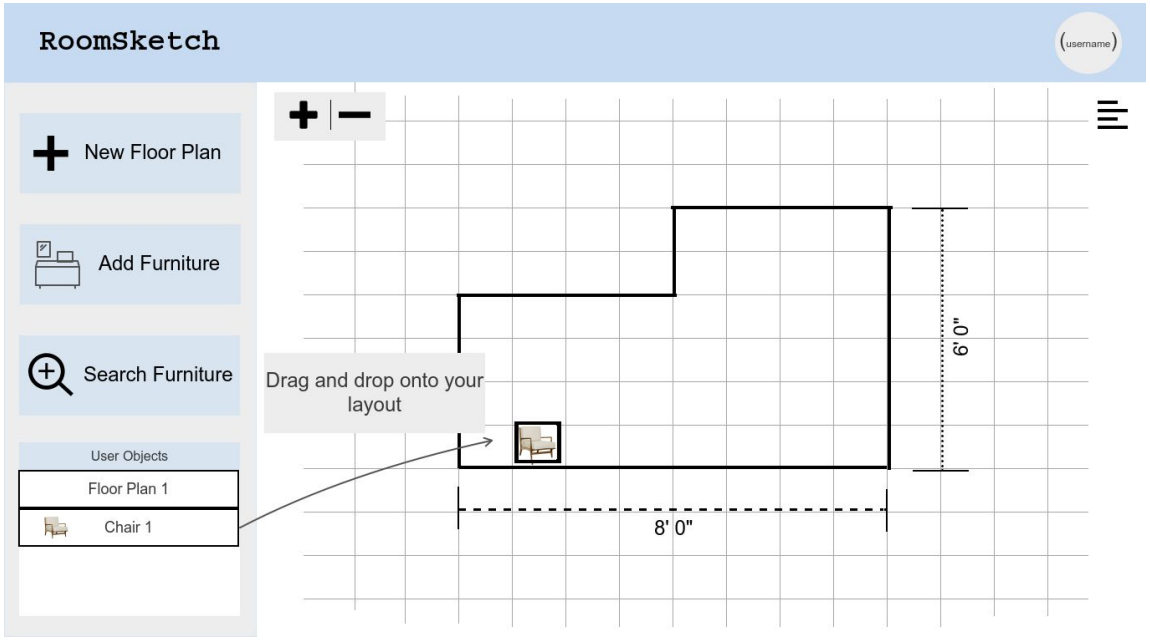

RoomSketch
(username)
New Floor Plan
Add Furniture
Search Furniture
User Objects
Floor Plan 1
Click and drag to draw your lines
Name your new floor plan


RoomSketch
(username)
New Floor Plan
Add Furniture
Search Furniture
User Objects
Floor Plan 1
6' 0"
8' 0"

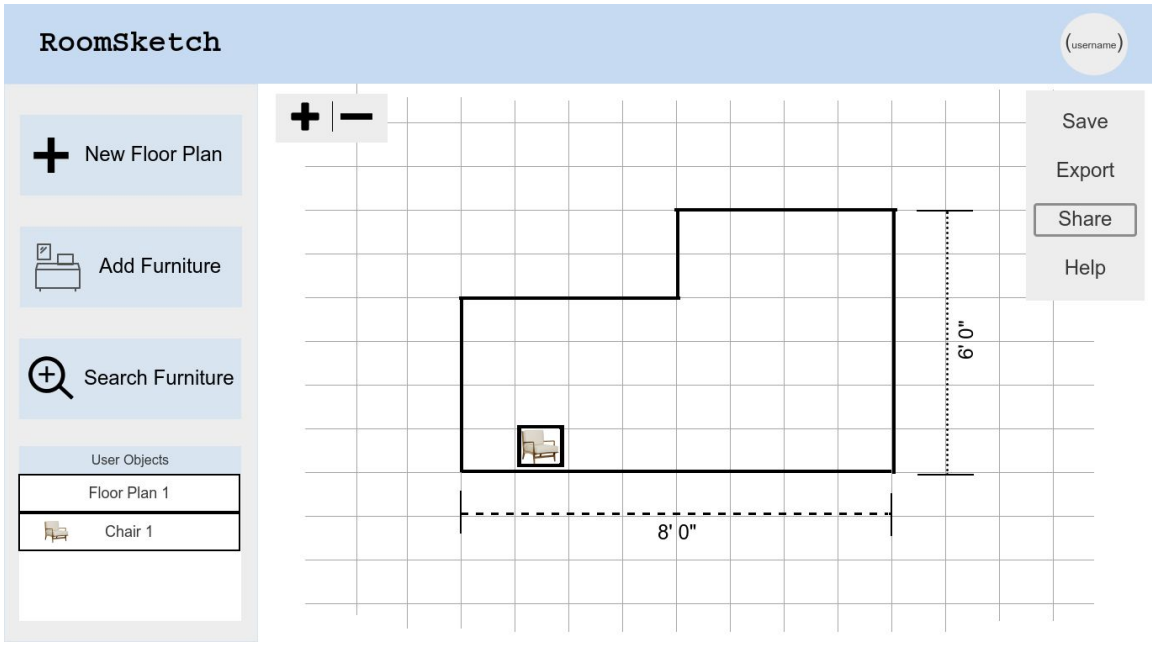
Search Furniture

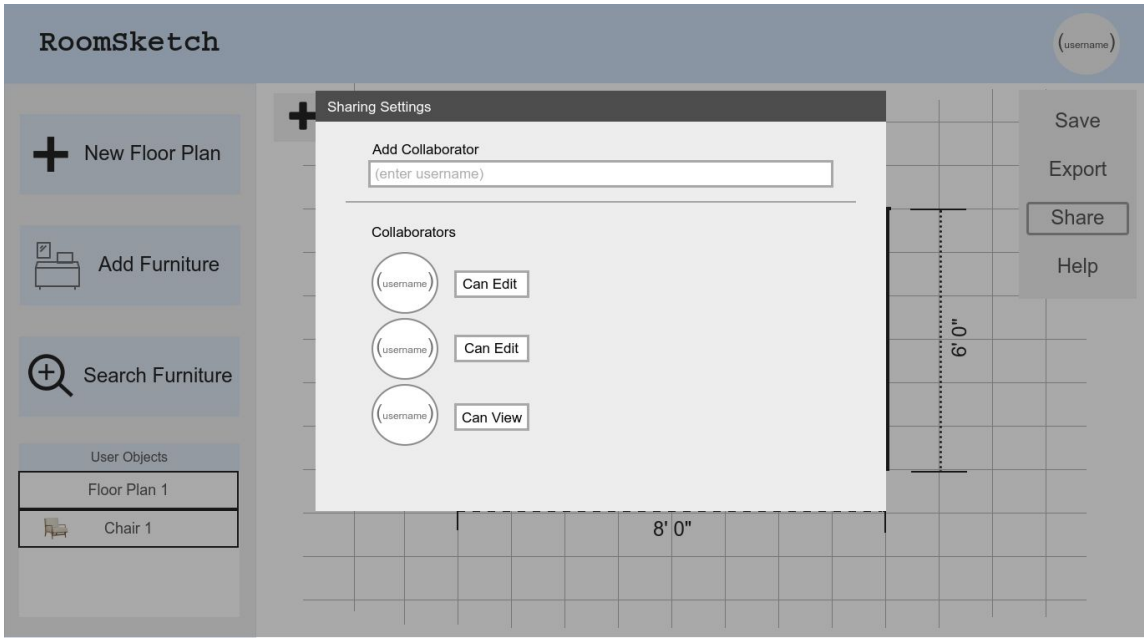


Placing Furniture

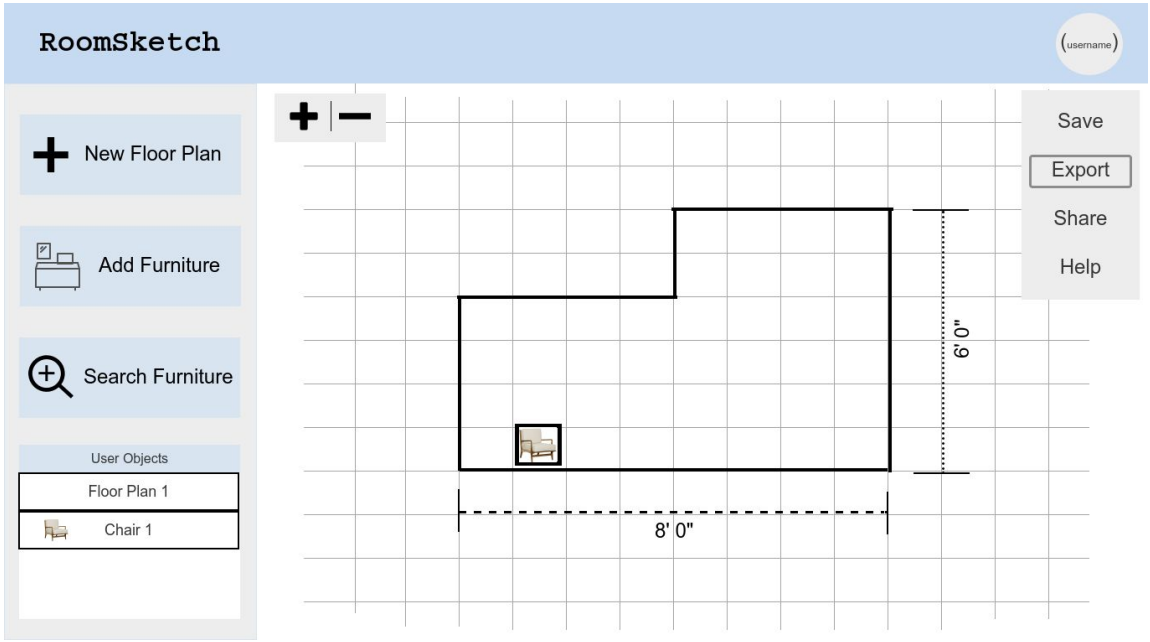


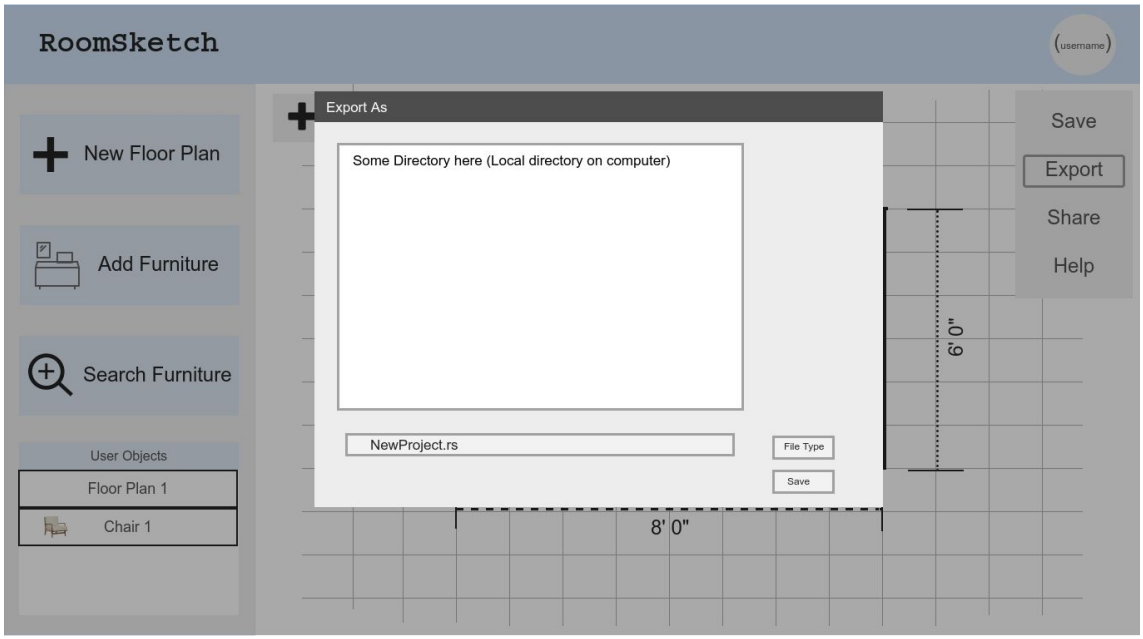
Share your floor plan with someone/ Sharing Settings



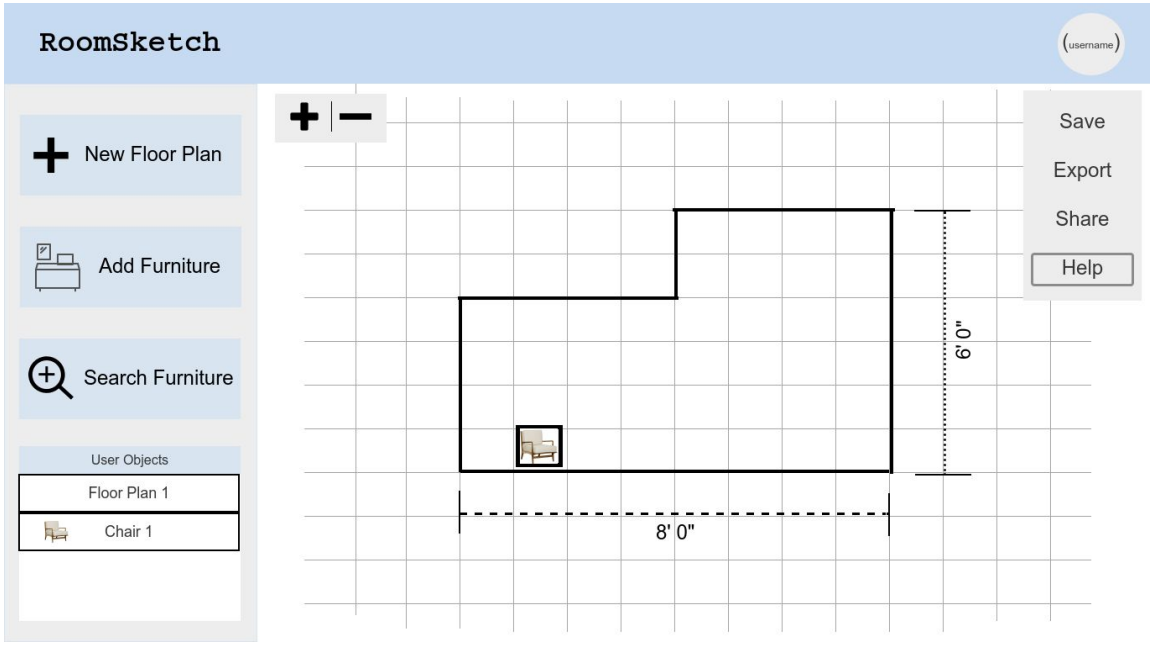


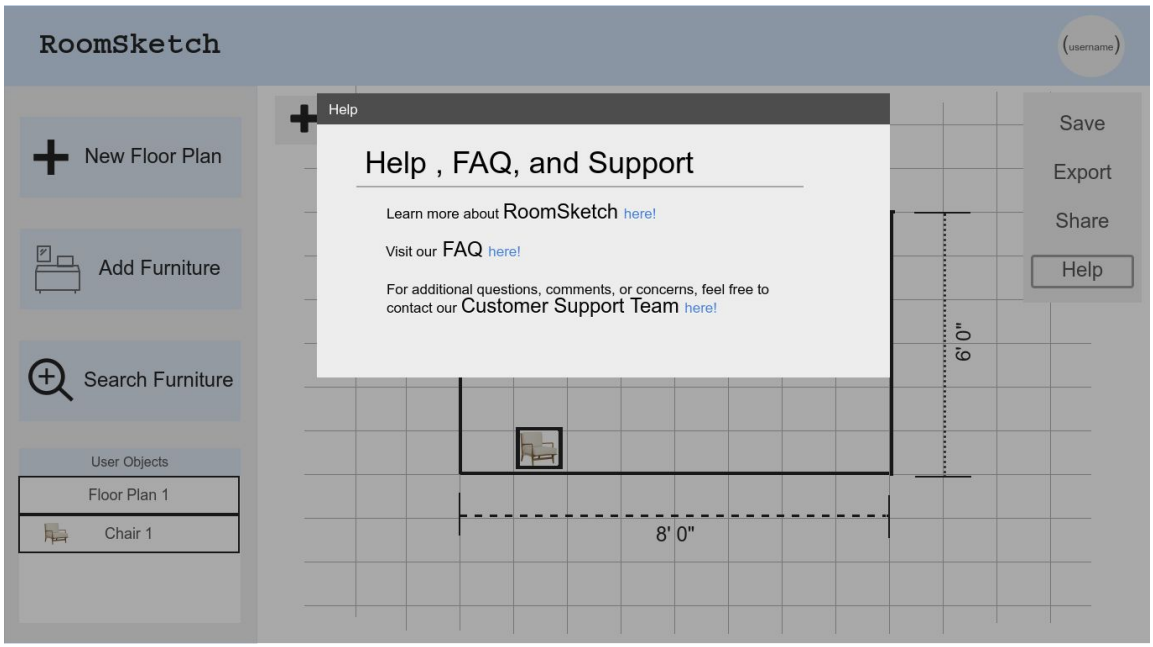
Save and export your floor plan. Layout for saving and exporting are the same with exception for the directory section which will either contain the directory of documents on the website or local ones on the user's computer.


RoomSketch
(username)
New Floor Plan
Add Furniture
Search Furniture
User Objects
Floor Plan 1
Chair 1
Save
Export
Share
Help
6' 0"
8' 0"


RoomSketch
(username)
New Floor Plan
Add Furniture
Search Furniture
User Objects
Floor Plan 1
Chair 1
Export As
Some Directory here (Local directory on computer)
NewProject.rs
File Type
Save
Save
Export
Share
Help
6' 0"
8' 0"

Help Pages


RoomSketch
(username)
New Floor Plan
Add Furniture
Search Furniture
User Objects
Floor Plan 1
Chair 1
Save
Export
Share
Help
6' 0"
8' 0"


RoomSketch
(username)
New Floor Plan
Add Furniture
Search Furniture
User Objects
Floor Plan 1
Chair 1
Help
Help , FAQ, and Support
Learn more about RoomSketch here!
Visit our FAQ here!
For additional questions, comments, or concerns, feel free to contact our Customer Support Team here!
Save
Export
Share
Help
6' 0"
8' 0"

ANALYTICAL RESEARCH QUESTIONS | HEURISTIC ANALYSIS

Questions:

1. Does our system provide feedback to the user so they know what is happening? How so?
2. Does our system use terms and concepts that are common to the real-world? Are we avoiding jargon and system-oriented terms?
3. Is our system easy to navigate?
4. Is our design consistent?
5. Does our system avoid user error when possible? Do we provide enough clear information to the user so they can understand and resolve the issue?
6. Are the icons we use intuitive? Are tasks and icons clearly labeled?
7. Is our site intuitive to use? How long does it take for the user to perform a basic task (i.e. create a layout)?
8. Did we design the website with only the necessary items displayed? Did we avoid the use of irrelevant information?
9. If an error occurs do we provide a solution? Is the solution easy to follow and understand?
10. Can the user find help when they need it? Is the help section concise and complete?

Tasks:

1. Profile creation
    a. Click “Login”
    b. Click “Create Profile”
    c. Fill out user info on the next screen. And then click “Create Profile”
    d. You will be redirected to the home page and will be logged in under the newly created user profile.
2. Layout creation
    a. Click the “+” button to create a new floor plan document.
    b. Give your floor plan a name and click “Next”
    c. Click the “+” button and choose “New Floor Plan” to create a new surface.
3. Furniture search
    a. Click the furniture icon to search objects. You can then choose to “Create New Object” or “Search Objects”
    b. “Search Objects” will let you type in a name or attribute of the furniture object and return matching or similar recommended results.
4. Furniture placement on the layout
    a. After either “Creating New Object” or selecting a pre

existing object (search option), click “Add Object” to add the furniture object to your floor plan.
   b. You will be redirected back to your floor plan and able to click/drag your furniture object.

5. Learning using the help documentation

   a. Click the options button near the top right hand corner and click the “help” option.
   b. This will redirect the user to our documentation and FAQ as well as how to contact support.

6. Exporting or sharing the layout

   a. Click the options button and click “save” to save the floor plan document to save it on the website. You will be prompted to give it a name if you haven’t already.
   b. Click the options button and “Export” to save the document to your personal computer.
   c. Click the options button and “Share” OR the lock icon to change sharing settings. You can add a user, make a file private, or make it public.

EMPIRICAL RESEARCH | USER EVALUATION FORM

Have the user walk through all tasks and take notes with focus on the following:

- Talk with the user throughout the demo.
- Note their reactions:
    - This includes both vocal responses and behaviour observed.
    - Do they have any questions or confusion about the design?
    - What do they find positive and/or negative about the design and function?
    - How long did it take for them to navigate? Was anything too difficult? Do they ever seem frustrated?
- Were they able to finish the task given? Why or Why not?
- Are any tasks unnecessary?
- Do we need to add more functionality/more tasks to make other tasks more intuitive?

Tasks to Evaluate:

Task 1: Create a profile.

Task 2: Create a new floor plan

Task 3: Create a new piece of furniture and place it

Task 4: Search for a piece of furniture and place it.

Task 5: Share your floor plan with someone.

Task 6: Save and export your floor plan.

Follow Up Discussion:

- Ask about the user's opinion of the interface. This includes appearance, functionality, ease of access, and learnability.
- Ask about areas that seemed more frustrating. Why were some areas more confusing or harder to use? What can we improve?
- Ask additional questions based on reactions noted above.

CONTRIBUTIONS

Alison Jones, Visual Design:

- Analytical Research Tasks
- Empirical Research/User Evaluation
- Part of the Prototype
- Completeness: 5

Victoria Dmyterko, Leadership:

- Abstract
- Introduction
- Analytical Research
- Document set-up
- Part of the prototype
- Completeness: 5

Jonathan Chen, Writing:

- Empirical Research Description
- Completeness: 4

Zhuohong Gu, User Communication:

- Empirical Research Description
- Completeness: 4