

When users are stuck on a question as they often times replied with “I don’t know”, I would ask them specifics which elicited a response. We know guiding users into a direction is not a good practice, however, when the responses are “I don’t know” and minutes of awkward silence then asking them about specific features and ideas are the only way to resume discussions.

	UI/UX Designer (Kathy Su)	Software Developer (Rachel Li)	Average student (kinesiology major roommate) (Andrew something, don't know his last name he's a Masters Kin student)	Shohreh Raoofi: pharmaceutical scientist	Yasaman Barzegar: Data Analyst, and painter
From the list of default features present. Would you use this application? Why or why not?	<ul style="list-style-type: none">- Would not use- Does not fit any specific need of theirs- Ideally would want more features (written down in future sections)	<ul style="list-style-type: none">- Yeah if they needed a quick notepad to document something- If it is performant and easy to use then she would use it- If startup time is quick	<ul style="list-style-type: none">- No- Already have other apps for simple doodling tasks- Would be too complicated of a userflows for the features present<ul style="list-style-type: none">- Have to login- No export as image/pdf- Offline mode would fix this	<ul style="list-style-type: none">- No- Alternatives such as MS Paint on her Surface Pro exist- Same reasoning as Average student<ul style="list-style-type: none">- Too complicated- Have to login- Missing features- Offline mode would fix some of these why not	<ul style="list-style-type: none">- No- Microsoft Draw exists- Similar reasoning to “Average student”<ul style="list-style-type: none">- Same reasoning as Average student- Too complicated- Have to login- Missing features
From the list of additional features, which do you look forward to the most? (List of the Additional features present on course website)	<ul style="list-style-type: none">- Save and restore states and cloud storage. Helpful when brainstorming, collaborating, and iterating.- Also export as image/PDF.- Permissions and annotations	<ul style="list-style-type: none">- Themes because they cannot stand light-mode- Specialized tools, class diagram templates, etc.- Export as Image/PDF	<ul style="list-style-type: none">- None excite him too much- Likes export and save/restore features but says they are more essential and not extras	<ul style="list-style-type: none">- Export as Image/PDF- Saving and being able to work on it again in the future. Mentioned how offline saves are sufficient but online backups would be appreciated.	<ul style="list-style-type: none">- Export as Image/PDF- Dark-mode/custom themes
How often do you use whiteboard applications. An example being FigJam.	<ul style="list-style-type: none">- Don't use “whiteboarding” applications that much but uses similar software such as Figma and Notability. Essentially uses a whiteboard application with plenty of extra features- Uses Figma almost everyday at co-op- Uses Notability almost everyday on school terms	<ul style="list-style-type: none">- Uses them a lot during remote technical discussions in conjunction (example given was being told how the microservice architecture changes should look)- Uses OneNote when studying DS&A. Says it is helpful because you can put mathematical notation, diagrams, and hand written notes side-by side- Also uses them when studying for school- Says whiteboard and similar applications are essential to her daily life.	<ul style="list-style-type: none">- GoodNotes user and former OneNote user- Has not heard of FigJam or Figma- Uses everyday for notetaking and used to use them when tutoring- Plays Skribbl which is a whiteboard based game	<ul style="list-style-type: none">- When she was a student (recently), not so much anymore- Only uses them to doodle occasionally (she estimated it as once a month)	<ul style="list-style-type: none">- Prior to painting they use the microsoft draw app to doodle- Does not use it professionally
What are some essential features that you think whiteboard	<ul style="list-style-type: none">- Said custom components/shapes that you can save and reuse- Export as an SVG if possible	<ul style="list-style-type: none">- A code block component/widget along with the default text widgets- Wants a code runner (was	<ul style="list-style-type: none">- Import images- Shape guesser. GoodNotes has this feature. You attempt to draw a shape and something	<ul style="list-style-type: none">- A bit out of scope but they wanted layer management like Photoshop. Essentially wanted the ability to draw on one layer, then put a layer on top,	<ul style="list-style-type: none">- Ability to customize drawing tools. Custom diameter's, opacity, etc- Infinite zoom in and infinite zoom out- Infinite scroll

applications should have, excluding previously mentioned items?	<ul style="list-style-type: none">- Some sort of history and undo feature	<p>hesitant because was unsure of security/backdoor concerns)</p> <ul style="list-style-type: none">- Some sort of version control/history- Ability to fire up a multi-user session without creating an account<ul style="list-style-type: none">- Would you like it to persist forever?- Answer: No it gets deleted some time after inactivity- How long after inactivity?- Answer: An hour	<p>guesses it. It also straightens your lines when using this feature.</p> <ul style="list-style-type: none">- Needs to be cross platform (including mobile)<ul style="list-style-type: none">- NOTE: Out of scope but interesting to consider	<p>then be able to make them opaque</p> <ul style="list-style-type: none">- Wanted to use the above feature to screen record herself making a slideshow of her drawings- Also wanted to use it to trace imported images- Assumed image imports would be added and upon being told it is not in the spec, requested it to be added	<ul style="list-style-type: none">- Being able to export only specific portions of whiteboard- History/undo feature incase mistakes are made when drawing
<p>Online collaboration interactions:</p> <ol style="list-style-type: none">1. Undo feature, how would it work2. If you are editing a component such as a drawing, text, etc. How would you expect others attempting to modify it to work	<ol style="list-style-type: none">1. Would only be able to undo their own actions<ol style="list-style-type: none">a. What if someone did something inbetween ur actions?b. Answer: Cannot undo past thatc. Explanation: User A can only undo until their actions have been undone, if another action exists then they lose the ability to undo past that point2. Would like it to not allow others to modify what they are modifying with the exception of a text component that is meant for multi user collaboration. Then a Google-Docs style text collaboration would be appropriate.<ol style="list-style-type: none">a. What do you define as something you are currently modifying? Suppose you are modifying a collection of components close to each other. Some squares and arrows that are all “connected”, should users be able to modify any part of it if	<p>Same as Kathy Su except they disagree about the connected components portion. They believe that in a connected structure that you should only be able to restrict modifications to the piece you are selected on.</p>	<p>Indifferent about these features. However, the same as Kathy Su. When presented with Rachel's ideas they stated that either way works and that they do not care.</p>	<p>Same as “average student”</p>	<p>Same as “average student”</p>

	you are working on it? b. Answer: If components are connected, then others should not be able to modify it.				
What would dissuade you from using a whiteboard application?	<ul style="list-style-type: none">- Missing features I want- No sync or storage- No custom components- If it were too demanding and slow	<ul style="list-style-type: none">- If missing it's text and shapes with text components- Lack of arrows- Laggy<ul style="list-style-type: none">- Cares about performance of their own actions, do not care too much about how long it takes to update- If it's missing sync, storage, or exporting as image/PDF	<ul style="list-style-type: none">- If it is too complicated to use- If missing image imports- If missing export as image/PDF- Too slow<ul style="list-style-type: none">- Cares about performance of their own actions, do not care too much about how long it takes to update	<ul style="list-style-type: none">- Poor performance- Too complicated and too many buttons	<ul style="list-style-type: none">- Wants to express creativity and draw detailed images, hence why software that does not allow this would dissuade her- Poor performance- Crashes where her work is lost<ul style="list-style-type: none">- Mentioned auto-save would be essential to her

Takeaways:

1. Exporting as image/PDF is essential
2. Cloud storage/sync is a very nice to have
3. Don't bother with class diagram tools and such. Implement a generic component/shape maker so all demographics can benefit. Furthermore, we can define these components ourselves using our tooling and make them publicly available.
4. Performance is key but performance of the application itself, server related delays are okay.
5. Users stressed the importance of custom components and importing images
6. Users also discussed how they want to invest varying amounts of time to understand the tool. More advanced users such as designers and developers wanted something that would fit as many needs as possible. Meanwhile students and others just wanted something that “works” and did not request too many complicated features.
 - a. Both types of users responded well to a “advanced mode” feature. By default the application would be simple but a toggle to switch the interface was supported so long as it was easy to find for non-advanced users in the event they accidentally toggle it on.
7. For the base product without additional features, users dislike how cumbersome it seems like the userflow would be. Forcing registration appears to be a no-no. Users requested a fully offline mode without registration.

Personas explored via interviews:

1. UI/UX Designer, essentially someone in a more creative job
2. Software Developer, someone in a technical field with lots of visual technical diagrams
3. Students/individuals interested in learning
4. Individuals who would normally not use whiteboards
5. An artist/creative person