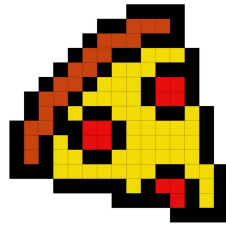


Art²

David Castro, Marie Chu, Becky Miller, and Leyth Toubassy

“Learn Art and Build
your Community –
One pixel at a time”



Problem

People don't continue art after formal education because it is time consuming and they aren't good at it. This makes them hesitant to share their work with others since they're not proud of their art.

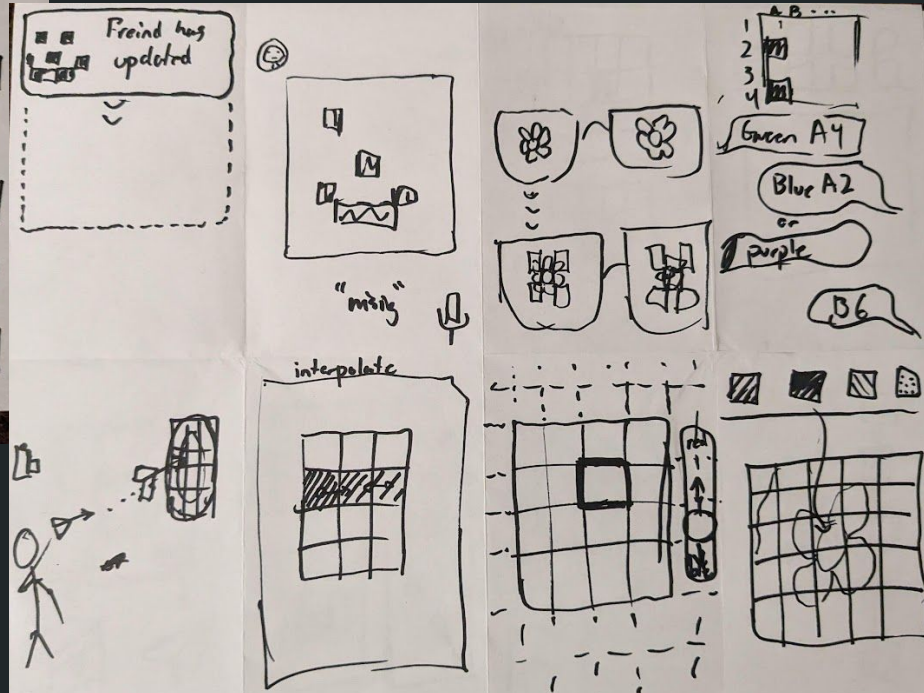
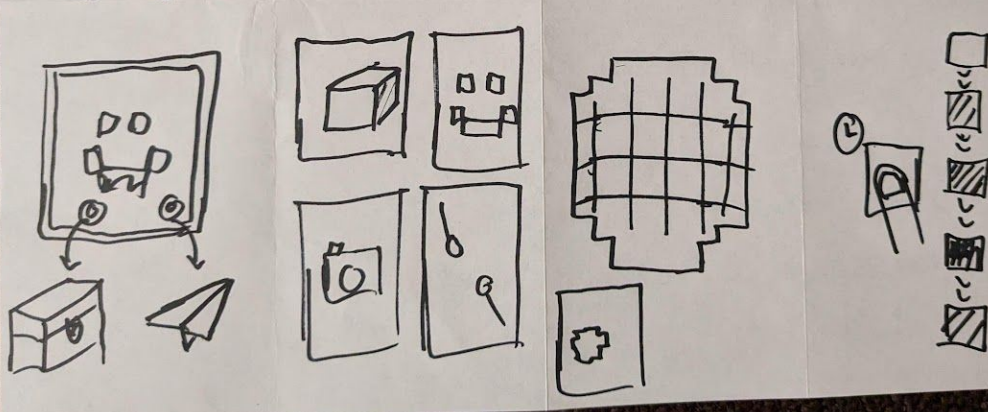
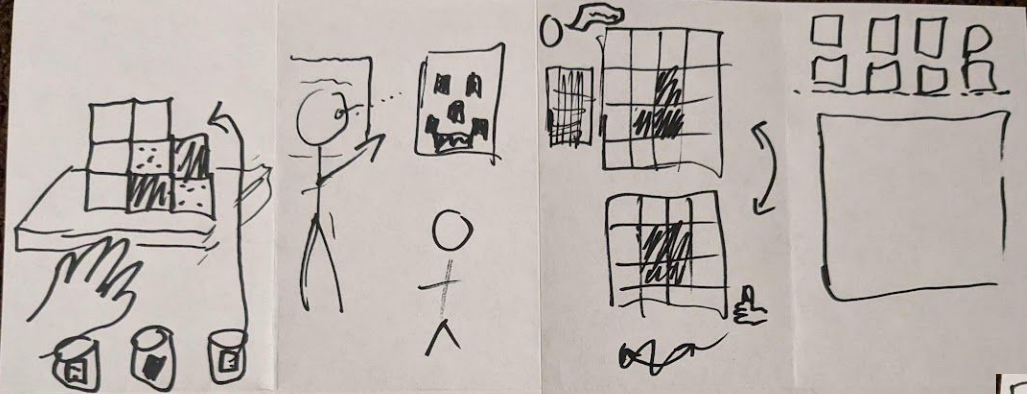
Solution

App that allows users to learn an artistic medium with a lower barrier to entry (pixel art) and collaborate with others to build a community.

Roadmap

1. Concept Sketches
- 2-3. Realizations
4. Task Flows
5. Storyboards
- 6-7. Testing
8. Discussion

1. Concept Sketches



Hand-drawn sketches and notes on a sheet of paper:

- Top Left:** A box labeled "Marketing Strategy" with a sub-note "What are I want to do?". Below it are several small icons and a grid.
- Top Middle:** A calendar icon and a small diagram with a box and a circle.
- Top Right:** A box labeled "ideas" with a sub-note "look what I need comma". Below it are several small icons and a grid.
- Middle Left:** A box labeled "Bio page" with a sub-note "save name of page". Below it are several small icons and a grid.
- Middle Middle:** A box labeled "FAQ" with a sub-note "video". Below it are several small icons and a grid.
- Middle Right:** A box labeled "different templates" with a sub-note "video simple". Below it are several small icons and a grid.
- Bottom Left:** A box labeled "E Collectable" with a sub-note "save". Below it are several small icons and a grid.
- Bottom Middle:** A box labeled "Tips" with a sub-note "1000 likes". Below it are several small icons and a grid.
- Bottom Right:** A box labeled "Can't feature as water" with a sub-note "check". Below it are several small icons and a grid.

Hand-drawn sketches and notes on a sheet of paper:

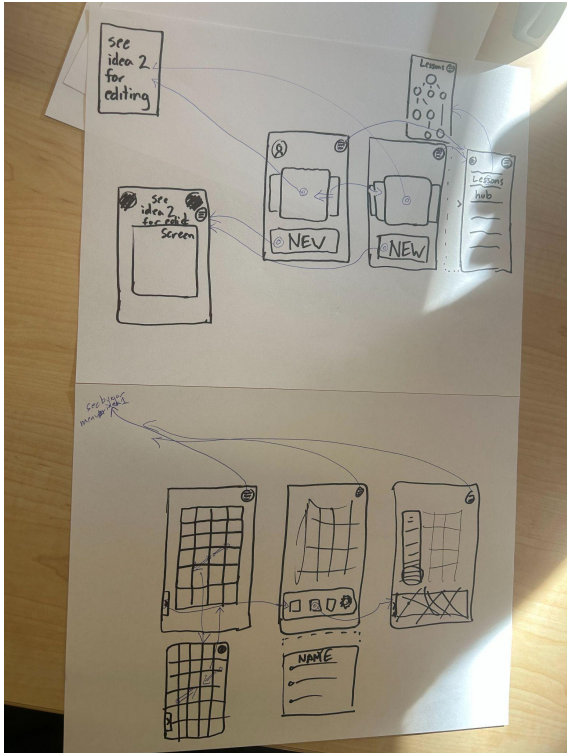
- Top Left:** A box labeled "ARE'S" with a sub-note "VOICE learning today!". Below it are several small icons and a grid.
- Top Middle:** A box labeled "video" with a sub-note "DRAWING can do me". Below it are several small icons and a grid.
- Top Right:** A box labeled "FAQ" with a sub-note "video". Below it are several small icons and a grid.
- Middle Left:** A box labeled "video" with a sub-note "video simple". Below it are several small icons and a grid.
- Middle Middle:** A box labeled "different templates" with a sub-note "video simple". Below it are several small icons and a grid.
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- Bottom Right:** A box labeled "Can't feature as water" with a sub-note "check". Below it are several small icons and a grid.

Hand-drawn sketches and notes on a sheet of paper:

- Top Left:** A box labeled "Your turn to draw!" with a sub-note "wants to draw with you!". Below it are several small icons and a grid.
- Top Middle:** A box labeled "What's doing?" with a sub-note "Pick a lesson!". Below it are several small icons and a grid.
- Top Right:** A box labeled "Decide what to draw!" with a sub-note "Practice a circle". Below it are several small icons and a grid.
- Middle Left:** A box labeled "Your turn to draw!" with a sub-note "wants to draw with you!". Below it are several small icons and a grid.
- Middle Middle:** A box labeled "What's doing?" with a sub-note "Pick a lesson!". Below it are several small icons and a grid.
- Middle Right:** A box labeled "Decide what to draw!" with a sub-note "Practice a circle". Below it are several small icons and a grid.
- Bottom Left:** A box labeled "Quick draw your character!" with a sub-note "+ Free Draw". Below it are several small icons and a grid.
- Bottom Middle:** A box labeled "Red 7:30 Blue 4:30". Below it are several small icons and a grid.
- Bottom Right:** A box labeled "Practice a circle" with a sub-note "Practice a circle". Below it are several small icons and a grid.

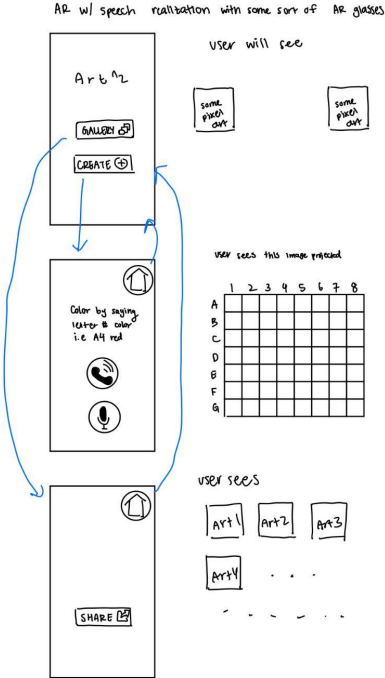
2&3. Realizations

Realization One



- Pros:
 - Only requires phone
 - Can use it on the go (i.e. in noisy environments)
 - Faster for the general population (tap versus voice)
- Cons:
 - Not as accessible for those with loss of motor control in fingers
 - Smaller “real estate” due to screen size
 - Less immersive

Realization Two



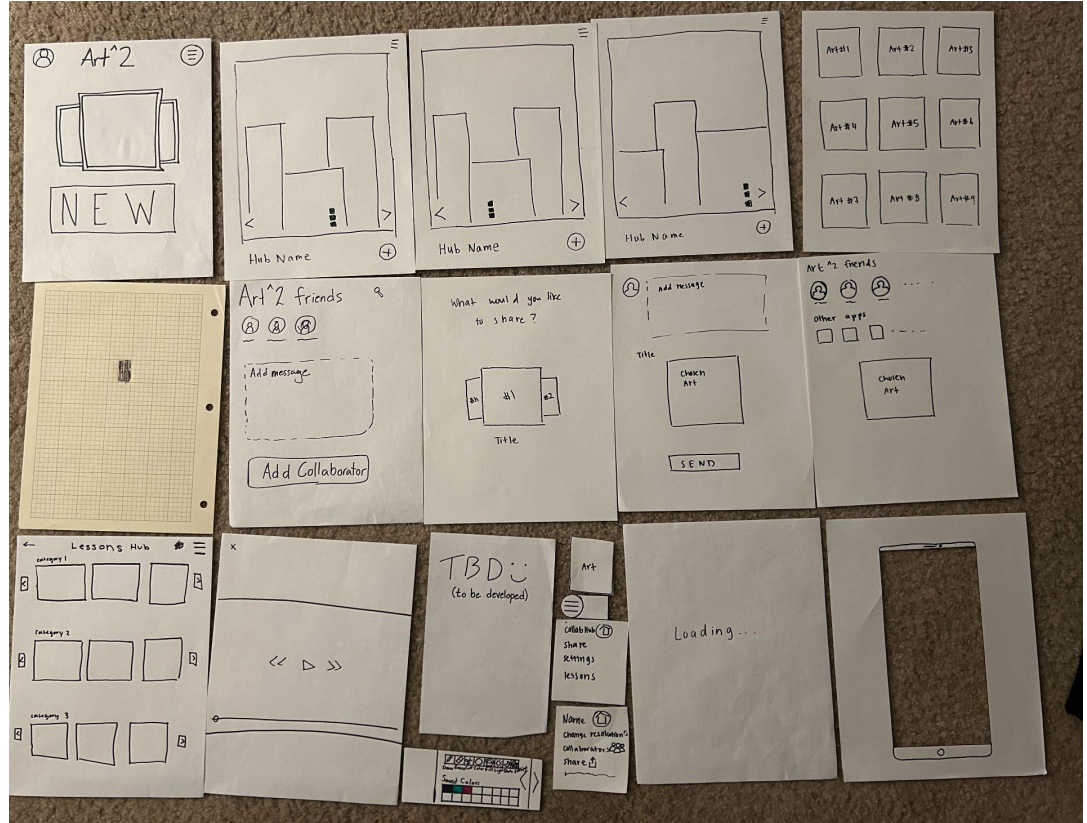
- Pros:
 - Simple
 - Accessible for those with motor control issues
 - More “real estate” (can project pixel creation grid into the real world)
 - More immersive experience
- Cons:
 - Doesn't allow users to choose specific shades of color
 - Needs additional AR accessories
 - Cannot use app in noisy environments
 - Difficult for those with speech impediments

Choice: realization
one

4. Lofi-Prototype

Lofi-prototype Construction

- Built with paper
- One screen per page
- Main screens:
 - Home
 - Drawing Canvas
 - Lessons
 - Gallery Hub

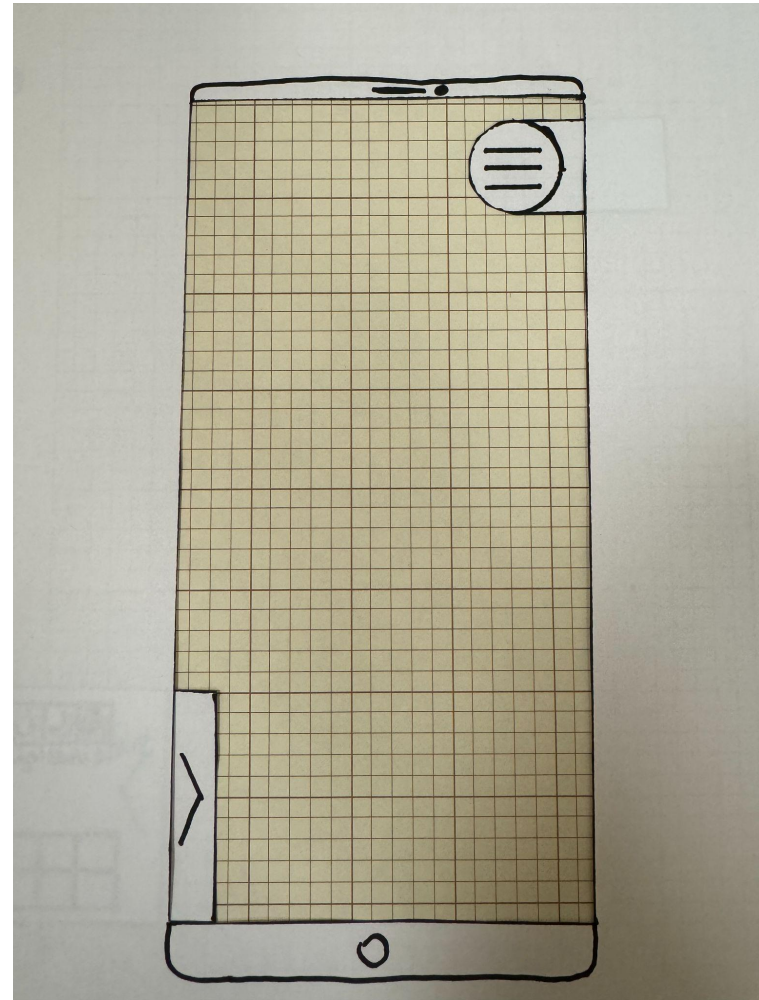


Lofi Prototype Challenge

How do we make a pixel art drawing app out of paper?

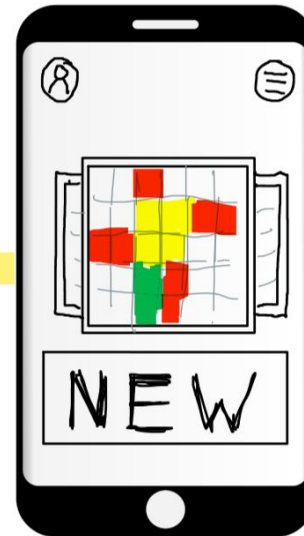
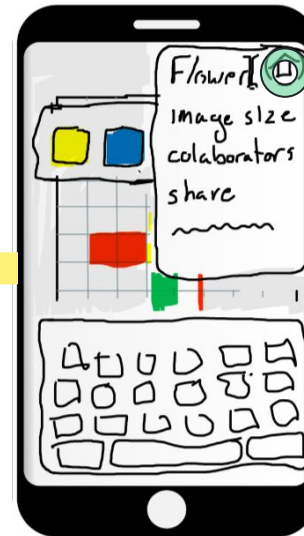
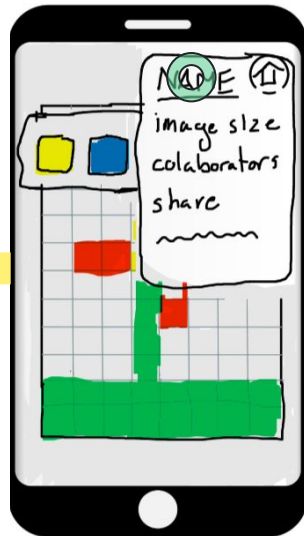
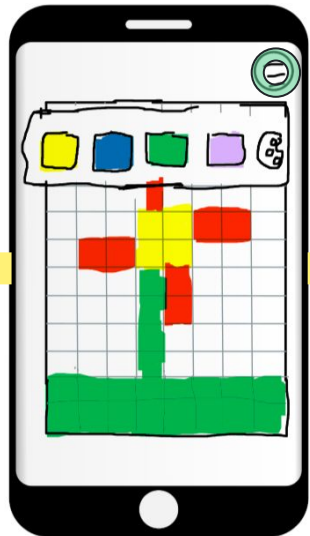
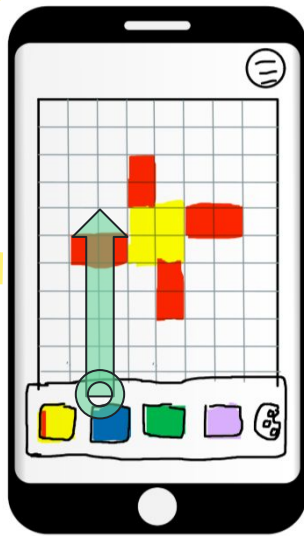
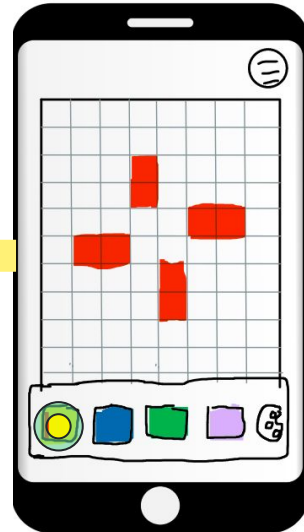
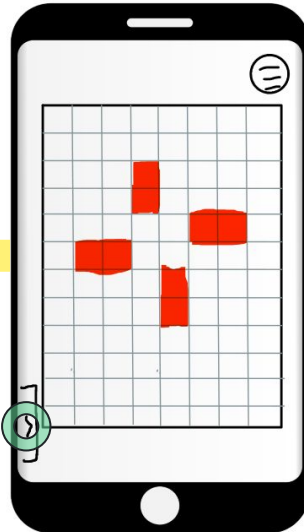
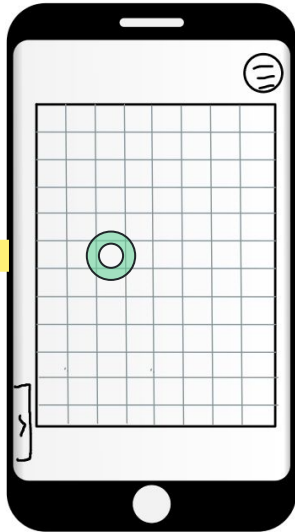
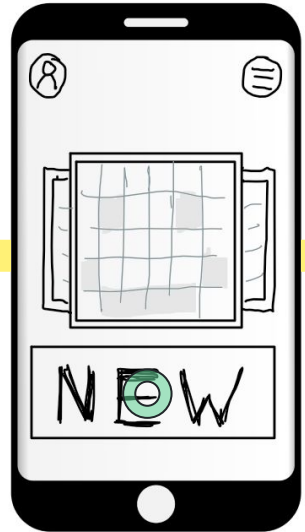
Graph Paper and a Pen!

Our drawing screen acted as an overlay for a piece of graph paper, so our participants could actually draw.

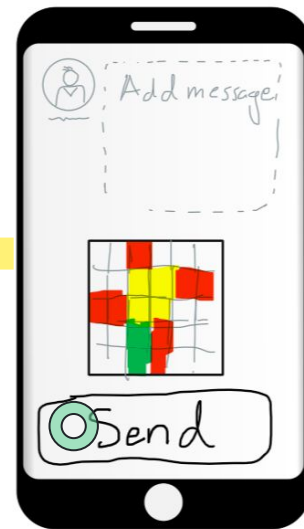
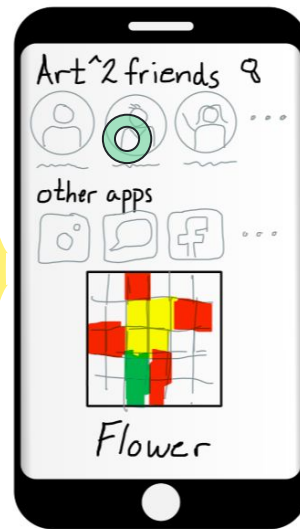
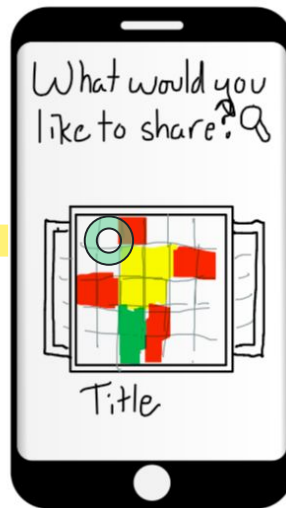
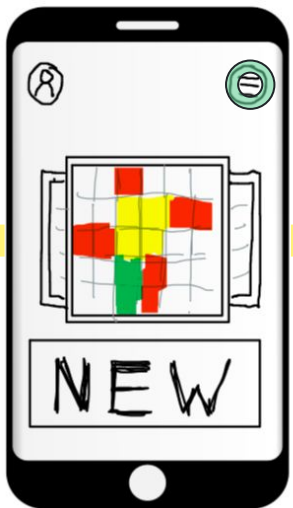
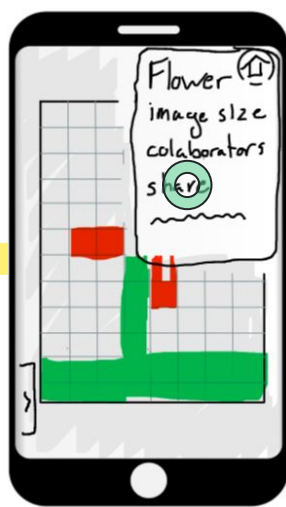
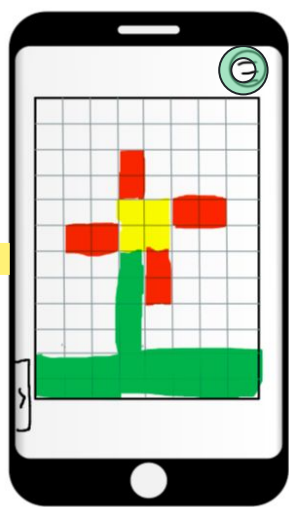
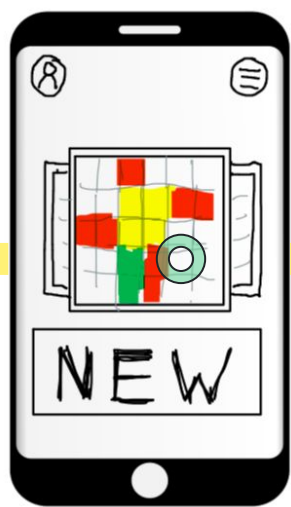


5. Task Flows

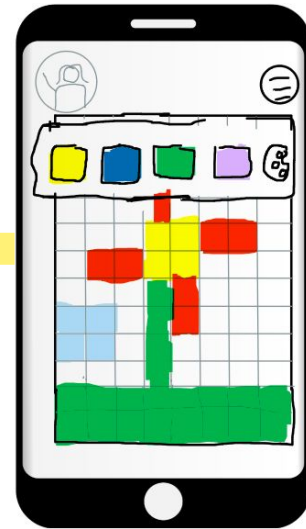
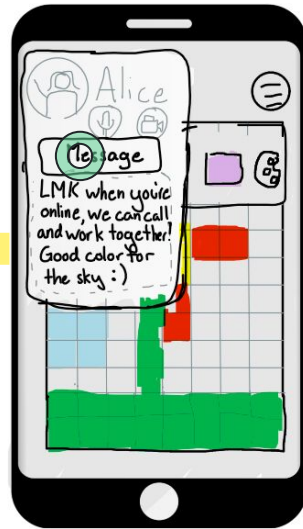
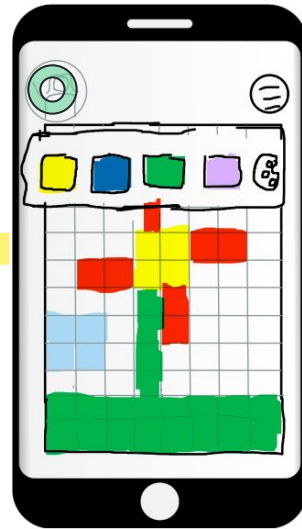
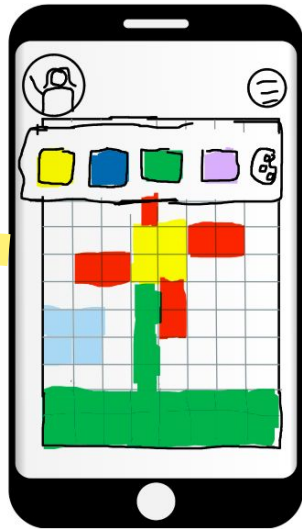
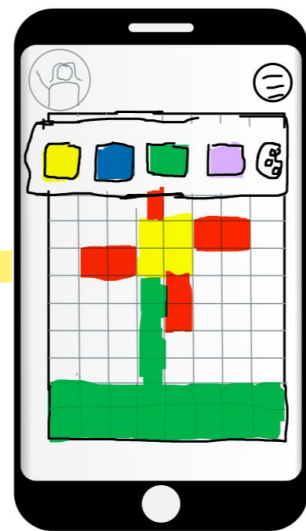
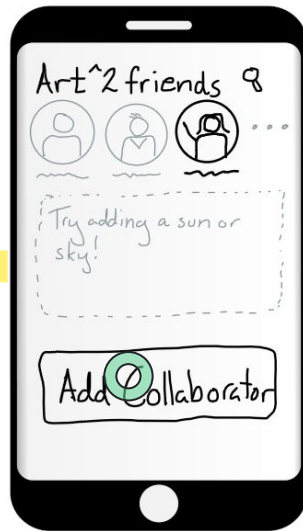
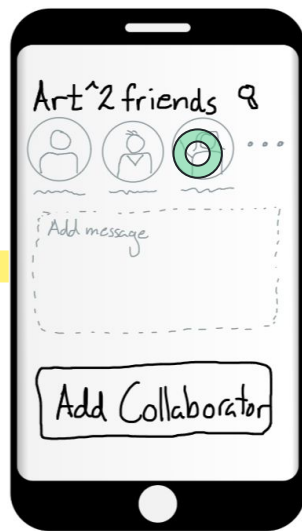
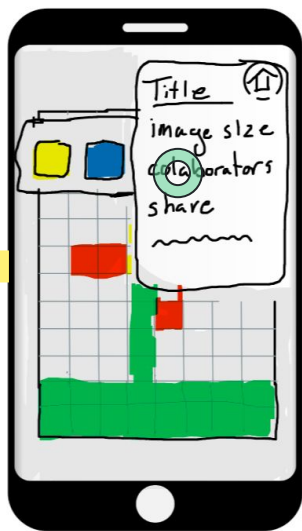
Task #1: Create a Piece



Task #2: Share Your Work



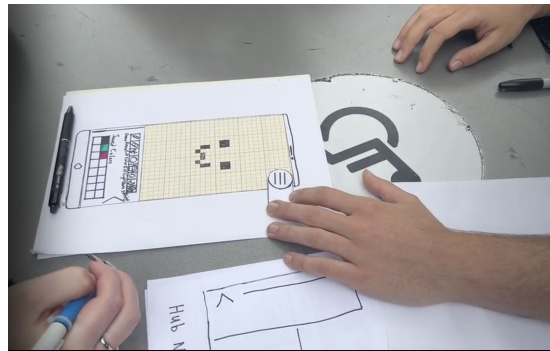
Task #3: Collaborate



6&7. Testing

Testing Methodology

- Participant Demographics:
 - 2 in Finance
 - Non-college Adult
 - Founder of two startups
- Recruitment:
 - Greeter asked individuals if they would be willing to assist Stanford students in testing an app idea
- Environment
 - Outdoor seating area at Stanford Shopping Center
- Apparatus
 - Lofi Paper Prototype
 - A pen
- Tester Roles
 - Greeter: David, Facilitator: Leyth, Computer: Becky, Notetaker: Marie



Test Procedure and Metrics

- Give participants high level task descriptions
 - Make a drawing, share it, and add a collaborator
- Participant Attitude
 - Generally Positive
- Irrelevant buttons pressed
 - Generally not many
- Time per task
 - A few seconds for all tasks

Testing Results (The Bad)

- People care about customization
 - One user immediately wanted to change their avatar
- Universal Icons are important
 - Two users remarked that the share button took longer to find because the universal symbol was not initially present
- Non-main task items were confusing
 - In the gallery hub one user noted that “she had no idea what was going on” (might be clearer with actual pixel art in it)

Testing Results (The Good)

- Participants had fun
 - Said it was a good change of pace from the rest of their day
- Main tasks were relatively easy
- People like the ability to add friends
- Easy to follow UI
 - Once users got to the main art screen, they were able to find menu options easily

8. Discussion

Findings

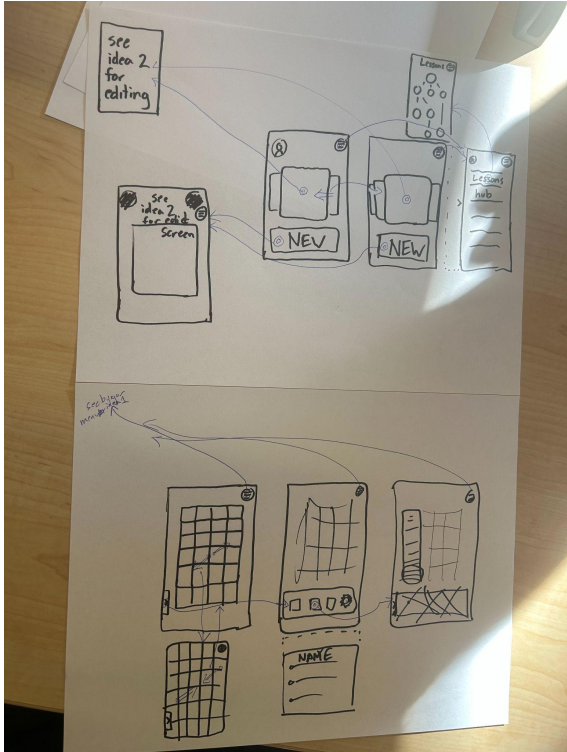
- People enjoy the core product
 - Yay!
- Home menu and iconography need some clarification
 - The task flows were intuitive to users, but they couldn't always find the buttons they wanted, even if they existed
- Toolbar may be too robust
 - Many of the tools have very specific use cases, and would not be necessary for most users
- Features outside the drawing
 - Profile customization for the app, social features

What couldn't we test?

- Collaboration
 - We were able to test the collaboration menu, but not collaboration itself
- Use of user drawing on other UI elements
 - We couldn't add user drawings to the UI
- Lessons
 - Again, we were able to test the lesson menu, but not the actual lessons themselves

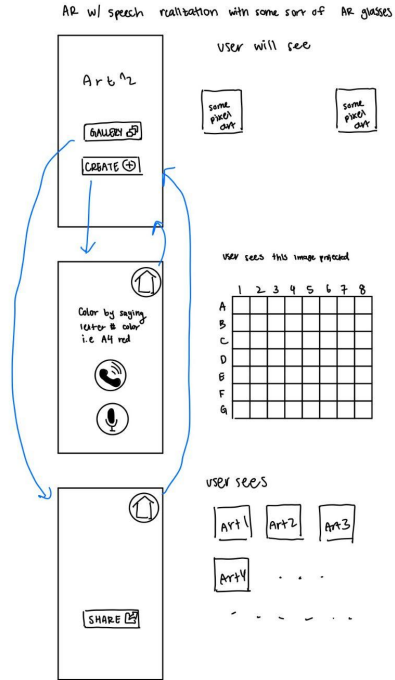
Appendix

Realization One



- Pros:
 - Only requires phone
 - More features
 - More aesthetically pleasing app
 - Can use it on the go (i.e. in noisy environments)
 - Faster for the general population (tap versus voice)
 - Allows user to customize resolution of pixel art, choose specific colors, etc.
- Cons:
 - Not as accessible for those with loss of motor control in fingers
 - Smaller “real estate” due to screen size
 - Less immersive

Realization Two



- Pros:

- Simple
- Accessible for those with motor control issues
- Easier for those with vision impairments
- More “real estate” (can project pixel creation grid into the real world)
- Allows user to see the “whole picture”
- More immersive experience

- Cons:

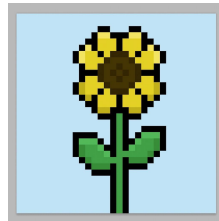
- Too simple
- Doesn't allow users to choose specific shades of color
- Needs additional AR accessories
- Cannot use app in noisy environments
- Difficult for those with speech impediments

Lofi Prototype (all screens)

[https://drive.google.com/drive/folders/1-24Z7r6oKbHY5xR3KF6wPZNwu95mtXXK?
usp=drive_link](https://drive.google.com/drive/folders/1-24Z7r6oKbHY5xR3KF6wPZNwu95mtXXK?usp=drive_link)

Script

We're trying to design an application for individuals to learn and express their creativity in art through pixel art. Here's a picture of pixel art (image below) if you're not familiar with it. We designed a paper prototype of our application that we wanted to test out with users first before building our application. you can interact with it by tapping , scrolling, etc just like you would on a normal phone. We had 3 tasks we wanted to test out and want you to use our prototype to achieve that task, speaking out loud as you perform the actions.



Log of critical incidents

- Participant #1
 - (2) Initially confused how he was supposed to draw (was trying to grab a pen)
 - (3) Drew normally instead of doing pixel art
 - (1) Couldn't find share button at first
- Participant #2
 - (2) Frustration over lack of supported features (i.e. avatar customization)
 - (4) Frustration over lack of clarity in gallery hub "I have no idea what's going on"
 - (2) Initially felt apologetic for not being good at art
 - (0) Afterwards enjoyment of creating pixel art
 - (1) Initially confused by the "title" on share selected art page
- Participant #3
 - (1) Didn't realize he was looking at a "home" screen for the app
 - (1) Couldn't find share button
- Participant #4
 - (2) Initially confused how he was supposed to draw (was trying to grab a pen)
 - (0) When asked to "share" he immediately clicked the menu button saying "I'm assuming it's somewhere standard like here"
 - (0) Immediately found collab flow also