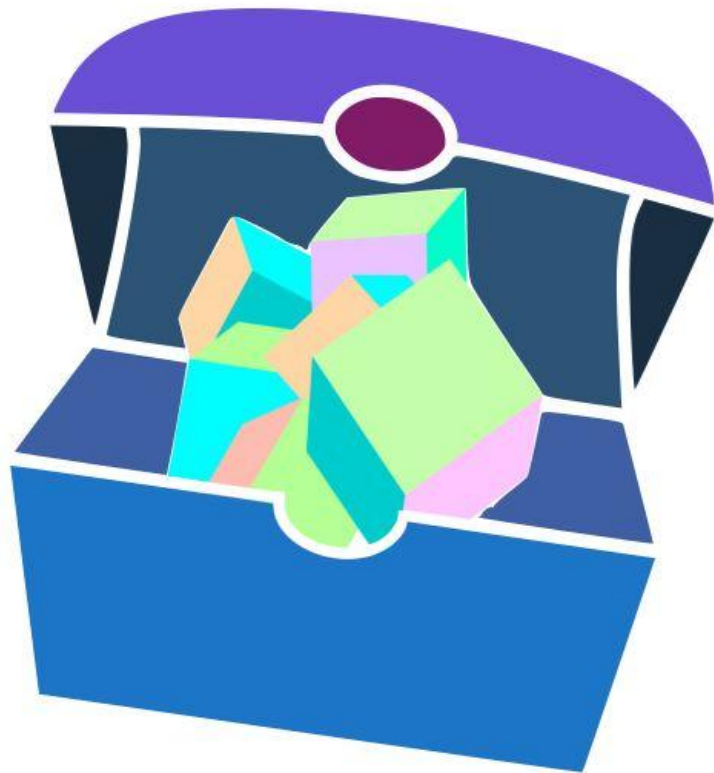


# *Trove*

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Treasure your  
memories.



# Our Team



Janine Fleming

Designer & Technical Writer

Janine is a senior studying STS with a focus on Comm and Media.



William Song Liu

Designer & Lead Engineer

William is a sophomore studying CS AI track. He loves game development, XR, and Web3!



Elizabeth Fitzgerald

Designer & Engineer

Elizabeth is a senior studying CS (AI & HCI). She loves designing games and puzzles!



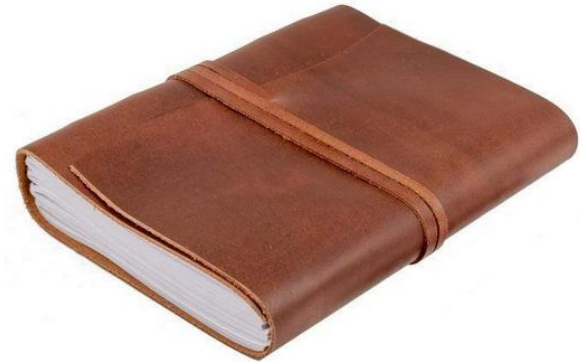
Hyunseok Hwang

Designer & Engineer

Hyunseok is a senior studying CS HCI track. He loves the metaverse and is interested in the AR/VR/Web3 space!

# *Value Proposition*

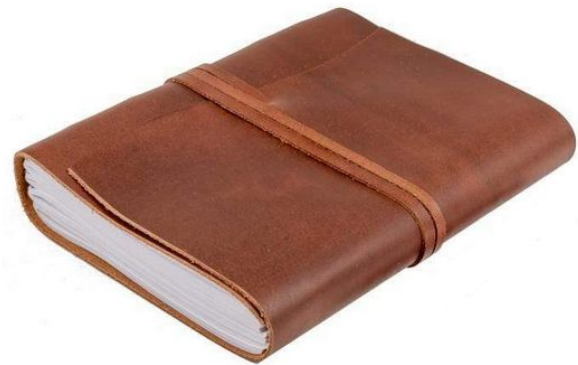
Treasure your memories.



# *Problem*

People struggle to revisit the **emotions** they feel when they view **art**.

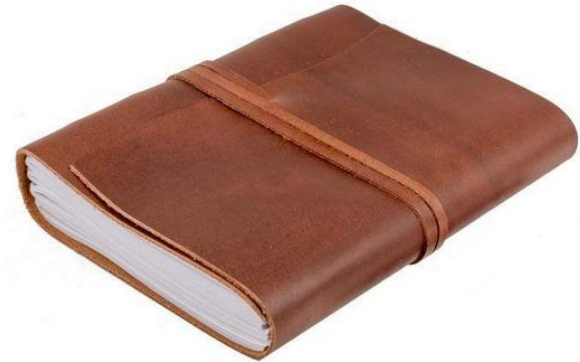
2D photos and journals don't cut it.



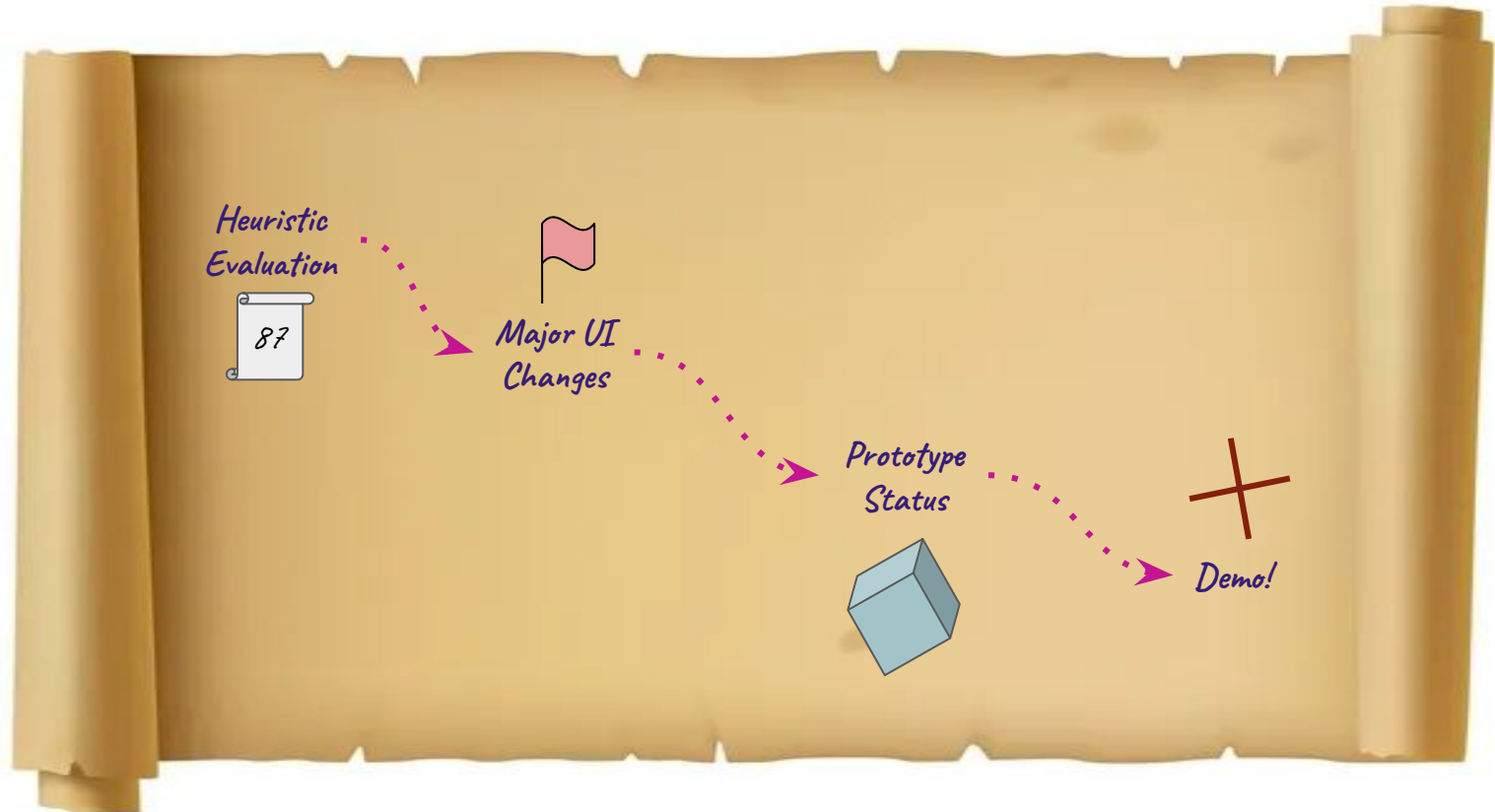
## *Solution*

Trove is a **location-based** mobile app that allows users to **discover and create** AR art pieces hidden around the real world.

Through **immersive AR** technology, users can form **stronger and longer-lasting connections** with art that they interact with.



# Overview



# Heuristic Evaluation Results

Heuristic	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12
# of Violations	9	5	9	15	4	3	7	19	1	5	8	2

87 violation in totals.

Severity	Sev. 0	Sev. 1	Sev. 2	Sev. 3	Sev. 4
# of Violations	1	24	36	20	6

30% of violations were Sev. 3 or Sev. 4.

## **H4. Consistency and standards**

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

## **H8. Aesthetic and minimalist design**

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

# Specific findings for the Sev. 3 and Sev. 4 violations

Heuristic	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12
Sev. 3	3	1	2	1	2	2	3	1	0	2	2	1
Sev. 4	1	0	1	1	1	0	1	0	0	1	0	0

## **H1 violations included:**

1. Scanning progress is shown numerically rather than visually.
2. There is no button to save changes made to a Trove entry.
3. After arriving at a memory, the user can still scan in their own object.
4. After decorating, the top right still says "Done," which is confusing.

## **H7 violations included:**

1. The user cannot upload scans of digital art during scanning.
2. The user cannot view changes to their art from the Trove.
3. The user sees comments on memories but cannot add their own.
4. The user does not get a description of the art they've navigating to before seeing it in-person.

## **H1. Visibility of system status**

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

## **H7. Flexibility and efficiency of use**

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.



# *Usability Goals*

## **Ease of Use**

We want our app to be easy to learn, even for users who have never used AR.

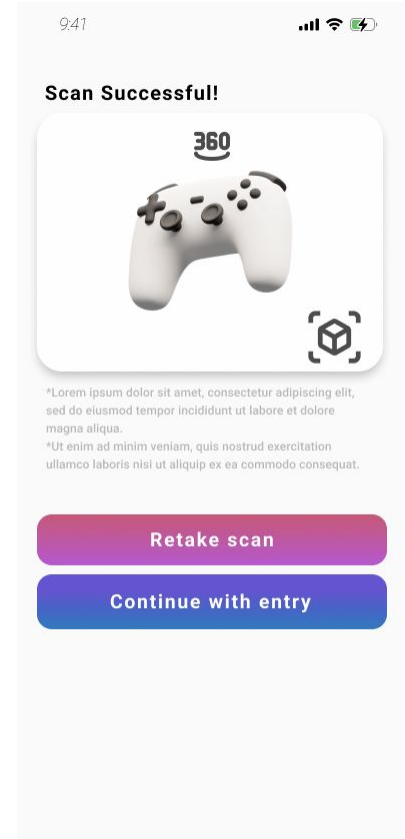
## **Fun to Use**

We want users to have fun with every task included in our app.

# Issues - Scan

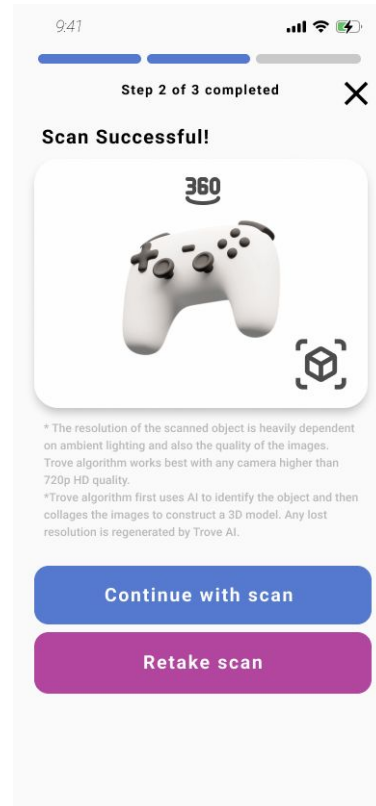
## Scan

- Cannot view scanning tips again after starting (H10)
- Cannot restart a scan midway without exiting and coming back (H3)
- Retake scan button may be first read (H8)





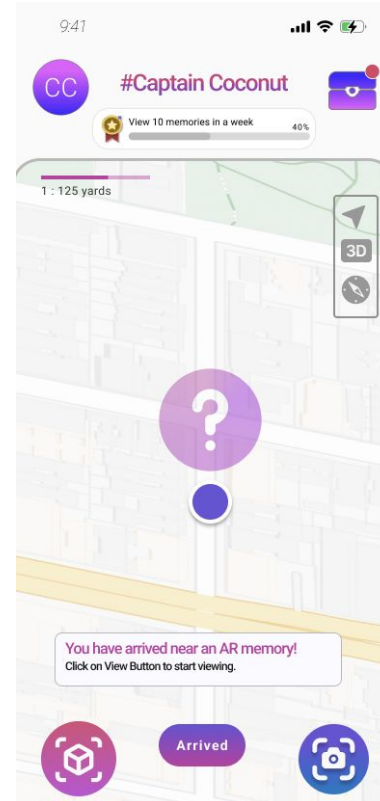
## Revised - Scan



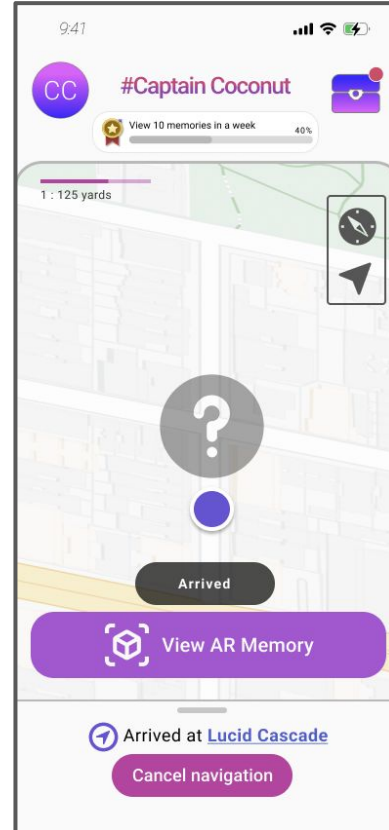
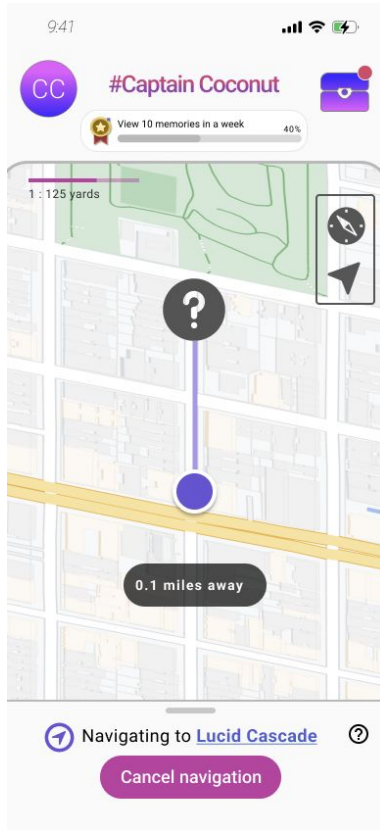
# Issues - Navigate

## Navigate

- Poor process funnel; uses notification to tell user to click view button (H10)
- View and scan buttons are enabled during navigation, can accidentally exit navigation process funnel (H5)



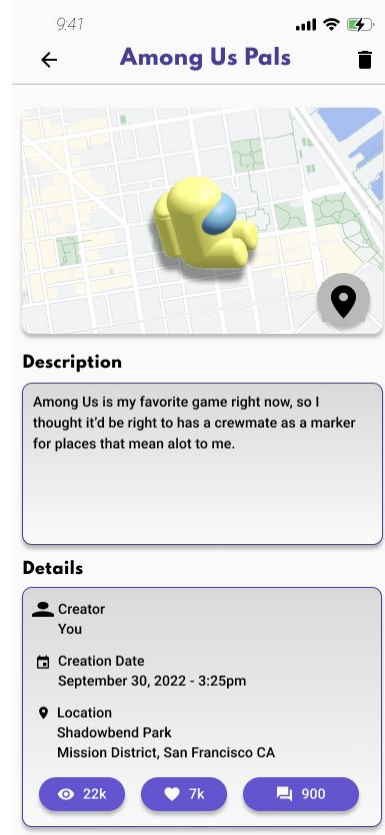
# Revised - Navigate



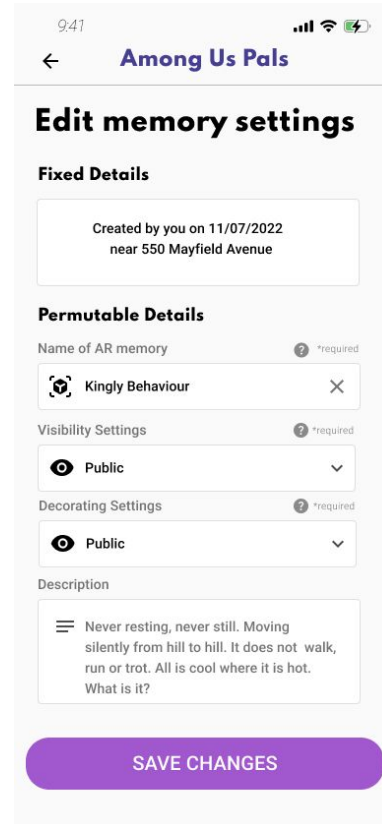
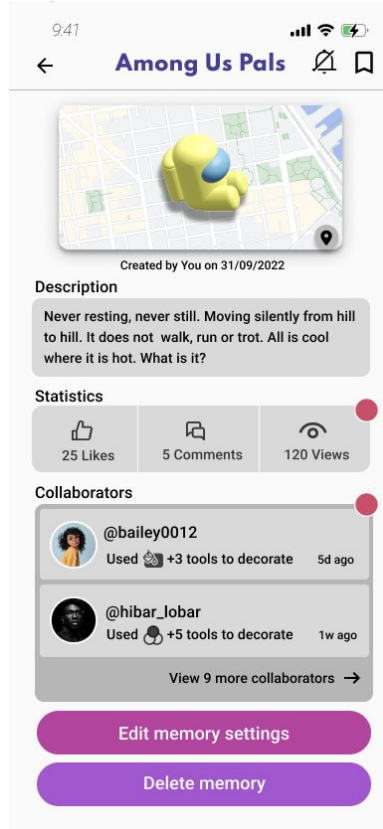
# Issues - Trove

## Trove

- No way to edit Trove entry settings (H3)
- No way to save your edits (H1)



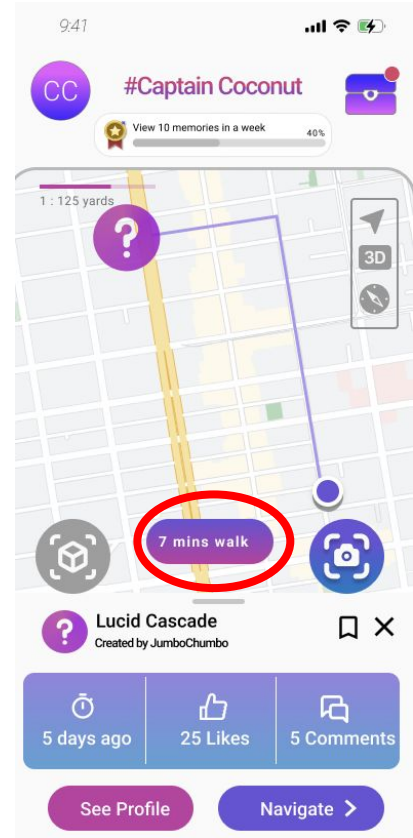
# Revised - Trove



# Issues - Color

## Color

- White text might not have enough contrast against the background (H11)
- Confusion of what is a button or not (H4)






# Revised - Color

9:41

ⓘ ×

## Scanning Tips

 **Well lit environment**  
In order to create a 3D memory from compilation of images, Trove algorithm needs to identify different colours. If the lighting is too dim the scanned object might be low definition.

 **All Around the world**  
Make sure to capture full 360 degree angles of the memory so that Trove algorithm does not miss even a smidge.

 **Take your time**  
Please be patient while we capture your memory in high definition so that you can re-live it in the future.

Continue

9:41

CC #Captain Coconut

View 10 memories in a week 40%

1 : 125 yards

?

0.1 miles away

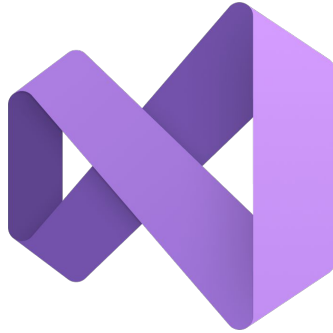
⤴ Navigating to [Lucid Cascade](#) ⓘ

Cancel navigation

# *Prototype Implementation Status - Tools*



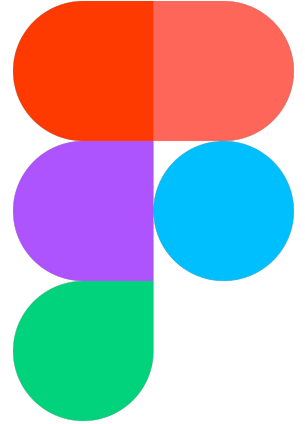
Unity



Visual Studio



Plastic SCM



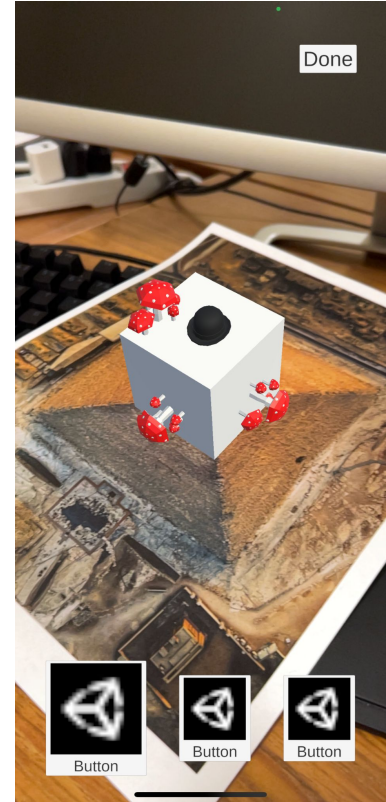
Figma

# Prototype Implementation Status - Completed Task

## View and Decorate an Object

Note: This is an Auxiliary Task!

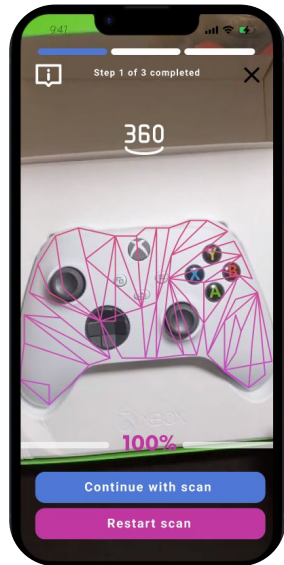
1. We implemented AR tracking on a reference image and the ability to display 3D object.
2. Users can place decorations on 3D object.
3. Users can save their selected decorations.



# Prototype Implementation Status - Next Steps

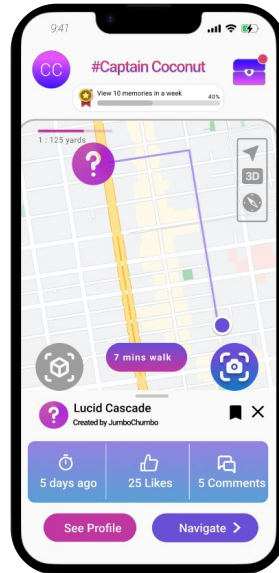
## Scanning an Object

Adapt existing code from the  
View and Decorate task.



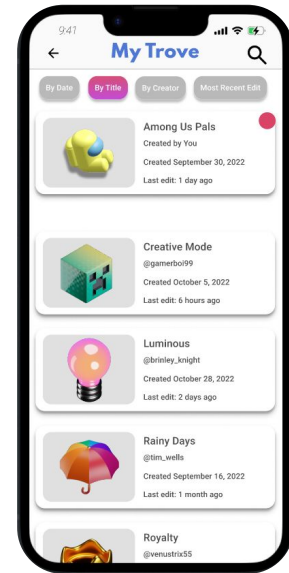
## Using the Map for Navigation

Implement map and  
navigation system.



## View and Edit a Trove Entry

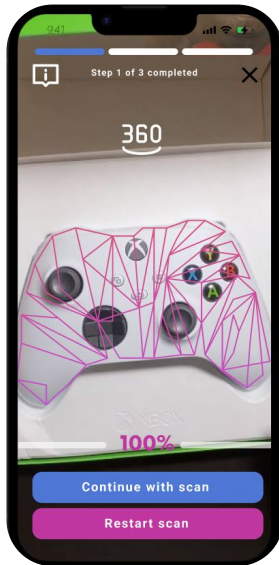
Implement UI.



# Prototype Implementation Status - Wizard of Oz

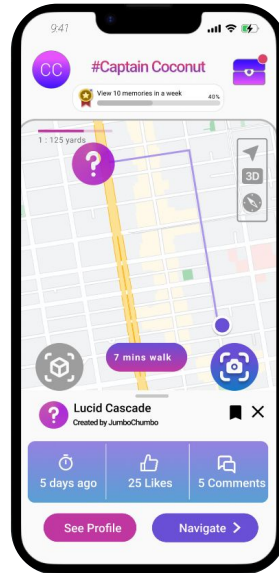
## Scanning an Object

We use AR tracking tags to locate a predetermined object.



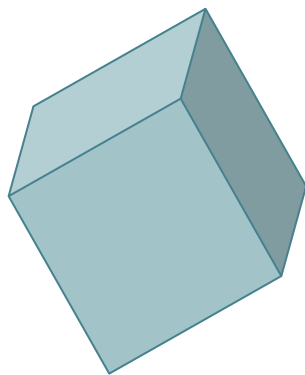
## Using the Map for Navigation

We're doing navigation by tapping rather than GPS.

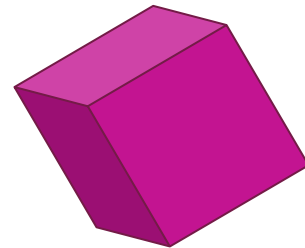
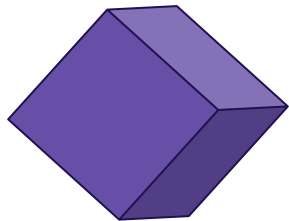


## Hard-Coded Features

1. Area of map
2. Navigation route
3. Scanned object
4. Decorations



# *Demo Time!*



*Thank you!*



# *Appendix*

Demo video link:

[https://drive.google.com/file/d/1rhl\\_w9GXxXw1Ei7fRh37joqUpLj3ZHOOr/view?usp=share\\_link](https://drive.google.com/file/d/1rhl_w9GXxXw1Ei7fRh37joqUpLj3ZHOOr/view?usp=share_link)