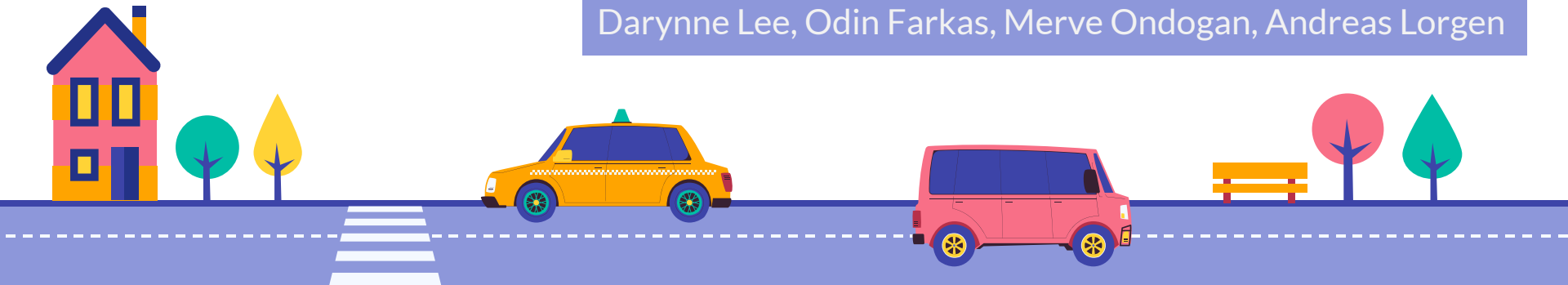
# Week 5: Low-Fi Prototyping & Usability Testing

Darynne Lee, Odin Farkas, Merve Ondogan, Andreas Lorgen



# Meet Our Team: Pissionaries

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Odin Farkas

Merve Ondogan

Andreas Lorgen

# Meet Our Team: Pissionaries

## Value Proposition:

PISSION helps you map out restrooms before you even leave the house, so you can focus on your journey, not your next stop.

# Meet Our Team: Pissionaries

## Problem

Planning for restroom stops in advance can be challenging, especially when traveling or visiting unfamiliar places. Traditional location apps don’t offer specific, reliable restroom information to help with pre-planning.

## Solution

PISSION enables users to plan ahead by providing detailed, crowd-sourced restroom information, allowing them to map out clean, accessible restroom stops before they set out.

# Presentation Overview

01

## Realizations

Pros and Cons, Selected Interface

02

## Low-Fi Prototypes

Simple, Moderate, Complex Tasks, Task Flow

03

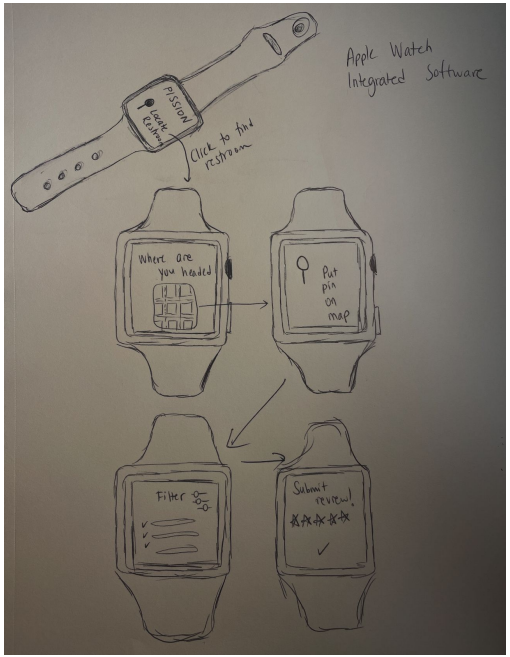
## Prototype Testing

Participants, Usability Tests, Discussion

Follow me, the pission unicorn
pill that gives you restroom finding 5 mills
Pission car service
air tag
WC
Piss water bottle
restrooms available
VR
I HAVE TO PEE
how a pee
LOL, bet.
Pee Legislation
ban pee 4 fee
LOCK PICK KIT
PISS SIRIES
Map
dirty
clean
training psychologist
pill
foldable filter
PRESS 123 456 789
200m
100m
300m
LETS GOOO 002
BOOM
8:34
Leave a review!
Pission
9:45
airpod
You don't need to pee!

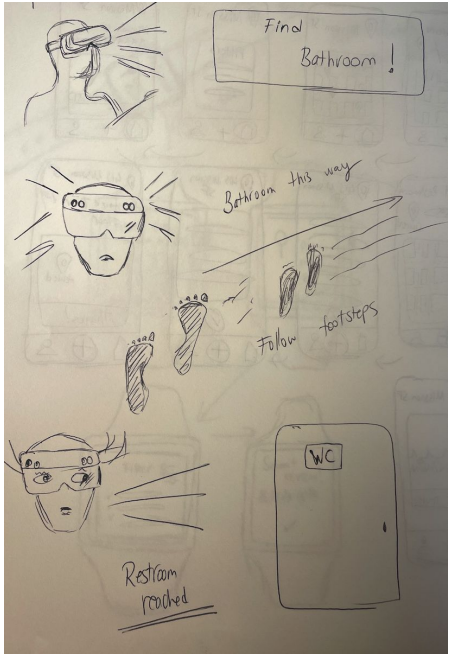
# Sketching Exploration

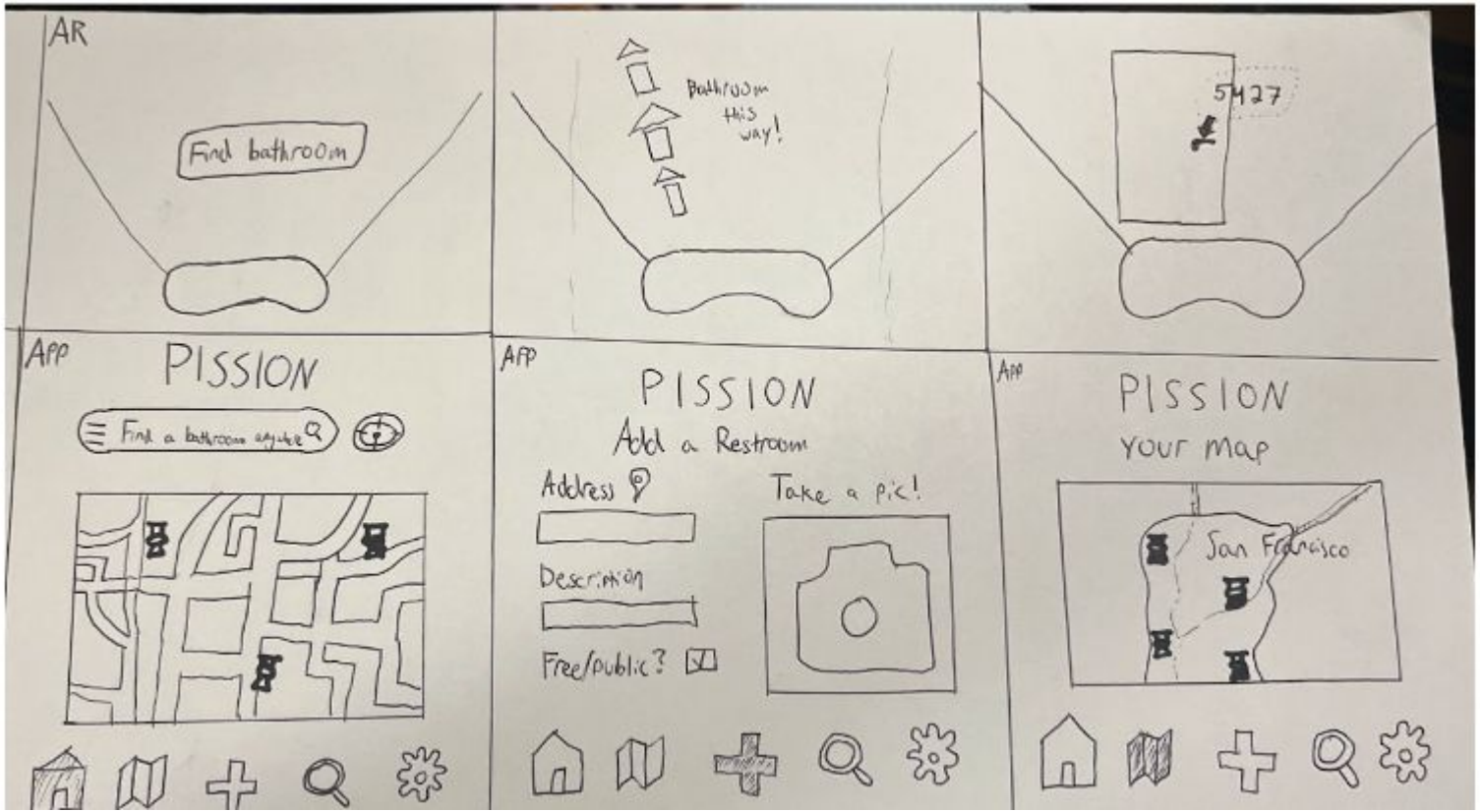
## Apple Watch




## Mobile App

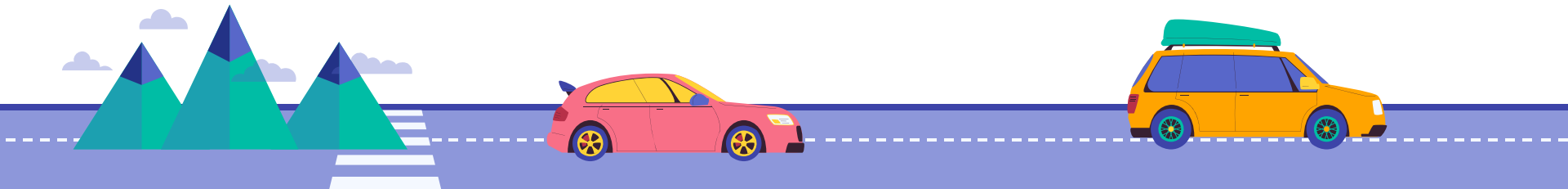
## AR/VR




AR
Find bathroom
Bathroom this way!
5427
APP
PISSION
Find a bathroom anywhere
APP
PISSION
Add a Restroom
Address
Take a pic!
Description
Free/public?
APP
PISSION
your map
San Francisco

# Evaluation: Top 2 Realizations

| | Mobile App | AR/VR |
|---|---|---|
| **Pros** | • **Ubiquitous**: People always carry their phone when out and about<br>• **Onboarding**: People know how to use their phone already<br>• **Easy to Update**: push updates | • **Immersive experience**<br>• **Hands-free navigation** (if AR/VR headset) |
| **Cons** | • Users may not want to **download** an app solely for finding restrooms<br>• Hard to integrate audio for visually challenged people | • AR/VR headset **not practical** on the streets<br>• AR/VR headset **not accessible** to many potential users<br>• Requires **more complex real-time data processing** (other than location tracking)<br>• Tasks can be completed without AR at much lower engineering cost |



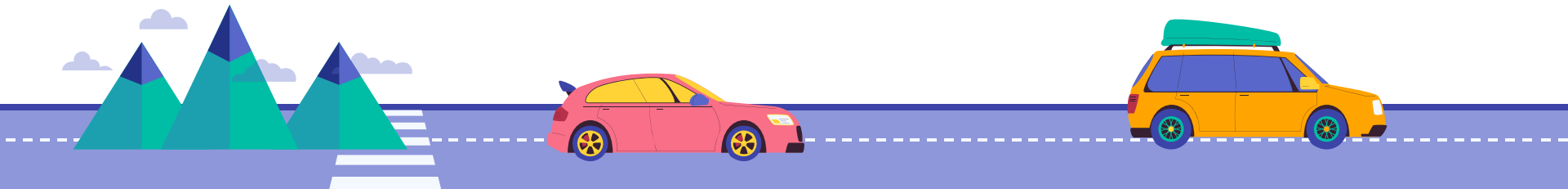
# Selected Interface: Mobile App

**Why Mobile App?**

1. Ubiquitous + easy onboarding
   - 70% of the world's population are smartphone users [2023]
   - 90% of US adults are smartphone users [2023]
2. Easy to update changes on the App Store
3. More simple real-time data processing: location tracking

**Why not AR/VR?**

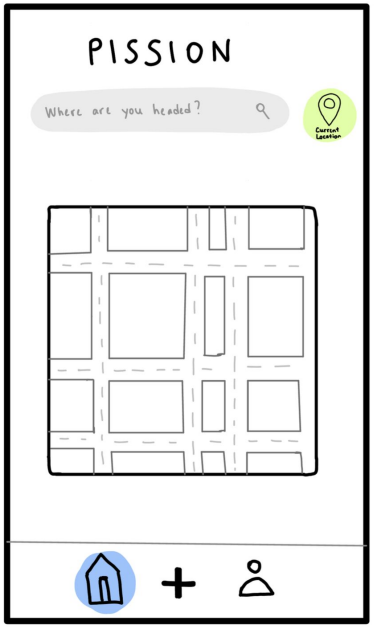
1. VR: doesn't make sense
2. AR headset: inaccessible, not practical
   a. 13% of US households have one VR headset [2023]
3. AR mobile: more complex data-processing, tasks can be done without at much lower engineering cost

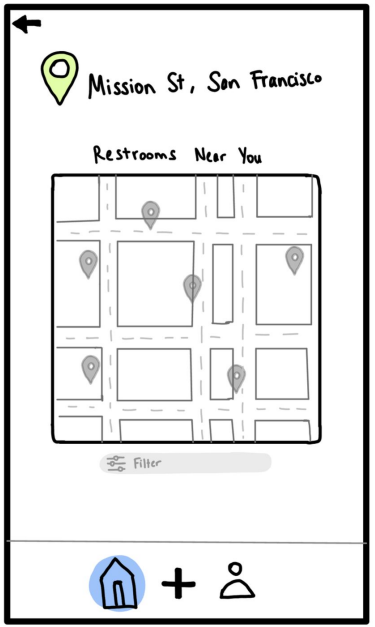


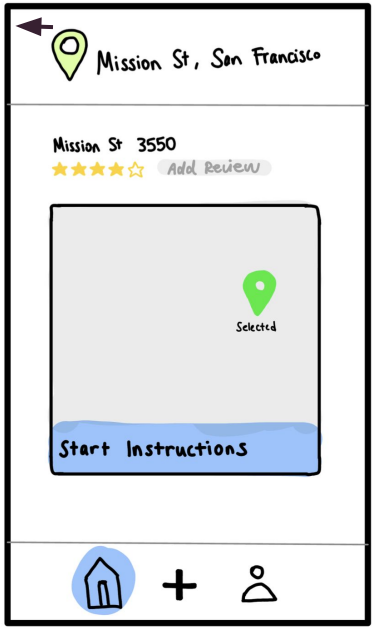
Built with iPad Notability

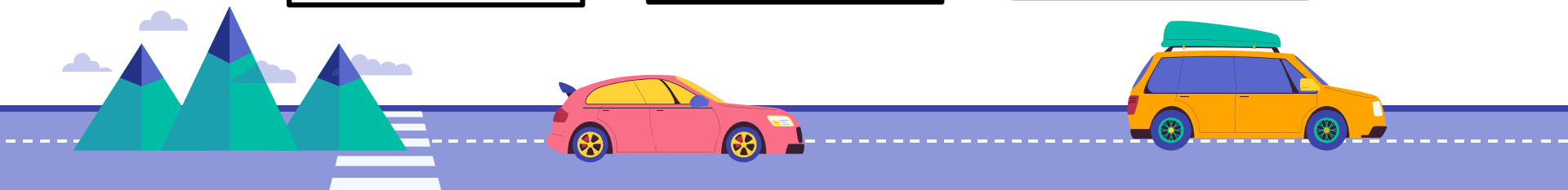
# Low-Fi Prototype

## Simple Task: Find a Washroom



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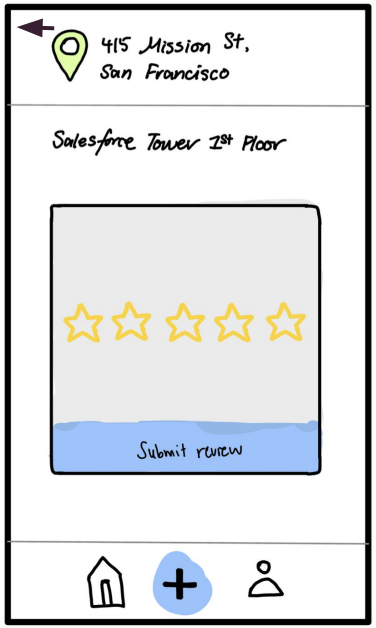
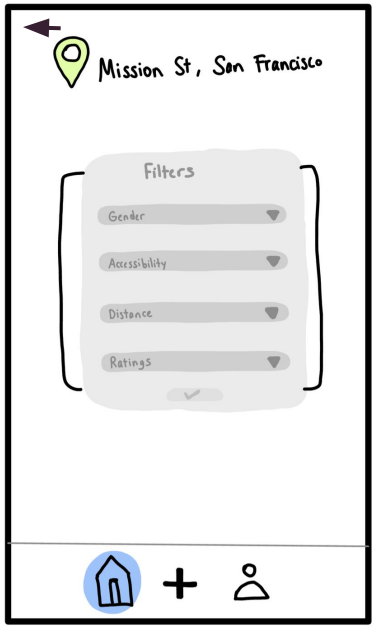
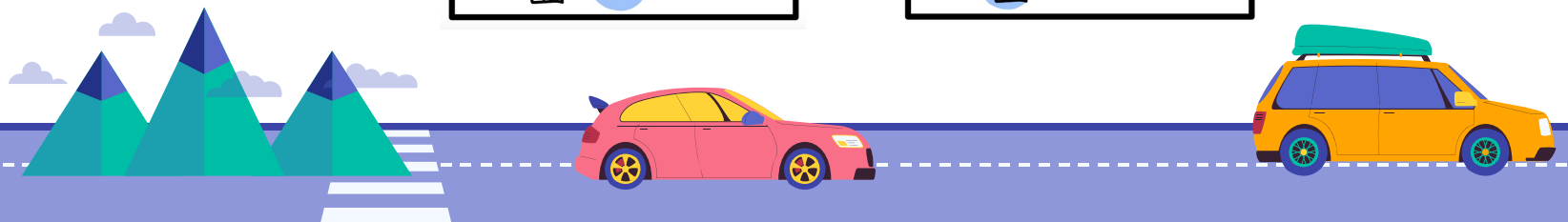
# Low-Fi Prototype

## Moderate Task: Filter or Rate a Restroom



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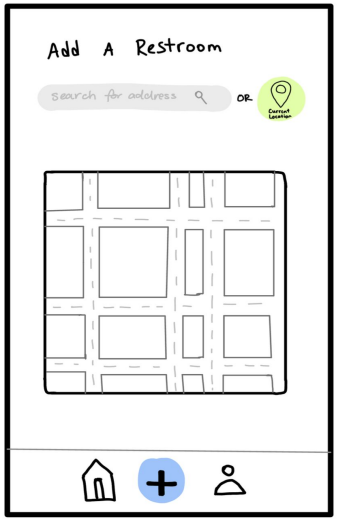
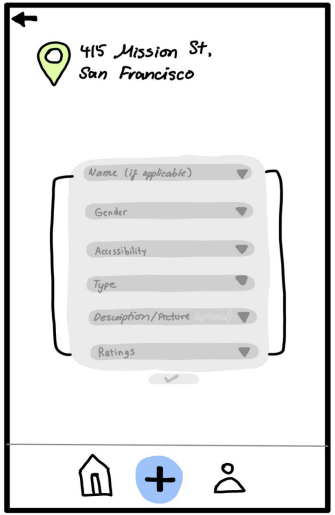
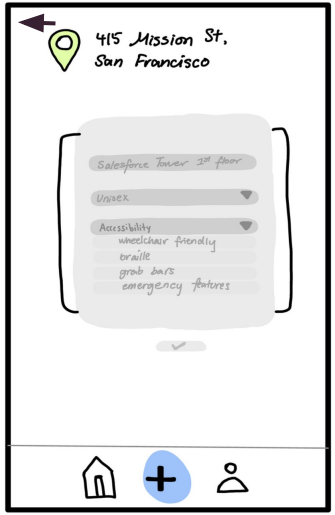
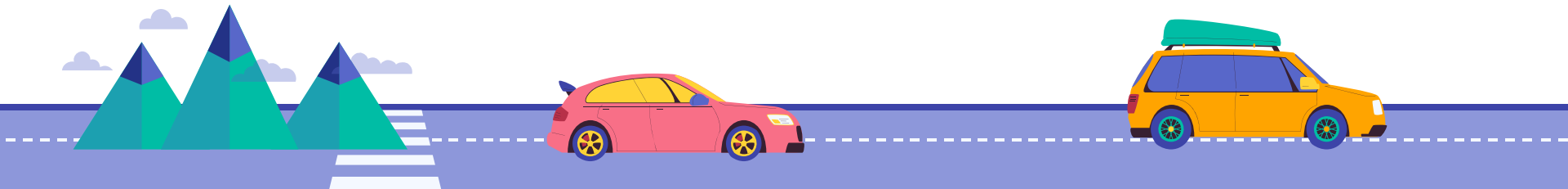
# Low-Fi Prototype

## Difficult Task: Add a Restroom

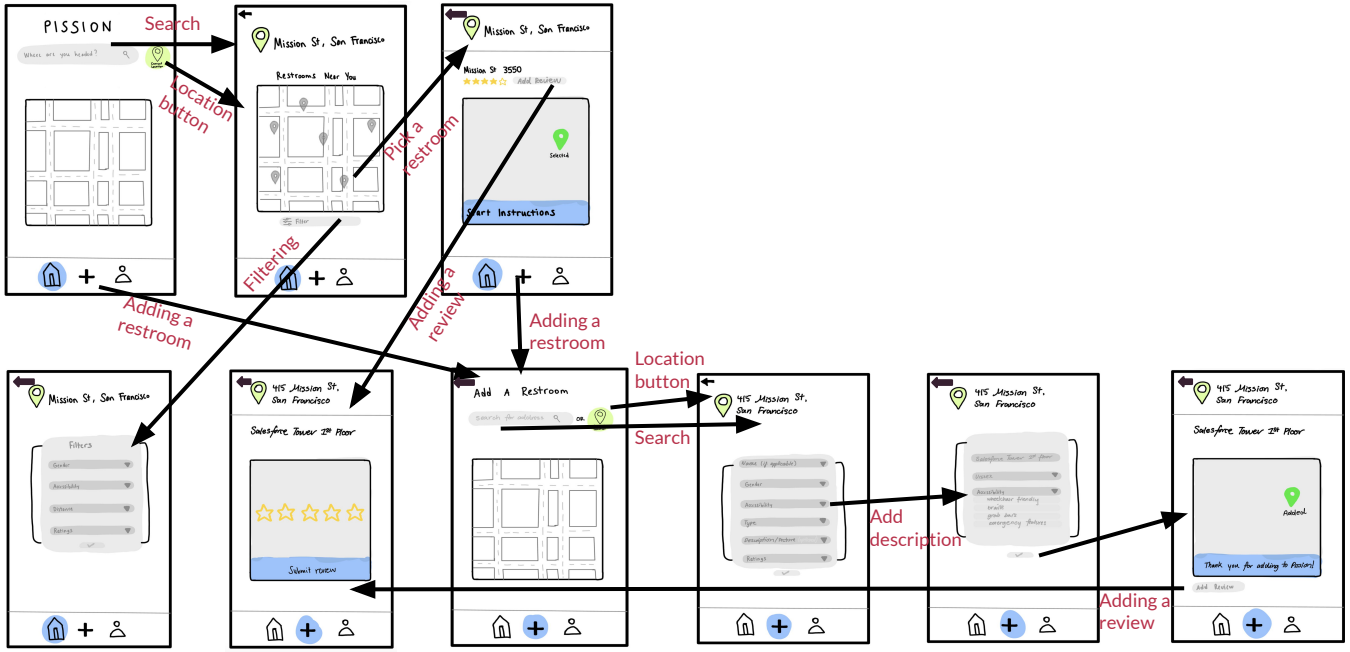


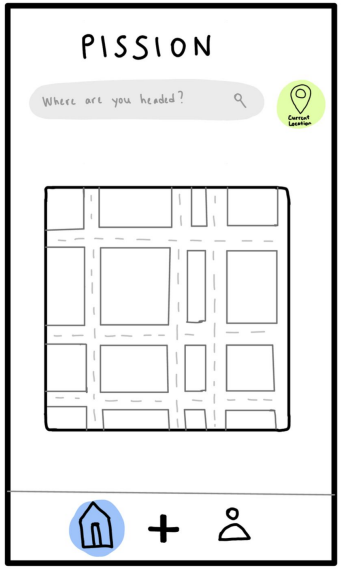


# Complete Task Flow

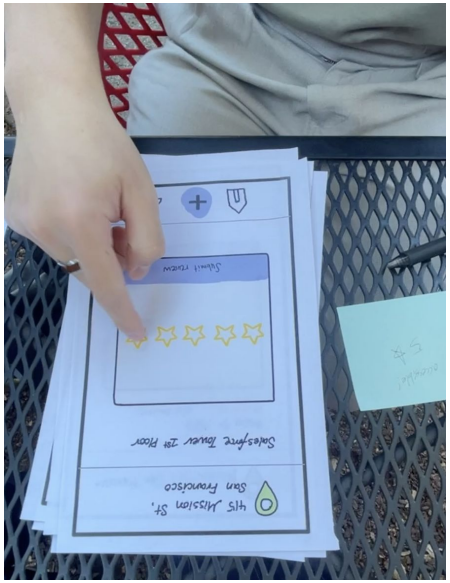


# Prototype Build Process

From iPad




To Paper



To Ben

# Usability Testing

**Environment**: Tressider **Apparatus**: Low-Fi prototype, Phone to record video. **Compensation:** N/A

**Participants**

Frank

Elderly

Diya

USC Visitor

Anant

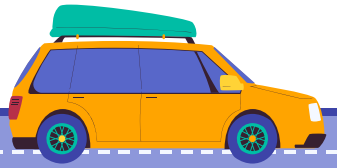
Stanford Student

Ben

Ex bodyguard of BoA CEO

Brian

Stanford Student



# Usability Testing

**Procedure**

- Approached potential testing interviewees and asked if they had 5 mins to test our low-fidelity prototype
- Odin: narrated the demo
- Merve: controlled the flow of low-fi prototype slides
- Darynne: took notes and synthesizd critical insights and design changes
- Andreas: recorded video

# Usability Testing

## Usability Goal #1: Easy Navigation and Search

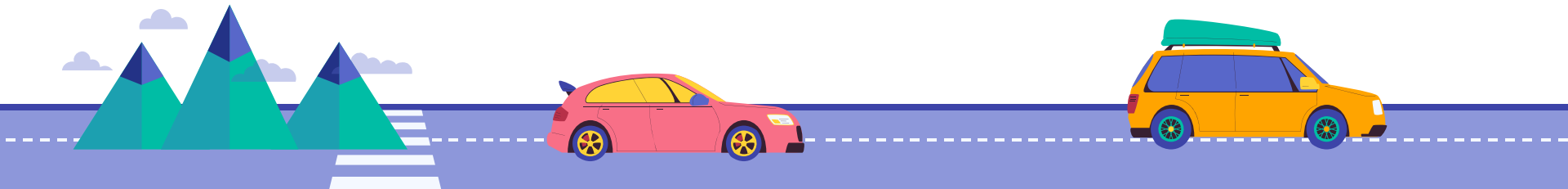
- Objective: Users can quickly find nearby washrooms and access relevant information.
- Process Data: Number of steps users go through to find a washroom on the prototype
- Bottom-line Data: The total time it takes for the users to find a washroom from start to finish / the percentage of participants who successfully find a washroom without assistance

4-6 clicks
2 mins

## Usability Goal #2: Streamlined contribution process

- Objective: Ensure users can easily contribute washrooms and upload photos without getting stuck
- Process data: number of steps users take to complete the contribution process
- Bottom-line data: completion time

9-10 clicks
3 mins



# Usability Testing

## Observations + Takeaways

USABILITY CATASTROPHE

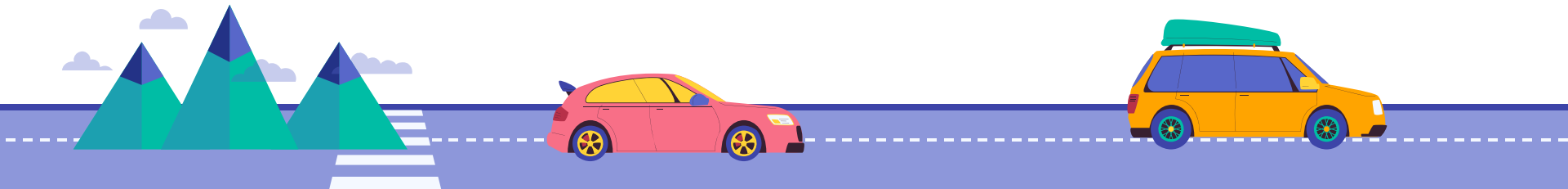
- Users are confused between the ratings in the filtering vs post-restroom evaluation
- Initial + and ✓ after filling details is confusing

MAJOR USABILITY PROBLEM

- Didn't see the Filter feature
- Too many details to add (e.g. What is "Type"?)
- Add review before or after successfully adding a restroom
- Add restrooms by dropping pin (rather than current location or entering address)

MINOR USABILITY PROBLEM

- Thought "Name" was the user's name
- One user thought the map was a general map rather than a restroom map
- Users always chose "current location" rather than type in an address, but they see both



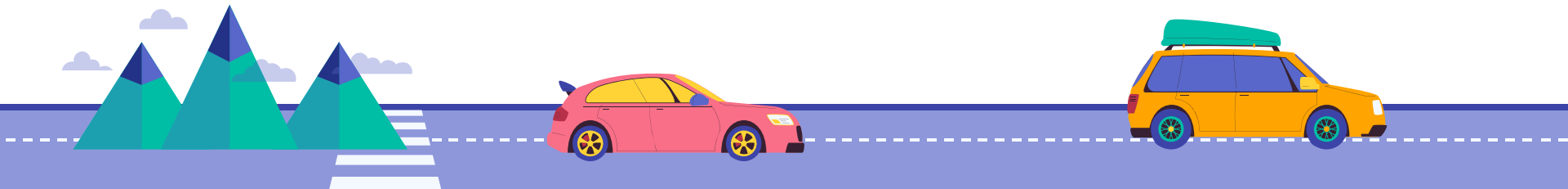
# Discussion

**Take-aways / future changes**

- Ensure the choice between “current location” vs “enter an address” (e.g. same background color)
- Move the Filter feature near the search bar + Bigger
- Only keep the necessary information fields when adding a restroom
- Clear UI distinction between ratings post-washroom (stars format) and filtering (text saying “5 stars”)
- Allow the function to add a restroom by pin drop

**Limitations of the test**

- We didn’t have a “profiles” page even though that was a button option
- Users couldn’t view the options for the filters so they had to guess

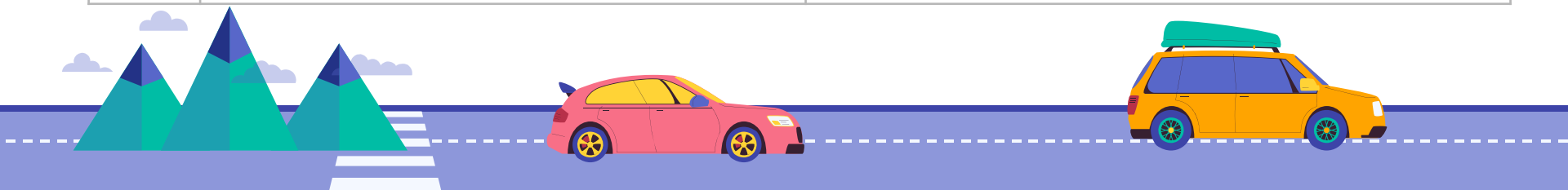


# THANK YOU!

**QUESTIONS?**

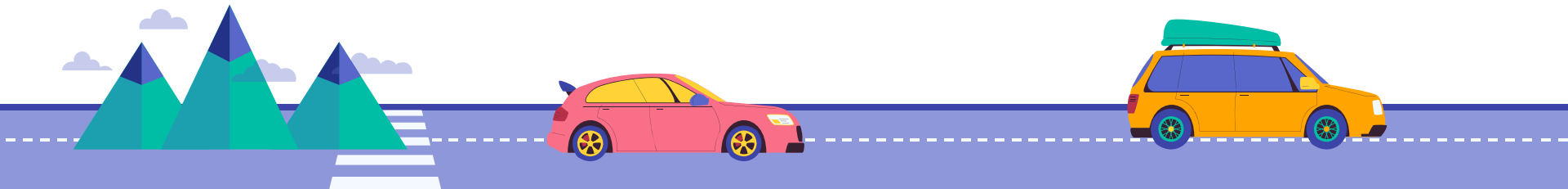
# Appendix 1: Evaluating Realizations

| | Mobile App | AR |
|---|---|---|
| **Pros** | • We are in 147L<br>• Ubiquitous<br>• People always carry their phone when out and about<br>• People know how to use their phone<br>• Faster solution<br>• Easy to Update (push updates) | • Immersive experience for finding the restroom<br>• Makes the process less stressful<br>• Easier to integrate audio (if headset)<br>• Hands-free navigation (if headset) |
| **Cons** | • Need internet and battery to use<br>• Users may not want to download an app solely for finding restrooms<br>• Hard to integrate audio for visually challenged people | • Longer use times, not practical<br>• Headset is not accessible to many potential users<br>• Learning curve for mobile AR<br>• Mobile AR requires more complex real-time data processing (data types other than location tracking)<br>• Tasks can be completed without AR at much lower engineering task<br>• Battery consumption |



# Appendix 2: Link to Low-Fi Prototype

Link



# Appendix 3: Testing

Consent Forms: in shared Google Folder

**Script:**

Intro: "Thanks for joining! I'll briefly show how to interact with the prototype, like where buttons and scrolling work. As you test, please think aloud about your thoughts or any confusion. I'll guide you through each task, one at a time."

Demo: "Here's how you interact with buttons – you can tap to select!

[ Show basic interaction without performing any tasks. ]

Task 1: Find a Nearby Accessible Restroom

Prompt: "Imagine you're looking for a [ insert filter ] restroom nearby. Find a restroom that meets your needs."

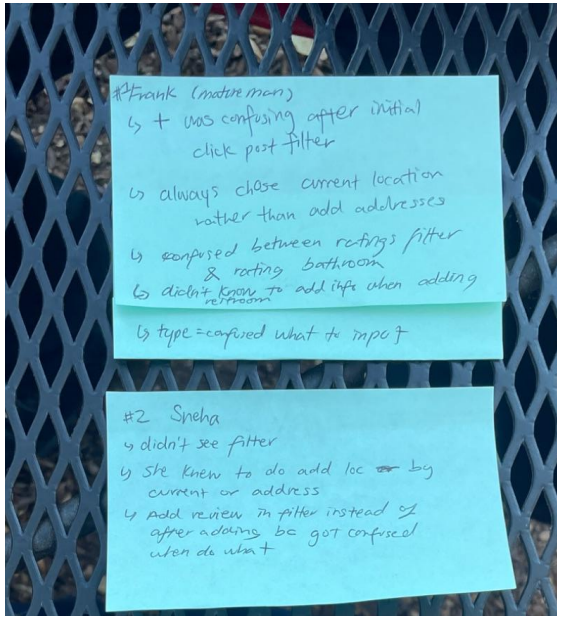
Task 2: Rate a Restroom

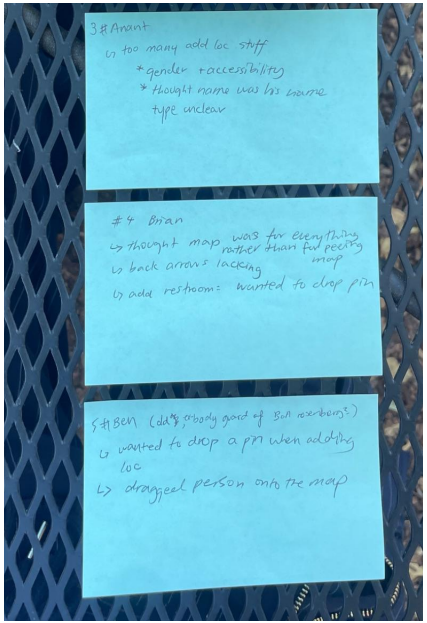
Prompt: "You've just used a restroom and want to leave a rating. Can you rate the restroom you visited?"

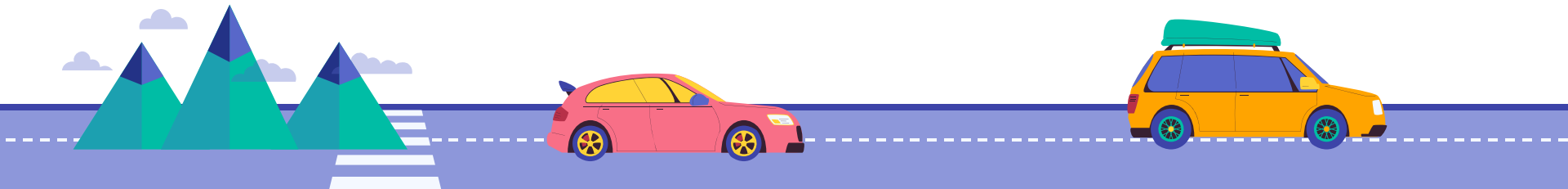
Task 3: Add a New Restroom

Prompt: "You've discovered a new restroom that isn't on the map. Can you add it to the app?"

Wrap-Up: "Thanks! Do you have any final thoughts or questions? Was anything confusing or unexpected?"



# Appendix 4: Critical Incidents from Testing

| Critical Incidents | Priority |
|---|---|
| **General feedback / finding a restroom:** | |
| - One user thought the map was a general map rather than a restroom map | 2 |
| - Users always chose “current location” rather than type in an address, but they see both | 2 |
| **Rating and Filtering:** | |
| - Didn’t see the Filter feature | 3 |
| - Users are confused between the ratings in the filtering vs post-restroom evaluation | 4 |
| **Adding a restroom:** | |
| - Initial + and ✓ after filling details is confusing | 4 |
| - Too many details to add (e.g. What is “Type”?) | 3 |
| - Thought “Name” was the user’s name | 2 |
| - Add review before or after successfully adding a restroom | 3 |
| - Add restrooms by dropping pin (rather than current location or entering address) | 3 |