Lo-fi Prototyping

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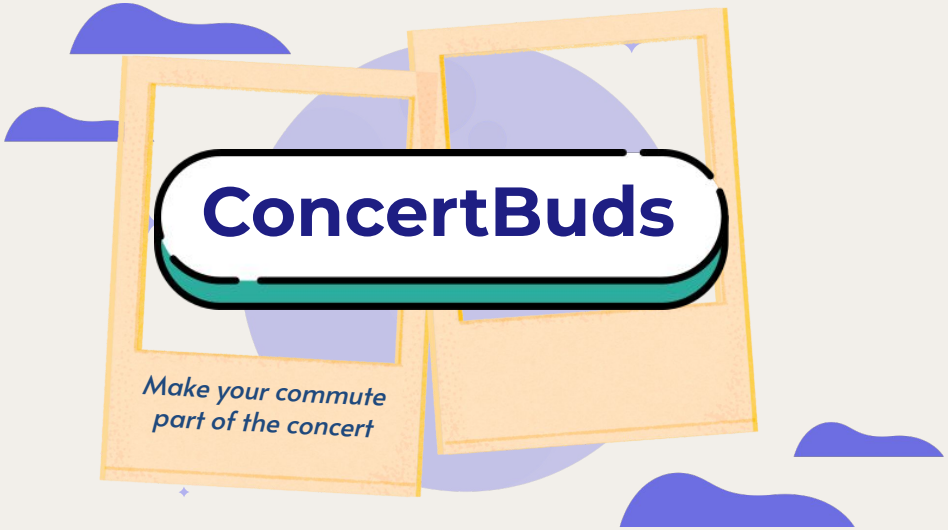

Connect with concert-goers on your ride and start the fun before the show!

Our app connects you with fellow concert-goers on the same public transport, so you can share the ride, plan meetups, and start the party early.

Problem

Concert goers have trouble finding people to go to concerts with.

Solution

ConcertBuds connects people in near proximity going to the same concert to share a commute–and memories.

Outline of Talk

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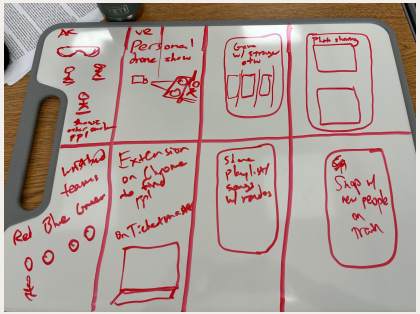
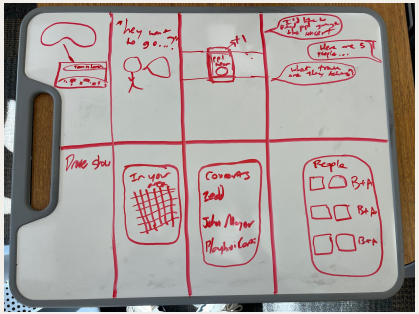
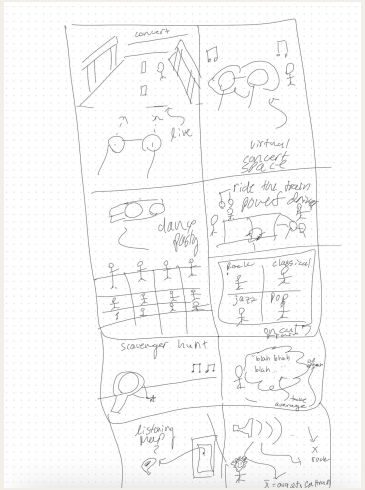
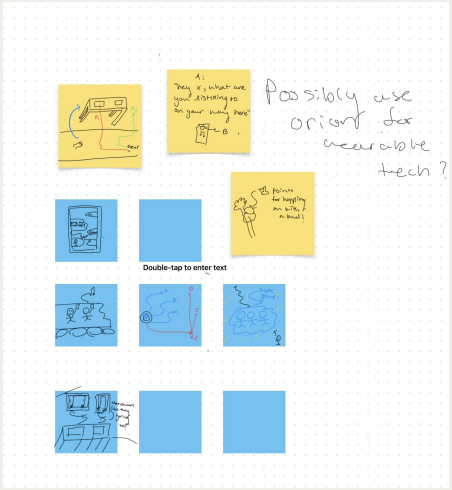


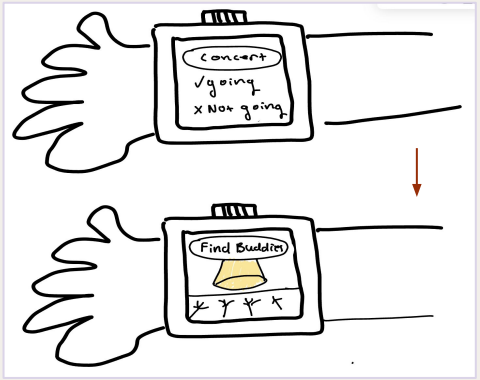




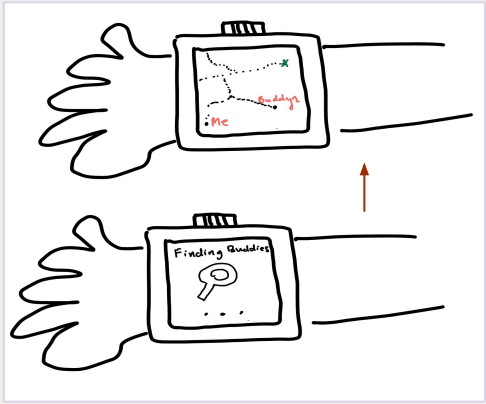


Sketching Exploration

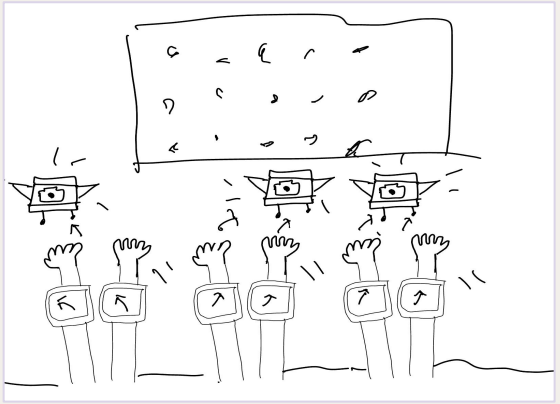
Concept 1: Wearable Watch App + Drones



Add self to list of people going to concert on watch, find buddies going to the same concert nearby!



User locations are easy to visualize, and route-mapping to the concert is optimized by distance and similarity to keep in mind user public transportation preferences and location



With a group at the concert, wave at drones as they move in the same direction. They will be taking live shorts of the group, making memories unforgettable.

Sketches by Matt

Wearable Watch App + Drones

PROS

Very interactive, allowing attendees to interact with a live concert

Innovative and futuristic

No competition on the market (i.e. we can corner the market)

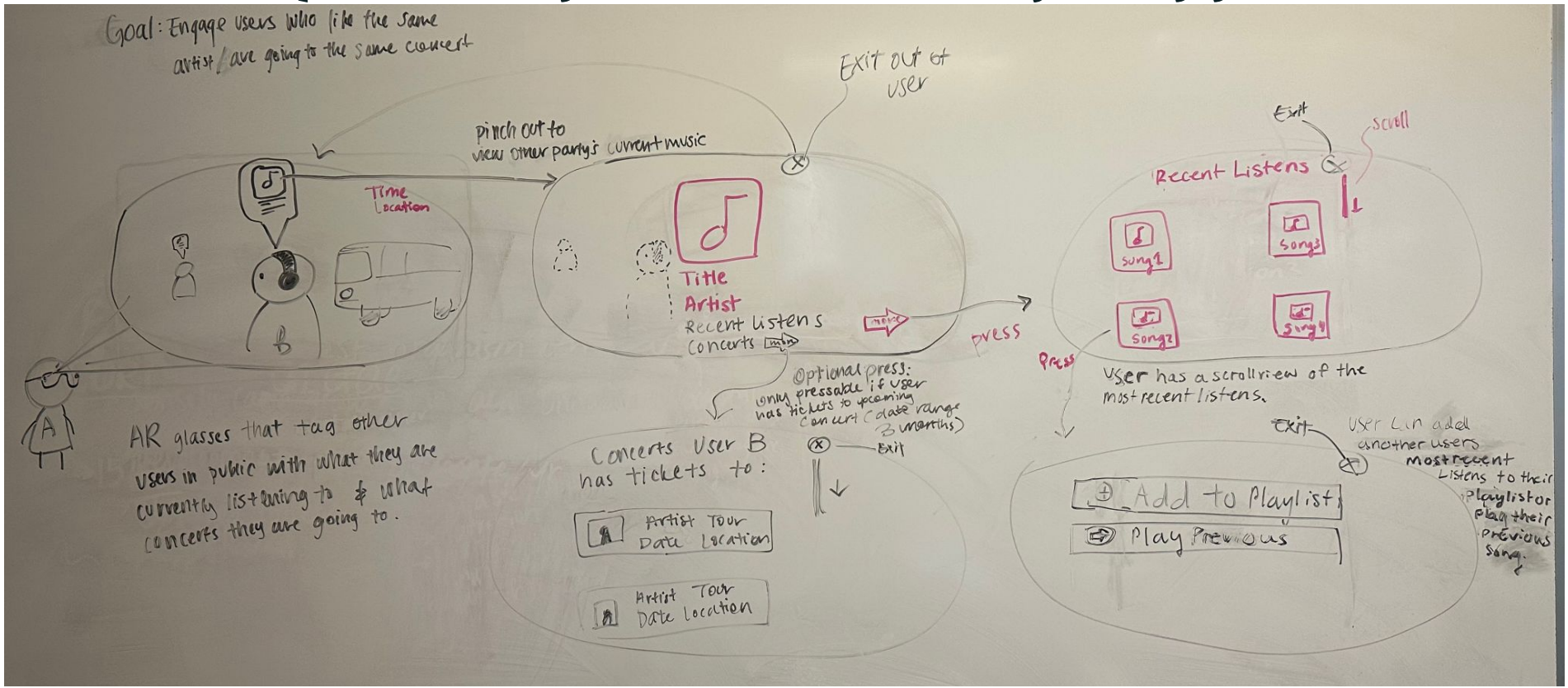
CONS

Lots of expensive hardware

Super disruptive at a live music show

Probably violates some aviation/drone laws

Concept 2: Augmented Reality Goggles

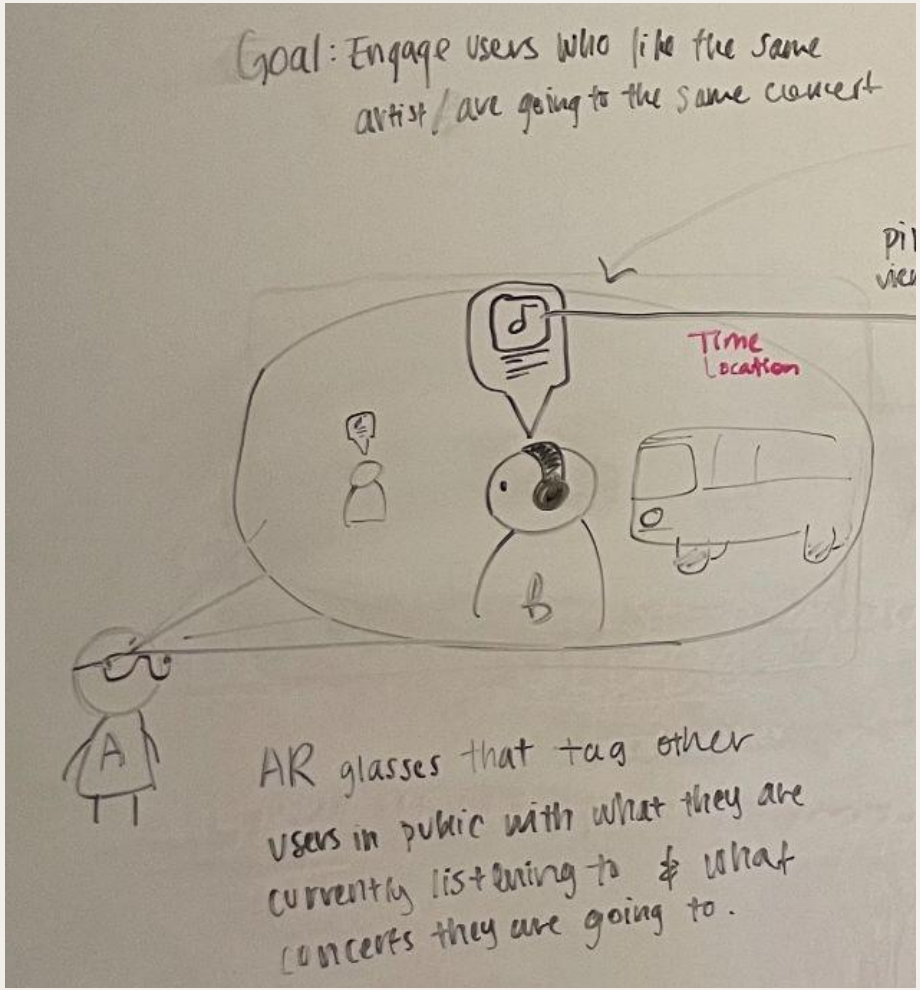


AR Glasses

Wearing glasses will allow user to view what other users are listening to.

Help users find their ConcertBud more easily in a crowd.

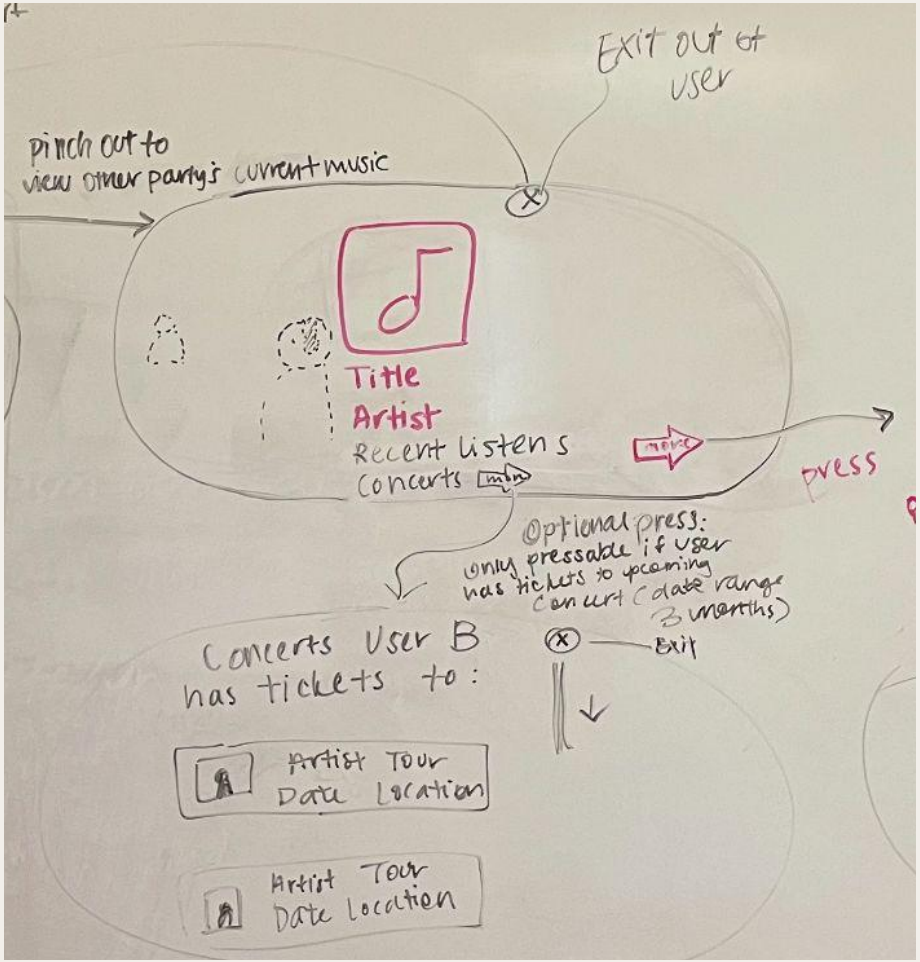
Record memories through snapping photos on the glasses at random times/doesn't need to be prompted by the user.



AR Glasses

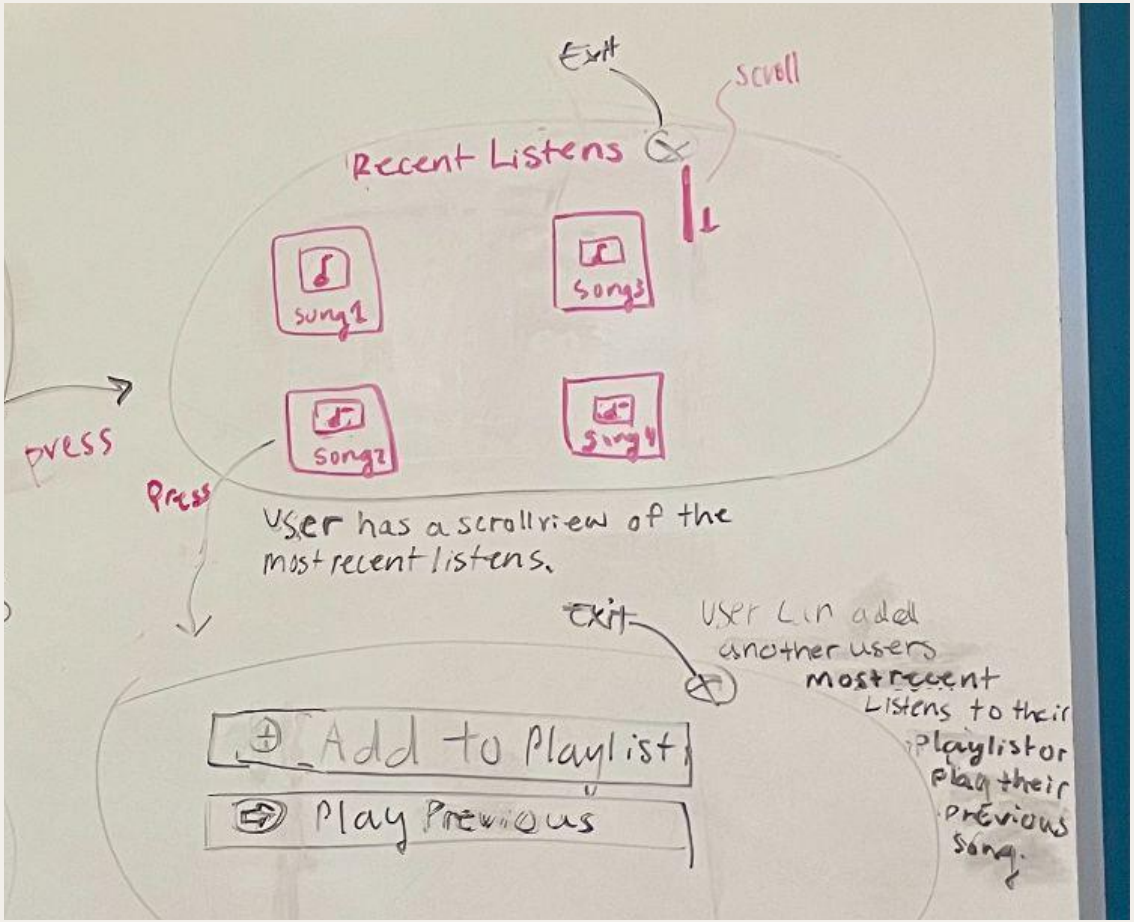
View in detail what other user is listening to, as well as the recent concerts others have been to.

This screen can be exited easily to view “reality” again.



AR Glasses

View the most recent listened songs on glasses, with the option of adding to a playlist.



AR Glasses

PROS

Fun interaction module

More immersive and interactive visuals

Break the ice with other concert goers easier

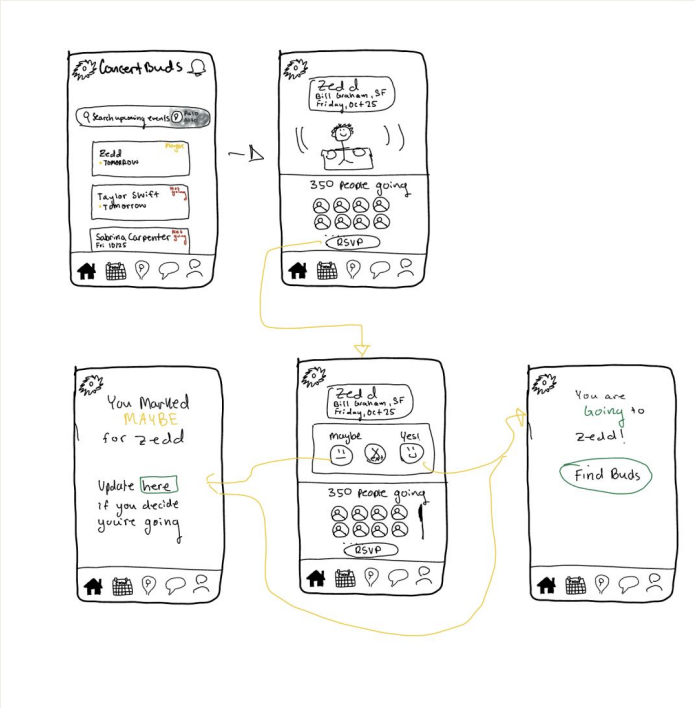
CONS

Steep learning curve to use

Privacy concerns

Relies on AR technology

Concept 3: Mobile App



Mobile App

PROS

- Easier to use
- Accessible to our user base
- Good method of communication and sharing media
- High functionality

CONS

- Barrier of having to download an app
- Data storage limitations on phone
- Crowded apps market makes it harder to stand out
- Safety concerns

Selected Interface and Rationale

Findings:

- A mobile app: most feasible and accessible to broad range of individuals (lower income, older populations, etc.)

Data:

- **81% of concert-goers** say mobile apps improve their experience with features like digital tickets and real-time updates.

Lo-fi Prototype Construction

Prototype drawn on iPad and printed on paper

Printed at different sizes to test how different buttons would be clicked and text would be read (simulate large and small screen sizes)

Pages implemented: landing page, chat page, navigation page

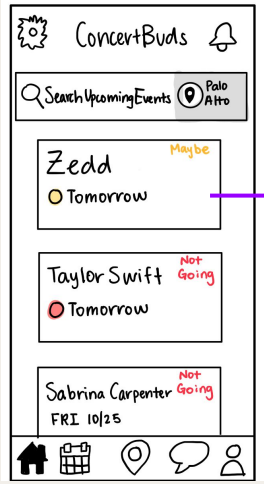
One screen per page to imitate a real app!

Manually responded to user input

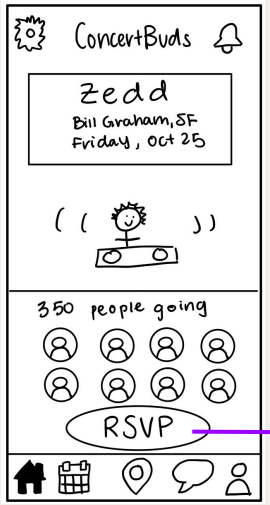
Lo-fi Prototype: 3 task flows

1. Simple: RSVP to a concert and see who else is going
2. Moderate: Connect with others going to the concert
3. Complex: Plan a commute and get matched with concert buddie(s)

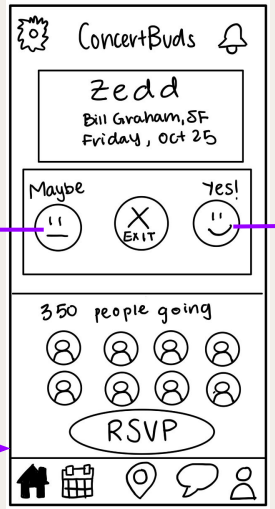
1. Simple: RSVP to a concert and see who else is going



App opens to upcoming concerts nearby. User clicks on “Zedd” concert tomorrow to navigate to the concert RSVP screen



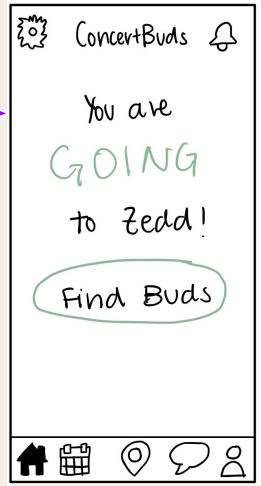
User can view concert information including number of people going and their profile picture icons. User then clicks RSVP



Modal pops up for RSVP decision.

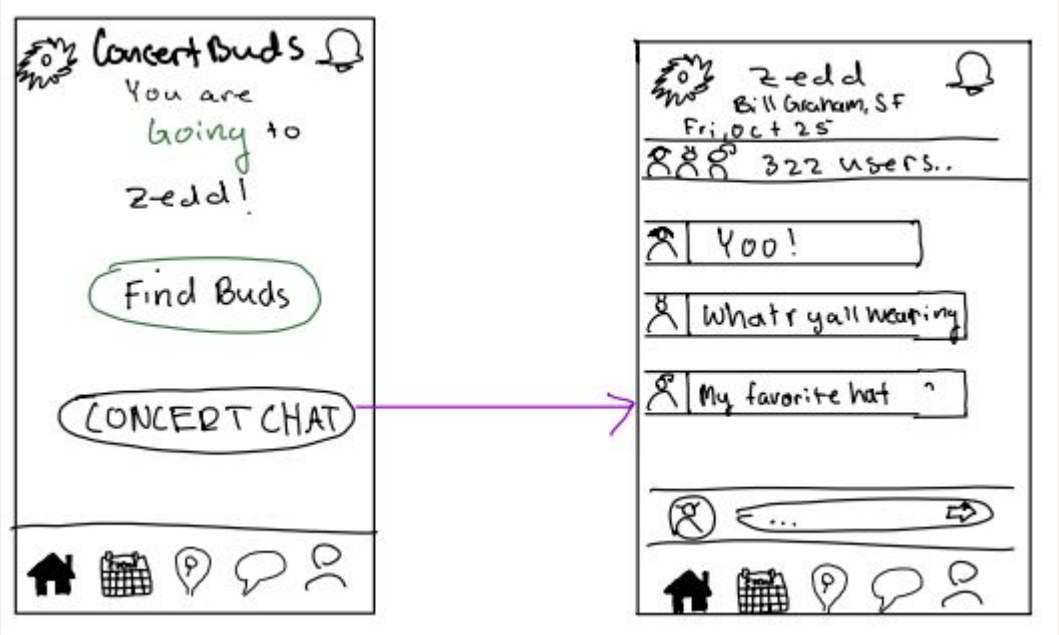
App goes to the MAYBE screen for user who is undecided. Allow user to change their mind if they click HERE

App goes to the GOING screen for concert-going user. They are now able to Find Buds for Zedd by clicking the Find Buds button.



2. Moderate: Connect with others going to the concert

App prompts user to join concert specific chat

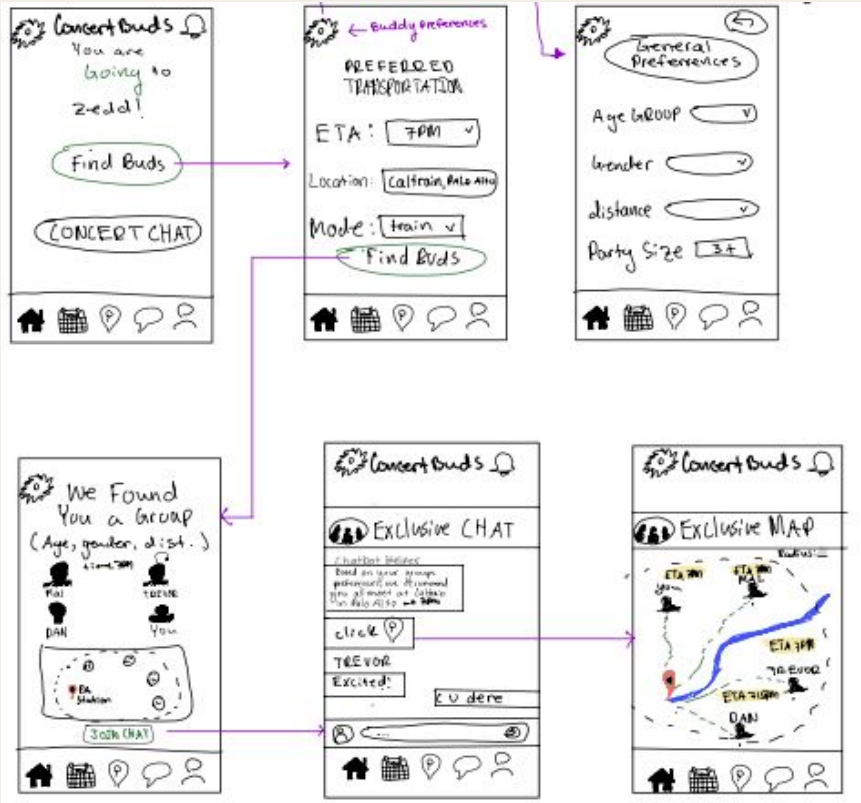


All going users to Zedd can chat on this screen

3. Complex: Plan a commute and get matched with concert buddie(s)

- User can find buds with their own preferences in the settings

- User can input their own preferred transportation settings



- Users get matched based on all preferences

- Buddy Group is formed, all people in the same Buddy Group can see each other on a map within a specific radius

- Buddy Group specific chat allows users to connect and share more about each other

Testing Methodology

Participants: found random participants in SF and around campus; cold-recruited a diverse set of strictly non-Stanford student participants who we did not know

Environment: SF, Stanford Campus

Procedure: approached them politely, asked for a couple minutes of their time, ensured they were concert goers, asked them to explain thought process as they were using our prototype, final feedback

We had them complete one or two tasks by explaining the app idea to them and presenting them with a prototype. We then asked about their experience using our prototype. There was no guidance on usability from the tester.

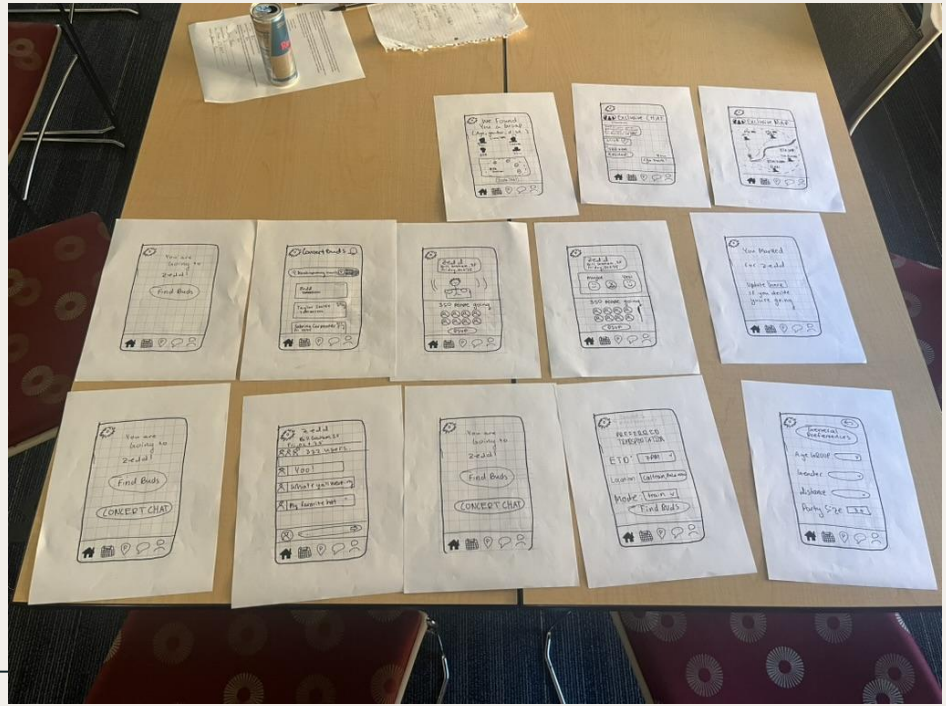
Member Roles:
Izzy: tester for SF participants, Matt: notetaker for all participants, Henry: tester for Stanford Campus participants, Sarah: tester for Stanford campus participants

Usability Goals

Time for Task Completion	How much time did each task take?
Intuitive	Was there overcrowding? Were there necessary visual prompts?
Desire to Explore App	I.e. How likely were they to join a group chat, or meet up with other Concertbuds?
# of Errors	Were there misclicks? How many?

Lo-fi Prototype Testing

We tested our UI prototype with 4 individuals: Jason, Janelle, Sarah, and Ben.



Jason (pt 1)

Jason only wanted his hands pictured

Simple Task:

- Jason first clicked to sign up for Zedd's event, and then RSVP'd.
- Wished the yes/no/maybe was more distinct, perhaps with green, red, and yellow color.
- Curious why "RSVP" was still shown again on the yes/no/maybe page.
- "I want an indicator of what you marked (yes/no/maybe) that takes you back to your main page with all the concerts". He also wanted a status page that was on the home page, with all planned concerts and one's status.

Jason (pt 2)

Moderate Task

- **Insightful quote:** "If I'm not with anyone yet, I can't use the concert chat yet, right?" – shows flaw in our UI that makes concert chat seem exclusive, when it is not
- Wanted to add his own friends and send out invitations (instinctual)
- Wanted frequent/regular "Concert Buds"
- Asked: "Does it know your seat number?" Wants to see if his other friends are at the same concert. Wanted to see that on a map
- Wishes "Concert Chat" said "All-Concert Chat" because it was unclear

Complex Task

- This was the easiest task for Jason to complete
- Though the "ETD" label was unclear/not useful – "I think inputting ETA would be helpful as people need to know when to leave so as to arrive on time."
- Wanted (in the chat) information about openers and when headliner shows up, with a countdown timer to the main act

Sarah: Person in Hayes Valley (pt 1)

Simple Task:

- Very straightforward layout
- Little to no confusion
- Was excited by our app idea
- Slightly hesitant to click/describe buttons
    - Points to our drawing capabilities :O

Moderate Task:

- Had some confusion and hesitation about joining a big group of concert goers but seemed on board when I explained motivations

*** Sarah declined to take a picture :(*

Sarah: Person in Hayes Valley (pt 2)

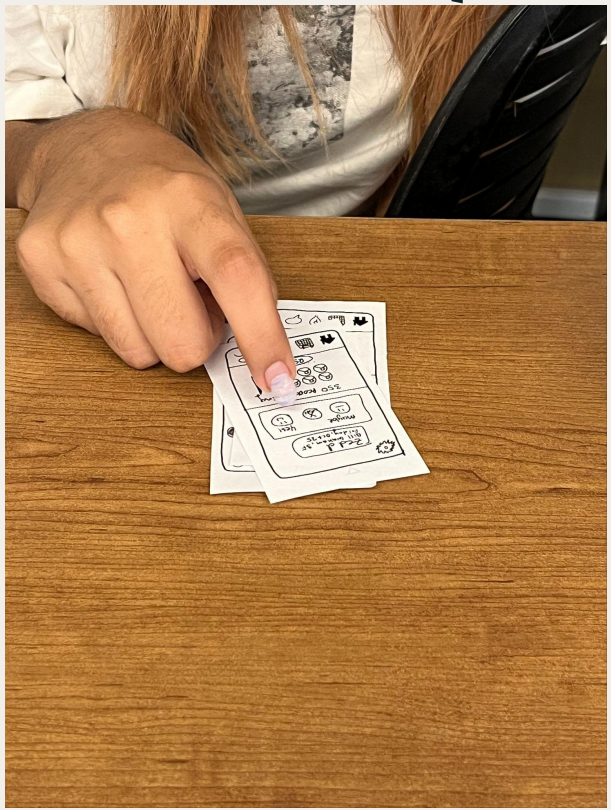
Complex Task:

- Fast to figure out
- Liked the map
- Thought the matching process was cool

-

*** Sarah declined to take a picture :(*

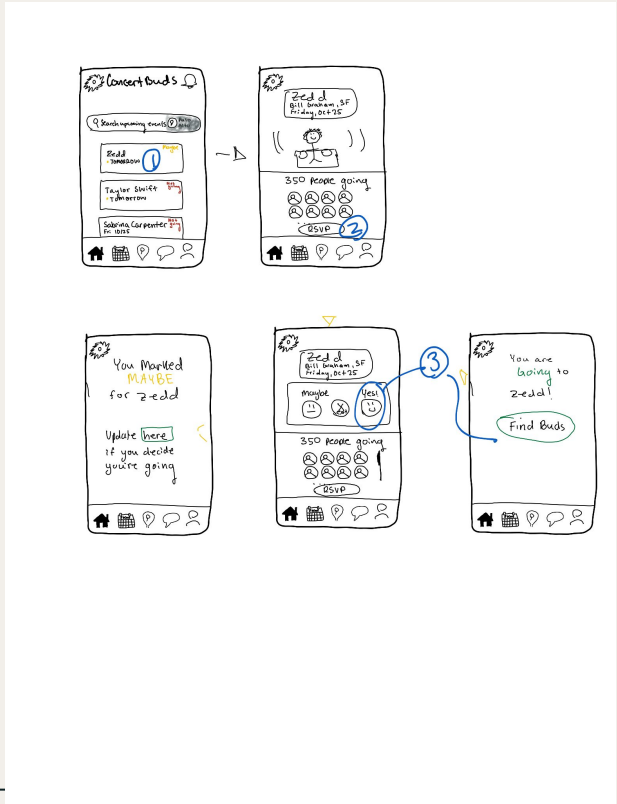
Janelle (pt 1)

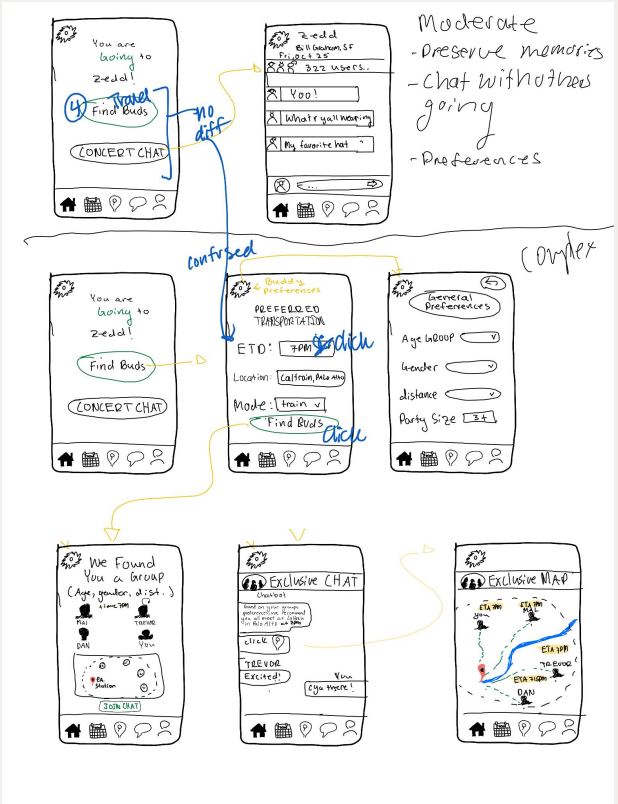


- Tried to click on the calendar icon when asked to find a concert buddy
- Immediately clicked yes on the RSVP even though instructed to rsvp “unsure but then deciding to go”
- Tried to change ETA
- Liked the exclusive map, wondered what the **chatbot** did – clicked on the location button and liked the exclusive map but noted it was **hard to find**
- Found the general chat **more engaging** than the exclusive chat
- Was curious to see what would happen if she clicked on a profile picture

- FEEDBACK: wanting to plan a concert journey in the far future + not at the location they are physically at, giving users the ability to add a concert they don’t see on the list
- Number of questions asked: 3
- Confusions: 4 (a lot in general for moderate and complex)

Janelle (pt 2) – map of user's clicks

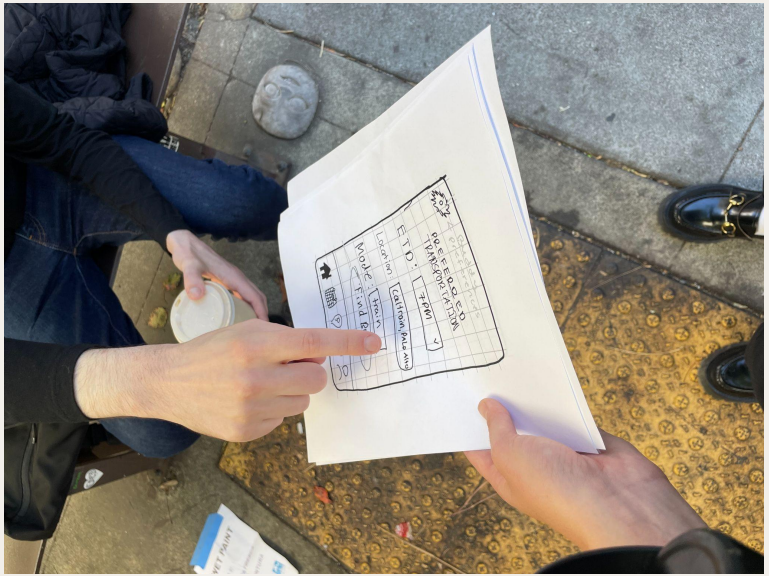




Ben: person in Hayes Valley (pt 1)

Complex Task:

- Most functionality was intuitive to Ben
- He was confused by the acronym “ETD”
- Also seemed hesitant to join a group chat after matching with concert going group
- Confused by “swirly button” in the top left (it was our settings button)



Ben clicking away!!

Lo-fi Prototype Testing Takeaways

a. Process data (what's happening in the big picture)
Most users are confused by the RSVP feature
b. Bottom-line data (usability goal key measurements)

Usability goals:
Quick, easy use:
- simple task was easy to navigate
- moderate and complex tasks were harder to navigate due to ambiguity in labeling buttons

Defined, clear tasks:
- yes

Intuitive Interface & Workflows:
-
- Missing steps in navigation, more customizable,

Lo-fi Prototype Testing Results

Process data

- Most users are confused by the RSVP feature
- Confusion on “swirly button” (i.e. settings)
- Hesitation and lack of motivation for joining a big group chat of concert goers
- Users want to see additional features (e.g. history, adding an unpopular artist) that our simple, moderate, complex tasks do not cover

Bottom-line data

- Some misclicks! (4 total)
- Quickly managed task flows, especially for simple and moderate tasks (average total time: 15 minutes)

Usability goals:

- Simple task was easy to navigate
- Moderate and complex tasks were harder to navigate due to ambiguity in labeling buttons
- Missing steps in navigation, more customizable options for user searching concerts & locations

Lo-fi Prototype Discussion - Implications

Implications:

- The **social feature** is the most engaging part of our app, while navigation takes the backseat.
- Multiple screens looked **similar** but in the design, are **different in functionality** (e.g. exclusive chat + general chat).
- Icons **draw attention** but if their meaning/functionality is **ambiguous**, could confuse users.

Lo-fi Prototype Discussion - Changes

Future changes to our design:

- We need to update our RSVP functionality and add a back button!
- We need a clearer distinction between the functionality of finding concert buds and joining the general concert group chat
- Only one participant used our taskbar. We need to add ease of navigation such as back buttons, functionality for searching concerts and viewing countdowns of concerts

Lo-fi Prototype Discussion - Limitations

Testing couldn't reveal:

- Accuracy of using icon buttons – a limitation since they were hand drawn
- Navigating backwards – how long it would take a user to correct a misclick
- How likely users would participate in concert chatroom vs passively read messages

Appendix

Full List of Pros and Cons - AR

PROS

- Fun planning; feels like part of the concert vibe
- Cool, immersive visuals that match the concert theme
- Easy way to meet other concert-goers
- Real-time directions to transit, meetups, venue
- Creates shareable, unique memories (concert-themed filters)
- Social boost: group up, share rides, hype each other up
- Real-time transit alerts; no more missed stops

CONS

- Learning curve–AR isn't easy for everyone
- Privacy concerns with location sharing
- Dependent on newer phones, good internet
- Major battery drain; need a portable charger
- Can distract from surroundings (public transit)
- Info overload: might get too chaotic
- Limited accessibility; not great for all users

Full List of Pros and Cons - mobile app

PROS

- Easy to use; familiar for most people
- Accessible on most smartphones
- Great for messaging, media sharing, connecting fans
- High functionality—supports navigation, social features
- Push notifications for instant updates
- Offline access for saved maps, schedules
- Customizable profiles, preferences for a personal touch

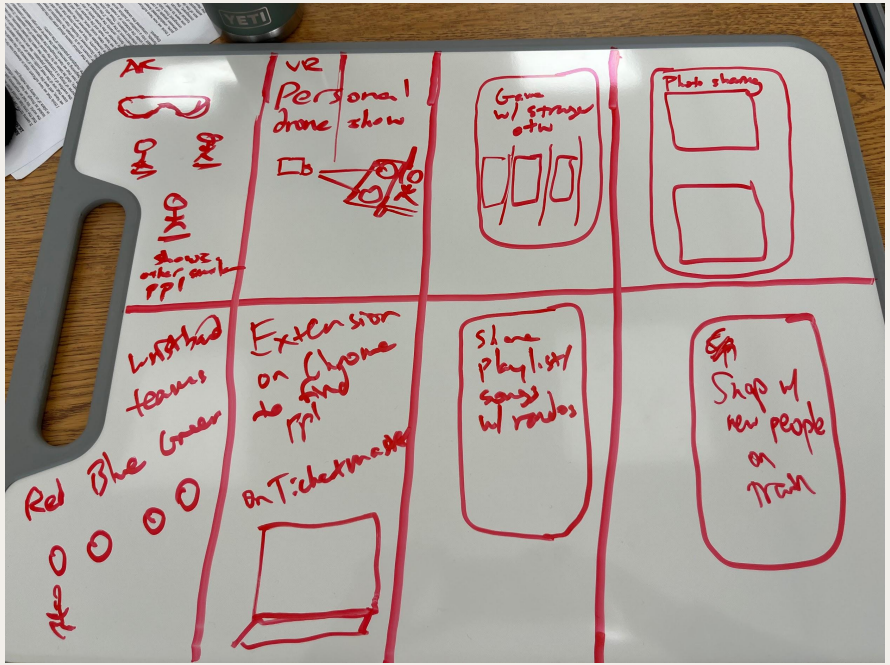
CONS

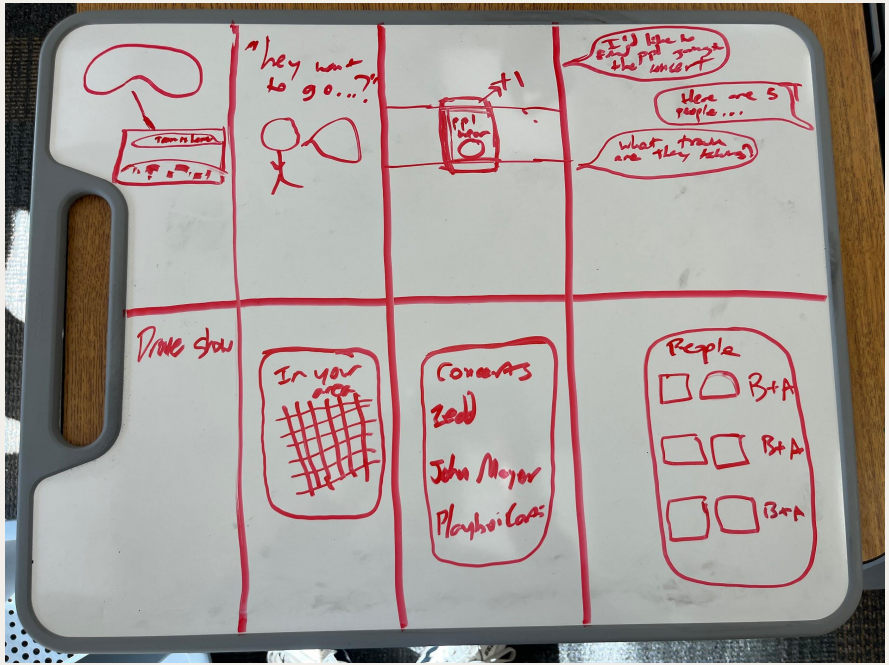
- Requires download; might deter some users
- Takes up phone storage
- Hard to stand out in crowded app market
- Data privacy concerns, especially with location use
- Compatibility issues on older devices
- Battery drain from GPS, background features
- Needs frequent updates for OS compatibility

A ton of sketching on Figma and then Notability (Figjam is a pain.)

https://www.figma.com/board/GedqG1YsNXGDhTHpWm04K0/lofi-prototype?node-id=0-1&node-type=canvas&t=F8wyXYfUNjrvDW1X-0

Henry's Sketches



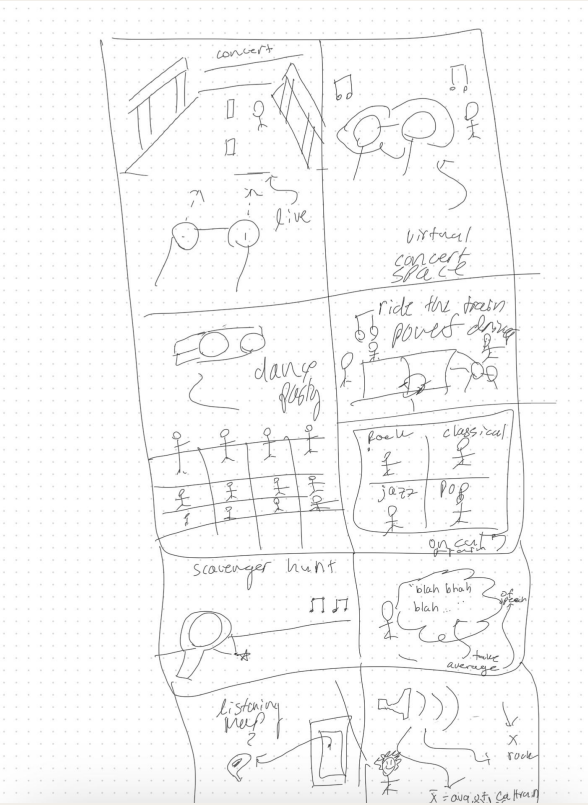


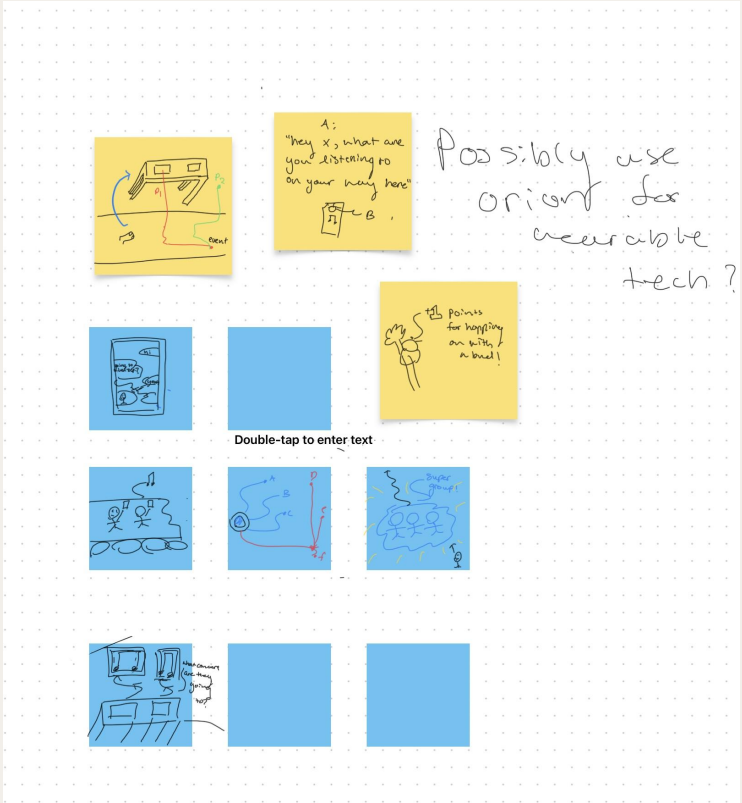
sarah

Visual notif
Concert buds
Speech control
karaoke in bus
Wearables
concert digital wrist band
Chat based systems
like another concert goer
or facilitate convo.
Darkhorse party bus
no seats
free - like squid game
concert here!
free
AR in concert
- be closer to artist
free
VR in concert

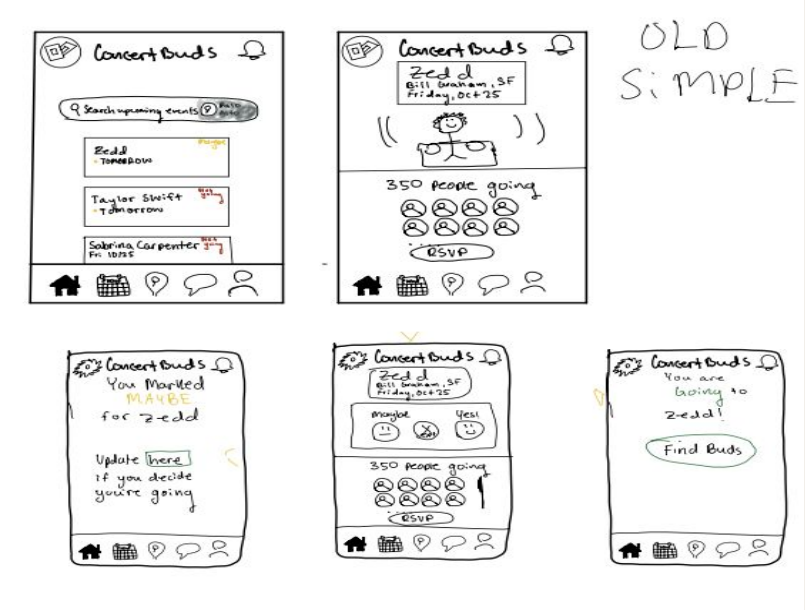
AR
VR
VR of driving while talking
free
free
light stick points
free
self driving car/limo
free
concert buds
connect w/ other apps
F
Insta
X
free
meet someone in line!
free
meet the artist in VR

Matt Sketches

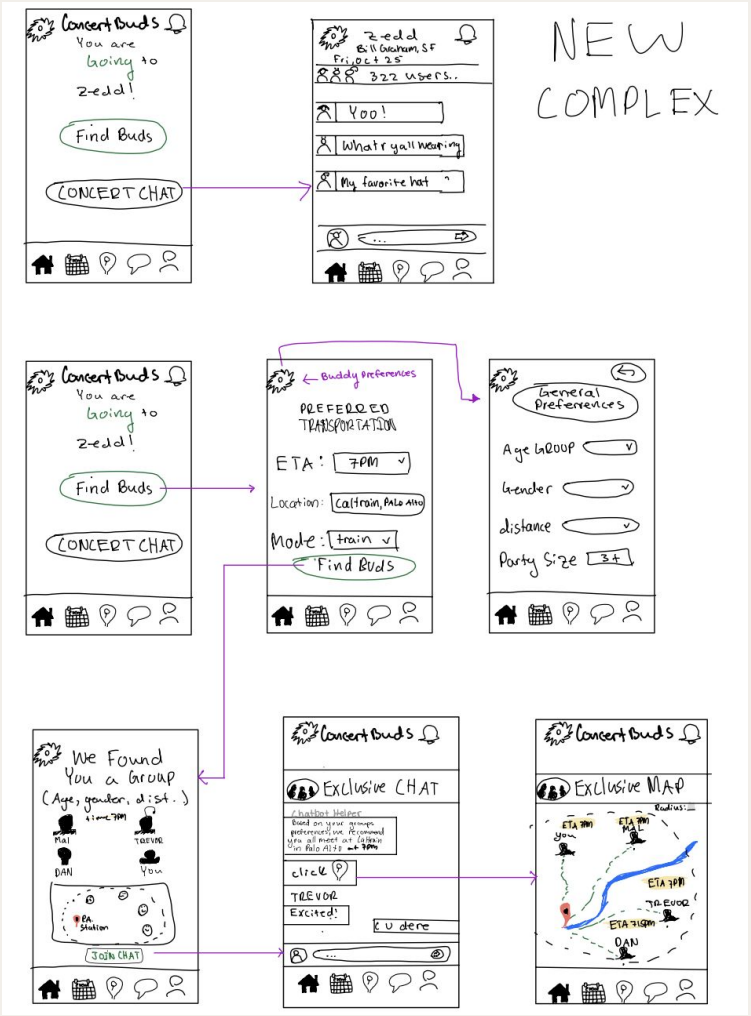




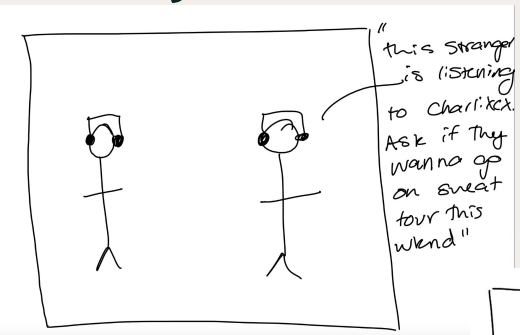
Matt Sketches

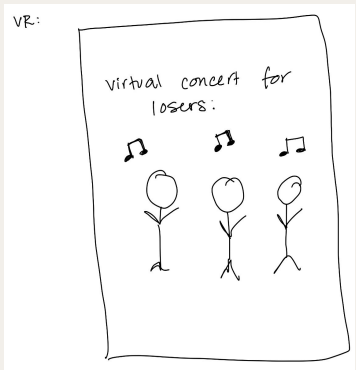


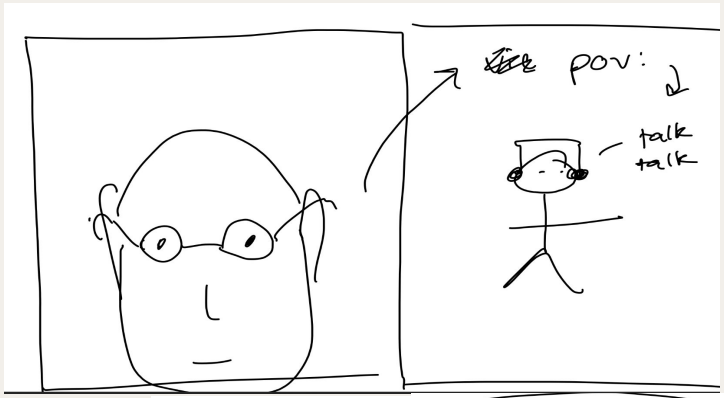
Matt Sketches

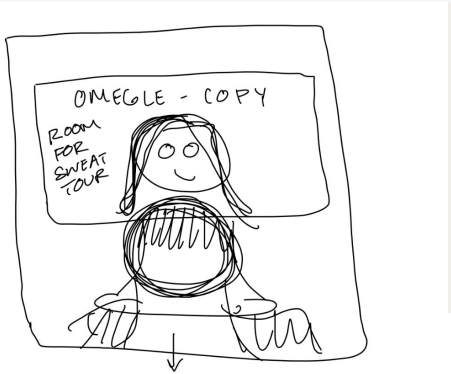


Izzy Sketches

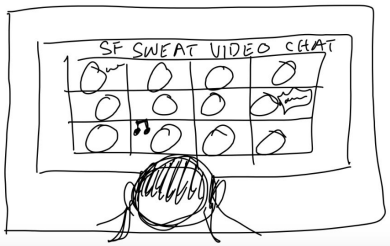


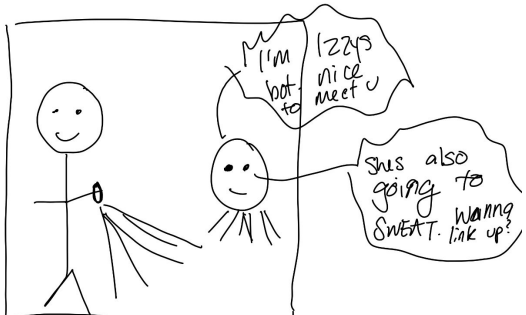


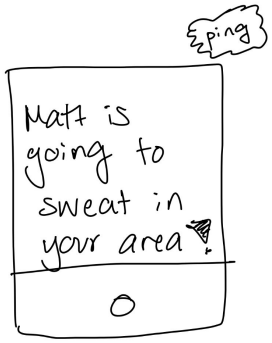


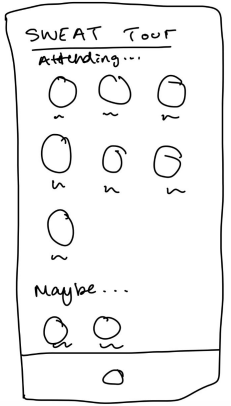


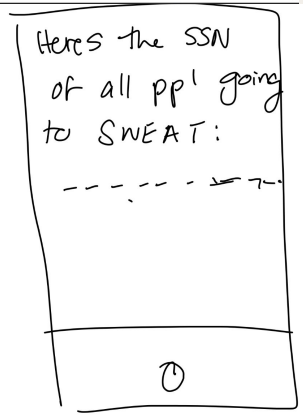
too your current travelling route, he may also be going to sweat tour



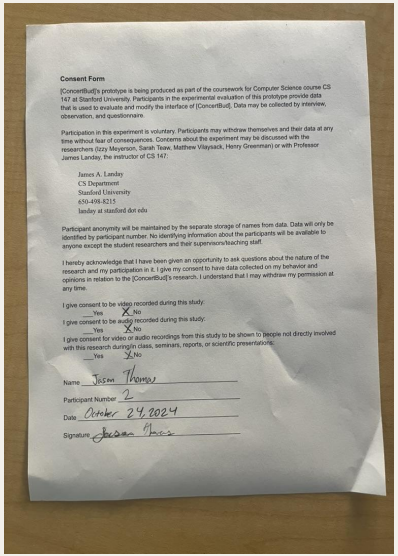








Consent Forms



Consent Form

[ConcertBud]'s prototype is being produced as part of the coursework for Computer Science course CS 147 at Stanford University. Participants in the experimental evaluation of this prototype provide data that is used to evaluate and modify the interface of [ConcertBud]. Data may be collected by interview, observation, and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Izzy Meyerson, Sarah Teaw, Matthew Vilaysack, Henry Greenman) or with Professor James Landay, the instructor of CS 147:

James A. Landay
CS Department
Stanford University
650-498-8215
landay at stanford dot edu

Participant anonymity will be maintained by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the research and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to the [ConcertBud]'s research. I understand that I may withdraw my permission at any time.

I give consent to be video recorded during this study:
___Yes X No
I give consent to be audio recorded during this study:
___Yes X No
I give consent for video or audio recordings from this study to be shown to people not directly involved with this research during in class, seminars, reports, or scientific presentations:
___Yes X No

Name Jason Thomas
Participant Number 2
Date October 24, 2024
Signature Jason Thomas

Consent Form

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___Yes ✓No
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___Yes ✓No

Name Janelle
Participant Number 1
Date 10/24/2024
Signature Janelle

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I give consent to be audio recorded during this study:
___Yes ✓No
I give consent for video or audio recordings from this study to be shown to people not directly involved with this research during in class, seminars, reports, or scientific presentations:
___Yes ✓No

Name Sarah
Participant Number 4
Date 10/24/24
Signature Sarah

Consent Form

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I give consent to be audio recorded during this study:
___Yes ✓No
I give consent for video or audio recordings from this study to be shown to people not directly involved with this research during in class, seminars, reports, or scientific presentations:
___Yes ✓No

Name BEN
Participant Number 3
Date 10/24/24
Signature Ben

Link to our script

https://docs.google.com/document/d/1Gt2Kk55MlI2AGGK2Ucgc3F2xInZAvnZPbqW-h9om3NM/edit