ConcertBuds

Creating Concert Connections

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CS 147 Autumn 2024, Design for Movement

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Value Proposition: Creating Concert Connections

II. Team Members & Roles

Henry G.
Developer

Izzy M.
Designer

Sarah T.
Designer/Developer

Matthew V.
Developer

III. Problem/Solution Overview

Concert-goers often want to meet up with others who have the same music taste to go to live performances together, but do not have any convenient, reliable way to do so.

ConcertBuds connects you with fellow concert-goers who are taking a similar route to the venue so you can plan meetups, share the ride, and start the party on your commute! Our app focuses on fostering real life interactions and building community. Primarily designed for solo concert goers, users can see and chat with other people going to concerts and find shared routes to venues on public transportation. By fostering meetups on public transportation, we promote sustainability and personal safety while designing for fun.

IV. Needfinding

Interviews

Designing for movement is an incredibly broad starting point, so we decided to focus on one particular facet of movement: taking public transportation.

To better understand users' pain points with public transportation systems in the Bay Area, we decided we would interview people on the Caltrain. On a Saturday morning in September, our team members boarded the northbound Caltrain at the Palo Alto station. We spoke with 9 riders on the Caltrain and an additional person in San Francisco upon arrival to the city. We found that because riders were eager to share their experiences and had nothing to do as they rode the Caltrain, it was surprisingly easy to recruit participants.

We approached interviewees in pairs with one person taking the lead on interviewing and the other responsible for note taking and/or recording. We introduced ourselves and ensured that interviewees felt comfortable and at ease before continuing with pre-written questions. We allowed the conversation to flow naturally, following inquiries and curiosities we had about participants' answers.

Our Caltrain participants ranged in age from mid 20s to late 60s. Some of these interviews did not yield many tensions, but there were several that did. For example, we met Michelle, a mom with kids in tow, who expressed reservations about bringing children on public transportation due to safety concerns and not wanting to bother other passengers with young children. Crowds intimidated her, and it was another layer of stress to bring her children into the mix. We also met Tanvi, a dentist living in SF and a first time Caltrain rider, who revealed herself to be skeptical of autonomous transportation options, such as Waymo. She expressed to us that "technology is too involved in mundane tasks." We talked to John, an NBC Universal sports executive, who felt that even though he was outgoing, the social norms of public transportation dictated that he shouldn't talk to strangers on the

train. As he described, “I’m quite gregarious but I don’t feel the need to talk to people while I’m riding the Caltrain.”

We asked these interviewees about their relationship with public transportation: how often they use it, what they do to entertain themselves, what excites them about public transportation, and what causes them pain. We asked questions to get at specific memories, like “do you remember the first time you took the Caltrain” or “do you have a memorable experience on public transportation.” We asked about the tools the participants used to plan their route and whether their experience as a passenger had changed over time. We ensured to let the conversation flow and follow inquiries/curiosities that arose during the course of the interview.

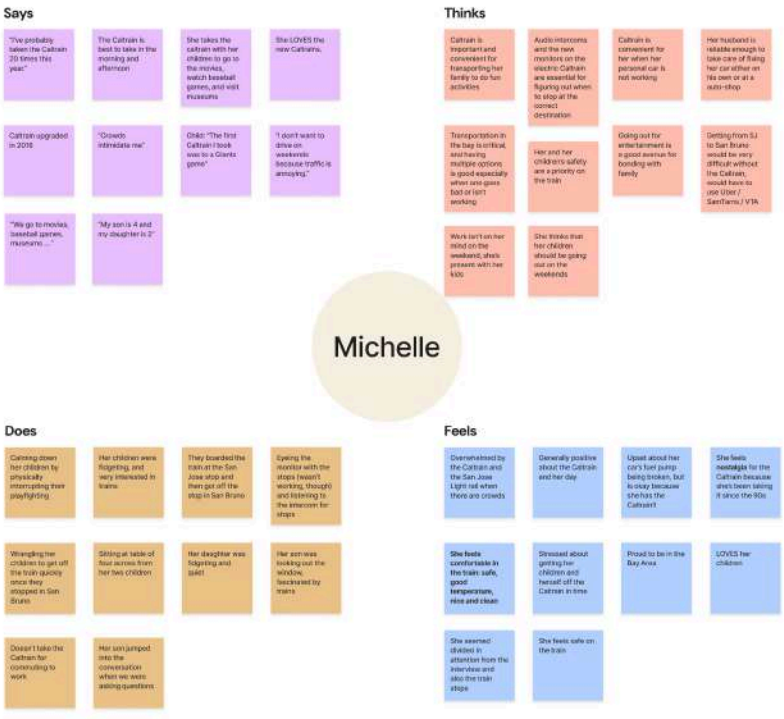
After synthesizing our 9 Caltrain interviews (and 1 SF one), we still felt our scope was too broad. We didn’t have a specific direction or idea, and so we decided we needed to further refine. So, we recruited two additional interviewees: one from the Palo Alto Peets Coffee and another is the head of the Stanford Transportation Club. We wanted to narrow in on how we could improve the transportation experience via entertainment channels.

Our conversation with Istvan, a product manager at Oracle, at the Peets Coffee proved to be the most fruitful. We went in with an intention to get more emotional and intrapersonal responses. This interview lasted much longer than all the others, and so there was time to probe into his relationships with others, his future predictions for technological change, and his nostalgia for the past. During this interview, we learned about Istvan’s strong desire to connect with others, especially through music. He expressed frustration over wanting to go to a concert but having no one to go with.

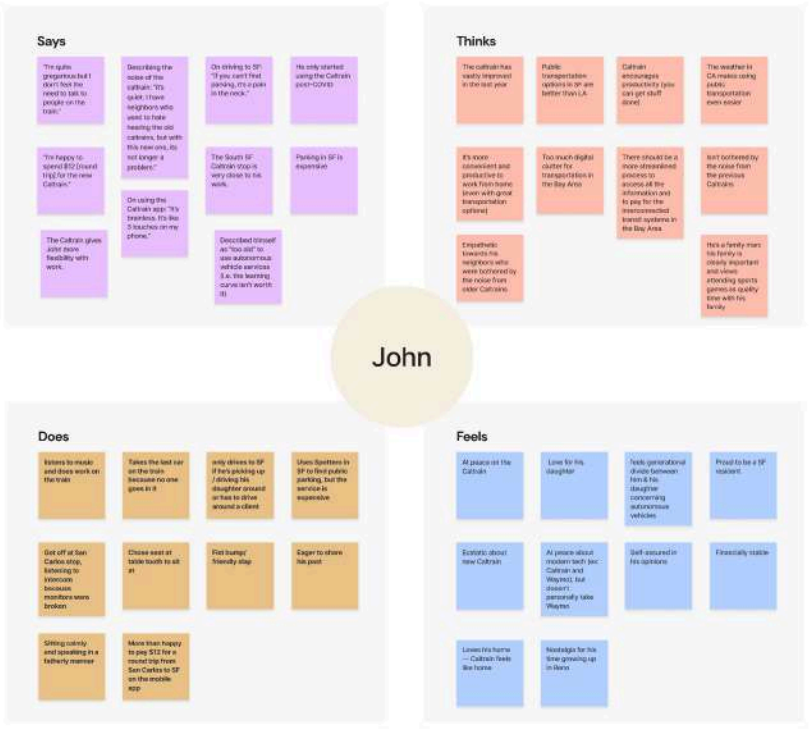
Matthew and Sarah with Istvan

Synthesis

In order to synthesize the many hours of interviews and pages of interview notes, we got together as a team to create empathy maps for our standout interviews. Each individual participant got their own empathy map. For each map, we outlined different things our participants said, did, felt, and thought in four distinct quadrants.



Michelle’s empathy map



John's empathy map

Tanvi's empathy map

Through the empathy mapping process, we discovered insights such as: public transportation systems in the Bay Area are very disconnected, entertainment on trains is important for parents travelling with children, and safety/convenience features, like monitors and intercoms, were essential to an easy ride. However, these felt like issues too broad to tackle. That's why, after talking to Istvan, we realized we could focus on transportation as a means to an end goal. We wanted to think about the entertainment experience and how transportation could play an important role.

V. POVs & Experience Prototypes

POVS

In synthesizing our interviews, we created POVs for our most important interviews: Michelle, John, and Istvan. After POV creation, we brainstormed “How Might We’s” (HMWs) to critically analyze tensions discovered in our interviews. Our HMW generation was done in rapid fire to get a vast set of ideas. We then combed through our HMWs to extract 2-3 of the most promising ones.

Below are our standout interview POVs:

POV #1: Michelle

We met… a mother riding the Caltrain with her two toddlers.
We were surprised to realize… that she often takes the Caltrain with her family on the way to weekend events, but is still overwhelmed on public transit when it is crowded.
We wonder if this means… she is anxious about losing her toddlers and crowds make it difficult to keep them safe
It would be game changing to… ease her anxiety about traveling with children in crowded public transportation

Michelle’s HMW Highlights:

How might we make the commute with her kids less stressful?

How might we reduce the feeling of unease on crowded public transportation?

How might we engage/distract her kids?

How might we make public transportation feel cleaner/safer?

POV #2: John

We met… a gregarious Bay Area fellow who takes the Caltrain for his commute to work
We were surprised to realize… he acts antisocial in his commute.
We wonder if this means… that the design of public transportation fosters this behavior.
It would be game changing to… remove/mitigate the feeling of isolation while traveling on public transportation.

John’s HMW Highlights:

How might we make commuting socially robust rather than isolating?

How might we remove/reduce the stigma of talking to strangers on public transportation?

How might we create social environments through design?

How might we foster connection during a commute?

POV #3: Istvan

We met… a middle-aged man from Hungary who enjoys going to coffee shops alone
We were surprised to realize… even though he enjoyed going to concerts with his daughter in the past, he feels sad that he doesn't anymore
We wonder if this means… he would be more inclined to go to a concert with a new friend to experience nostalgia
It would be game changing to… bridge the generational divide by helping older generations feel comfortable going to live entertainment

Istvan's HMW Highlights:

How might we connect him with people who have similar interests?

How might we bridge the generational divide in going to live entertainment events?

How might we make social outings feel more worthwhile to a middle aged, working adult?

HMWs

After our POV and HMW generation, we picked out the most powerful HMWs with which to ideate solutions. **Our standout HMWs include:**

- HMW make commutes **socially robust** rather than **isolating**?
- HMW make social outings **feel worthwhile** to someone who **doesn't know of anyone else** to go to social events with?
- HMW help bridge the **generational divide** in attending **live entertainment**?

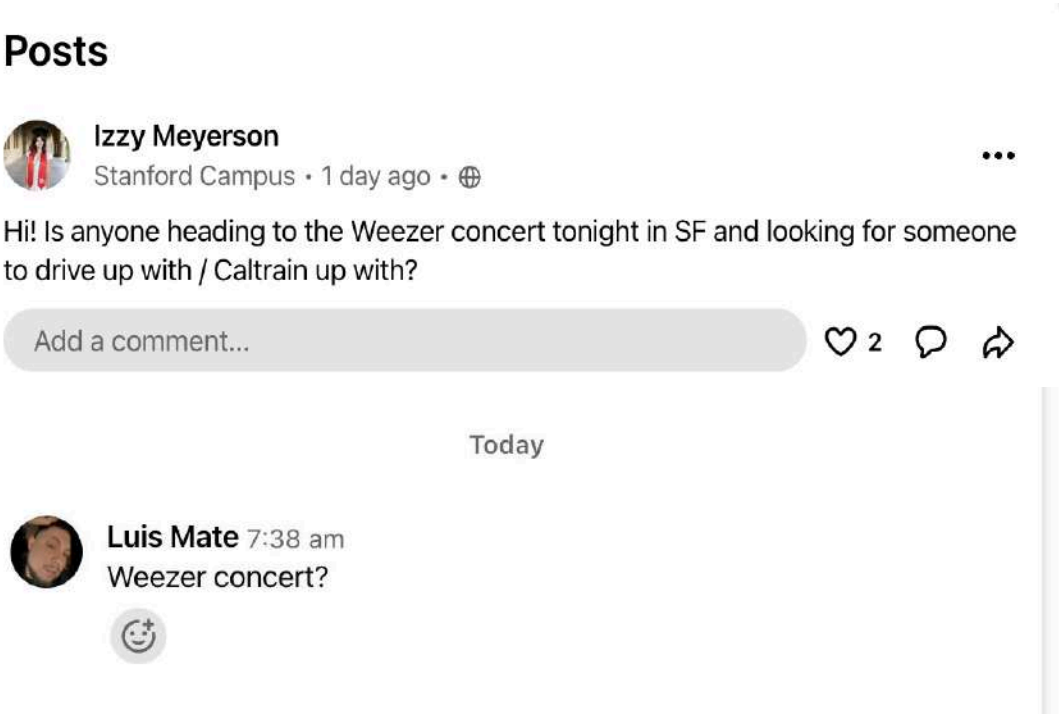
Top 3 Solutions

From these HMWs, we began to brainstorm possible solutions to these problems. Our 3 standout solutions include:

1. What if we create an app where people can meet others **nearby** to commute with to **shared destinations**?
2. What if we made a **trivia or action game** for users nearby each other on transportation to compete in fun digital games against each other (regardless of age) and get rewards?
3. What if we made commuting **worthwhile** for users by asking them to upload **before** and **after** photos with each other as a sort of promotion for the event and in turn get discounted tickets.

Experience Prototypes

For the **first** solution, our experience prototype involved making posts on various social platforms (Nextdoor, Fizz) asking whether anyone in the area would be interested in attending a concert with one of our team members.

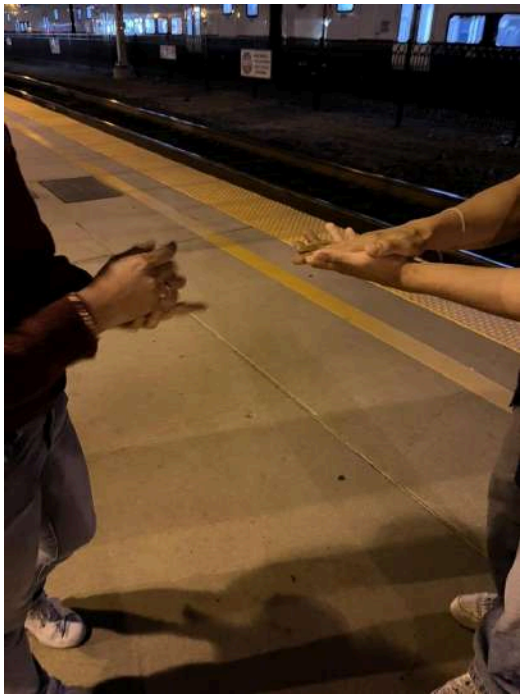


Izzy's Post on Nextdoor with only one response

A team member's post on Fizz

Through this experience prototype, we were testing the assumptions that existing apps are too broad to fulfill the niche need we found in our needfinding interviews and that people want company to attend fun events but may have no one to go with. Our experience prototype reinforced our assumption that existing apps are too broad for this, in that we didn't receive many responses because we were using apps with broad utility. We also believe that there was not enough time for our posts to rack up a meaningful amount of interactions, and that a Weezer concert may have been too specific of an event to attract a Palo Alto audience. We also believe that because these apps have such a broad audience, users of these apps may be hesitant to meet up with strangers. Overall, this experience prototype did support our belief that current location-based apps (i.e. Nextdoor, Fizz) are ill-equipped to fulfill the need to meet others in the area with the purpose of going to a concert together.

For our **second** solution, we approached strangers on public transportation for a game of rock, paper, scissors as our experience prototype.



Matthew playing Rock, Paper, Scissors with a Caltrain rider

With this experience prototype, we were testing the assumption that people are often bored and lonely on public transportation and a friendly game would help those fearful of breaking the stigma of socializing with strangers on public transportation. We received a range of responses, including those who were eager and excited to play a game against one of our team members and those who flat out rejected the offer. Ultimately, we saw that there was indeed a desire for some to socialize and engage with others on public transportation through lighthearted game play. However, not all people held this belief. From this experience prototype, we believe that it's easier to break the stigma of talking to strangers on public transportation when people are able to establish initial trust and rapport through lighthearted gameplay. Though this experience prototype showed the greatest support for our hypothesis, we ultimately decided that developing a smartphone game to play with others while on public transportation would be outside the scope of this class.

For our **third** solution, we tested our assumptions that taking photos and sharing recorded memories is a good incentive for making meaningful connections, commuting with others is better than commuting alone, and it's all about the journey rather than the destination. We created an experience prototype whereby one of our team members held up a sign that read "Are you going to [insert name of place]" in a common space. Any passerbyers that approached were asked whether they

wanted to walk together to a destination, and, at the end, were asked to take a selfie together.

Photo of Sarah with sign and passerby

After walking to Lakeside together

We found that most people did not acknowledge nor approach the sign. People were also reluctant to share an individual selfie but were much more excited by taking a picture together with the sign holder. Due to these results, we hypothesized that it is more encouraging to take photos with others when it is for the purpose of memory-sharing. We also learned that people are less likely to share a picture of themselves with people they don't yet know. The results of the experience prototype showed that some were willing to walk places with strangers and get to know each other, but that photos of the event were less appealing.

VI. Design Evolution

Final Solution

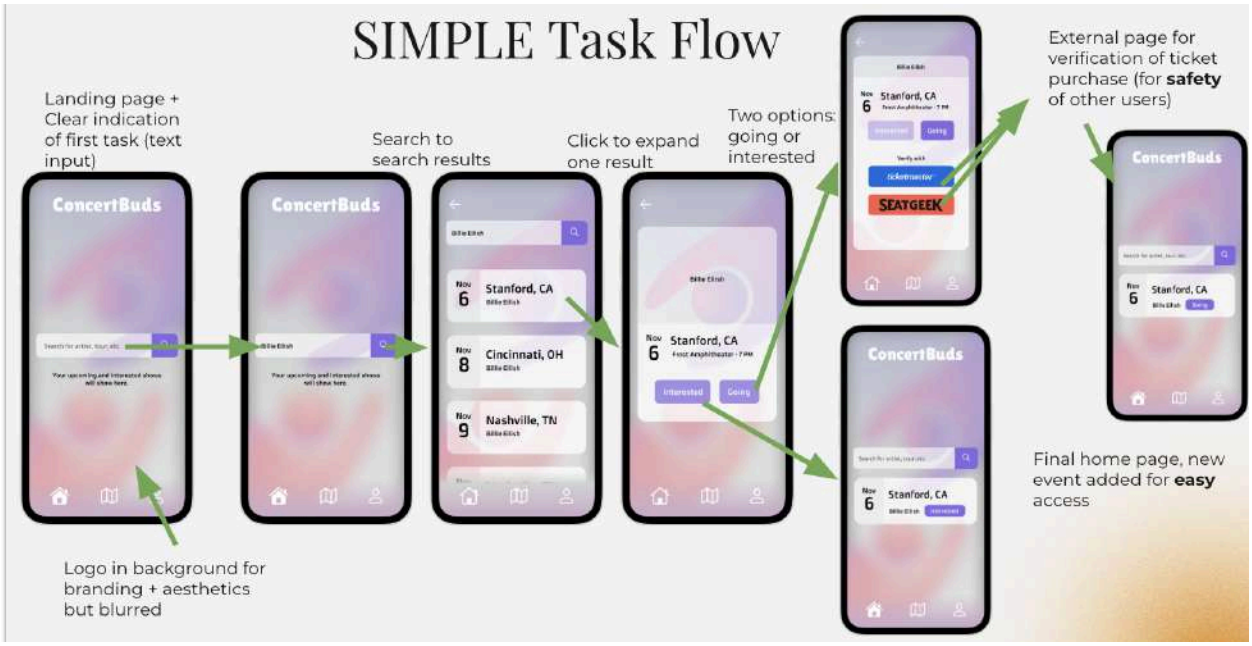
Our final solution was ConcertBuds, a smartphone app that connects nearby concert-goers who are going to the same show on a shared commute so that the concert going experience could be social and fun for those who have no one to go with. This was primarily inspired by our interview, POV, and HMWs from Istvan where we saw a need for concert goers to connect with one another. Our experience prototypes confirmed to us that people want to be entertained while commuting and are happy to meet up with others, strangers or not, on a shared commute.

The intended audience is anyone who attends concerts and wants to find other people to go with. However, those who are not technologically savvy and solo concert-goers who live in isolated areas and therefore do not share a commute route with others who are attending the same event.

There are inherent privacy implications due to the location-based nature of the app. There are also safety concerns with regards to meeting up with strangers, though these are reduced by meeting up on public transportation which is inherently in the public eye. Our app has the potential to perpetuate systemic biases as well, due to the nature of having profile pictures and names attached to users' profiles.

Tasks

Simple Task: Users can search for a concert using a location based search and RSVP to any concert. Once RSVP'd, users can see other ConcertBuds who have RSVP'd to the same event. This is the simple task because it will be the most commonly used feature of the app and is required in order to complete both the moderate and complex tasks.

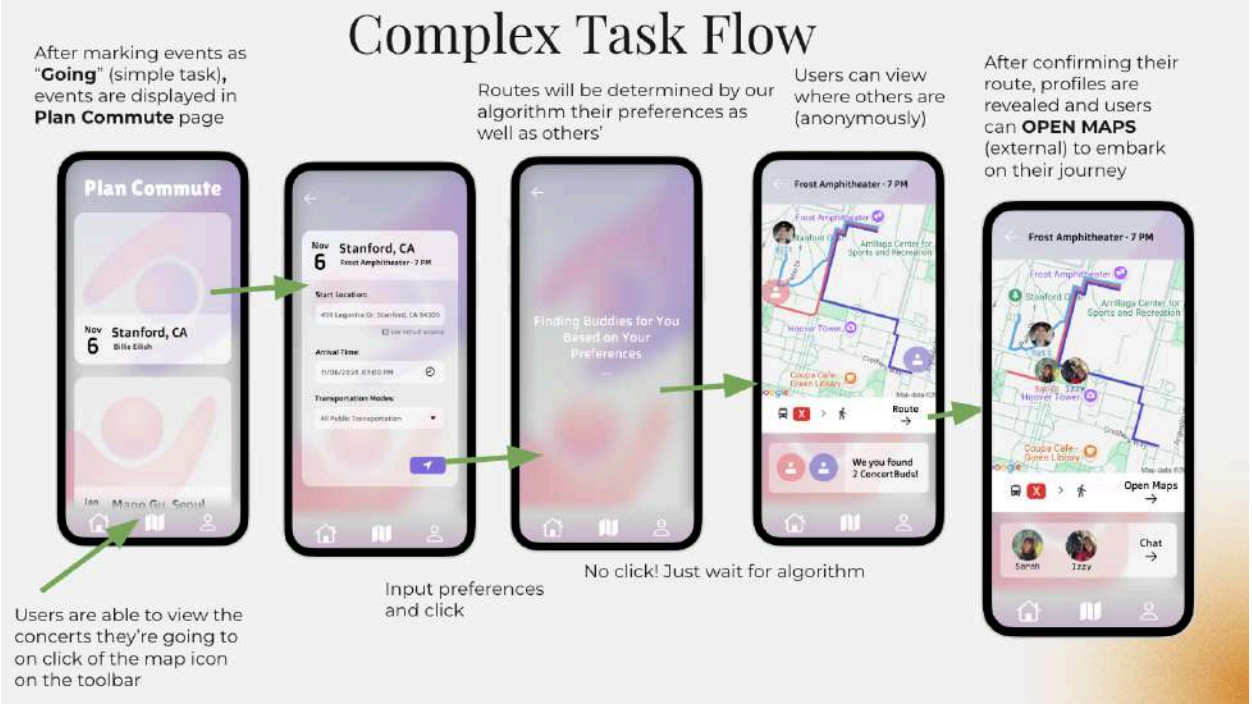


Our annotated simple task flow

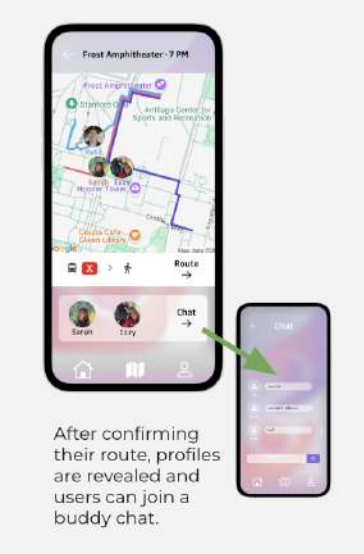
Moderate Task: Users can connect with others going to the same concert by joining the group concert chat or individually chatting with other users listed on a concert's RSVP page. This task is accessible once a user has RSVP'd to a concert. If a user chooses an individual profile on the RSVP page, they can direct message that individual. They can also join the bigger group chat of all ConcertBuds who have RSVP'd to the event.

Our annotated moderate task flow

Complex Task: Users can plan their commute to the venue and connect with other users on a shared commute. On the navigation bar at the bottom of the screen, a user can plan a commute to one of their RSVP'd concerts. They can input their location and planned arrival time as well as their preferences on what types of public transportation they want to use (i.e. bus, train, subway, etc…). The app then plans a commute for them based off the given information and checks to see whether other RSVP'd ConcertBuds will be sharing a similar route. If so, these ConcertBuds are connected along their shared route so they can meet ahead of time and share the commute to the venue.



Our annotated complex task flow



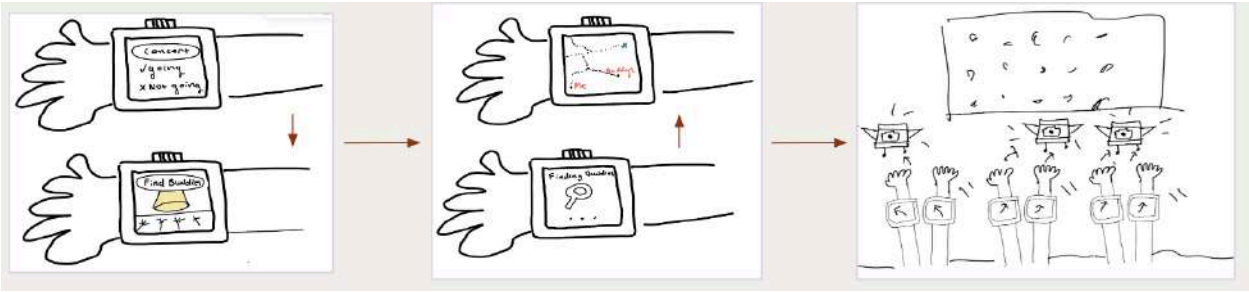
Additional privacy measure for complex task

Design Evolution

To recap our solution design evolution, we started with the basic premise that public transportation users feel wary of talking to others on their commute due to social norms, even if some prefer to be social. This finding was based on our needfinding interviews which confirmed the belief that riders adhere to the social norm of keeping to oneself on public transportation. Through experience prototyping of

finding ways to engage people on public transportation, we found that riders want to connect with others who are going to the same destination, especially if that destination is a live entertainment event. However, connecting just anyone on public transportation was too broad and unfocused to succeed – there had to be some common interest or understanding. We revisited our interviews and analyses to find common threads to narrow our scope. Though we began within the arena of public transportation, our needfinding interviews, POVs, and HMWs pointed us to the idea that concert goers want to be able to connect with others before the show, and our experience prototyping proved that the medium of public transportation would be an ideal place to do so.

Before settling on our final mobile application solution, we ideated some low-fi prototypes of other types of solutions. For our first solution, we created a wearable watch app that could control drones. Through the app, users would be able to connect with each other and find shared commutes to the venue. The drones would be motion censored so that when a user waves their arm (watch arm), the drones move in the same direction and take photos/videos to memorialize the event.

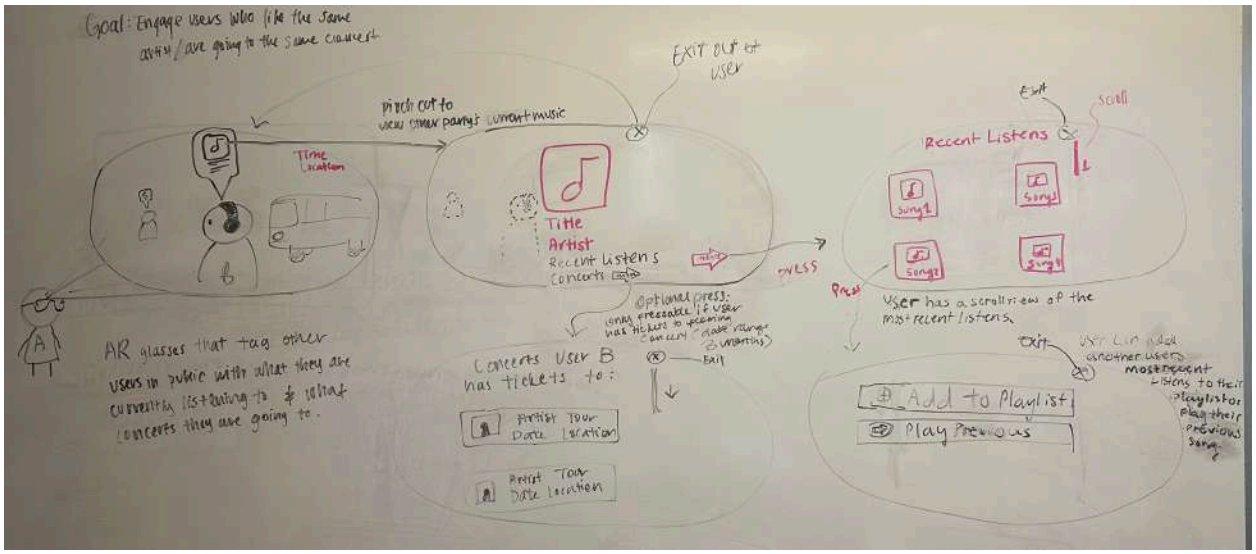


Flow for wearable watch + drone solution

We liked the interactiveness of this solution and how it tapped into new technological innovations. There is also no competition currently on the market. However, the solution involves lots of expensive hardware making it inaccessible. It would also be incredibly disruptive at a live music event and may even violate aviation/drone laws.

Our second idea was to create augmented reality goggles that would allow users to view what other users' are listening to in real time. This facilitates real life interaction as a user can just go up to someone they've identified, via the AR goggles, that likes the same music. The goggles would also have the capability to take pictures,

thereby recording memories of any shared event.

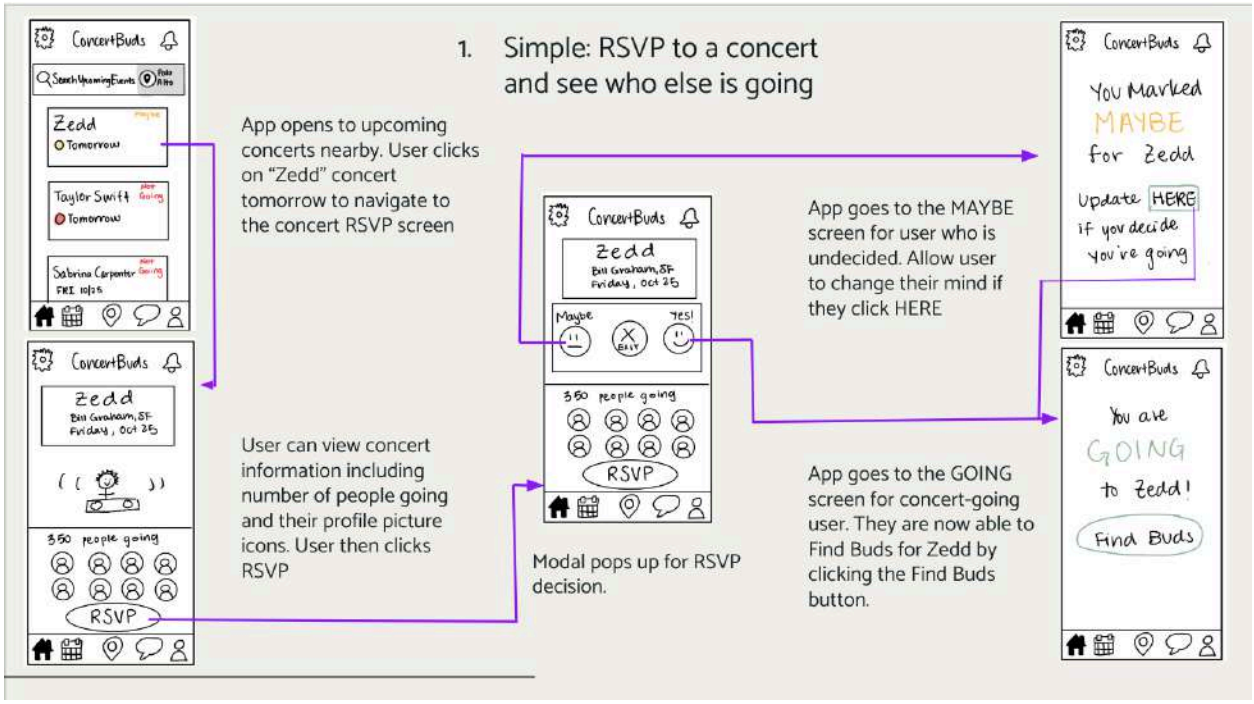


AR Goggles Solution

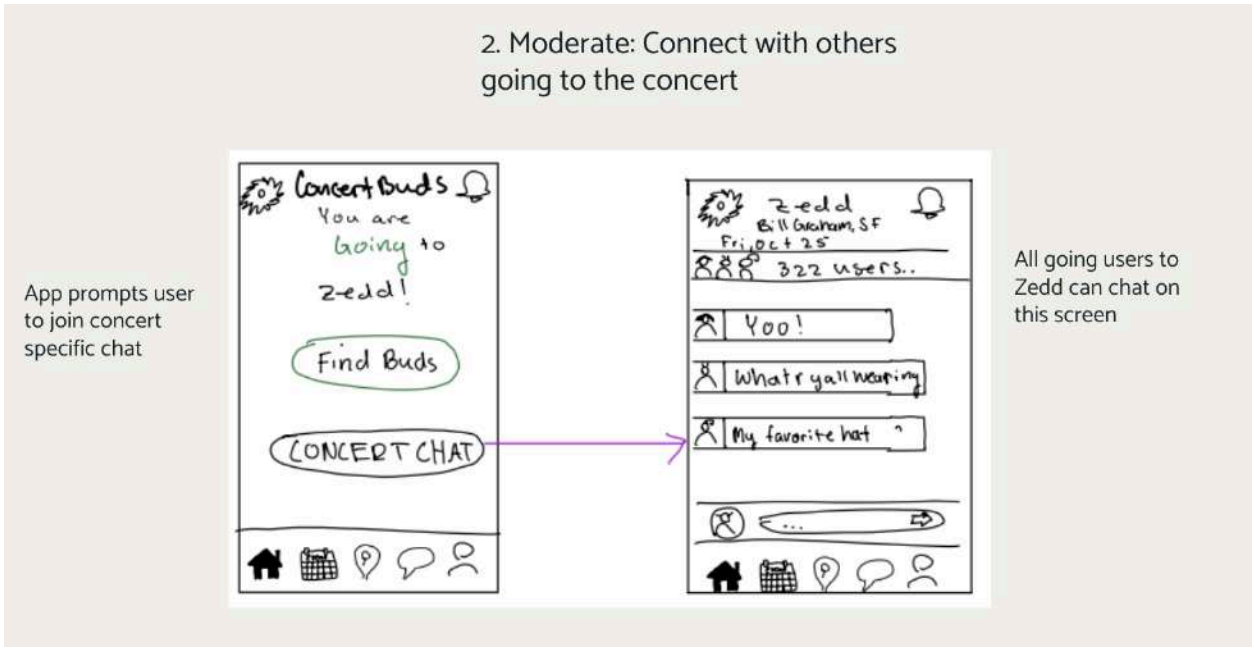
This solution is also highly interactive and immersive, making it new and innovative. It facilitates real-life interactions, which is attractive to our values. These goggles, however, would be expensive and have a steep learning curve to learn how to use. There are also privacy concerns in being able to view what other people are listening to. The idea also relies on AR technology which our team does not have experience with.

Our final solution, and the one we chose to develop further, is a mobile app, as this would be the most accessible, easiest to use, provides a good method of communication between users, and could have high functionality in the limited 10 week period we had to develop it. We acknowledged, however, that the crowded app market would make it harder to stand out and that there could be a barrier to use in that users would have to download the app and allocate enough storage on their phone for the app data.

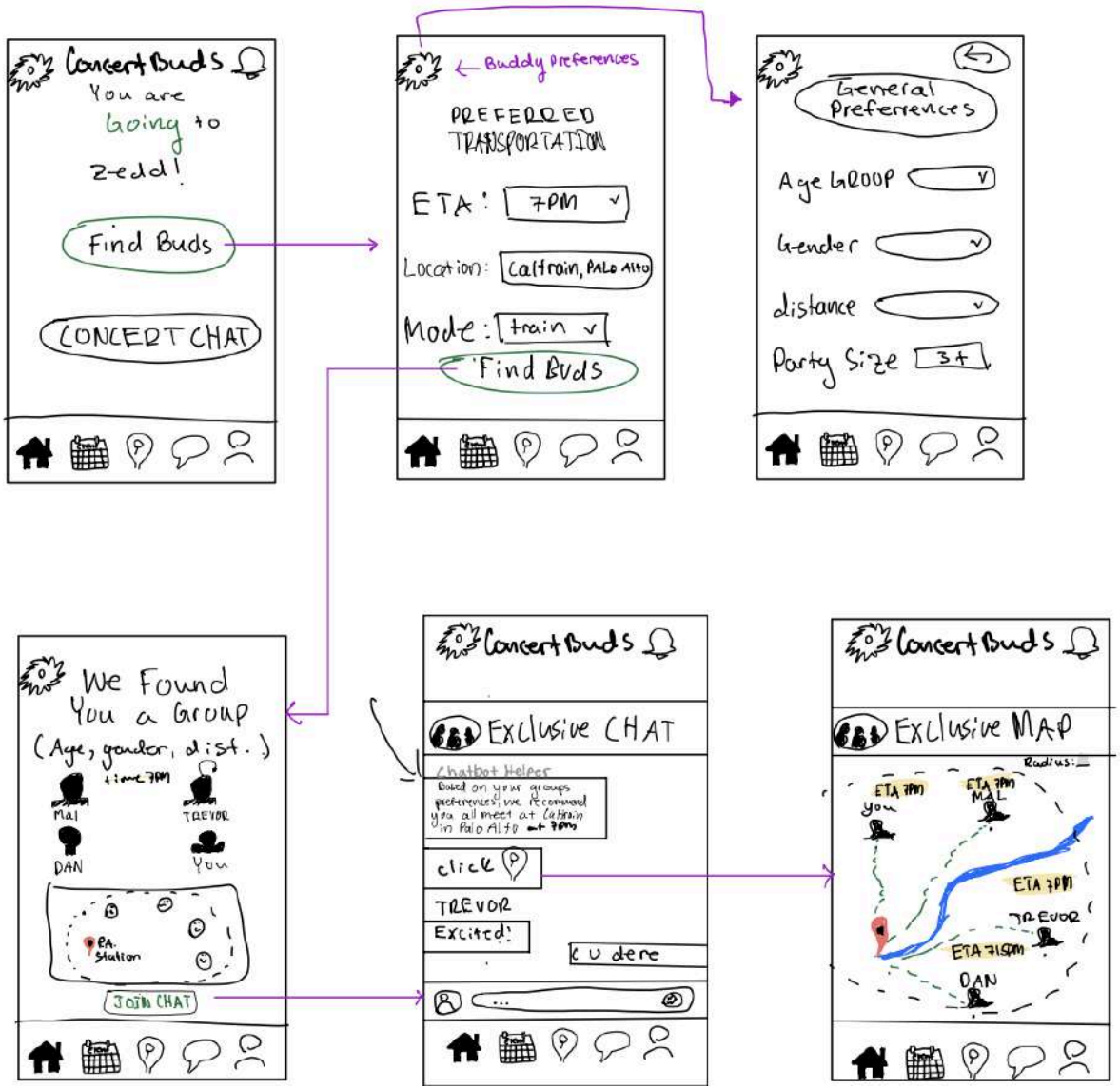
Low Fidelity Prototype:
Our low fidelity sketches were done on an iPad with a drawing app (Notability). Our task flows are outlined as follows:



Simple Task Flow (low-fi)



Moderate Task Flow (low-fi)



Complex Task Flow (low-fi)

Usability Testing:

With these low-fi prototypes of our three tasks, we set out to do some usability testing. Some members of our team recruited people on Stanford's campus (no students) while another member tested the low-fi prototype in San Francisco. We asked each participant to complete one or two tasks and then had them reflect on their experience using the prototype. We also made sure not to provide any guidance on the app's usability/functionality since we wanted to ensure that the app was intuitive. If participants were confused, that would help us understand what functionality was not intuitive.

Before testing, we outlined usability goal posts to focus on, including time it took a user to complete a task, whether the interface was intuitive with visual cues and uncrowded, how curious each participant was to explore the app by joining chats or planning commutes, and lastly the number of errors or misclicks a participant made.

We aggregated our findings from our participants (Jason, Janelle, Sarah, and Ben):

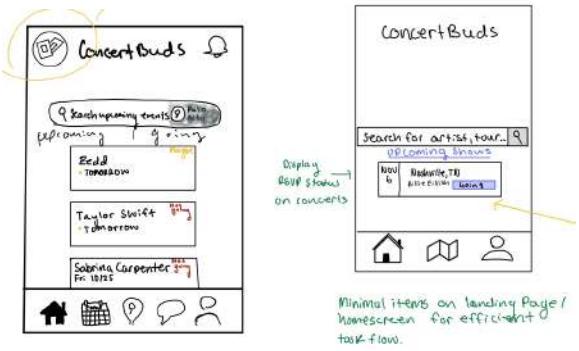
- Generally found the functionality intuitive
- Confusion/hesitancy surrounding the motivation behind our moderate task, specifically in joining group chats
- All participants were pretty quick in completing tasks
- Didn't understand why we included a "maybe" button on the RSVP page
- Wanted a visual cue of the marked RSVP status
- Thought that a status page with all planned concerts on the homepage would be helpful for users
- Confusion about "ETD" (estimated time of departure) label on complex task
- Confusion surrounding the "swirly button in the top left" (our settings button)

Ultimately, we found that our participants had confusions around the RSVP and group chat features. There was also a desire for additional features that our three tasks did not incorporate. There were only 4 misclicks across all participants, but everyone quickly completed the task flows. For each participant, the simple task was the easiest to navigate and the moderate and complex tasks were more difficult due to ambiguities with the buttons. We found that the social features of our app (i.e. the chats) were most engaging to our participants. Many of our screens looked too similar for their different functionalities, leading to confusion. Through our low-fi usability testing, we were able to catch common mistakes that were much easier to fix going forward than they would have been if testing on a medium or high fidelity prototype.

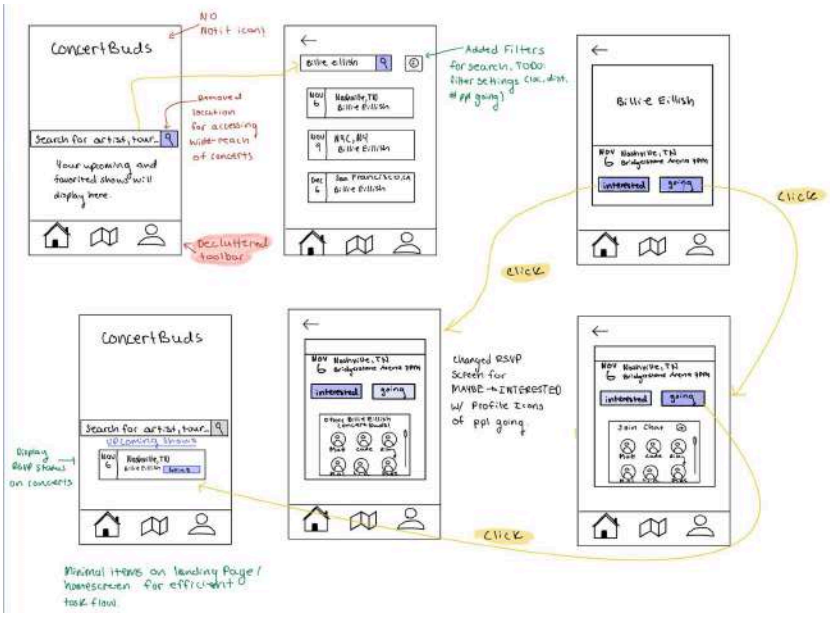
Going into our medium fidelity prototype creation, we wanted to focus on:

- Updating the RSVP functionality
- Adding back buttons and ways to undo actions
- Differentiate between the goals of finding ConcertBuds and joining a group chat
- More visually intuitive navigation bar

Our first revision was to declutter the toolbar, as it had led to lots of confusion in our usability testing, and redesign the landing page. Below are the before and after pictures depicting the change:

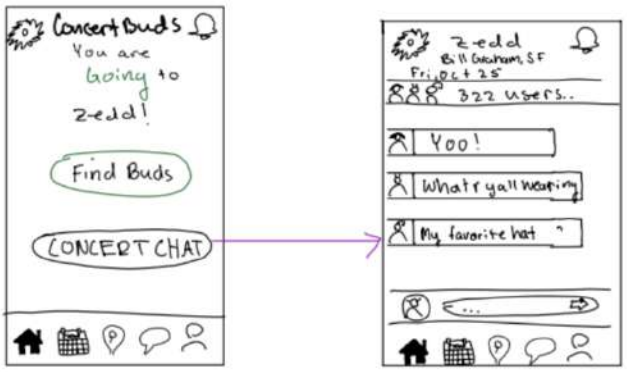


Before After

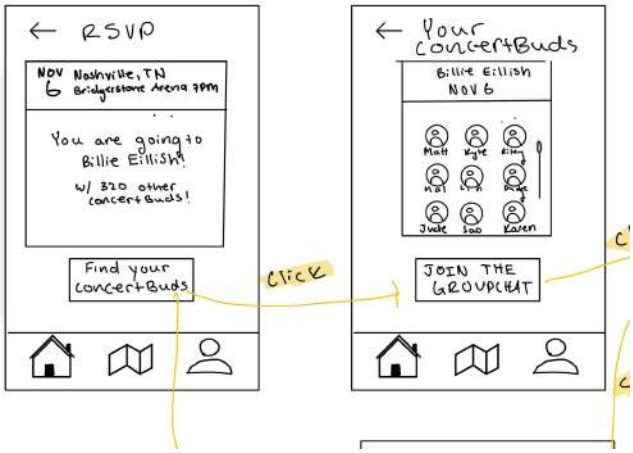


Changes within the task flow

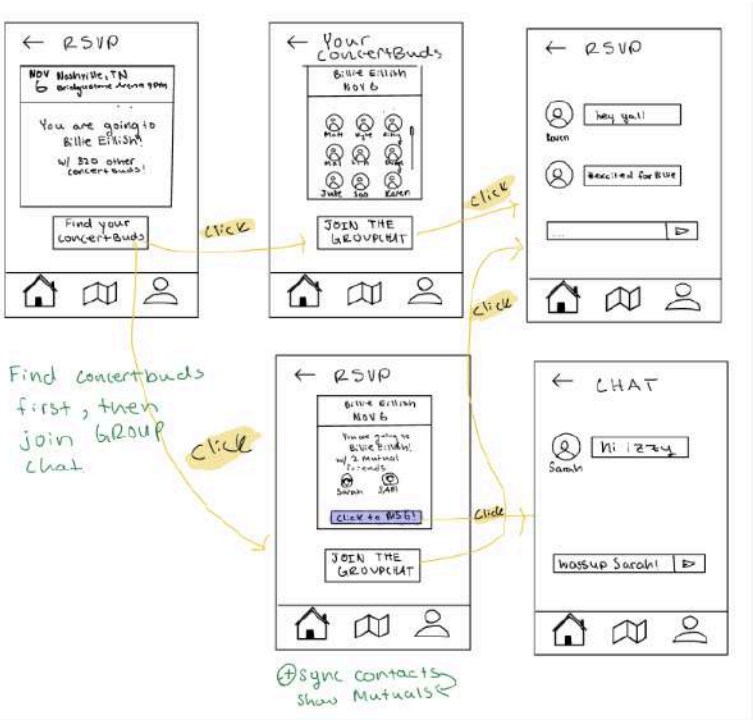
We then redesigned the RSVP process so that the group chat and buddy match were distinct.



Before revisions

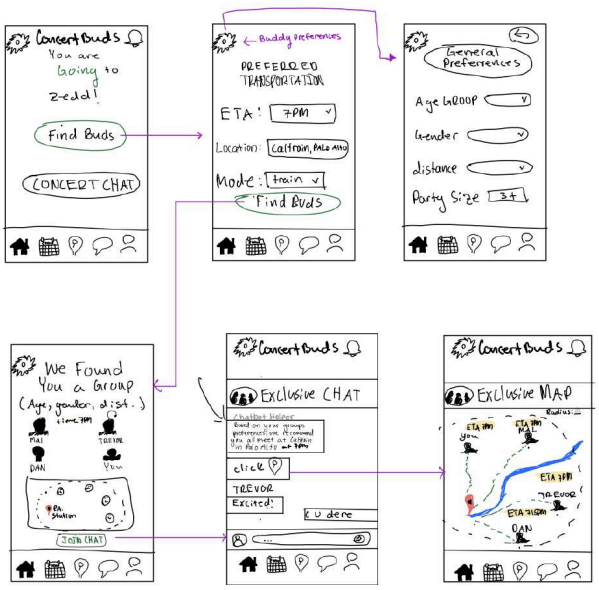


After revisions

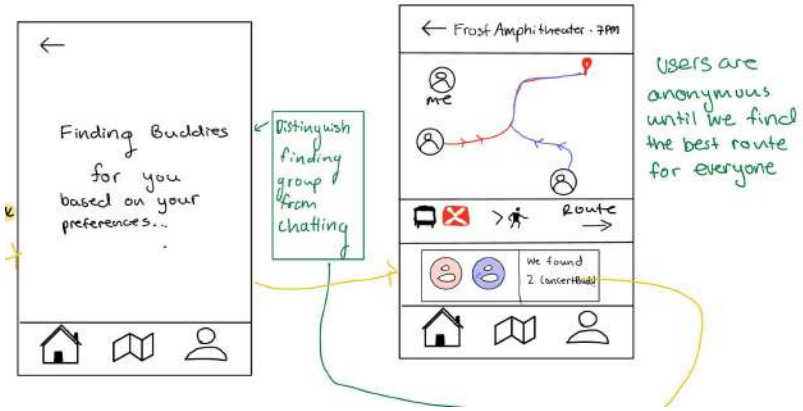


Revisions in Task Flow

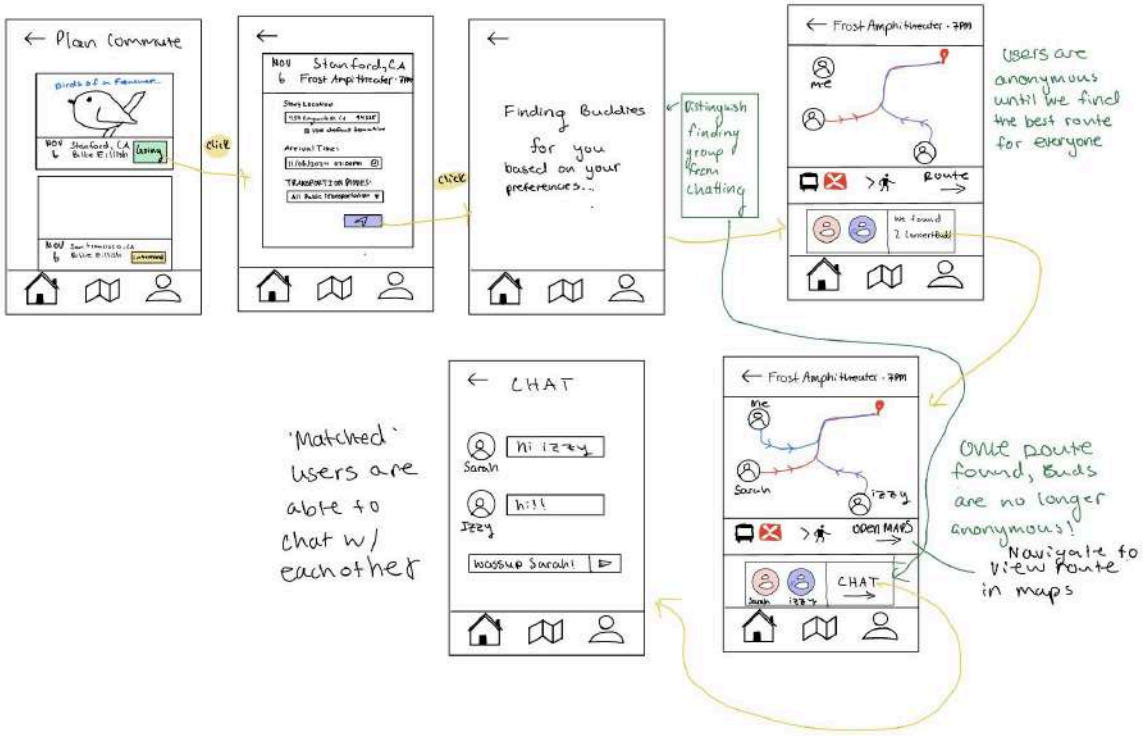
Our final major low-fi revision involved the navigation feature. Our CA gave us feedback that our complex task was too broad. We also learned through usability testing that the commute planning functionality was too buried/inaccessible. So, we streamlined this feature and made it accessible from the toolbar.



Before revision



After Revision

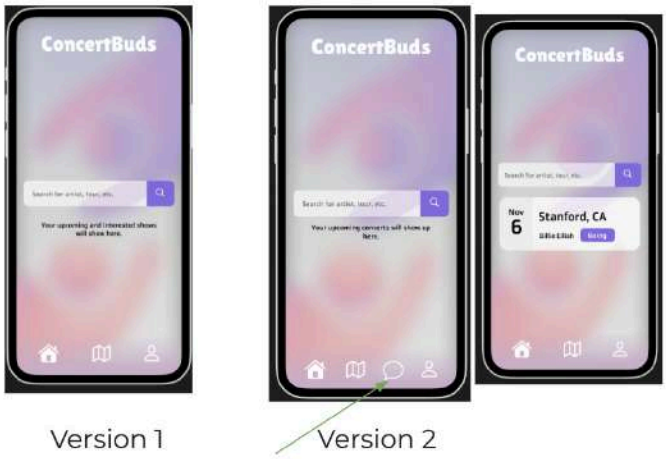


Revisions in Task Flow

Medium Fidelity Prototype:
These revisions were incorporated into our medium fidelity prototype, which was built in Figma. Below are the three task flows:

Simple Task Flow Changes:

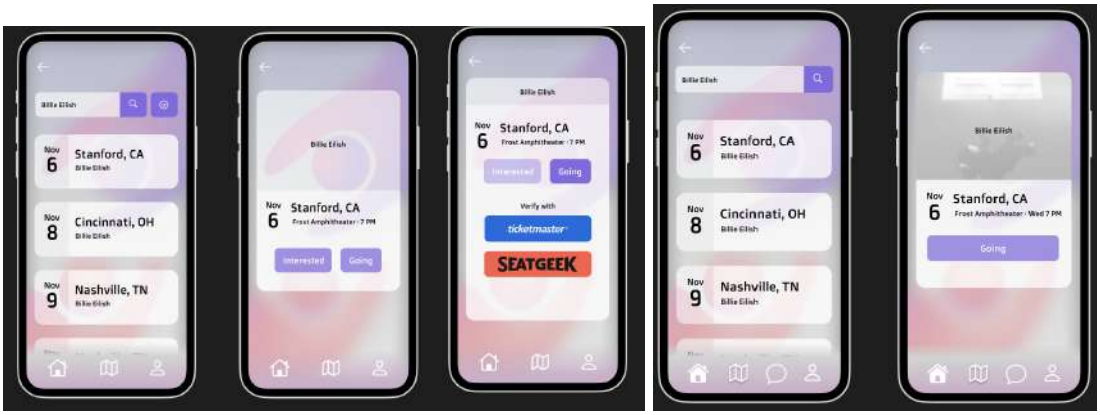
Toolbar Changes:



Toolbar Changes

- More navigation options
- Chats are more accessible (now accessible from the toolbar)

RSVP Page Changes:



Before After

- Updated visuals (i.e. artist pics) to enhance aesthetics
- Removed the “Interested” option
- Removed ticket verification feature (does not relate to any tasks)

ConcertBuds Page Changes:

Before

After

- Number of ConcertBuds RSVP’d is visible
- More information about the concert
- “Join the Chat” button is more accessible and intuitive

Commute Page Changes:

Before

After

- More intuitive buttons to plan routes
- Greater transparency surrounding other users' actions

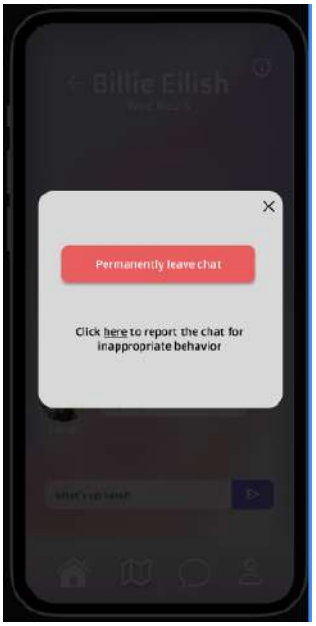
Chat Page Changes:

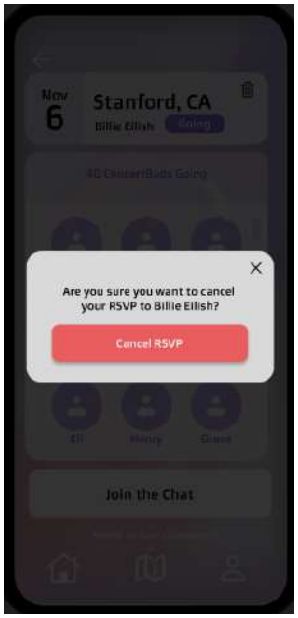
Before

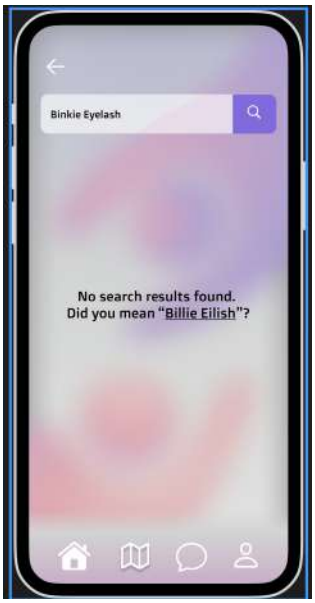
After

- Included mute/unmute button
- Included info icon that allows user to report a chat for abuse and allows a user to leave the chat

Warning Popups and Error Checking:







- All three screens are new
- More robust control and safety features
- Included error checking

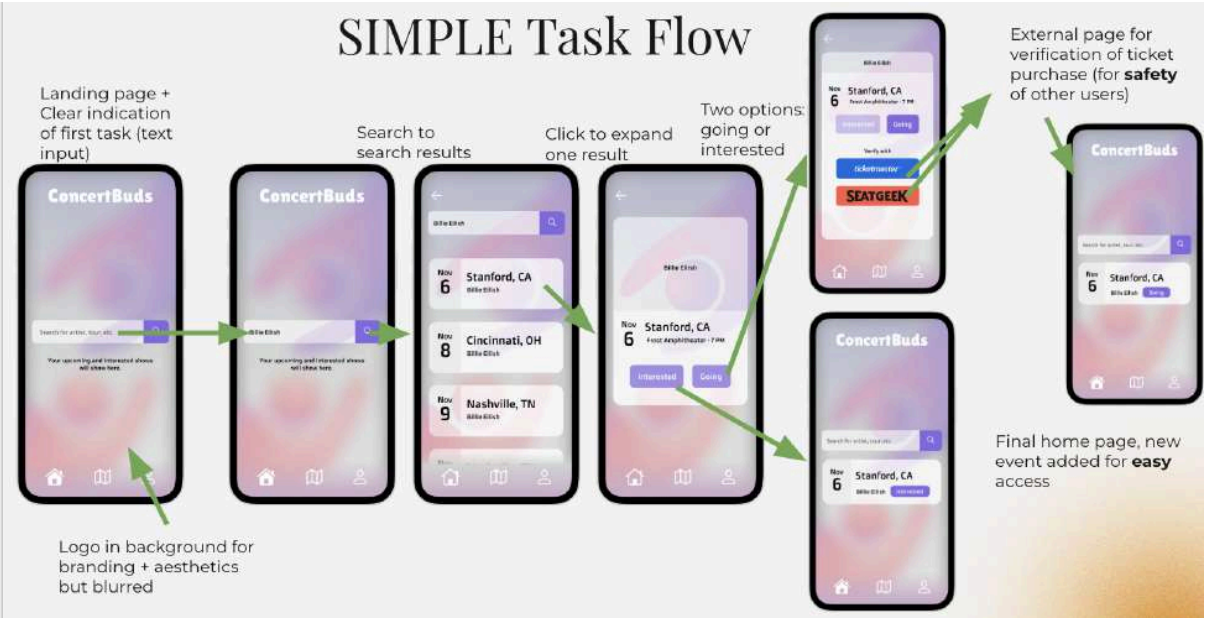
General Aesthetic Changes:

Before


After

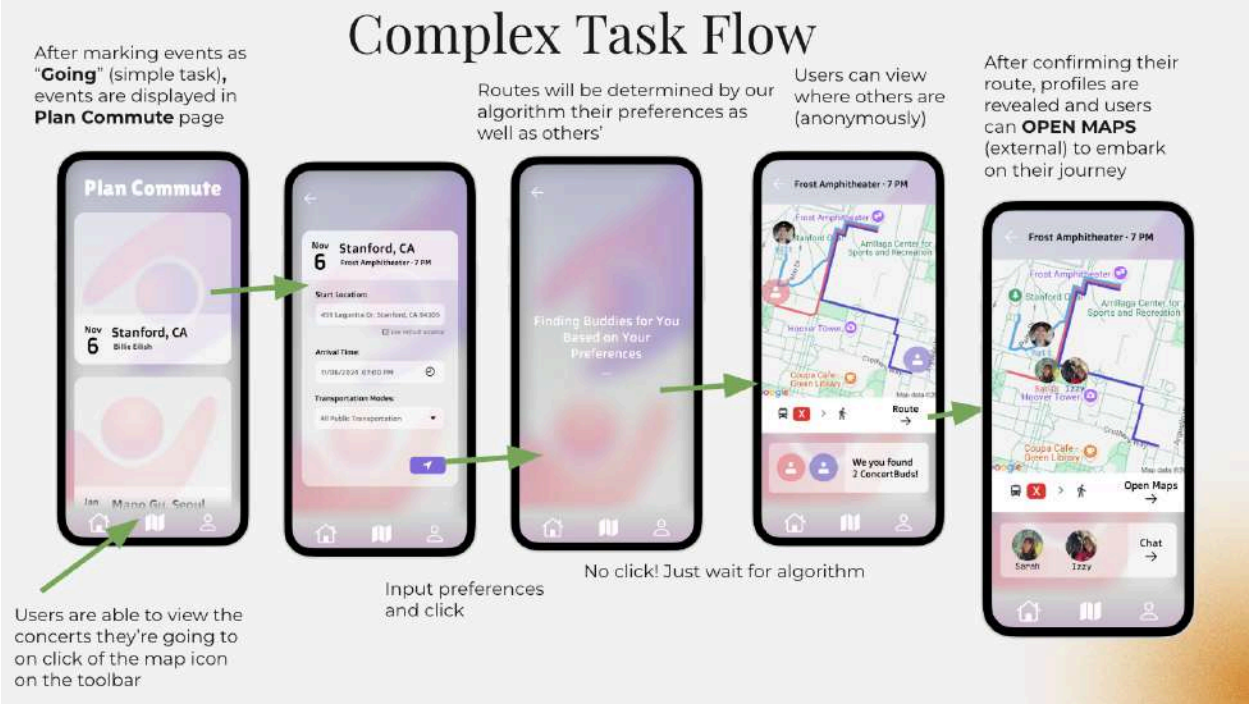
- Higher contrast for white text by darkening the background
- Increased accessibility but preserved playfulness

Full Task Flows:



Simple Task Flow (with changes)

Moderate Task Flow



Complex Task Flow

After finishing the medium fidelity prototype, another CS 147 group evaluated our design for heuristic violations. We evaluated each violation (a total of 79 violations) we received, whether to accept or reject the violation, and redesigned in both medium and high fidelity prototypes if we agreed with the other group's reasoning. We mainly focused on heuristic violations that had a severity of 3 or 4, as these were the most severe categories, therefore deserving the most attention.

Severity 3 Violations Summary:
The below summary only captures violations we felt were justified and thus implemented changes to our prototypes based off the violation feedback. See appendix for all severity 3 violations changes not implemented.

- [H1]
  - Users don't know how to populate upcoming shows
    - **Fix:** We included a text prompt on the home screen below the search bar that says "You upcoming concerts will show up here."
  - No way to know whether "Going" or "Interested" has been selected
    - **Fix:** We removed the "Interested" option so that there is only an option to select "Going." We felt the

"Interested" button didn't enhance our app functionality or experience.

- [H2]
  - "Create route" icon is a mismatch with its intended functionality
    - **Fix:** We changed the icon to instead be a map icon.
- [H3]
  - Back button on route planning has wrong functionality
    - **Fix:** We implemented the correct functionality on our medium fidelity figma prototype.
  - No way to undo RSVP
    - **Fix:** We added the ability to undo an RSVP by clicking the "Going" button again, which reshades it to the original color and marks a user as no longer going.
- [H4]
  - Different home and icon button used between pages
    - **Fix**: We made our icons consistent across pages.
- [H5]
  - No error checking if clicking a route that conflicts with concert timing
    - **Fix:** We added error checking in the high fidelity prototype.
  - No indication that a user joined a large chat
    - **Fix:** The "Join Chat" button takes a user to the chat and joined chats are saved and can be accessed from the toolbar.
  - No obvious difference between "Interested" and "Going"
    - **Fix:** We removed the "Interested" option.
- [H6]
  - No preview of how many ConcertBuds are going
    - **Fix:** We included the number of RSVP'd ConcertBuds on the ConcertBuds page once a user has RSVP'd to a show.
  - Tour dates don't include day of the week
    - **Fix**: We included a day of the week in the tour information.
- [H8]
  - Add photo of artist to make visuals more interesting
    - **Fix:** We added a visual of the artists tour from the TicketMaster API when RSVPing to a concert.
- [H10]
  - No estimated route time
    - **Fix:** We included an estimated route time.
  - No explanation of different route colors on map
    - **Fix:** We made the color differences obvious by

encircling a ConcertBuds profile in a circle that matches the color of their route on the map.

- [H11]
  - Genre tags lack contrast
    - **Fix:** We enhanced the contrast.
  - No alternatives to visual map icons
    - **Fix:** The google maps API has visual alternatives.
  - App relies on color for RSVP statuses
    - **Fix:** We removed color as part of this functionality since it was unnecessary.
- [H12]
  - No way to report chats
    - **Fix:** We included an information icon in chats that allows you to report other users in the case of abuse.

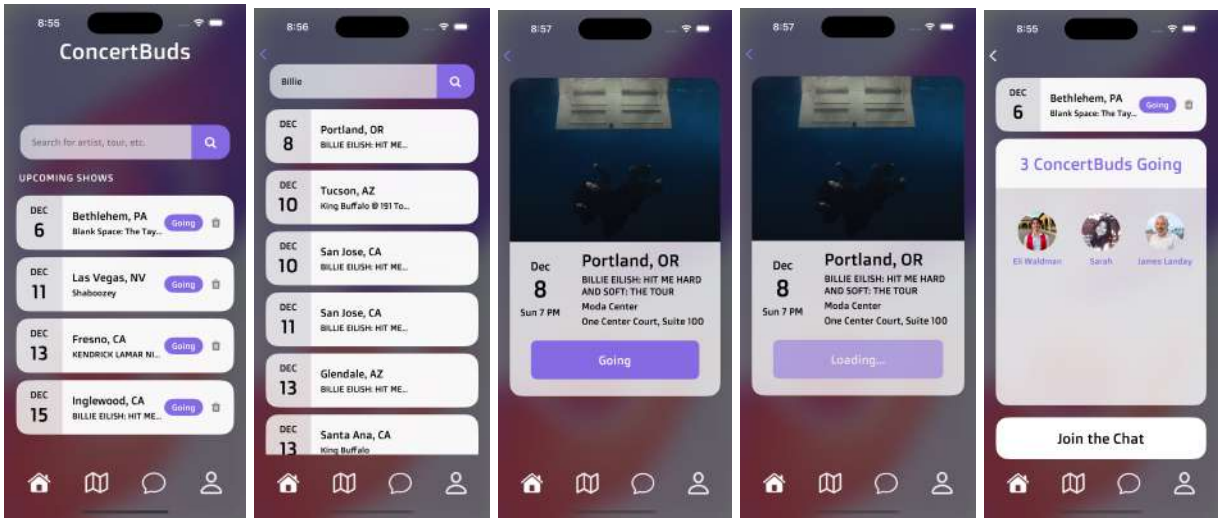
Severity 4 Violations Summary:

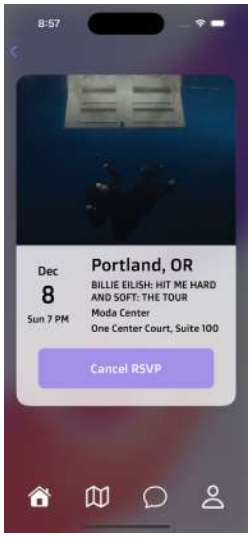
- [H1] There is no indication if other user accepted shared route
  - **Fix:** We added a text prompt that pops up if other user's accept the route
- [H6] The text on the top of the chat page is just "chat"
  - **Fix:** We renamed chats to be specific to the concert in question (i.e. "Billie Eilish Chat")
- [H12] No safety features visible while finding concert buddies
  - **Fix:** We included an information icon on the chat pages that allows a user to report another user for abusive conduct.
- [H2] "We you found 2 ConcertBuds" uses unnatural language
  - **Fix:** We fixed our typo!

High Fidelity Prototype:

After incorporating design changes based on feedback from the heuristic evaluation, we began to build our high fidelity prototype.

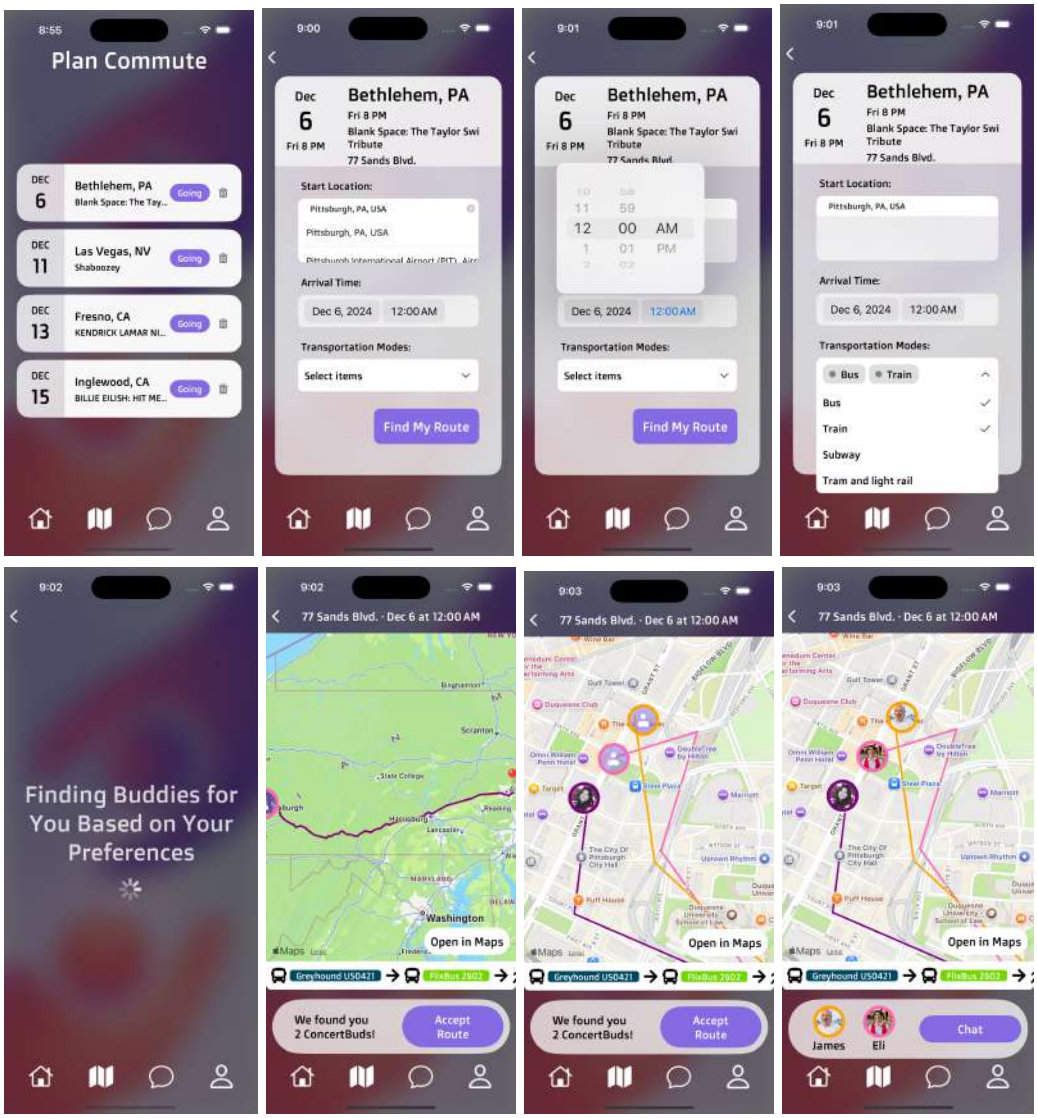
Notable changes we made included darkening the background to increase contrast with white text, adding a trash icon to un-RSVP to a concert, and more features (e.g. leave a chat) feature on the chat.





Join the Chat

Plan Commute


Plan Commute
DEC 6 Bethlehem, PA Going
DEC 11 Las Vegas, NV Going
DEC 13 Fresno, CA Going
DEC 15 Inglewood, CA Going
Bethlehem, PA
Start Location:
Arrival Time:
Dec 6, 2024 12:00 AM
Transportation Modes:
Select items
Find My Route
Bus
Train
Subway
Tram and light rail
Finding Buddies for You Based on Your Preferences
77 Sands Blvd. · Dec 6 at 12:00 AM
Open in Maps
We found you 2 ConcertBuds!
Accept Route
James
Eli
Chat

Profile


Email
Password
Sign in
Sign up
Logout
Sarah
FAVORITE GENRES
Rock
Pop
Jazz
Electronic
PAST SHOWS
NOV 30 SAP Center, San Jose, CA Weezer
NOV 14 Bill Graham Center, San Francisco, CA Ed Sheeran
Sign out successful.
OK

Values in Design

The core values guiding our design of ConcertBuds: playfulness, inclusivity, simplicity, personalization, and community oriented. Throughout the design and iteration process, we kept these values at the forefront of our minds as they reflect the internal motivations for our features.

Playfulness

Our app is inherently geared towards fun, as live entertainment events are just that. We wanted our design to reflect this playfulness and fun through our color palette and visual aesthetics, which have an vibrant and ambient vibe.

Inclusivity

It was imperative that our app be inclusive to all people, regardless of demographic characteristics. We made sure that, though our aesthetic is fun, we didn't alienate anyone by making it feel "too young." All people are encouraged to use our app and meet up with other ConcertBuds. Because our app is primarily built around public transportation, it also encodes economic inclusivity.

Simplicity

We opted for a more bare-bones, intuitive design that would be simple to use and navigate. This value supports our other value of "inclusivity" as it allows ease of use for all generations. We encoded this value into our design by using as few icons as possible while still enabling a user to easily complete a task, and by choosing icons that are widely recognizable.

Personalization

Our app allows users to customize their profiles, input preferences for potential ConcertBuds matches, and keep track of their upcoming shows. Personalization is critical to our app design since it matches strangers together, and for safety and personal reasons, users should be able to customize the type of people they want to meet up with by sex and age.

Community Oriented

The goal of our app is all about creating connections and building community. Because users are matched with others' along the same route, it inherently fosters connection between people who live near each other, or are part of the same community. This value is encoded in all of our tasks, where you can view other people going to the

event, chat with them, and plan shared commutes.

Tensions in Design

Personalization and inclusivity are inherently at odds with each other because personalization is catered to an individual's needs whereas inclusivity appeals to a broad spectrum of people. We attempted to balance these values as much as possible by allowing some personalization that we thought was necessary for safety reasons (i.e. age and sex of ConcertBuds matches) while limiting it to just the essentials.

We also found there was some tension in our values of playfulness versus inclusivity. Playfulness is somewhat subjective based off of generational preferences, and as designers in our early 20s, we recognize we likely embedded play into our design in the way that we perceive it to exist. This may not wholly translate to other generations which may seem playfulness embodied differently. However, our stripped back design helps compensate for this by appealing to a wide variety of people.

VII. Final Prototype Implementation

Tools Used

All code is written in React Native on Expo Go

Ticketmaster API was used for searching/fetching the information on upcoming concerts. Google Maps API in the Google Cloud Console was used to display a live map as well as to fetch routes to a concert. For pixelated avatars, we used the xsgames random users API. Supabase was used to authenticate and store profiles as well as information on user's concerts and to manage chat message data. AI tools used included ChatGPT and Claude AI.

Hard-Coded Data & Limitations

We were able to implement the UI and basic functionality of all 3 of our primary tasks. Due to time constraints, we used hard coded data in the following:

- User profile's name is fetched from the database but user's preferences are currently hardcoded and are in our future implementation steps.
- Current matching algorithm is hard coded to two location points near the user.

- Currently, you are not able to join your “Buddy Chat” after being matched with your specific buddies for a concert, which is a chat made up of users you’ve matched with.
- Due to limits in the number of concerts we can manually RSVP to, we hard coded two users (James and Eli) to be RSVPed going to every concert. In the future, we anticipate more users using the app and thus eliminating the need for this placeholder.
- “Past Shows” is hard-coded in the profile page for now. In the future, we would allow this to be clickable to view a past concert experience with other ConcertBuds.
- We populated the database with 55 test users, RSVPing them to random concerts to simulate a real-app experience
- We used https://xsgames.co/randomusers/ to generate random pixelated avatars as default avatars for users.

“Wizard-of-Oz” Techniques

We used Wizard-of-Oz techniques to complete our high fidelity prototype in the following ways:

- Our matching algorithm currently defaults to the two placeholder users in the database (James and Eli), but in our actual implementation, these would be other users who have queued up/requested a route and optimized location to be a commute buddy.

VIII. Reflection & Next Steps

Key Learnings

Lead with empathy: The most vital characteristic in yielding a good needfinding interview or effective POVs/HMWs are thinking critically with an empathetic lens. By truly attempting to understand your interviewees, you get a better idea of their pain points and frustrations and therefore their needs. You must walk in the person’s shoes a bit to see what the world likes from their perspective, and in doing so, you will generate better ideas and gain more insight on how to improve your design. This also means you must be open to surprises.

If you go into an interview with a concrete notion of what the other person thinks and feels, you are not opening yourself up to the possibility of being surprised and therefore uncovering tension.

Scope down for Specificity: As part of the Design for Movement studio, we went in with a vast array of possible directions to take. Movement encompasses so many different ideas like bodily movement, movement of goods, movement of ideas, transportation, etc… For the first few weeks, we had to continually scope down our ideas by going over interviews and analyses and digging deeper to find more meaningful, direct insights. Though we started very broadly, even when we had scoped to public transportation, through the design process we were able to narrow down our ideas while still being guided by our studio's theme.

Iterate, iterate, Iterate: With more iteration, you get more ideas. With more ideas, you can better compare and contrast to understand what makes a good, powerful design. It is crucial to iterate at every step of the design process so that new ideas can come to light and enhance the prototype. Through iterating, we were able to refine, or in some cases, completely overhaul some design features to make a better app.

Test, Test, Test: Testing goes hand in hand with iterating. If you iterate your designs but never test them on external users, you will not be able to understand how your app will function in the real world. You can only uncover errors and successes by continually testing each fidelity prototype among potential users. This is where the most valuable feedback comes from.

Speak Loud and Proud: It was important for our group to have a sense of camaraderie and inclusion. This would allow us to share ideas, no matter how "out there," without fear of judgement. By doing so, we were able to add more novelty into our product.

Encoding Your Values: The most important thing to ground you in the design process are the values you outline before beginning to design any prototypes. These values should be the determining factor of how

you structure your designs and allow you to evaluate whether each feature is vital or not.

What Next?

We would firstly want to reiterate on our current draft of reporting features and implement robust safety features, perhaps using AI facial recognition to confirm identities and chatbots to moderate chats.

Regarding safety – based on our feedback in studio and in reviewing expert judges' feedback at the CS147 Expo, we acknowledge that safety may be a concern for users, especially for women using our application who have their own right to be concerned about meeting others on our application. To reduce their worry and concerns, we could introduce preferences for age, gender, and proximity in addition to ensure users on the platform have an enjoyable, fun experience without worrying about harm.

In our medium fidelity prototype, we discussed implementing a feature that would allow a user to sync their contacts so that there's a possibility of matching with friends or mutual friends for shared commutes. Because of the tight timeline of this class, this feature was not able to be implemented. It also wasn't necessary for any of our three tasks, so we chose to exclude it.

If possible, we would want to implement a custom made algorithm to match ConcertBuds that we think would be compatible. This could be based on user data and user preferences, such as their listening habits, past shows, age, gender, and proximity.

Technical next steps include utilizing AI in our matching algorithm to optimize the groups and routes of users. For our complex task, we would implement the BuddyChat which is a chat that users who are matched together can join and communicate in to get their commute started. Then, within each chat, we would implement a more robust info control icon: when clicking, a user would be able to visualize and have other user profiles accessible to them and be able to report them in each chat for community chat moderation and safety. For more

accessibility, we would engineer the ability to view past concerts in the profile page for users to reminisce and appreciate their experiences with other ConcertBuds. Lastly, for production, we would implement a minimal and aesthetic, at-minimum 2-page signup and signin process that uses supabase's build in authentication protocols.

IX. Appendix

Severity 3 Violations, no change with justifications:

Level 3 Violations:

- [H1]
  - No indication of users online status (this isn't needed for any task)
- [H2]
  - Multiple users named Grace (users can use any screen name)
  - Bus and person icon are confusing on route planning (we decided this actually matches standard route plan symbols)
  - Transportation modes lack labels (we decided these also matched standard, recognizable transportation icons)
- [H3]
  - Many buttons don't have functionality (will be functional in HiFi)
  - Buttons are only navigation method available (doesn't enhance task completion)
  - No way to clear search results (incorrect: back button)
- [H4]
  - Map uses custom markers instead of standardized ones (custom markers are meant to show other ConcertBuds)
- [H6]
  - Concert name not present on route generation page (people typically know what concert they bought tickets/are going to, adds too much clutter)
  - Profile lacks info about common music interests with others (cheapens inclusion metrics)
- [H7]
  - No way to save/favorite frequent routes (this is unnecessary as most people don't frequently go to concerts at the same venue and the whole point is to meet on a shared commute with others which could change depending on the location of other users who are going to the same event)
- [H10]
  - No tutorial (our app is intuitive enough to learn quickly!)

- [H12]
  - No prices shown on concert listings (doesn’t serve our apps purpose)