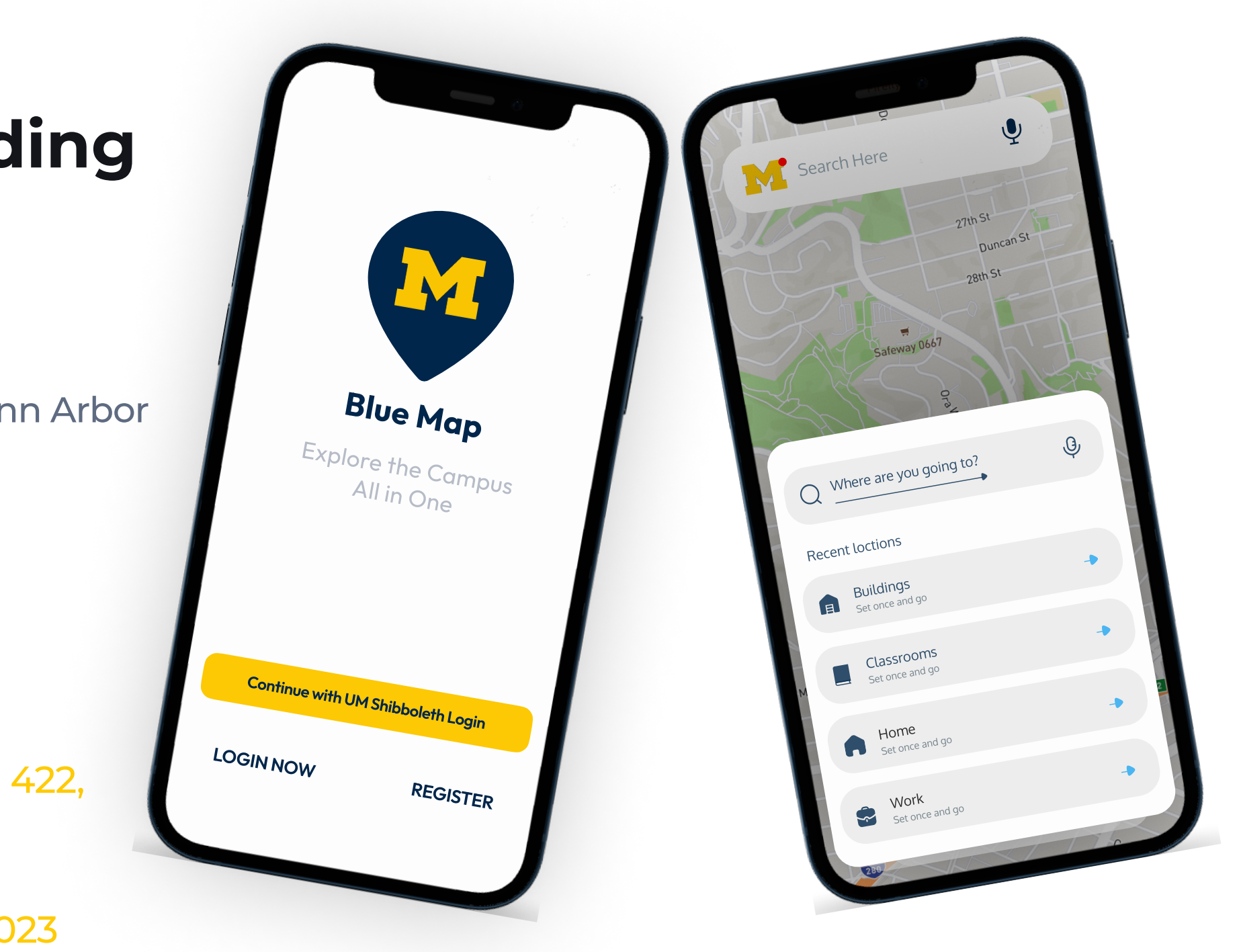
Campus Wayfinding UX Case Study

What issues arise for students
at the University of Michigan - Ann Arbor
when navigating on campus?

Arthur: Zhe Chen

Project Type: UX Research for SI 422, Usability Needs and Evaluation

Duration: January 2023 - April 2023

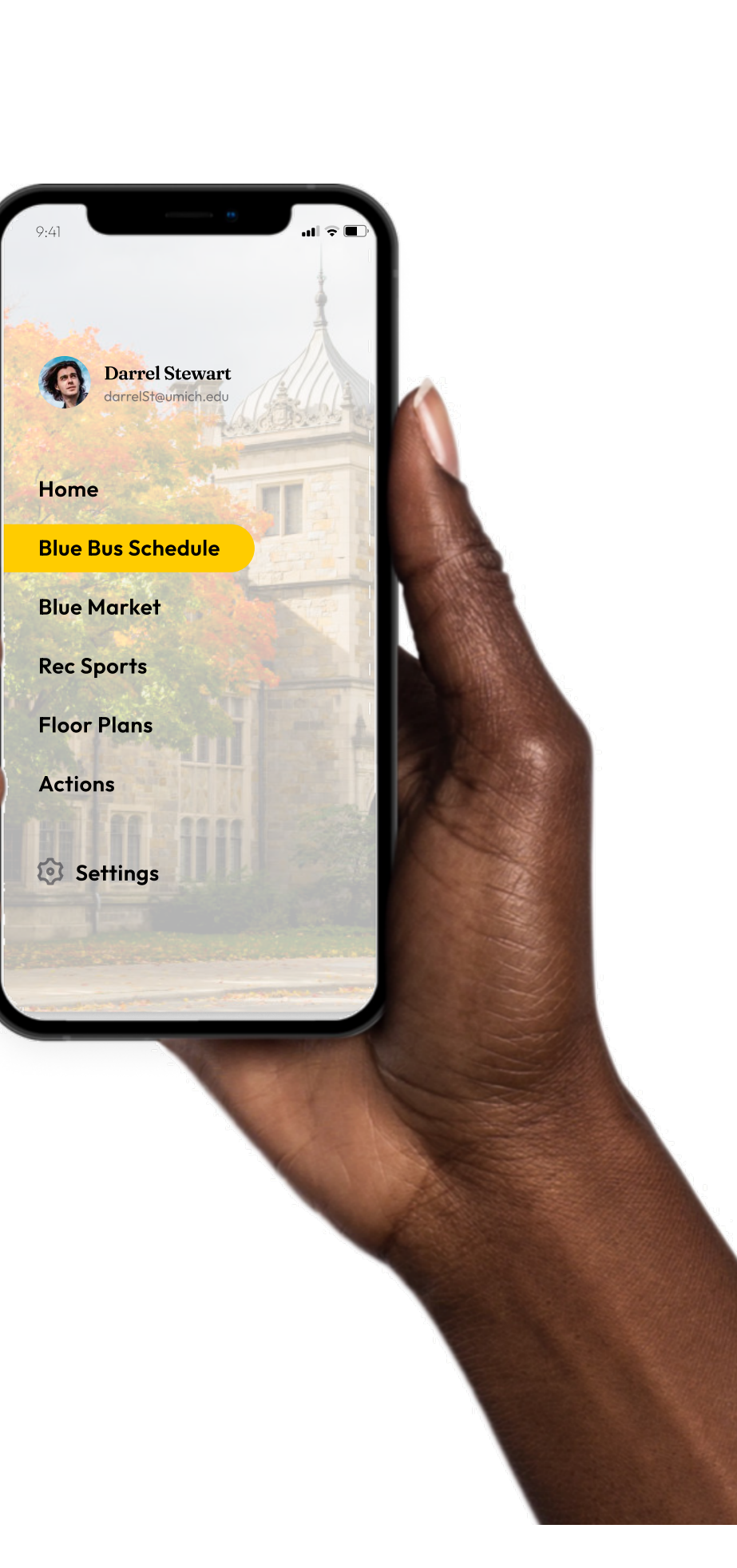


Product Overview

Our campus wayfinding app - Blue Map - is designed to help students navigate their way around the campus with ease. The app provides a user-friendly interface that enables students to search for specific locations and buildings, view maps of the campus, and get directions to their destinations or any campus resource.

With our app, students will be able to quickly locate their classrooms inside buildings, and avoid getting lost on campus. The app also includes features such as real-time updates on blue buses, campus events, weather conditions, and emergency notifications.

In addition, the app provides a feedback system that allows students to report issues with navigation or building accessibility. This feedback will help us to continually improve and update the app, ensuring that it remains relevant and useful to the entire community.

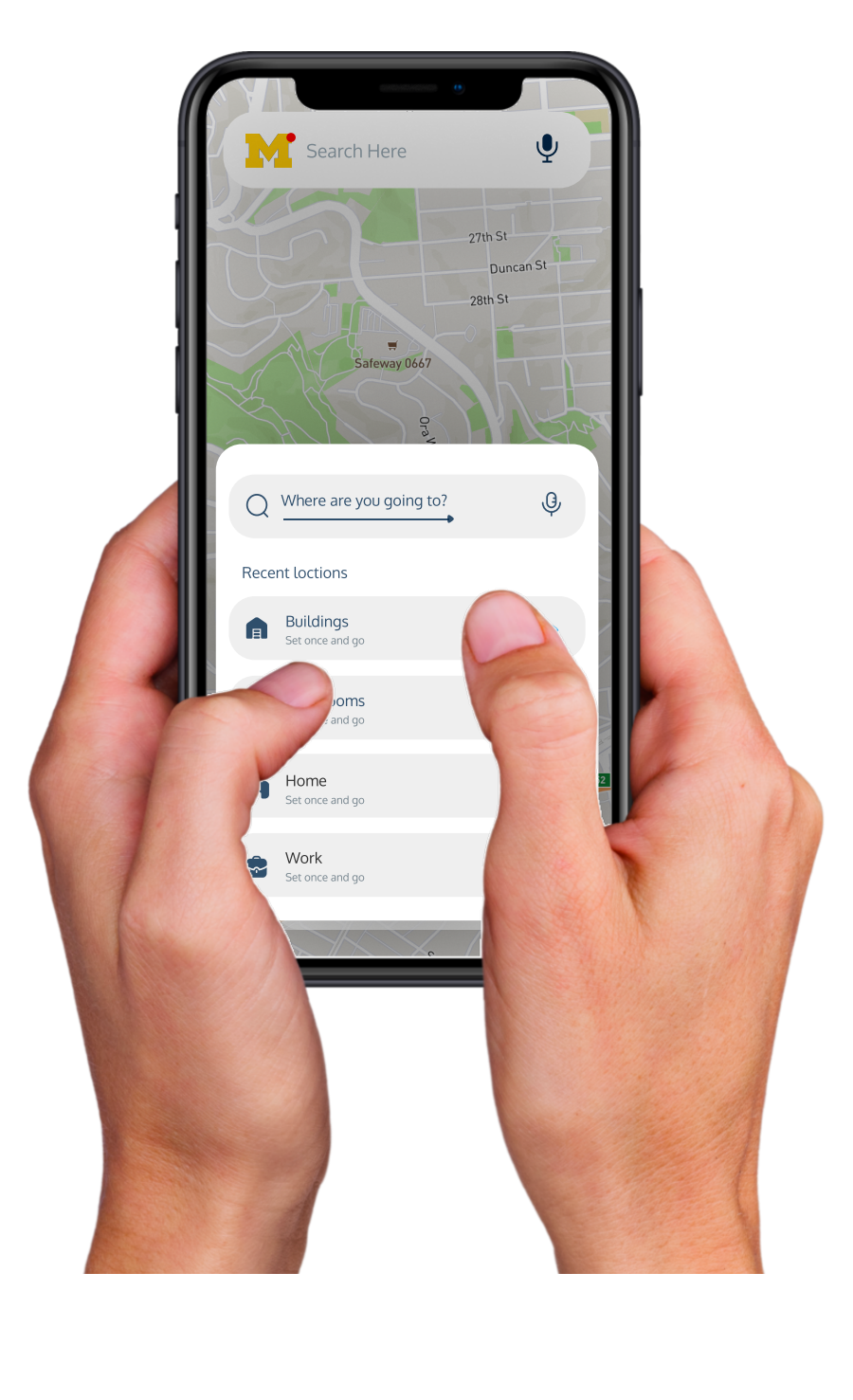


Responsibility

- UX Researcher
- UI Designer
- Team Leader

Tools

- Figma
- Miro
- Survey
- Excel
- Canva

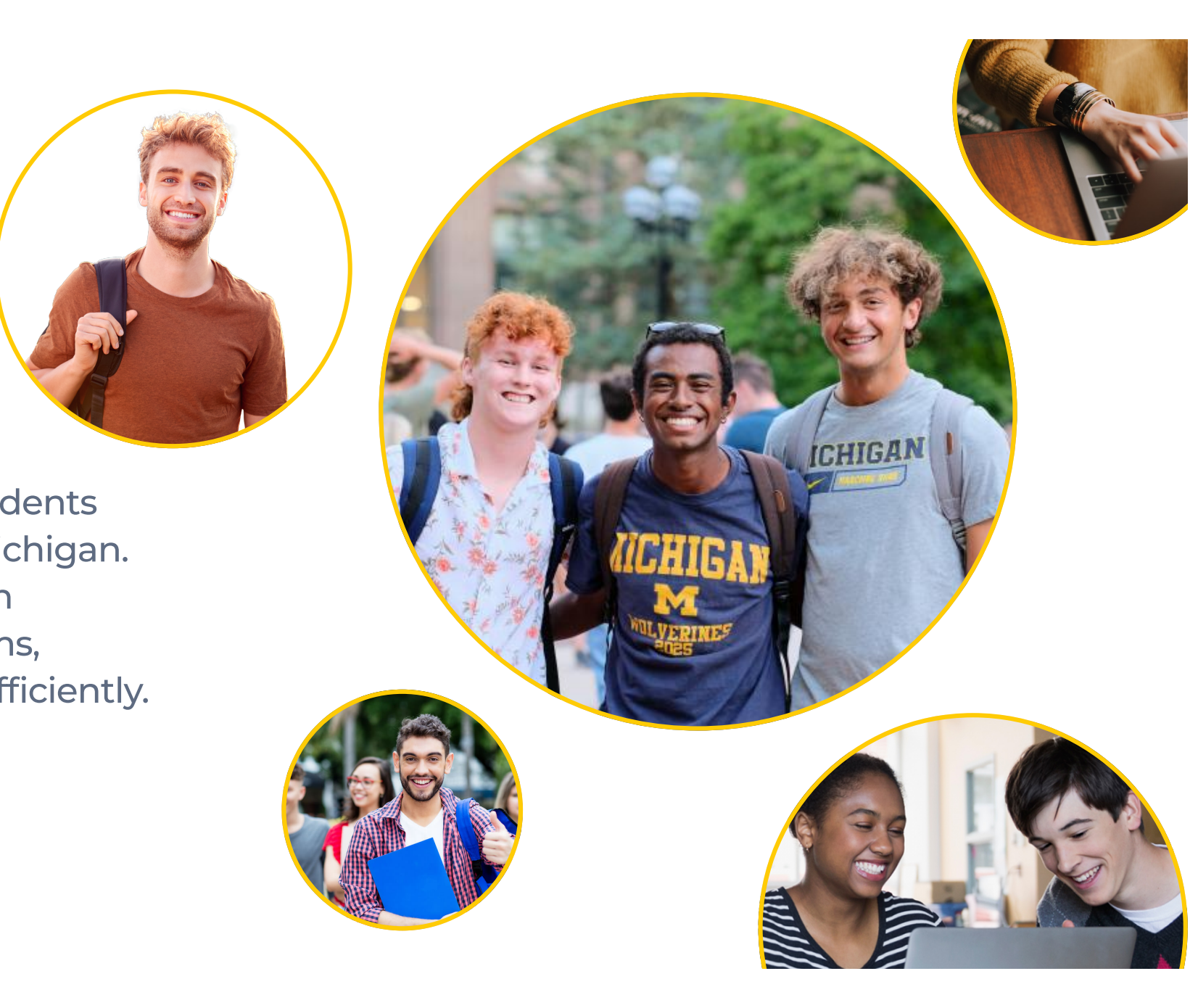


Problem Statement

Navigating through a college campus can be challenging, leading to frustration and missed appointments. Traditional navigation methods like paper maps and signage are outdated and not easily accessible. There is a clear need for a mobile app that provides a simple, user-friendly, and comprehensive solution.

Goals

Our main objective is to develop a mobile app that simplifies navigation and enhances the campus experience for students. The app will provide precise and real-time information on the location of classrooms, blue buses, and other points of interest. Our aim is to make the app easy-to-use, accessible, and informative for all students, improving their overall campus experience.



Target Audience

For this UX case study, our target audience is students who are currently enrolled at the University of Michigan. They want to navigate both the central and north campuses and seek information about classrooms, buildings, events, and other campus resources efficiently.

User Research

For the mobile app, our team conducted extensive user research through surveys, interviews, and observation of students on campus. This research helped us identify key features and design elements that would be most useful and valuable for users, ensuring that the app meets the needs and expectations of our target audience.

Competitive Analysis

Google Maps and Apple Maps are 2 popular mapping apps with turn-by-turn navigation and real-time traffic updates. However, they lack the customization and personalized features that the blue app provides for campus wayfinding, such as step-by-step directions to specific classrooms and real-time updates on blue bus schedules and events. While these general mapping apps are strong competitors in the market, the blue app offers a more comprehensive and tailored solution for campus navigation.

COMPANY NAME	GOOGLE MAP	APPLE MAP	BLUE MAP
USER INTERFACE & DESIGN	✓	✓	✓
MAP ACCURACY & DETAIL	✓	✗	✓
INDOOR (CLASSROOMS) MAPPING CAPABILITIES	✗	✗	✓
REAL-TIME BLUE BUS UPDATES & ALTERNATIVE ROUTE SUGGESTIONS	✓	✗	✓
INTEGRATION WITH OTHER UM APPS/ RESOURCES	✗	✗	✓
ACCESSIBILITY FEATURES	✓	✓	✓

Unique Features

- Step-by-step directions to specific classrooms and offices on campus
- Indoor floor maps of all campus buildings, including offices and classrooms
- Voice-activated directions for hands-free navigation
- Integration with campus services, such as shuttle bus schedules, campus dining options, and printers' location
- Integration with UM campus safety system, providing emergency notifications and location sharing in case of an emergency

Quantitative Research

Our team conducted a survey aiming to understand what students look for in navigating on campus and finding classrooms inside buildings. The target audience for this survey is students who are currently enrolled at UM and are attending the campus. This group is likely to be the primary users of the wayfinding app and therefore, their feedback will be crucial in ensuring that the app meets their needs.

Screeners

- **Enrollment status:** We want to target both undergraduate and graduate students who are currently enrolled at the university. In the survey, we designed questions asking if they are students of UM and specifically their academic status. We can then exclude those answers with a "No" for that question.
- **Familiarity with the campus:** We want our target audience to be present on campus. In our survey, we use the question "Do you have any class on campus" to exclude students who are having entirely online classes. Since they are not on campus, they can't actually provide useful information to our project.
- **Ownership of mobile phones:** Since we are developing an app, we want all users to be able to access it. In the survey, we ask "do you have a mobile phone" to see if the individual has it or not. If they don't have one, they will be excluded as they will not be our potential users in the future.

Observations

93% (15/16)

Walking is the most frequently used mode of commuting. Other options are driving, public transportation.

68% (11/16)

Students expressed some levels of difficulties when navigating the campus. 2 of the 11 students selected the frequency as **Very Often**, while 6 of them chose **Quite Often**.

68% (11/16)

Inside of buildings is where 11 students found most frequently having difficulty navigating on campus. 3 students chose **Outdoors** for this question.

62% (10/16)

10 students use a navigation app 1-3 times a week on campus; 3 never use any navigation app; 2 chose 4-6 times; and 1 chose over 6 times a week.

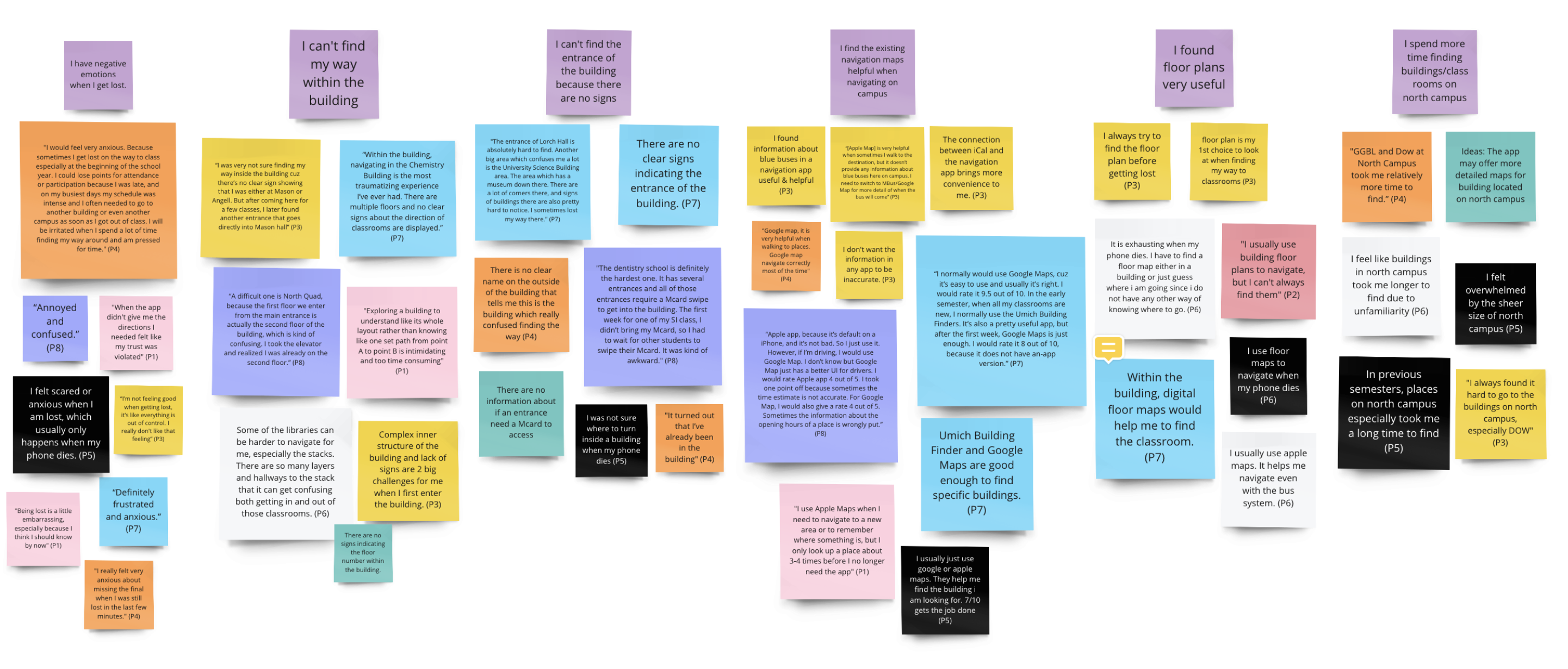
100% (16/16)

For resources students use to navigate inside buildings, all of the 16 participants choose floor maps; the 2 other options are also popular: Help desks/ asking other people (9), Using a mobile device for to search for directions online (8)

50% (8/16)

Of the options for the previous question (left), 8 students actually found floor maps **the most helpful resource**; while 6/9 selected Help desks/ asking other people.

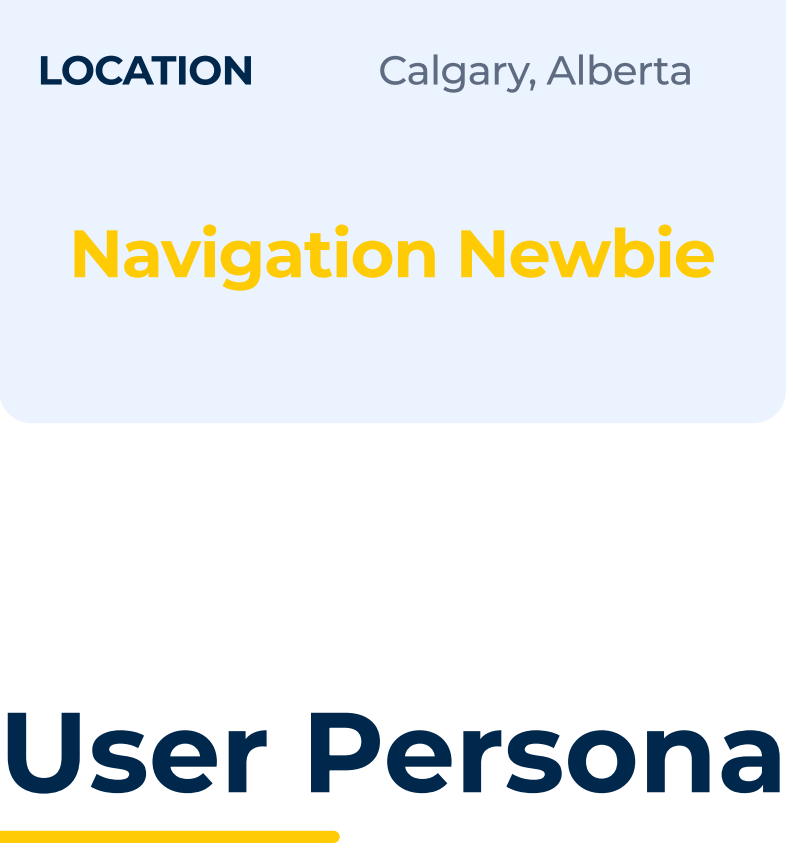
Affinity Diagram


I have negative emotions when I get lost.
I can't find my way within the building
I can't find the entrance of the building because there are no signs
I find the existing navigation maps helpful when navigating on campus
I found floor plans very useful
I spend more time finding buildings/class rooms on north campus

The affinity diagram helps the team to organize and group large amounts of qualitative data, gathered from interviews, into meaningful categories or themes (the first line of the sticky notes). This can help to identify patterns and insights that can inform the design of the app.

Some of our assumptions are actually confirmed by the final themes, one example is that students found existing map applications useful when navigating on campus - Google Maps and Apple Map are the 2 most commonly used apps. The team could then use the insights and patterns identified to inform the design of the app's features and functionalities. In this case, we might prioritize the development of a feature that provides turn-by-turn directions to buildings/individual classrooms. By using an affinity diagram in this way, the design team can ensure that the app's features are informed by user needs and behaviors, resulting in a more effective and user-friendly product.

User Persona 1



NAME: Allison Hargreeves

AGE: 35

JOB: Family Physician

LOCATION Calgary, Alberta

Navigation Newbie

Bio

David is a freshman student who just started attending UoM. He grew up in a small town in Michigan and is the first person in his family to attend college. He's excited about the prospect of meeting new people and experiencing life on a larger scale than he's used to. He's planning to major in business and hopes to eventually start his own company. Outside of school, he's really interested in table tennis and basketball.

> I'm excited to start this new chapter in my life, but I'm also a little intimidated by the size of this campus.

Personality

- Hardworking
- Smart
- Expressive
- Punctual

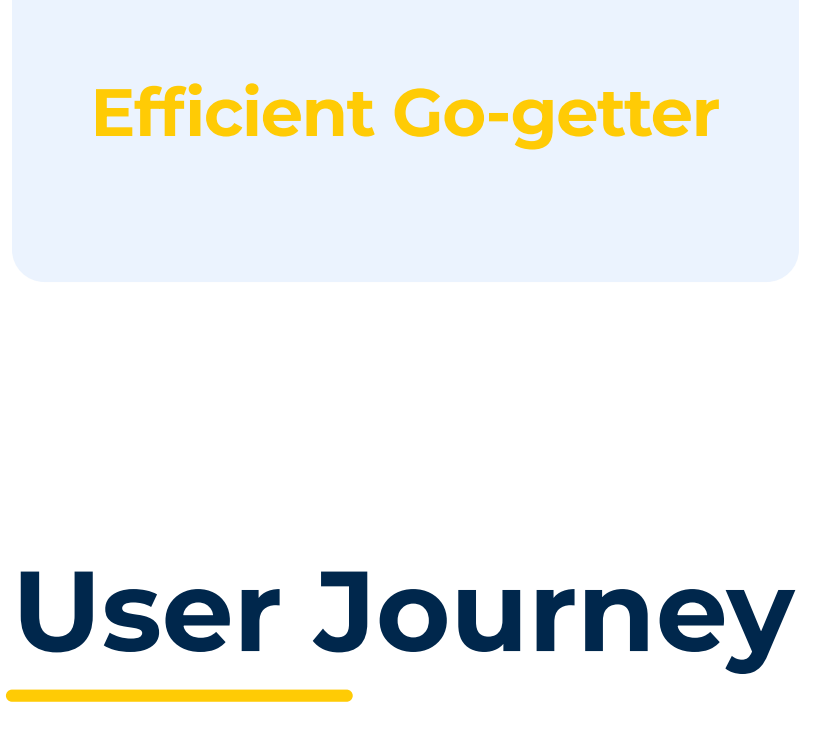
Pain points

- Unfamiliarity of the campus
- The overwhelming number of buildings and landmarks to navigate
- Wasted a huge amount of time on finding classrooms due to the lack of features in the existing apps of the inner structure of buildings

Goals

- Successfully navigate the University of Michigan campus (central and north)
- Locate important buildings, classrooms, and campus resources (printers, rec sports...)
- Attend classes on time

User Persona 2



NAME: Mary Harper

AGE: 22

NATIONALITY: British

OCCUPATION: Student

Efficient Go-getter

Bio

Mary is a senior student at UM studying CS and Linguistics. She recently started working with the Center for Academic Innovation and joined an intramural tennis team to try to do new things in her last year at U-M. Mary has an extremely busy schedule that mandates timeliness while traversing between parts of the campus that are far apart. She needs to be able to chart the most optimal routes between and inside of buildings in order to get where she needs to go quickly.

> I want to get where I need to go quickly and confidently.

Personality

- Diligent
- Confident
- Responsible
- Courteous

Pain points

- Unpredictable bus schedules
- Getting lost inside of buildings
- Having no time to explore the campus more to gain familiarity
- Navigational apps routing to an inconvenient entrance

Goals

- Find optimal routes to her destinations easily
- Feel more confident when navigating inside buildings
- Attend classes on time

User Journey Map

Persona: David

Scenario and Expectation: David lives at the campus dormitory located in the heart of the university. He prefers to commute on foot and is now searching for the Chemistry building, where he will attend his first class of the day. Additionally, David wants to get there on time, and if time permits, he also wishes to grab a drink during his way to the class.

PROCESS	INPUT	FOLLOW	ADJUST	ARRIVE
ACTION	David types in his current position and acronym of the Chemistry Building as his target location.	The application provides a visual map outlining the necessary steps to follow.	The map adjust the steps for David because he wants to get a drink during his way to the class.	David arrives at the Chemistry building on time.
FEELING	😟	😳	🤔	😄
MINDSET	David is a little worried whether the app will show him the right route to the building.	David is focusing on the route on the map	David also wants to grab a drink, and he is little concerned if the app can adjust the route correctly.	David is relieved because he arrives at the Chemistry Building on time.
IMPROVEMENT OPPORTUNITIES	1. Users needs to stay with his phone during, and this could be inconvenient. Therefore, using notifications to tell users which direction to take when needed could provide a more seamless experience for users. 2. Showing users estimated time of arrival will be helpful to calm them down.			

Key Takeaways

1. Blue Map provides a centralized platform for all campus-related information, making it easy for students to access important information such as bus schedules and campus events, and emergency notifications in one place.
2. The app is designed with user experience in mind, offering intuitive navigation and clear, concise information that helps students quickly find their way around campus.
3. The app can help to reduce anxiety and stress for students, particularly for those who are new to campus or have trouble with directions. By providing clear, step-by-step guidance, the app can help students feel more confident and empowered in their navigation.
4. By leveraging the latest technology and design trends, the app can set a new standard for campus wayfinding and establish the institution as a leader in student experience and innovation.

Future Roadmap

1. One area of focus could be to enhance the app's integration with other campus systems, such as student accounts or course schedules, to provide a more seamless and personalized user experience. For example, Blue Map + Wolverine Access, after the app gets students' course schedules, it may automatically show the best route to the destination when it is the time for class without any manual operation.
2. Incorporating additional features such as wayfinding for outdoor spaces, parking lots, or nearby amenities could expand the app's utility beyond the classroom. As technology continues to evolve, integrating new features such as augmented reality or voice-activated navigation could further enhance the app's capabilities and user experience.
3. Continued user research and feedback can help to identify new pain points and areas for improvement, ensuring that the app remains relevant and valuable to UM students over time.

Thank you for viewing

Reach out via email: czhe@umich.edu