Final Prototype & Project Report

Dawg Watch

Spencer L.
Seth S.
Mishelle O.
Luke D.

Meet The Team

Dawg Watch is a multidisciplinary team of four that worked together over the course of the Fall 2023 semester to research, test, and design a computer interface. The team consists of:

- Spencer L. (Designer)
- Seth S. (User Researcher)
- Mishelle O. (User Researcher)
- Luke D. (Developer)

Problem and Solution Overview

Through extensive needfinding interviews, Dawg Watch identified an important issue that needed to be addressed. Students reported having a difficult time aligning and comparing their schedules with their friends and classmates. Our team wanted to design a system that made comparing schedules and classes as undemanding as possible for students. Through follow up interviews and prototype testing, we created a solution that acts as a social media platform, allowing users to view friend's schedules and interact with class reviews from peers.

Needfinding Interviews

The goal of needfinding interviews is to identify specific problems, so through our first round of interviews we asked a diverse group of participants about their experiences registering for classes as college students. Our main goal with the first round of needfinding interviews was collecting a diverse group of participants. The team interviewed four college students found at UGA that were given pseudonyms:

- Jacob: A recent transfer student from kennesaw state.
- Anastasia: A non-UGA student from SCAD.
- Ethan: A UGA 4th year accounting student.
- Erica: A UGA 4th year computer science student.

Erica acted as our extreme user because she expressed ample experience with signing up and dropping classes compared to the other participants. Through the first round of interviews our team learned that the current registration process has a low learning curve, contains all necessary information, and is effective for search classes. However, we also learned of some problems, including: over complicated menus that forced students to use third-party software, outdated UI elements, and difficult to find class information.

Our initial interviews focused too much on the University of Georgia's class registration application, Athena, so in subsequent interviews our team asked more general questions about registration experiences. Questions in the second round of interviews asked things such as experiences with advisors, finding new classes, and registering for classes. In the second round, our team interviewed three more students with diverse backgrounds: Sara, James, and Ricky. Through these interviews we learned that registration can be stressful and time consuming due to research, advisor meetings, and class signup.

Furthermore, credit filing and interest-aligning electives can be hard to find and students struggle to understand the requirements to complete their major programs in time. Through these broadened interviews we were able to gather a wider collection of problems outside of simply signing up for classes.

Here are some visual maps of our interviews, typically called “empathy maps”:

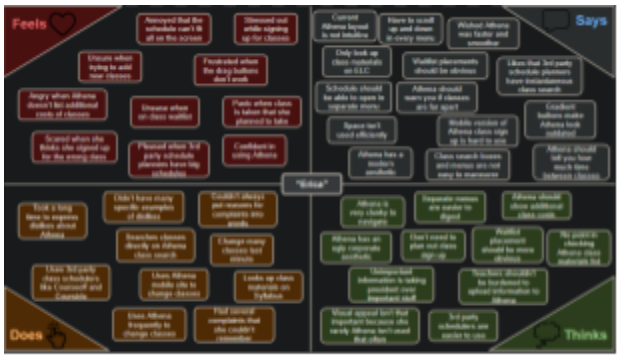

Figure 1. Erica's Empathy Map.

Figure 2. Jacob's Empathy Map.

Figure 3. Anastasia's Empathy Map.

Figure 4. Ethan's Empathy Map.

Point of Views and Solutions

After the completion of the needfinding interview process, our team picked out the top three perspectives from our needfinding interviews. Here is the breakdown of perspectives:

Point of View 1: “Anastasia”

- **We met** a third year liberal arts student from SCAD.
- **We were surprised to notice** that she only chooses classes based on what her friends within her major chooses.
- **We wonder if this means** that she has a hard time scheduling for classes that work for both her and her friend.
- **It would be game-changing** to integrate a social aspect into registering for classes so you can see what courses your friends are taking.

Point of View 2: “Ricky”

- **We met** a first year computer science major at UGA.
- **We were surprised to notice** that they did not know what classes they needed to take even after meeting with their advisor.
- **We wonder if this means** that the requirements need to be more clear, especially for new students.
- **It would be game changing** to have a step by step requirement guide for each major, including prerequisites courses.

Point of View 3: “Sarah”

- **We met** a 4th year UGA political science student who often struggles to find and sign up for classes they want.
- **We were surprised to notice** that she wants to avoid the stress and time commitment that comes with finding classes and planning for the future.
- **We wonder if this means** that the current process for signing up for classes is too time consuming and stressful given all the hoops you have to pass through to get registered.
- **It would be game-changing** to have some product or system that has all the tools necessary for class research and planning all in one place, so less time can be spent looking up classes and stressing about planning.

From our seven interviews, we narrowed down our top picks to the three descriptions you see above. These three points of view helped us contextualize the needs and desires potential users might have in our problem area. In our brainstorming processes, we created 10 - 15 “how might we” (HMW) statements for each point of view. “How might we” statements help designers brainstorm because they allow us to rephrase our need and want observations into opportunities and potential solutions. Here is a sample of the HMW statements that stemmed from each of our POVs:

Point of View 1: “Anastasia”

- How might we integrate a social aspect into class registration?
- How might we get students to update their friends about their class changes?
- How might we encourage friends to share their class experiences?
- How might we communicate what classes we want to tell friends about?
- How might we help students discover what classes/professors other students like?

Point of View 2: “Ricky”

- How might we encourage students to actively check their major requirements?
- How might we make the completion requirements and prerequisites like playing a game?
- How might we make major pathways fun to interact with?
- How might we make a step by step guide interesting to read?
- How might we show the major requirements in an interesting way?

Point of View 3: “Sarah”

- How might we encourage students to explore class options?
- How might we make college students more confident when choosing classes?
- How might we make signing up for classes something people look forward to?
- How might we avoid creating a learning curve for the new platform?
- How might we lower artificial barriers in the registration process?

The main HMW statements that we analyzed involved integrating a social aspect into registration, encouraging students to explore class options, and increasing student confidence when choosing classes. In the final step of our brainstorming processes our group came up with three solutions to answer some of the most important HMW statements. Here is a short description of each of our three solutions:

➔ **Solution 1**

A system that can show what classes are most similar to your major and interests and what classes people similar to you are taking.

➔ **Solution 2**

A system that can connect underclassmen to upperclassmen of the same or similar major to act as mentors. The upperclassmen mentors provide insight into classes, professors, and how to navigate other aspects of college life.

➔ **Solution 3**

A system with a friends list that shows what courses friends are taking and what ratings they have given previous courses. You can also view what courses friends had previously taken, what they plan on taking, and what they are currently taking.

Design Evolution

The process of class registration for college students is fraught with challenges, often leading to stress and dissatisfaction. A comprehensive understanding of these challenges is crucial to developing a system that not only meets students' functional needs but also addresses their emotional and cognitive experiences during the process. The design evolution of a class registration system, was guided by insights drawn from empathy maps of various students—Ethan, Erica, Jacob, and Anastasia—each representing a distinct user persona with unique experiences, feelings, and needs.

Empathy-Driven Design Rationale

Empathy maps are powerful tools for capturing the nuances of user experience. For this project, they have been instrumental in shaping the final design solution, ensuring that it resonates with users on a deeper level.

Ethan's map (**Figure 5)**, for example, reveals a desire for simplicity and organization in the registration process. His frustrations with unnecessary menus and delight in the functionality of planner tools suggest that an effective design would be one that streamlines the process, prioritizes clarity, and integrates planning features seamlessly into the system.

Figure 5. Ethan's Empathy Map.

Erica's experience seen in **figure 6** indicates a need for efficiency and visual clarity. Her stress during sign-up and panic when class plans fail underscore the importance of a user-friendly interface that provides clear navigation and immediate visibility of crucial information, such as additional costs and schedule compatibility.

Figure 6. Erica's Empathy Map.

Jacob's reflections in **figure 7** show an appreciation for intuitive systems and a straightforward process. Despite his ease with the system after a learning curve, his concerns about

outdated interfaces highlight the need for modern aesthetics without compromising on usability.

Anastasia's perspective in **figure 8** provides a comparative view, valuing user-friendliness and ease of scheduling. Her satisfaction with SCAD's system over Athena suggests that incorporating elements from more user-friendly platforms could benefit the design.

Figure 7. Jacob's Empathy Map.

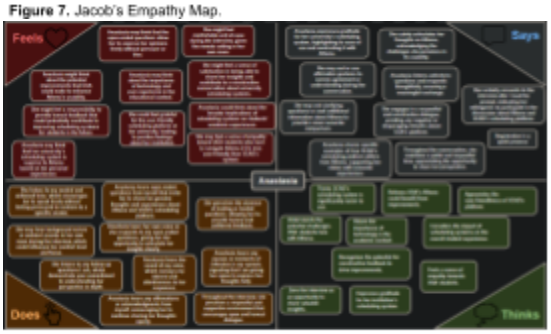

Figure 8. Anastasia's Empathy Map.

POV and HMW Influence On Solution

Constructing empathy maps was simply the first step of the brainstorming processes to find a solution. As mentioned previously, our team utilized the empathy maps to create numerous HMW statements to contextualize the solution. Our team voted on the top three HMW statements. We found that the selected three statements most wholly encompassed the problem area for the issues identified during our needfinding process. Here is the list of our top three HMW statements:

- How might we integrate a social aspect into class registration?
- How might we encourage students to explore class options?
- How might we make college students more confident when choosing classes?

The first two questions above are focused on the social aspects of registration while the last point focuses on the stressful and time consuming nature of class registration. To find our solution, we wrote down as many solutions as possible in a short period of time using the 10 for 10 brainstorming method. Finally, we voted as a team and narrowed down our solutions to three strong choices as seen in the previous section.

Final Solution and Task Complexity

Our final design solution, influenced by our empathy maps, POV statements, and HMW statements, can be described as a registration system that values clarity, simplicity, and social connectivity—key aspects derived from the empathy maps.

After choosing a final solution to answer the problems of our stakeholders, we developed several paper prototypes and drawings to visualize our ideas. With these conceptual drawings, we created three tasks of varying complexity. These tasks were chosen for their potential to enhance the user experience and test the intuitiveness of the designs:

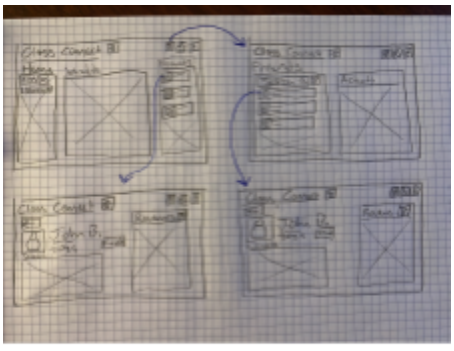

Figure 9. Simple Task Wireflow

Simple Task: View a Friend's Profile

Reflecting Ethan's need for simplicity, this task allows users to quickly and easily access their friends' profiles, a feature born

out of Anastasia's appreciation for the social aspect of registration systems. Seen in **figure 9**.

Medium Task: Find Highly Recommended Classes

Addressing Erica's demand for efficiency, this task enables users to find classes recommended by peers, streamlining the decision-making process and reducing the stress associated with class selection. Seen in **figure 10**.

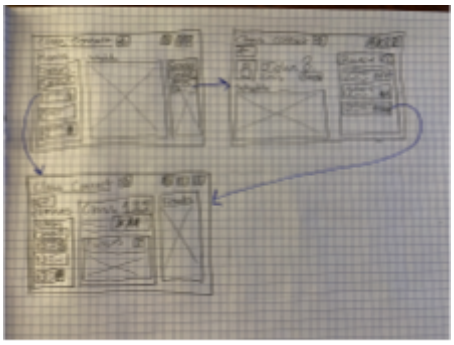

Figure 10. Medium Task Wireflow

Complex Task: Schedule Comparison

Catering to Jacob's preference for intuitive processes, this more complex task allows users to compare their schedules with friends, identifying potential gaps and aligning their schedules with minimal friction. Seen in **figure 11**.

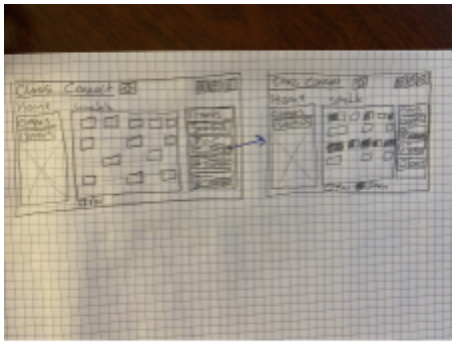

Figure 11. Complex Task Wireflow

Design Process: From Low-Fidelity to High-Fidelity

The journey from low-fidelity sketches to a high-fidelity prototype is documented through screenshots illustrating the major steps in the design process. Initial sketches (**Figure 12)** focused on addressing the emotional cues from the empathy maps—such as Erica's anger at hidden costs and Jacob's annoyance at outdated interfaces—by proposing a clean, modern look and transparent cost listings.

Figure 12. Lo-fi prototype.

As the design evolved into a high-fidelity prototype, it underwent several iterations based on usability testing and feedback. Key changes included the integration of a social component to reduce the anxiety associated with class registration, as suggested by Anastasia's and Ethan's maps, and the simplification of the interface to address Erica's and Jacob's concerns about usability.

Figure 13 depicts the simple task to “check out one of your friend’s profiles”.

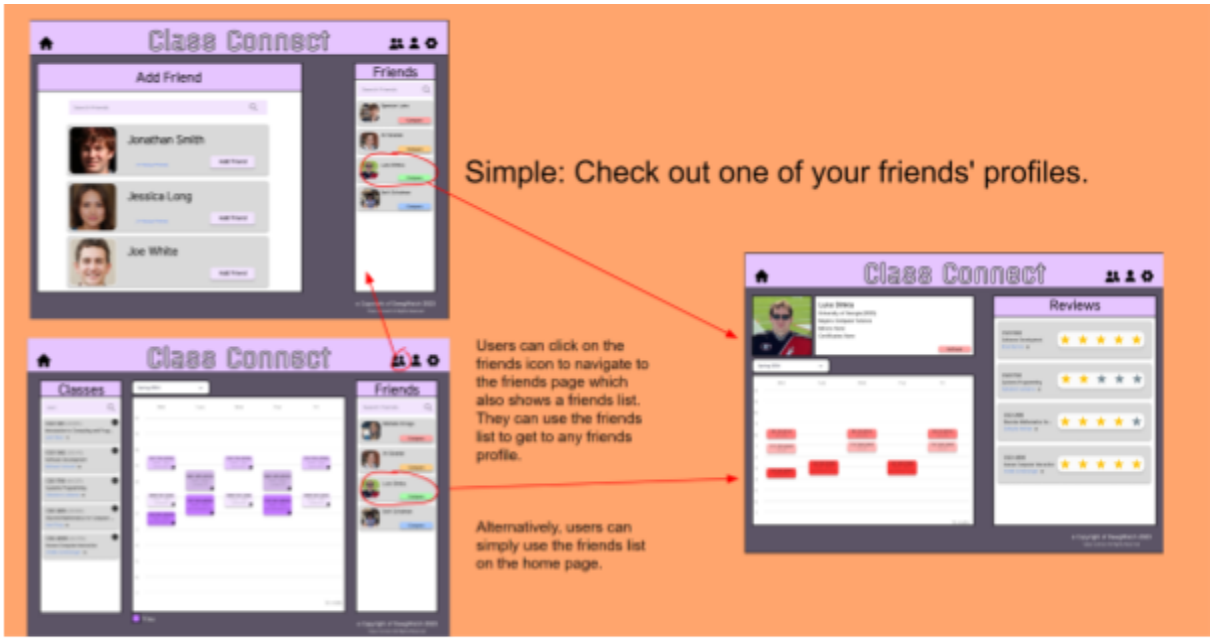

Figure 13. Wireflow of the simple task in High-Fidelity prototype.

Figure 14 depicts the moderate task to “find a class that your friend gave a high recommendation for previously”.

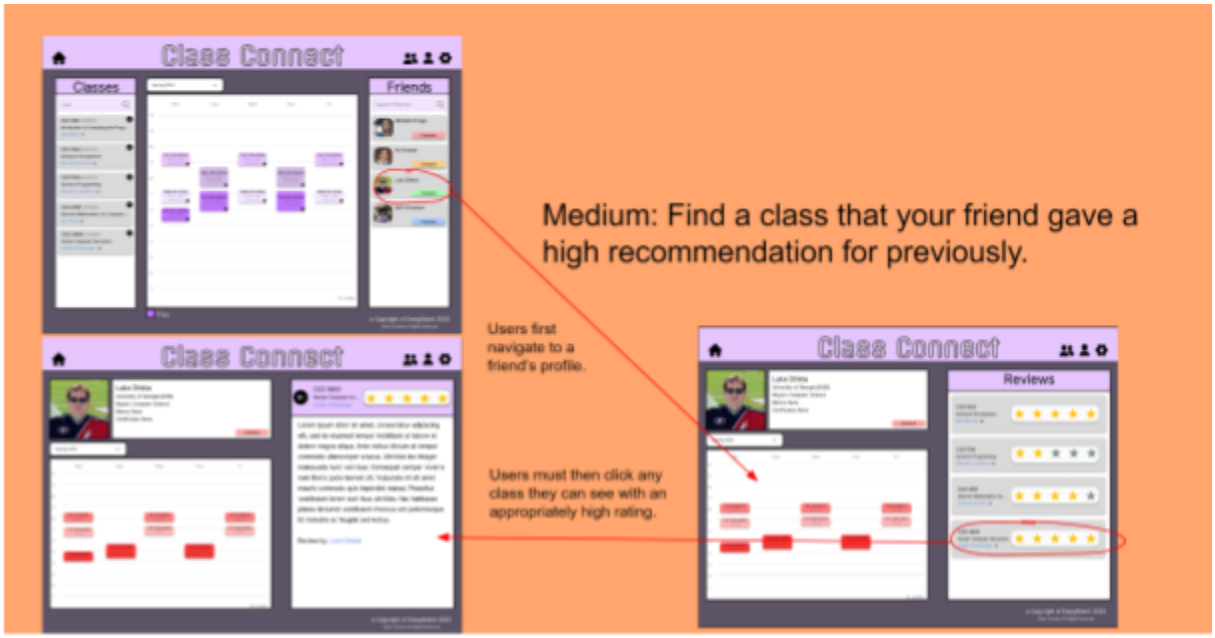

Figure 14. Wireflow of the simple task in High-Fidelity prototype.

Figure 15 depicts the complex task to “compare schedules with a classmate and determine if you share a gap in your schedules”.

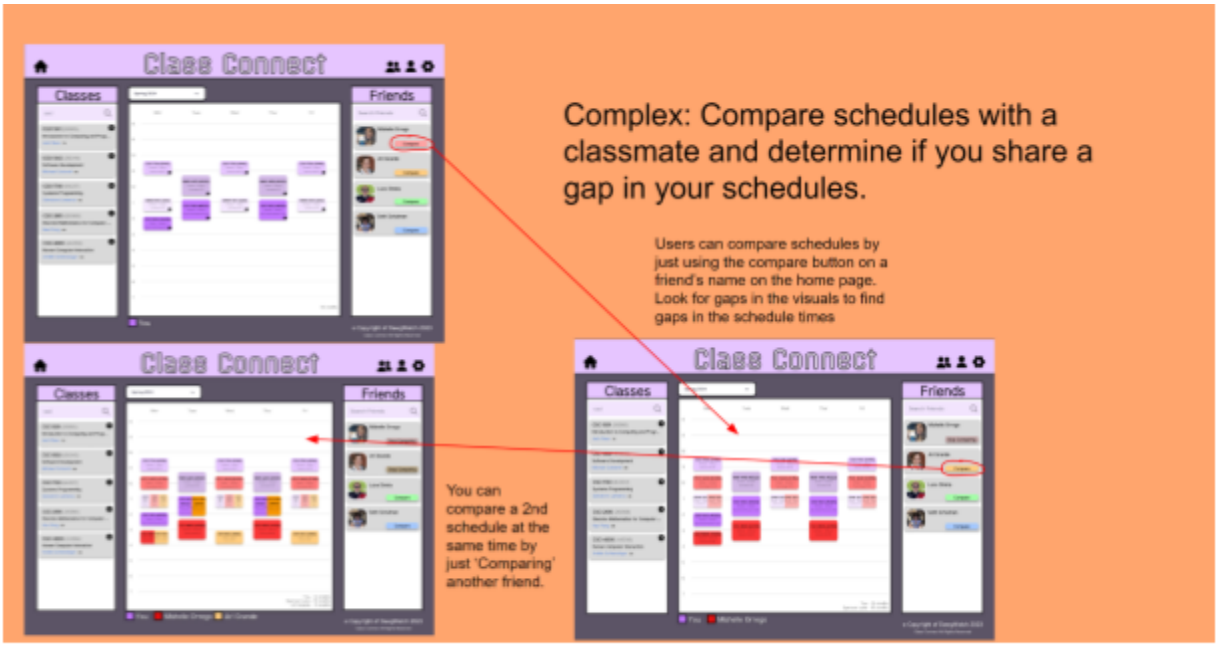

Figure 15. Wireflow of the simple task in High-Fidelity prototype.

Reasoning Behind Design Changes

After user testing, there were very few high severity remarks taken from our participants. But we addressed even the smallest issues to assure user satisfaction. Each major design change was backed by evidence from user feedback and evaluation techniques. One notable change was the simplification of many buttons. Participants complained that the buttons in the lo-fi model (**Figure 12**) were “hard to read” and in strange positions, so in the hi-fi model we added color and cleaned up the button layout.

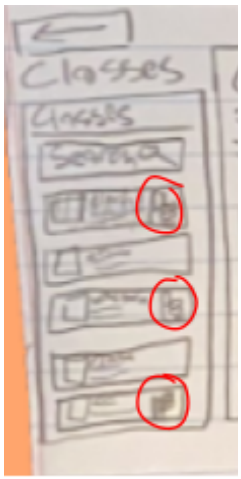

Figure 16. Lo-Fi recommendation markers.

One of the bigger changes we made was the removal of the friend recommendation icon. In the lo-fi model (**Figure 16**), we originally included a thumbs up emoji to signify that the class was recommended by friends. None of the participants understood what the symbol was so it was removed in the hi-fi model (**Figure 17**).

Figure 17. Hi-fi model without recommendation icons.

The other changes were simply aesthetic changes to make text easier to read including labels and titles. These issues were addressed because the original was drawn on paper and difficult to read, so naturally in the computerized version this issue was easily addressed. Nearly all users' complaints and concerns were addressed in the hi-fi prototype. Because further testing may reveal more issues in the future, our team is open to change and keeping an open mind.

This empathetic approach to design, grounded in the lived experiences of students, has resulted in a class registration system that is not only functionally robust but also emotionally and cognitively attuned to users' needs. The next steps involve further refinement through iterative testing, with a continued focus on empathy to ensure that the system remains user-centric in its evolution.

Design for Diversity

Designing for diversity is designing for everyone. Improvements and design decisions that enable those that might not be included in traditional design choices will inevitably improve the universal usability of a product. For us, that means going through steps outlined in class that can guide us towards good design, with inclusion and diversity in mind.

To start, we must consider what we might not be considering when designing and what we might need to avoid. The worst-case scenario means that our system is limiting aspects of registration. The focus on social community and friends may ostracize groups of people who don't have strong networks of friends at their college. This would make it more difficult for those students to research classes and find new topics of interest compared to students with tons of friends.

On the other side, our best-case scenario is providing easier access to an intimidating and outdated system. Our system can hopefully help to connect both students with many friends and students who just blew into town. We hope that students will be encouraged to make new connections and find classes and time to hang out together. Through camaraderie, relying on and collaborating with friends can hopefully make the registration process smoother and easier.

When designing our system for college students, there is a traditional stereotype that fits the mold of a lot of our potential users. That mold, a young adult, typically fresh out of high school, is the market we are looking to help, but they are also not the only group that could benefit from our system. There are niche groups who are new to college and don't fit that mold, international students or students who may be attending college later in life may be excluded from this service.

From all this, we can generalize our main group of users to be freshmen and other people new to college that may be intimidated with the registration process and might not know where to start. With that in mind, we wanted an 'All People' statement that incorporates all the aspects of new college students.

"All people who go to college can incorporate their friends into the class registration process to alleviate stress and time consumption."

Students without friends or close connections at their colleges may be excluded from the 'All People' statement above, but we will work to further implement aspects of social media to help these individuals.

As college students ourselves, our team has been able to experience the problem area firsthand and those unique insights have helped us design an experience that will support students like us. This is even more true as our team is composed of people from multiple majors as well as being spread out across

different graduation years. However, we lack some diversity because no one on our team has had a non-stereotypical college experience and we are all white and majority male.

Final Prototype Implementation

Our high-fidelity prototype was built using only Figma. Figma was massively helpful for creating clean visuals and organizing information hierarchy. Not only that but Figma made it possible to visualize the link between different pages and their changes with the ability to create buttons and other types of interactions. Figma did have several limitations that hindered the work on our prototype. Figma does not allow users to have a single interaction type perform multiple actions. This means you cannot have a single click on the left mouse button do two different actions at once. This limitation forced us to use other methods such as changing the type of interaction or setting the activation key to another button altogether. Furthermore, Figma does not have the ability to simply add text-input boxes, drop-downs, or any pre-built interactables. Our team was forced to create many of these items by hand and even had to drop some features because their implementation was too complex to make from scratch.

To implement many of the features to show off our prototype we utilized several work-arounds and deceptions to convince users of a certain functionality. **Figure 17** shows the class search bar where we used a search feature. This search feature does not actually search or even let you type with it. The search feature is entirely hard coded (**Figure 18**) and forces users to press specific buttons to use and then moves to a new page to give the illusion of classes populating the search.

Figure 18. Search bar component.

We also created separate pages for each of the comparison visuals to give the illusion that users were actually adding new schedules and they were combining naturally (**Figure 19**). This is the trick our team used for mostly every feature in the prototype.

Figure 19. The menus that show users comparing schedules

Figma High-Fidelity Prototype Link

Here is the link to the high-fidelity prototype for interested parties:

https://www.figma.com/file/zb6cLRITVIFJYnzusb2M3t/Final-p4?type=design&mode=design&t=ihvAYWwmoSGhNIjC-1

Summary and Next Steps

This semester's project on class registration systems underscored the critical importance of empathy in design, revealing that a user-focused approach is key to creating impactful solutions. The project's evolution from initial empathy maps to interactive prototypes highlighted the value of iterative design and responsive adaptation to user feedback. Should the project timeline extend, we would perform follow up participant testing to evaluate the successfulness of our hi-fi prototype. Furthermore, future enhancements would include adaptive learning algorithms for personalized course recommendations and a dynamic feedback mechanism to ensure the system's continuous evolution in alignment with students' changing needs and educational trends.