

# Pathways

## Empowering students forward

### Group Members



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“We aim to provide students with a direction in their path to college and empower them in the college application process”

## Problem and Solution Overview

College is often viewed as a way forward and an agent of social mobility; however, the process is often complicated and stressful, resulting in a need for college counselors and other such mentors and advisors in order to offer guidance. We aim to scaffold the college application process with the resource Pathways, empowering students to take charge of the application process by creating their own “college roadmap” and connecting high school students with college students of similar backgrounds that can help provide feedback and advice on their roadmap based on their past experiences. Pathways aims to equip students with the tools needed to take charge of the college application process, ultimately hoping to leave students feeling empowered and ready to give back to others seeking help during the process.



## Tasks & Final Interface Scenarios

The tasks that the team determined would generally model the flow of the app are:

Task 1: Create a college roadmap (moderate difficulty)

This task is a defining feature of the app; we needed to provide a resource that would help students plan out their college application process. This is also the task that defines

future student-mentor interactions, as guidance and feedback is based on the state of the roadmap.

Task 2: Match high school students with a college student of a similar background (complex difficulty)

A distinguished quality of the app is the ability to connect high school students with “role models” or mentors that are similar to them so that they can see someone like themselves in a successful environment and receive advice that is applicable and customized to that particular student.

Task 3: Receive feedback/guidance from mentor (simple difficulty)

Matching with a mentor is only useful if the high school student is able to receive some form of guidance from them. As a result, we wanted users to be able to receive feedback and other advice from their mentor as a way of guiding through the college application process.

## Storyboard Walkthrough of Tasks (Hi-Fi Prototype)

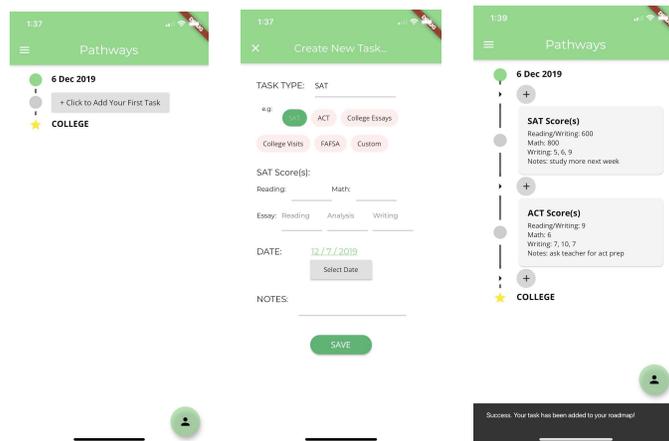


Figure A: Walkthrough of task 1, creating a college roadmap.

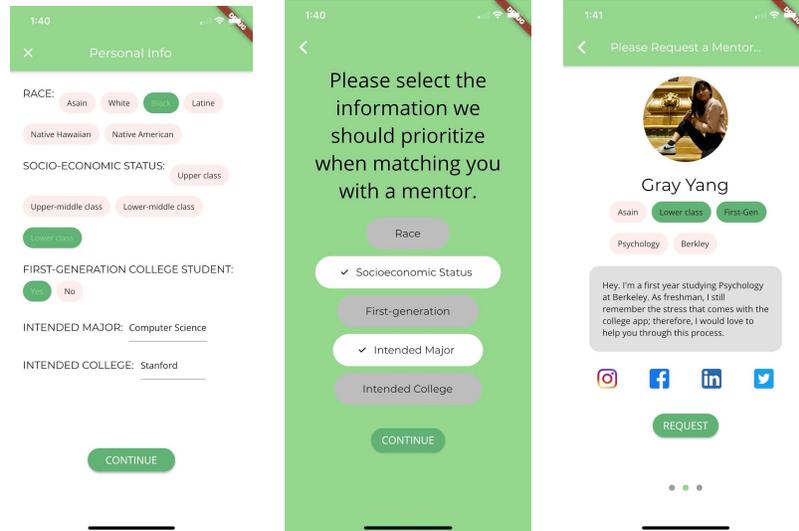


Figure B: Walkthrough of task 2, matching high school students with a college student of a similar background.

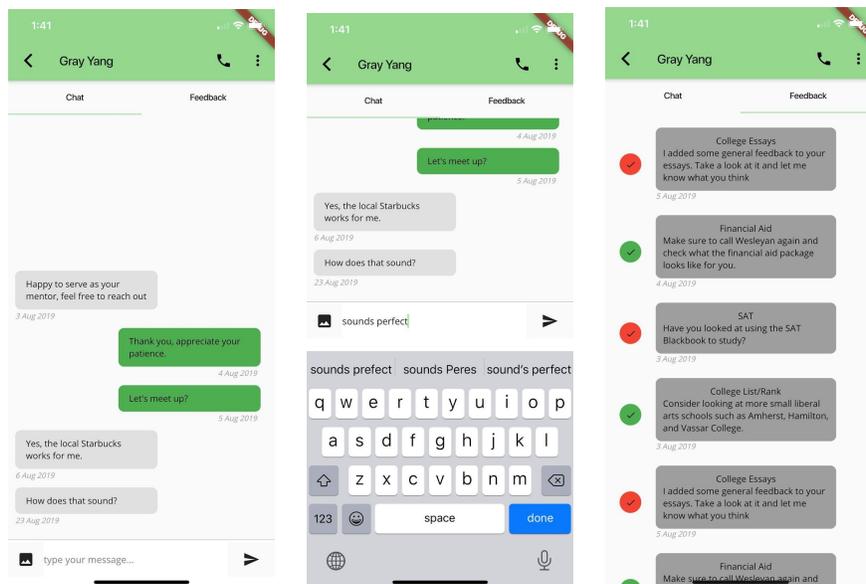
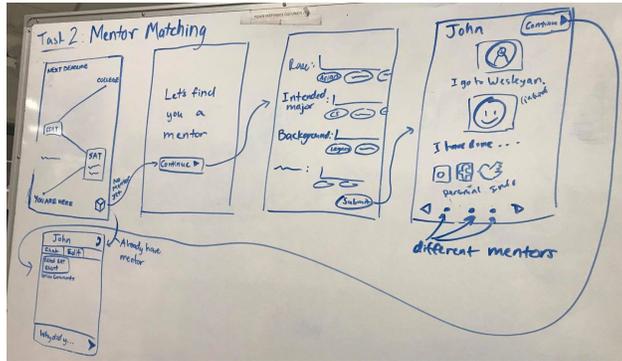
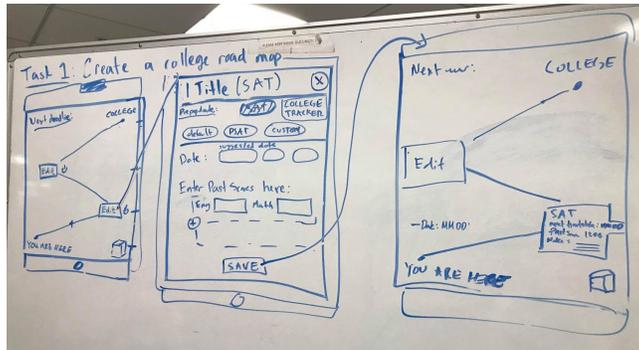


Figure C: Walkthrough of task 3, receiving feedback/guidance from their mentor.

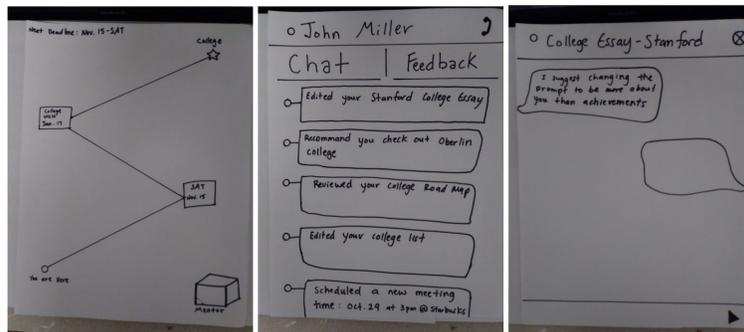
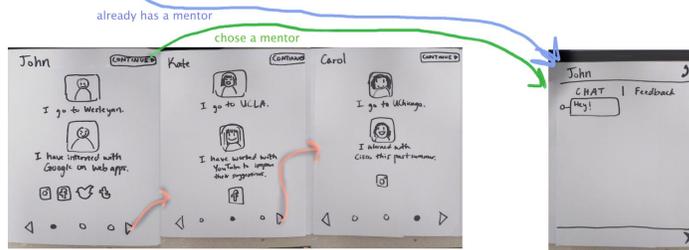
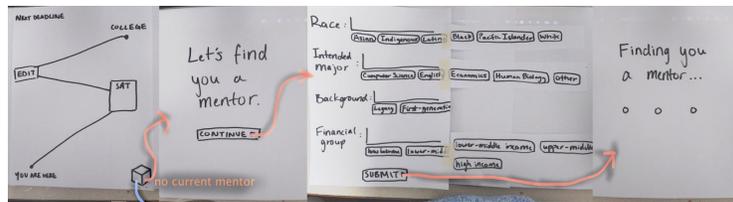
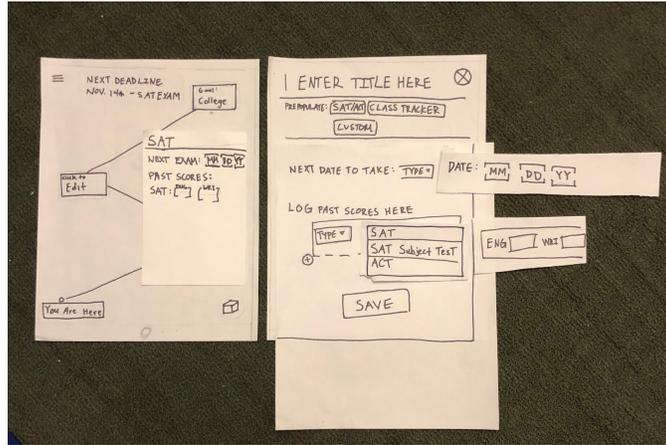
## Design Evolution

In outlining the design of the app, the group initially defined basic flow and functionality through sketches on a whiteboard before progressing to use paper prototypes and Figma illustrations before the final prototype.

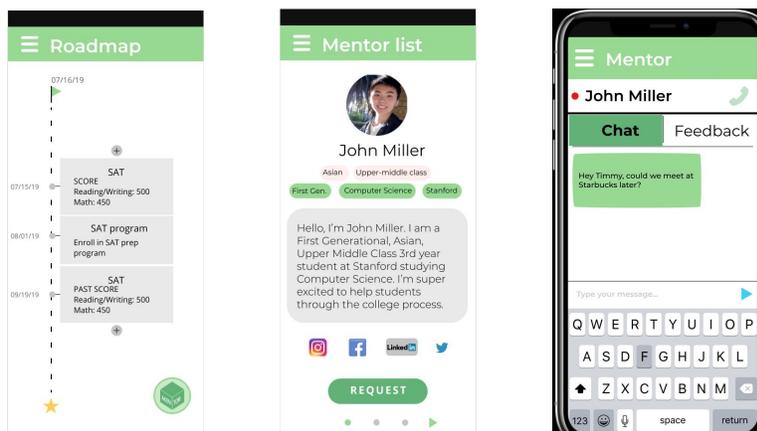
- Whiteboard pics



- Paper prototype pics



- Figma



## Design Changes

Feedback at various stages in the design indicated that the overall design, layout, and flow of the app was appropriate for its function and that the app was generally intuitive and visually appealing. The team made minor tweaks to the design based on the verbal concerns from participants testing the paper prototype in order to be more consistent with the rest of the app and also removed certain features that would have made the app more confusing. Notable among these changes are the changes to the mentor icon (encapsulating the icon in a button circle so users knew it was clickable), beginning the roadmap with only one editable task node and replacing college and beginning markers with only text and icons so as to clarify which components are interactable, and making submit or continue buttons have a more uniform location so users intuitively knew how to proceed within the app.

## Major Usability Problems Addressed

Heuristic evaluations of the med-fi prototype done on Figma revealed that there was an overall lack of visibility and consistency in color usage, user control, explanations during certain app processes, and guidance and direction in usage.

## Heuristic Violations

All heuristic violations of severity 3 and 4 were accepted and changes were made appropriately to remedy the violations.

### Severity 3

- 1. H2-10: Help & Documentation - “I wasn’t really sure what to do when I first entered the roadmap screen. My eyes naturally gravitated to the menu button in the top left, but I guess the interaction I’m supposed to seek out is adding a task to the roadmap. Fix: add a tutorial or help button.”**

Initially, we planned on adding a short tutorial screen upon opening up the app for the first time that directs users to create a task to begin forming their roadmap; however, in the final prototype, we decided that by having just one task box and labeling it with the text ‘Click to Add your First Task’, it would be clear how the user should navigate for this initial part.

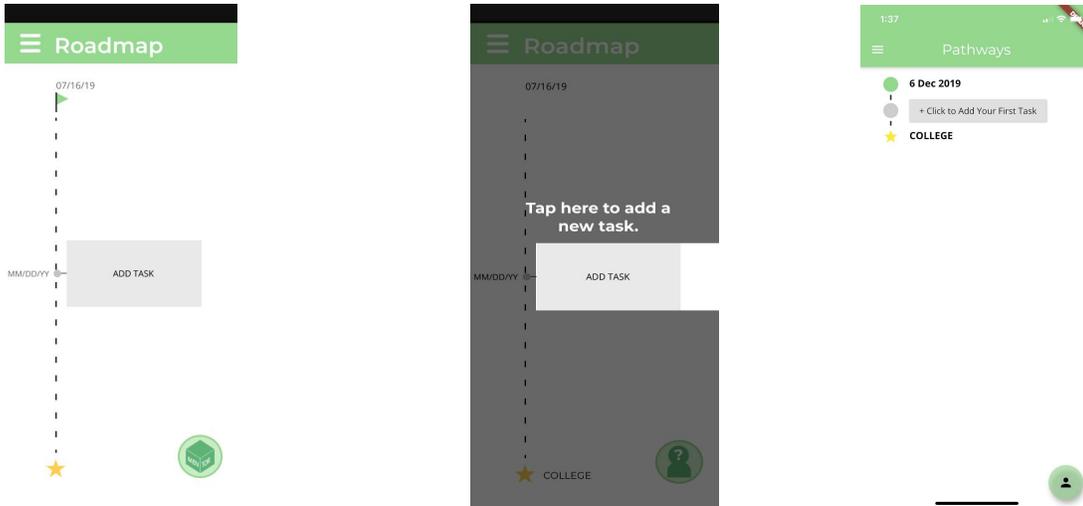


Figure 1: Before (left), initial plan (mid), and final (right) implementing a tutorial.

- H2-8: Aesthetic & Minimalist Design - “Somewhat related to issue #2, I think the gray color and small fonts in the Roadmap tasks could be a bit easy to skim over and miss. Fix: Emphasizing task titles, and keeping ‘Add Task’ in the title font, rather than the body font, could help”**

We remedied this problem by changing the font colors to simply black (#000000) instead of a light gray in order for the text to be more legible and add contrast to stand out more. We decided to keep the font difference within the app in order to remain consistent with Open Sans being more for the content or body of the app and Montserrat being more for titles.

*\*Look at figure 1 to see the changes for Roadmap Tasks\**

- H2-3: User Control & Freedom - “It seems like deleting events is not possible in the medium-fidelity prototype. I would like to see the ability to delete events you created by mistake (or if it exists already, it didn’t seem clear enough), as well as the ability to check off events that have already been completed, in a way that will be clearly visible on the roadmap. Fix: I would make the events clickable, and then allow you to delete them or set them as complete from there. Another option is putting checkboxes next to the events.”**

We added a delete function to the view task page that you can pull up whenever you tap on a task node so that users can actually delete tasks that they do not need. As for completed tasks, we plan for them to automatically scroll up before the current date marker so that only upcoming tasks show up in order for users to be able to better keep track of what tasks are completed and what tasks have not been/are upcoming.

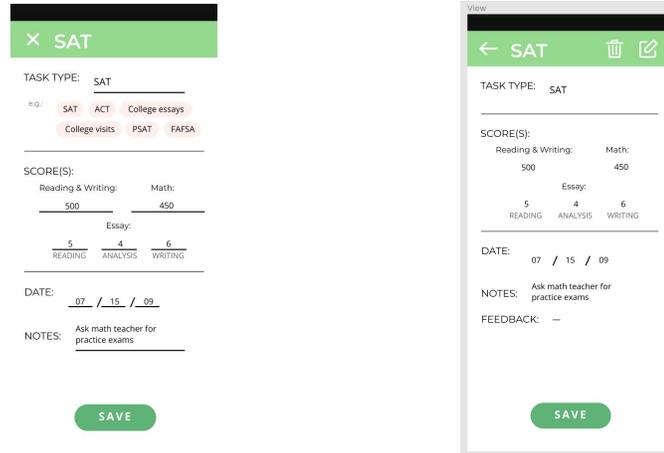


Figure 2: Screens before (left) and after (right) implementing delete button.

- H2-4: Consistency & Standards** - “The white text on a green background (for example, as seen in the first screen) is inconsistent with the rest of the application’s text colors (black on green or black on white for body text). In addition, the continue button in the mentor matching is inconsistent with the ‘let’s get started’ text from the beginning of the app. (See issue #1.) Fix: make the text black.”

We changed the title screen text to black on a light green background in order to be more consistent with the color usage of the rest of the app.



Figure 3: Screen flow before (left) and after (right) changing text color.

- H2-2: Match System & World** - “On the personal information screen, I think that some categories should allow multiple entries. In a lot of cases, people might not be sure about what college they want to attend or what they want to major in; they may be turned off by having only one option. Fix 1: Since this app is targeting

high school seniors, who have not necessarily decided what they want to do in college, I might allow users to select multiple possible majors. Fix 2: It seems odd to only have one intended college, even as a way of narrowing mentor options. Perhaps giving students a chance to list multiple intended colleges would be useful?”

We allowed the input of multiple intended colleges/majors/inputs and also added an onboarding screen to the identities selection process that explains you may fill out as much or as little information as possible so that users can know that they can input multiple options.

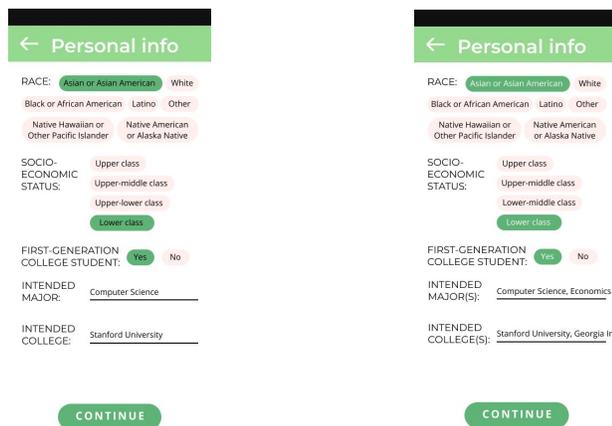


Figure 4: Screens before (left) and after (right) allowing multiple inputs.

- H2-8: Aesthetic & Minimalist Design - “It’s a bit strange from an aesthetic perspective that the mentor button remains a generic cube after the mentor is matched. Fix 1: I might consider changing it to a profile picture of your specific mentor. Fix 2: Also add the mentor option in the sidebar”**

We decided to do away with the cube button in order to eliminate confusion as to what the icon might be, opting instead to make the icon a person figure with a question mark as a face when there is no mentor and a person figure with a smiley face when there is a mentor, as we believed that a more human shape would more accurately represent a mentor. We wanted to retain the more graphic aspect of the icon instead of using the actual mentor’s face, as it might be distracting for some users to constantly see their mentor’s face while editing their roadmap.

*\*Look at Figure 1, at bottom left corner, to see change in mentor icon\**

- H6: Recognition not Recall - “Title in the navigation bar states ‘Roadmap’ but not certain if the roadmap being displayed is the user’s roadmap considering that the user can view others’ roadmaps. Users will have to recognize their own map based on its contents or remember which roadmap did they select from the**

navigation menu. **Fix: Update title based on which roadmap is being viewed (ex. 'My Roadmap').**"

Since we were only considering in the future, should we continue this project, to implement the feature of being able to view other student's roadmap, we didn't incorporate this change in our final prototype as it was out of scope for our project.

8. **H3: User Control & Freedom - "After filling in the personal information and the resulting matches being displayed, there isn't a way to go back and edit the personal information. Users won't be able to change their personal information or mentor once they've submitted it or committed to a mentor. Fix: Adding a back button in the Mentor List screen that leads back to the personal information for edits/changes and/or an option/button to change mentors."**

We added a back button in the mentor match pages that allows you to return back to the information/identity prioritization page (which also allows you to return back to inputting personal information) to allow users to make changes to information that they input.

*\*Look at figure 4 to see the changes made to go back*

9. **H3: User control and freedom - "I noticed that if the user is in the 'Personal info' page for mentor searching, clicking the back arrow would only take them back to the 'Let's find you a mentor' screen. This is unlikely to be what they want to accomplish, since the 'Let's find you a mentor' screen is simply a transition screen. Fix: Directly take them back to the 'Roadmap' page."**

We fixed the way that the screens reroute such that the back arrow takes users back to the roadmap page in order to follow a more logical and intuitive flow of the app and where the back arrow would lead a user to.

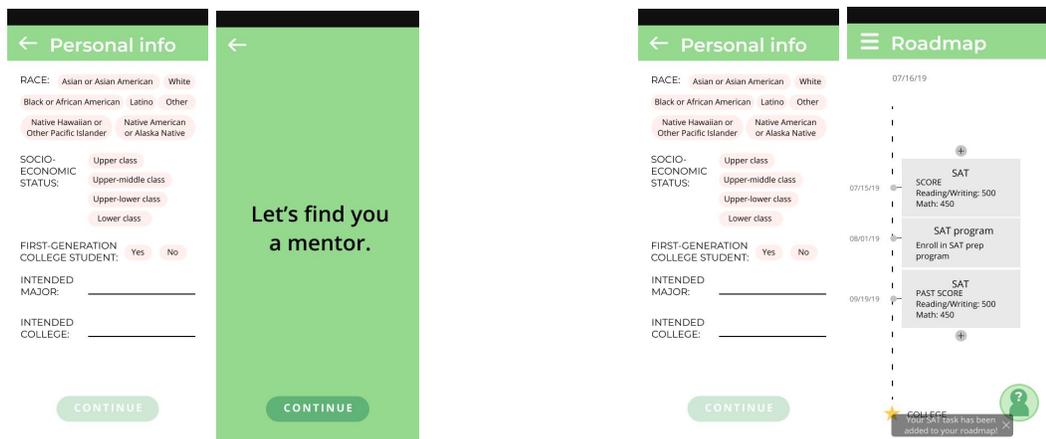


Figure 6: Screen flow before (left) and after (right) implementing back button change.

## Severity 4

1. **H2-2: Match System & World** - “It would be nice to have more clarity about what the flag and the star mean (since they both have a connotation of the end). I know from studio that the intention was to have the user start with the flag, then descend through the tasks; however, this ordering was only clear once I looked at the dates on the left hand side. In addition, descending along a list seems a bit counterintuitive to me. **Fix:** If you want to keep the ordering, perhaps having a stick figure and cartoon picture of a university would help. If you wanted to go even further, you could lean more into the metaphor of a roadmap, and show the user as a car driving along a road from a house to a university.”

We decided to do away with the flag icon and replace it with just the current date and also add the college label next to the star icon in order to have a much clearer use of icons and how the timeline/roadmap “reads.”

*\*Look at figure 1 to see the change in Roadmap flag/star icon\**

2. **H2-10: Help & Documentation** - “People are likely to feel awkward handing their personal data about sensitive topics, like race and socioeconomic status, to an app. I would feel more comfortable if I knew what data was shared, and with whom. **Fix:** mention whether data is shared with mentors, the app developer, or advertisers. These mentions could be in the form of a blurb, or a prominent link to a clear privacy policy. **Fix:** A page before ‘giving their details’ that explains why/how mentor matching process.”

To deal with the issue of privacy, we decided to implement onboarding screens explaining how information will be used and to tell the user that they can input as much or as little information as they feel comfortable in order to match with a mentor. We implemented this in order to be more transparent about the mentor matching process and hopefully gain trust with the user.

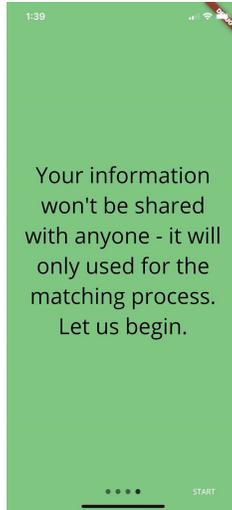


Figure 7: Information Explanation screen.

- H2-5: Error prevention - “As we discussed in studio, it is unclear what is selected and what isn’t on the mentor prioritization screen. I think that might lead users to make errors. Fix: Consider using a white background for the screen, which would make the green selected categories stand out. Alternatively, consider whether this screen is needed. Since the mentor profiles already show which areas match and which do not, would the users be worse off without the screen?”**

We changed the opacity of the identity options to make it more clear which options are selected and which are not.

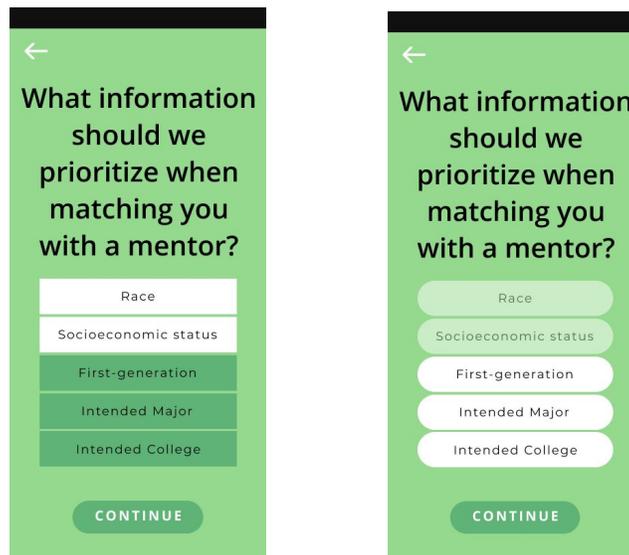


Figure 8: Screens before (left) and after (right) opacity changes.

- H2-6: Recognition, not recall - “Feedback from mentor is only visible on the mentor screen, once you have matched with a mentor. I would like to see it in the**

main part of the UI, specifically in the roadmap. Ideally, it would correspond to the specific topic of the feedback. Fix: one option is to have the feedback highlighted as an icon over each task that has received feedback.”

For this project, our scope was solely working on the student’s side of the app; therefore, for this particular feedback, we felt it was a bit out of scope and unnecessary for us to change seeing as we already had a mentor feedback feature for the student. In order to implement this change, we would’ve had to consider the mentor’s side of the app. However, to compromise with the feedback given, we decided to add more information to the already implemented mentor feedback feature.

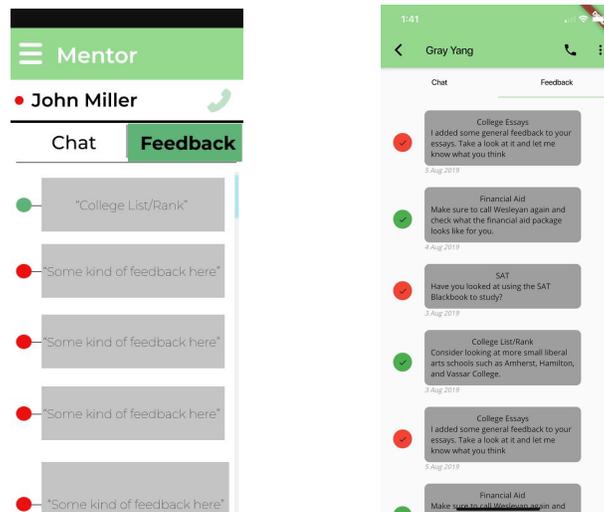


Figure 9: Screens before (left) and after (right) implementing feedback feature.

5. H2-1: Visibility of Status - “So far, users have to check each screen individually in order to see if they have any messages. Fix: I’d like to see UI elements (e.g., notifications, highlights) that show you when you receive new feedback or chats from your mentor.”

This was something that we wanted to implement, in which we had planned to add a notification icon along with the number of how many new messages you have left in order for users to more easily know whenever they have new/unread messages and feedback; however, as our app was meant to only demo our prototype, this feature simply wasn’t important nor relevant enough at this stage to implement.

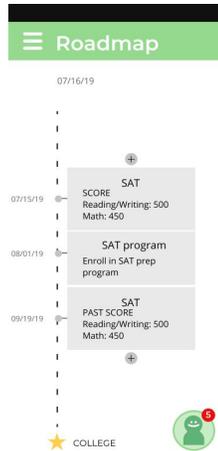


Figure 9: Initial plan of notification feature

6. **H10: Help & Documentation** - “When filling out task details or one’s personal info, there isn’t any clarification on some questions. Users may not instinctively know if some questions can have multiple answers or which answers to the question are appropriate such as if the user is multi-racial and how to express that in the personal info questionnaire. **Fix:** Add clarification to each question such as **RACE (select all that apply)** or **SOCIO-ECONOMIC STATUS** where a button that when clicked, displays a range of income for each class (ex. the ? button).”

We added onboarding screens in order to inform the users that they can input as much or as little information as they would like, thus solving the issue of if they are unsure of which identity group they might fall within. Additionally, it informs the user that they are allowed to have multiple selection/input.

*\*Look at figure 4 & 7 to see changes*

7. **H6: Recognition not Recall** - “The only time users are able to read about the mentor is when they’re being matched with one. Once a mentor is confirmed, there isn’t any visible indication of being able to review the mentor’s background/bio again when the profile could be easily linked to clicking the mentor’s name or a button in the Mentor screen page. **Fix:** Maybe have the mentor’s name be clickable and link to their profile page.”

We added a mentor bio screen when users tap on the mentor’s name in order to remind students of who their mentor is and what identities they share.



Figure 10: Screens mentor bio addition.

- H6: Recognition rather than recall - “After the matching step, the mentor became nothing but a name. This can be a problem, as the user has no way of reminding themselves in the app what the mentor has to offer. Fix: Keep a selected portion of their profile that was displayed when the user was selecting a mentor.”**

Similar to above, we added a mentor bio screen to help remind users of who their mentor is and what they share in common.

\*Look at figure 10 to see changes

## Other Changes

We also added more user control and status updates through the addition of toasts, cancel buttons, and confirmation pages so that users have more control over the flow of the processes within the app.

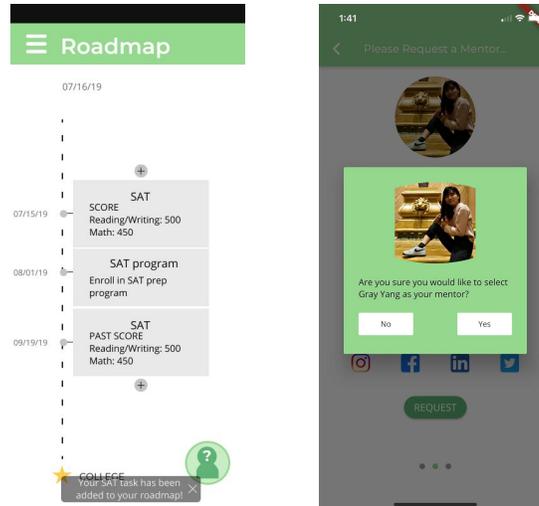


Figure 11: Screens implementing toasts, cancel buttons, and confirmation pages, respectively.

## Prototype Implementation

We decided to implement our prototype through Flutter due to Mamadou having previous experience working with the tool. Flutter is a cross platform mobile SDK. It's basically Google's version of ReactNative. Flutter made it super simple to go straight into editing UI widgets using their language Dart which is similar to JS. The tool was unhelpful more generally in the beginning because it made everything difficult. The reason being that Flutter has a huge learning curve since Dart isn't a commonly used language. We used the Wizard-of-Oz technique to simulate the "Mentor" feature in which a mentor will give feedback and communicate with the user. The Wizard of Oz technique was also used in the mentor identities that are identical to the user; we faked the matching process. Some hard coded features: sample tasks, given matched mentors, & mentor initial feedback/chat. In general, all the data is hard-coded. As soon as you exit out of the app, all the data deletes. What is missing is truly hooking this up to a backend so that data is saved and propagates. Additionally we are missing the entire other half of the app for the mentor to actually look at things and provide feedback to the student.

## Summary

Overall, throughout this entire process, we believe that we've created an app that truly fits the need that we found from our initial interviews. With our goal of empowering students to feel confident and possess the knowledge and tools to owning their own college application process, our app has gone through various changes in design and UI implementation. However, with each iteration and testing from random people to our peers, using the feedback given, we can confidently state that our app has accomplished what we sought out to do. Although there is

more to be done still for our app to reach full completion, we believe that our app still poses as a meaningful solution to an ever growing need in the world.