A. High-Fidelity Prototype
1. Based on the detailed designs you developed in the previous milestone, produce a high fidelity prototype of the proposed user interface. Remember, unlike a wireframe or mockup, a prototype is often clickable and thus allows the user to experience content and interactions in the interface. In many cases, users might think they're using a real application when testing a really good, high fidelity prototype.

   ● The elements of your prototype should be presented in a consistent manner and in a way that viewers can see all wired artboards at once and individually (perhaps by clicking).

   Additional Expectations

   ● You are expected to use use a UX software tool to create your prototype (e.g., Adobe XD, Figma, etc.). You must provide a download link for any source files and assets needed in addition to one or more exported PNG files of the artboards.

   ● You are expected to provide proper attribution for each asset that your team uses that you did not personally create. Unless you see a notice to the contrary, you should assume that assets your team did not author are subject to copyright restrictions. In the United States fair use is a doctrine applied to copyright law that allows limited use of copyrighted material without requiring permission from the rights holders, such as for commentary, criticism, news reporting, research, teaching or scholarship. If appropriate, you should include a "fair use statement" on your website – an example statement can be seen here.

2. Each prototype in (A.1) needs to relate to one or more of your related, relevant user stories from (A.2) in the previous milestone. To demonstrate this, you should do the following for each relevant user story:

   ● restate the user story along with an extended description that explains how the design elements of your prototype address your problem of study with respect to that specific user story; and
   ● provide one or more short video demos of someone using your prototype to accomplish the narrative described by that specific user story.

Prototypes on Figma:
https://www.figma.com/file/kwLnaOc4fqq6um7seAh6rd/Milestone3_Mockups?type=design&node-id=213-6350&t=be73TQkxT4BixctC-0\

1. **User Story 1a: Accessing Syllabus**

   As a student user of Athena, I want full access to the course syllabus of the class so I can properly prepare for the requirements of the class.

   The user story is about a student who is using Athena and desires full access to the course syllabus to adequately prepare for the class's requirements. As a user I want to know the topics that will be addressed, the type of assignments and their deadlines, and the schedule for the exams. By having access to the course syllabus, the students can plan their study schedule, manage their homework and ensure that their course requirements are met.

To overcome this issue, the prototype's design features should focus on offering the course syllabus in a straightforward and accessible manner. As a solution to this problem we created a mockup with design elements that provides the updated syllabus of that current semester in Athena's course details modal under prereqs/coreqs/syllabus tab as a downloadable PDF that a student can view anytime. Having the syllabus as an embedded PDF makes it more likely for a user to view the media as opposed to having a link to the media ([Source](#)).

User Story 1b: Accessing Grade Distribution

As a student user of Athena, I want full access to the grade distributions of the courses so that I can fully understand the risks/rewards of taking this class.

This user story is about students wanting to access the grade distributions of the courses to make an informed decision about taking the class or not. By having access to this information, the student user can understand the risks and rewards of taking a class, including the level of difficulty and how grades are typically distributed.

To address this problem, the design elements of the mockup we chose to prioritize was providing the grade distributions in a clear and accessible manner. We included this as a prominent item on Athena's course details modal by having a tab that displays the grade distributions when it is clicked.

The grade distribution is displayed as a simple interactive bar graph which displays a tooltip with the bar's value when the user hovers over a bar. This makes it easy for students to interpret the data ([Source](#)) and is a great way to "provide a high level detail at first glance while letting people dive deep end when they like" ([Source](#)). Furthermore, we made sure to include well labeled axis and title so that users will be able to easily understand what the visualization is about ([Source](#)).

Additionally, we included the feature that allows students to filter the grade distribution based on factors, such as the professor, semester, or year. This enables students to compare grade distributions across different offerings of the same course, providing a more comprehensive understanding of the course's level of rigor.

Though many other design choices we made for this user story did not directly address the problem of study with respect to this user story, they were made intentionally with proper justifications explained in [Milestone 3](#). These included the benefits of using a bar chart and a grouped bar chart when comparing data across different categories, position of the filter button, reset filter button, and color palette of the bars, etc.

2. ## User Story 2: Tracking Seats

As a student user of Athena, I want to be updated on the seat availability of courses so that I can register for the courses that I would like to take.

This user story is about students wanting to be updated on the seat availability of courses so that they can register for the courses they like and know their waitlist position. By being informed on the seat availability, the student user can plan their

schedule easily and register for classes before they fill up when the waitlist is dissolved during add and drop. In addition to this, the students will easily be able to access their waitlist position through their phone.

To address this problem of lack of easy access, the design elements of the mockup we chose to prioritize was providing up-to-date information on the seat availability of courses a student has waitlisted for in a clear and accessible manner. We allowed students to set up text notifications for when a seat becomes available or when students' waitlist numbers get changed. By receiving real-time notifications, students are easily able to see their waitlist number and how many seats are available at any given moment. Currently, Athena lets you access this information in a convoluted manner:
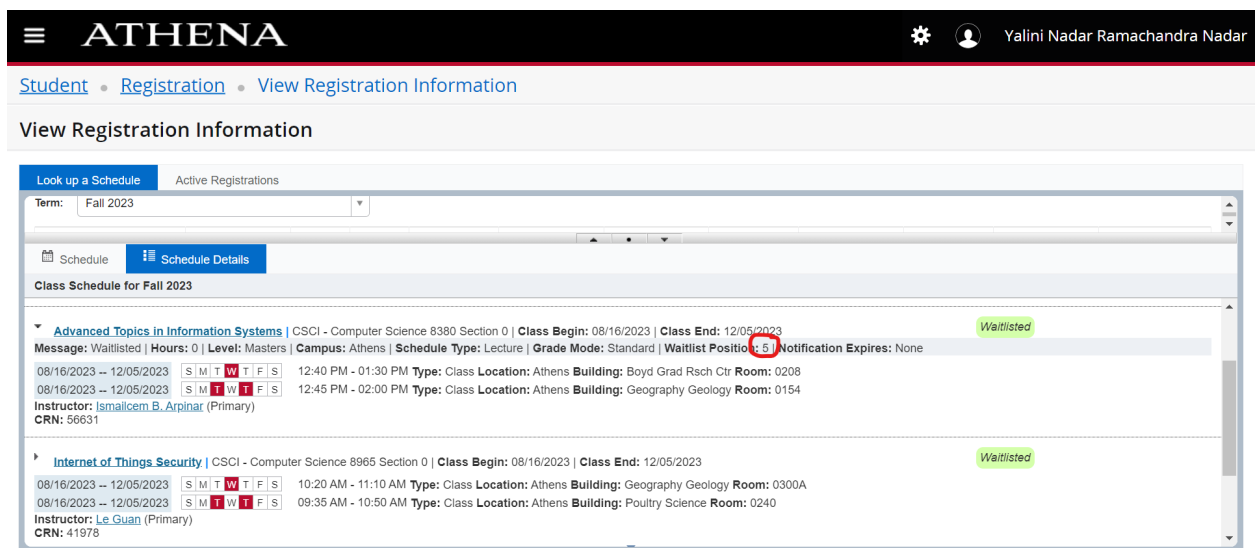
Looking at the screenshot above, you can see how users are currently able to view their waitlist position. They must click on the carrot beside the waitlisted course, which opens up a small section with a grey background as you can see with the "Advanced Topics in Information Systems" course.

Considering this, we wanted to make this process of viewing the waitlist position as easy and straightforward as possible. One key assumption we made was that all students who use Athena have a duo account linked to their phone number (Source), meaning the students phone number is already in the database which we can access to compleete the user story. Using this assumption, we decided not to ask the student to enter their phone number in this process. We also decided to use checkboxes while listing the courses so that user can select the course(s) they would like to track since they are familiar components in user interfaces and they make it easy to compare available options (Source).

Other design decisions that are not directly address our problem of student with respect to this user story such as the color of the 'yes' and 'no' buttons and the intentional placements of these buttons were justified in Milestone 3.

User Story 3: Career Prospective/Class Reviews

As a student user of Athena, I want information related to how taking a class will affect my graduation and career based on previous students' experiences taking the same class so that I will be more interested in the class I am taking and therefore will be more likely to succeed.

This user story is about wanting access to relevant information about courses and their impact on graduation and career goals through the experiences of previous students who have taken the same course. By having access to this information, students can make better decisions when selecting courses, leading to a more fulfilling academic experience and greater success.

To address this problem, we chose to include two important features in the mockup: Alumni Feedback and Reviews. The Alumni Feedback page shows the outcomes of students who have taken certain courses in the past while the Reviews page displays the reviews of a particular course along with things like how it affected a students academic and career goals and what the students liked or disliked about it.

We chose to add a small nav bar on the top center of the page that includes links to both these pages so users can easily navigate between them (Source). For the page that is currently selected we chose to color the text Bulldog Red to reflect the cohesive Georgia brand (Source) and also highlight the current page.

For both the Alumni Feedback and the Reviews page, we chose to display the content on multiple cards in a two column grid layout because of its clarity, efficiency, economy, and consistency (Source). In addition to this, we added a search bar below the nav bar to make is easy for prospective students to find reviews and feedback relating to their own majors and classes (Source).

As for the Reviews page specifically, we decided to add the 5 star ratings for each card in the top right corner. We believe this gives the students a direct and quick insight into the course's quality (Source). However we agree that a system of only ratings doesn't inform students as well as actual feedback can (Source) which is why we included both on the cards.

Other design decisions that do not directly address our problem of student with respect to this user story such as the placement of the search bar and the addition of the see more feature rather than using pagination were justified in Milestone 3.

Prototype Demos:
- User Story 1a & 1b: https://youtu.be/ZL3UzTs5xlw
- User Story 2: https://youtu.be/bskQmBFBcXs
- User Story 3: https://youtu.be/9Li2C1HPzP4

Additional Expectations

You are expected to produce demo videos from the perspective of the user in the user story. You may provide audio or text commentary; however, each demo should be less, "explaining what the user will do," and more, "explaining what the user is doing." You

may need more than one video demo per user story if there is more than one typical path for accomplishing the related task or activity. These videos are separate from the final summary video described by (C).

You are expected to do what's described above with most of the user stories you outlined in (A.2) of the previous milestone. If, for any reason, you are unable to demo a user story as described above using your prototype, then you must substitute the video with a strong, convincing argument that both explains and justifies why you're unable to demo it. Your instructor will weigh the merits of any such substitution against its impact on your ability to tackle your problem of study when determining how it will impact your grade for this part of the assignment.

B. Testing Protocol
1. A user testing protocol describes the objective(s), methodology, and organization of a user test; it essentially describes how to administer a user test and how the data can be used to answer your research question. For this part of the milestone, you should describe your protocol by answering the following questions:

    ● What is your research question? It should be simple, falsifiable, and related to the effectiveness of your design in solving your problem of study.

    How did the new features added to Athena affect user satisfaction when comparing the old user interface to the new user interface?

    ● Based on your research question, what methodology will you use for testing and why? Some examples include:
       ○ Observation / Participant Observation.
       ○ Surveys
       ○ Interviews.
       ○ Focus Groups.
       ○ Experiments.
       ○ Secondary Data Analysis / Archival Study.
       ○ Mixed Methods (combination of some of the above)

    We will use an approach focusing on presenting current students with surveys to determine whether their satisfaction increases after the new features are implemented. This can be done using the pre-post survey design where a standardized survey instrument is administered before and after the implementation of the new features and comparing the results. We chose this methodology because companies in the real world regularly collect feature requests and feedback through surveys and release new versions of their apps to keep users engaged and happy ([Source](#)). Product updates and surveys go hand in hand in the digital world. When they are used together, they can become a powerful tool to measure customer satisfaction and consequently improve the user experience.

2. Based on the methodology you chose in (B.1), describe your testing procedure. Regardless of methodology, your testing procedure needs to involve your design prototype from (A). Also, be sure to incorporate answers to the following questions in your description:

    ● What is your specific plan to deal with informed consent?
    ● What specific data will you collect and how will it be organized?

- What type of analysis do you intend to perform with the study data, and how will that analysis help answer your research question from (B.1)?
- How might you conduct your testing procedure safely during a pandemic?

First we will design a prototype of the system with the new features integrated smoothly, unlike the prototypes created in part A which were made for each user story individualy more or less. This was because the starting point of each user story was slightly different and connecting all of them together was not part of the user story itself. So a little more work will be done to combine all the prototypes from part A to create a seamlessly integrated prototype for the Athena portal as a whole.

Since we have chosen to interact with human participants while conducting pre- and post- surveys, we will apply for approval from the UGA IRB using the IRB Portal ([Source](#)). This is considering that all our group members have already completed the online certification for rearchers. Once we receive clearance from IRB, we can start selecting the participants. The target population for our study will be UGA students who use Athena for class registration with the eligibility criteria that limits the study to students who have most recently registered for a class using Athena in the past year. We will use a variety of methods to recruit participants such as contacting the random students via UGA Mail, using social media, putting up flyers at MLC, and working with professors and departments across campus to reach potential participants. We will make sure that the final sample of participants selected for the pre- and post- survey is representative of the target population. Once we have a sample of participants, we will then obtain informed consent from the participants before administering the survey by explaining the purpose of the survey, how the data will be used, and how their responses will be kept confidential.

For the pre-survey, we will administer a standardized survey instrument such as System Usability Scale (SUS) which is designed to measure the usability of a system and user satisfaction with its interface. It is a very easy scale to administer to participants and can effectively differentiate between usable and unusable systems ([Source](#)). The pre-survey will be given to a sample of users who have used Athena prior to the addition of our proposed features and will measure their baseline level of satisfaction and adoption. Then we will administer the same SUS survey to the same sample of users after they have had a chance to use the new version of Athena with the new features. The post-survey will measure their level of satisfaction and adoption after the addition of the new features.

Then we will collect and organize the survey responses into a dataset and perform data processing and cleaning. The final dataset will include information about the users, their responses to the survey questions, and any other relevant demographic or contextual information. Then the data will be ready for statistical analysis in order to compare the pre- and post-survey responses and assess the impact of the new features using inferential statistical methods such as the paired t-test. Paired t-tests are used when each subject has a pair of measurements, such as a before and after score. These tests "determine whether the mean change for the pairs is significantly different from zero ([Source](#))." This will help us answer the research question of whether the new features have a significant impact on user satisfaction and adoption or not, making our initial research question falsifiable.

To conduct our testing protocol safely during a pandemic, we can administer the surveys online to avoid in-person contact. We also plan to protect the participants' privacy by using secure methods to transfer data between participants and researched. In addition to this, we will be storing all study data securely using a secure cloud-based storage. We will also limit access to data so that only our group members and the professor(s) involved with this project have access to it.

C. Final Summary Video

1. Create a 10-20 minute video that summarizes your term project, including the new information and deliverables in parts (A) and (B) of this milestone. Here are the specific requirements:
   - Introduce yourself: include your team name and a short overview of your problem of study and proposed solution.

   - Show how your design evolved from what you proposed to what you ended up with: using work from previous milestones and part (A) of this milestone, provide viewers with commentary regarding how your design changed over time. This should culminate with a "showcase" demonstration of your prototype that highlights what you ended up with in a way that connects your design decisions back to your problem of study – if you use clips from any of the demos you produced in part (A), then please integrate them in a way that keeps this "showcase" idea in mind.

   - Discuss your testing protocol, including the experimental design and how the data you ascertain from the study might be used to determine if your design successfully tackles your problem of study.

   - Finish by providing a brief summary of what you learned while working on this project, including what parts you thought were the most useful and what parts you enjoyed the most.

   Additional Expectations

   You are expected to involve all team members in The creation of this video, and the video itself should contain credits at the end describing who did what.

   You are expected to provide a link to the video in your milestone deliverable report; if your report is an HTML page, then you may embed the video into the page in addition to providing the link.

2. Prior to the milestone deadline, one team member needs to post the following information in a followup discussion to Piazza @24.

   A. Team Name: DCI

   B. Team Member Names: Yalini Nadar, Subhiksha Ganesan, Himanshu Jain, Neel Roygaga, Yash Roygaga

   C. Brief Synopsis – shorter than what's on your home page

   Athena course registration process at the University of Georgia presents issues such as lack of course information and seat availability.
   A proposed solution is to include more features such as providing access to course syllabus, grade distribution, and course reviews and feedback so that students can make more informed decisions while registering for classes. User satisfaction can be measured through a pre- and post- survey design.

   D. Link to your group home page:
   https://yashr357.github.io/CSCI4800-project/index.html

E. A few sentences describing what you thought was easy/hard about this particular milestone'

It was easy to create the prototypes once we had all the necessary components organized and created already from the previous milestone. It was straightforward to copy and paste them to create multiple instances of each component and connect them together to create a flow for each user story. The hard part was describing a testing protocol because we didn't discuss a lot about that in class or work with it much during the ddqs.

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