Resurface

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ITSC 3130

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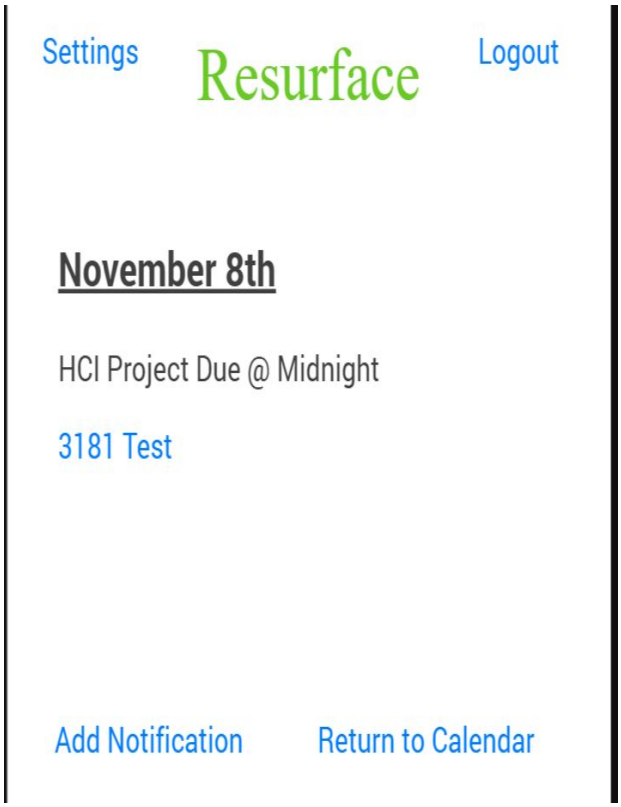

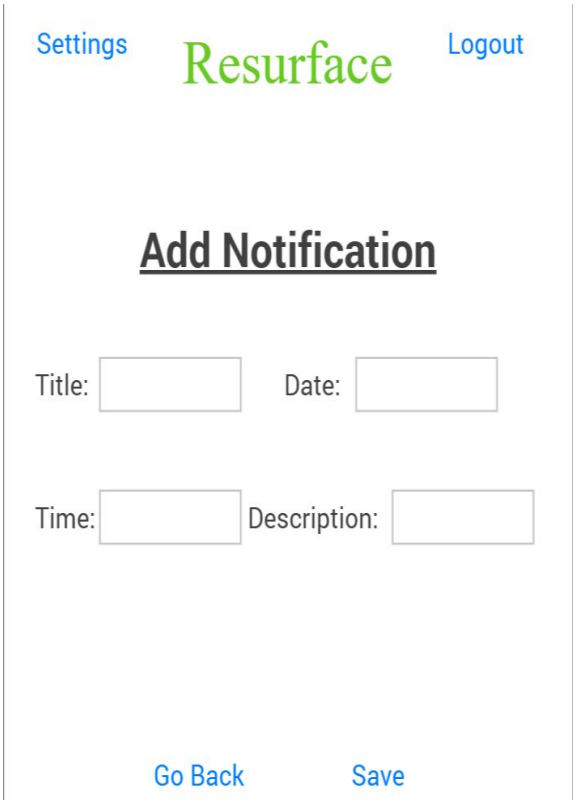

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Introduction

As a group consisting of college students, we've experienced how hard it can be to remember the due date for every assignment at school as well as having any extracurricular activities and/or social activities. Forgetting due dates can primarily be a problem for students with much harder majors and more hectic schedules. It's not only dependent on the schedule of a student but it can be solely dependent on the status of each student; traditional or non-traditional and full-time or part-time. If you're not always on top of your due dates and scheduled assignments, you will be bound to miss out on at least one or two very important grades.

Our group decided to create an application that could reduce the number of missed assignments. It would do this by simply notifying the student more effectively in which the student would be able to complete their work with ample time of the scheduled due date. We wanted to dive deeper into showing students that our application is much more diverse than the simple to-do list or calendar shown on the original canvas site. It was important that we design our application to use canvas as a base but to expand and explore the different avenues of advanced reminder systems. We wanted to explore why advanced reminders are not suited for all students but extremely helpful for the majority.

Needfinding

In order to fully become aware of the direction we wanted to take the application, it was important that we narrowed down our focus group into strictly college students. It was something that all of us could relate to and we could easily identify the greatest struggles that we have as students.The main goal of our application was to help students remember when assignments are due by notifying them in a more effective way. If you're not always on top of your due dates and scheduled assignments, you will be bound to fall behind or miss out on several very important grades.

As it was mentioned above, the application is desirable for college students but there isn't a specified age requirement. We've been able to identify different personas that range from a part-time student with responsibilities such as work and school to a regular student who is full-time and striving for a diploma. These two examples will be shown below to showcase the lives of two highly different users which cover different ends of the spectrum. As long as you're a student in college, despite being traditional or non-traditional, our application known as 'Resurface' would be a great fit for you.

The first person that we thought would benefit greatly from our application was a full-time student named Haley Alderwood. Haley is a nineteen year-old sophomore studying finance at UNC Charlotte. As a full-time student, she has a full schedule where she's taking fifteen credits and always looking for more ways to stay involved on campus through different organizations

and campus activities. Haley is very serious about her organization to stay up-to-date with all her assignments for each class as well as scheduling tutoring sessions and campus organization meetings when necessary. Although she's a highly successful student who is responsibly driven to complete her assignments on-time, she's looking tirelessly to gain work experience in her respective field. Haley has been seeking full/part-time summer internships to build out her resume for the second half of her undergraduate schooling. In order to successfully apply to various summer internships and part-time gigs, she must be prepared and serious about how she organizes herself for the upcoming weeks and months.

Haley is suited to be one of our intended users because her life as a student is strictly based on organization, preparation and staying up-to-date on everything occurring in her life. She's involved with on-campus organizations, activities, applying for internships all while taking five classes in business related classes. She has a lot on her plate especially if she wants to advance through her coursework and graduate on time. It's really important for Haley to be effectively reminded when different assignments are due and as student juggling various responsibilities, our application would be perfectly suited for such a student.

The second persona that we thought would benefit greatly from our application was a part-time student named Richard Crenshaw. Richard is a twenty-four year old senior studying computer science at NC State. Aside from being a part-time student who is enrolled in his final semester of undergraduate schooling, he's also a full-time intern at a highly regarded company known as IBM. He's working forty hour weeks as well as being enrolled in nine credit hours of

cybersecurity courses which is three classes. As a part-time student and full-time intern in his desired field of work, Richard regularly forgets about all his assigned school work due to his primary focus being on his work at IBM. He's really excited to begin working full-time after graduation but he must learn to balance both his job and school in order to be successful.

Richard is suited to be one of our intended users because his life as a full-time intern and part-time student is strictly based on balancing both school and work while staying up-to-date with several assignments in different classes. It's hard enough to try to organize yourself to be able to excel in all your coursework and on-campus organizations but it's a different beast once you're given responsibilities for a company outside of school such as IBM. It's really important for Richard to be effectively reminded when different assignments are due, especially since he's working forty hours each week with very little downtime during the week.

These two personas cover different ends of the spectrum in terms of varying college students. You have Haley who is your full-time student with a very driven mindset to excel through her classes and graduate. Then, you have Richard who is your non-traditional, part-time student that is trying to balance working forty hour weeks at a renowned company while taking three cybersecurity courses at a local university. It's important to recognize that both of these students have hectic schedules that different tremendously but both individuals could use Resurface to reinvent themselves and never miss the due date of another assignment.

It was ideal that our focus group of users for the Resurface application revolved solely around college students. This gave us the chance to receive feedback in the form of a survey. We collected data from various users ranging from ages 19 to 23+ as well as both full-time and part-time students. In order to collect background information spanning different users/college students, we created questions in hopes of learning more about the identity of various students. By completing this survey, we were able to learn about many things such as when students normally started their school work, how organized each student was and how often students forget to do assignments.

We started by asking students when they usually started their assignments prior to it's due date. We learned that roughly 84% of students start their homework assignments either a few days prior or a few hours prior to the due date. This means that only around 16% of students start their assignments as soon as its assigned. Next, we asked students how often they forgot to complete an assignment and we learned that almost 80% of students from our survey sometimes forget to do an assignment. It's a really intriguing idea that helps to pinpoint exactly what our application should encompass. In order to learn more about students, we wanted to see how often people would visit canvas and what level of organization did each student have. We were able to learn that almost 90% of students go on canvas daily and roughly 80% of students consider themselves to be relatively organized. Lastly, it was important for us to identify the type of students involved in the survey regarding full-time or part-time. We learned that the majority of students that responded in our survey were full-time whereas maybe one student identified as part-time. This was a very important finding to recognize different personas.

In order to gain a better understanding of the goals we wanted to have for our notification application, we interviewed several participants about their experience with a social and communicative application called Slack. Slack is a messaging application that allows people to communicate across different communities at their own peril. The interview allowed us to gain a lot of new knowledge that was created a foundation for what we wanted our application to do. We learned that many participants found the workflow and means of communication among teams very helpful but thought it was overrated in terms of what they application could do. We also learned that it is being widely used in the professional workplace but there are many small difficulties that users experience such as joining different workspaces. All the participants we interviewed would recommend the use of Slack to other people but recommended that the application be used for small businesses rather than large corporations because there are much better options for the type of functionality introduced.

The participants concluded that Slack is very similar to applications like Discord and Teamspeak in terms of communicating with other people and communities. They associated characteristics such as efficient, simple and useful to describe the application and everyone that we interviewed would return back to the site in the future. The interview of different participants using an application in a similar realm such as Slack helped to identify specific design goals for our application. We learned that we wanted our application to be simple and effective in terms of notifying students of their upcoming assignments. It was entirely up to us to learn from the downfalls of Slack and use it to our advantage in the creation of Resurface.

One of the most important needfinding strategies that we performed was the competitive analysis. In order to perform this aspect of research, as a group we were assigned an application called Slack which as mentioned above, is an application used for communication between teams and groups within an organization. After using Slack, we quickly learned that it can streamline communication among students but it also mastered the alert and delivery system of notifications. Slack doesn't appear to use any of the visual design and heuristic principles that we learned in class such as grids and gutters but it uses a lot of consistency among the design of the application. We completed a heuristic evaluation of Slack to evaluate any usability errors and learned that the application effectively met all ten of Nielsen's heuristic rules with very small deviations from what was expected.

In terms of severity ratings for Slack, there weren't any big issues with the implementation of Slack itself, but there were several pain points such as a lack of input validation or error preventative messages to indicate whether an email is real or not. There were also a lot of issues with the consistency of the menu and how confusing it can be to navigate through the application. Overall, there are various functionalities that were implemented perfectly throughout Slack but also some that still need a lot of work. This competitive analysis was a really impactful learning experience that will allow us to leverage everything to make Resurface much more user-friendly.

Design Goals

The main goal for Resurface is to help students remember when assignments are due. In an initial survey, 32.4 percent of the people said that they forget about due dates for their assignments. One of the main design goals that we had was to be able to view the calendar with the notifications. This way, the users of Resurface can look at a calendar and if there is a dot under a day, then they know that they have an assignment due that day. The next design goal that we came up with is to make a Resurface account. This is an important step because without an account, then you won't be able to use the app and get reminded about school assignments.

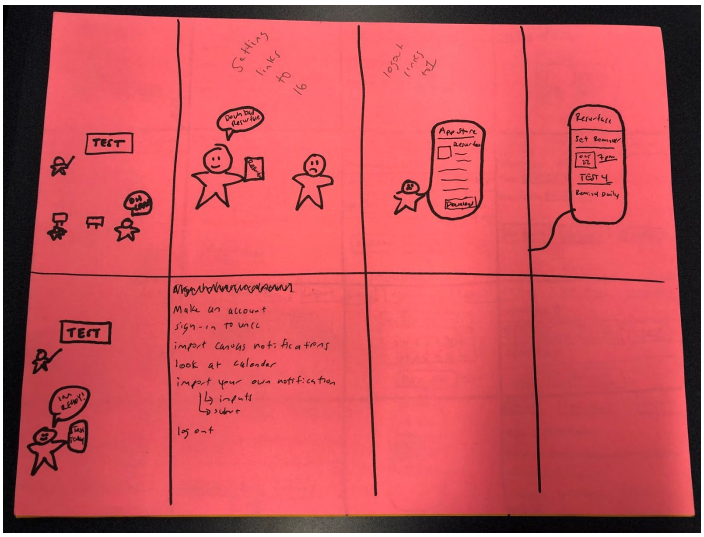
Our next goal was to be able to link your Resurface account with Canvas. With this, Resurface would then be allowed to take all of the assignments in Canvas and put it in our app. This is essential to our app because user will not have to copy over every single notification that they have for their classes in canvas. The next design goal that directly applies to linking Resurface to canvas is to be able to add in a notification manually. This is extremely helpful for any class that doesn't use canvas or the teacher doesn't put the assignments in until after they are already do. This is also helpful to put in quizzes or tests that aren't there until the grade is in canvas.

The next design goal is to edit notifications. As students, we all know that assignments get moved forward or backwards at different times so there needs to be a functionality that lets you edit. That also leads into the next design goal, which is deleting notifications. Nobody wants notifications for an assignment that is no longer due. With editing and deleting, another design goal that we had is to mark a notification as done. With this, if you finish an assignment a few

days before it is due, you can mark it as done and that will stop all the notifications for the next few days.

The next design goal is to have a settings page. Within this setting page we want users to be able to edit the push notifications that they get. When they want the notifications and how often they want them. Also adding email notifications on top of the push notifications in the settings if the user wants emails as well. Lastly, in the settings an account information page that has all of the information of the user. The last design goal that we had was for the user to log out of their Resurface account.

The picture below is the storyboard that we made for Resurface. Our example is of a student forgetting about a test. This happens when teachers don't put their test on canvas. If people rely solely on canvas then these things can happen. It shows the character downloading the Resurface app and setting a reminder for the next test. Finally, we have the student showing up for the test being prepared with the Resurface app in hand.



Scenario (Sunny Day)

It was a cold Monday afternoon and Michael, who is a student at UNC Charlotte, just got finished with his eight hour work day at Wells Fargo. As soon as he returned home, he began studying for his computer architecture class that was scheduled on Canvas for Tuesday afternoon the next day. After a few hours, he began to get ready for his 7pm class that same night in which he entered the class without any preparation. As soon as he walked into the class, he realized that a test was scheduled by verbal communication before the holiday break that just passed. The next day, Michael really wanted to find a way to be reminded about all his upcoming assignments through a notification system even if the scheduled assignments are not inputted directly on Canvas. After looking through the app store for viable applications to act as a reminder, Michael came across an application called Resurface which was used as a plug-in on any mobile device.

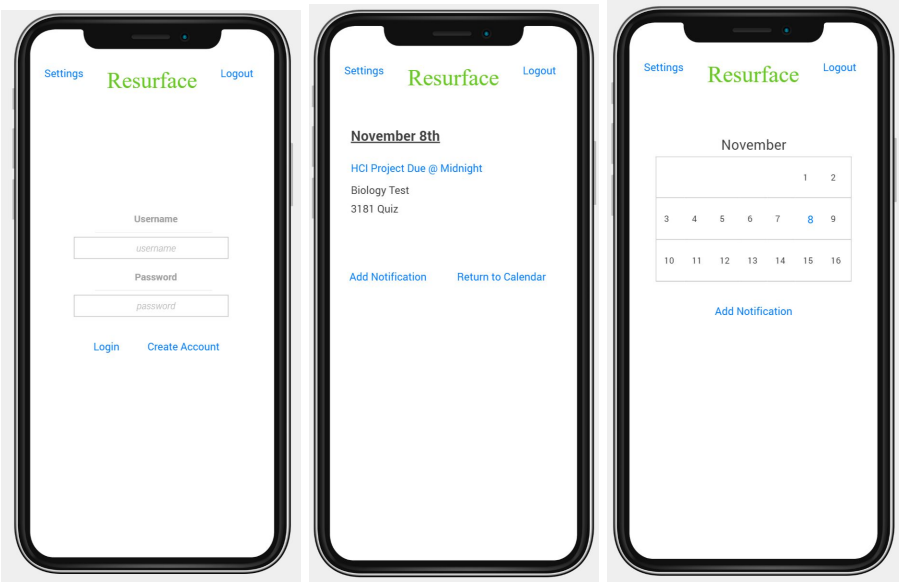
As soon as he opened the application, it brought him directly to the login prompt of Resurface. After creating an account to login to Resurface, he clicked a link to login using his UNCC NinerNet account where Michael was prompted to give permission to the Canvas application to use it's data. From there, all of the Canvas assignments that were originally inputted into the Canvas app were transferred to the interface of Resurface. Here, he could see that he had an upcoming computer architecture test on Tuesday afternoon, an English essay due the following Tuesday before class and a book to read for an ethics class. The only thing missing was an upcoming penetration testing quiz the following Monday night. Using the interface of the Resurface application, Michael was able to click on 'Add Notification' to add a new assignment to the list of assignments to be reminded about. He was able to include a title of the penetration

testing quiz as well as a description to study and the due date of the following Monday night which was in six days.

From there, the calendar updated to provide hyperlinks for all the dates in the current month with an assignment attached to the date. Michael quickly learned that he didn't need to study for the penetration testing quiz before Monday night so he was able to edit the description of the assignment by clicking on the hyperlink in the to-do list of the application interface. Michael changed the description from "you need to study" to "the quiz is based on the material you learn the day of the class". After adding the additional assignments into the Resurface interface, Michael clicked on the settings button to turn on push notifications. Afterwards, he was able to get advanced reminders of upcoming assignments and due dates prior to when they're due but also repetitively so he'll be aware of every assignment he must complete. The notifications will be shown on the lockscreen of his mobile device to serve as a viable option for a notification application for college students in need of balancing their workload and staying up-to-date with all their assignments and projects.

Design Description

HCI Design Element Analysis



Example 1: Icons, buttons, color palette

Signifiers, Affordances, and Modalities:

Signifiers: Login/Create account screen as an introduction to the application to let users know they need to create or have a certain account before moving forwards, blue hyperlinked text

Affordances: Blue hyperlinked text for ‘Settings’, ‘Logout’, ‘Login’, ‘Add Notification’, etc. (which encourages users to click)

Modalities: Touch, Mobile

Applicable metaphor: Device/Robot

Description of Mapping Between Metaphor and Signifier/Affordance/Modality:

The interface for Resurface acts as a device because the user will have complete control over the system including whether or not they want to add more notifications or only relay the notifications from Canvas itself. The user will be able to control their own activity on the

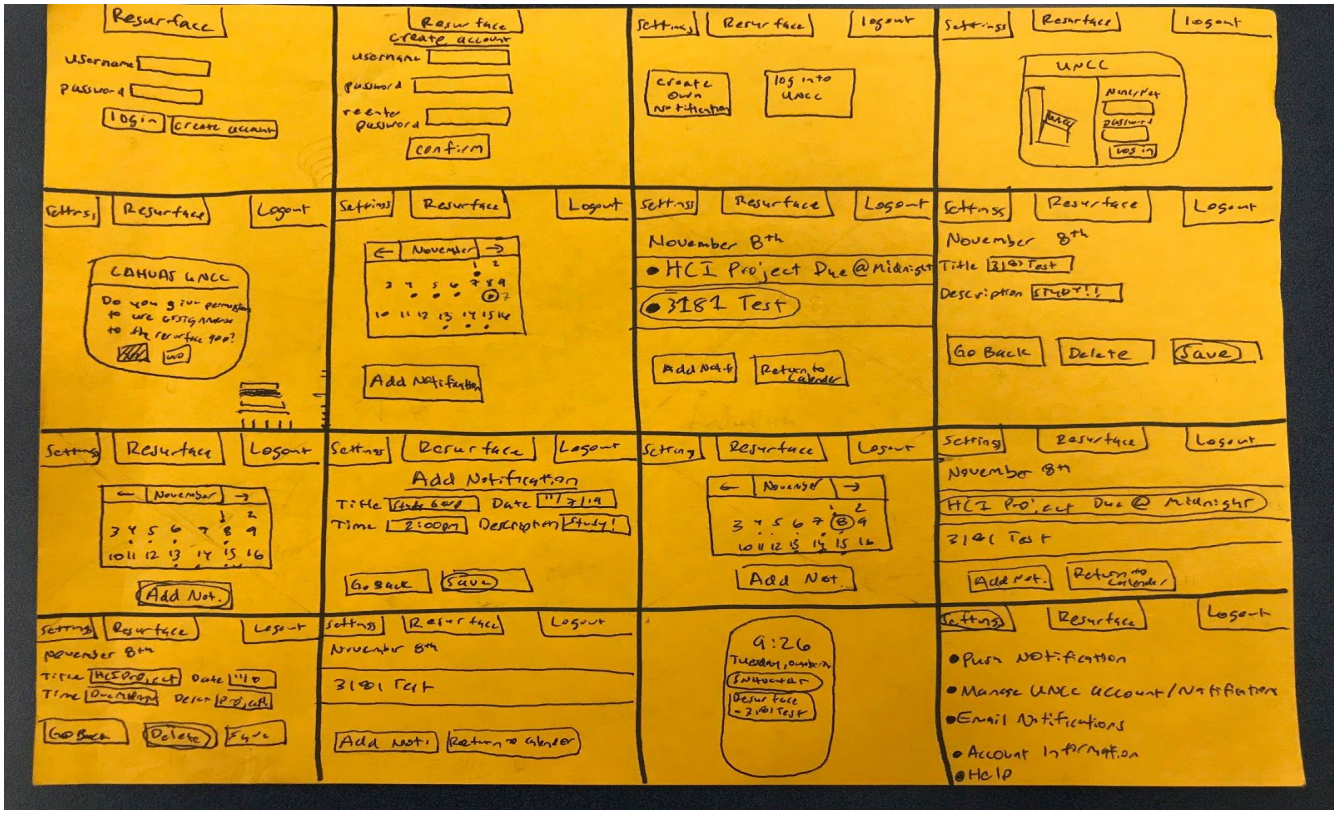
application through navigating with the use of each of the links. The interface of Resurface will also act as a robot because whether the user adds extra notifications or not, push notifications will be a sole provider in allowing notifications to appear. It almost acts as an automated machine that alerts the user when an assignment needs to be completed even if they aren't controlling the application at the time. The hyperlinked text through the application acts as the device whereas the entire functionality is based on a mobile device in which the user doesn't always need to be controlling the device for the primary functionality to be working properly.

Design Concept

Our design concept for Resurface was intended to be simplistic and easy to use. Resurface was created to help students stay on top of their assigned schoolwork and stay organized throughout their collegiate tenure. In order to ensure that our application did its intended job without becoming a distraction to our users, we developed Resurface with a minimalist, simple design.

When a student downloads Resurface, the first thing they are asked to do is create a Resurface account. This connects the user with our server and allows them to turn on push notifications to their phone. The next thing the student can do is link their Canvas account to Resurface, doing this allows the system to automatically upload the student's coursework to their Resurface calendar. The push notification feature is absolutely imperative to our design concept and reinforces our design goals because it is what will truly serve as the necessary reminder for students. Not every student checks their Canvas calendar everyday of the week and we do not expect every student to consistently check their Resurface calendar everyday. As long as the student has allowed push notifications, Resurface will notify the student directly. Resurface will

also notify the student in a timely fashion that gives them enough time to complete the assignment before the assigned deadline.



Our low fidelity prototype demonstrates how the online calendar can be combined with the planner in a simple, concise system that notifies the user when upcoming assignments are due. Based on the following image, you can see in row 2 sections 2-4 how easy it is to open the main calendar, add a notification, save it and then return to the main calendar. This compartmentalization provides a more organized, day by day interface that helps keep user focus on present day and future tasks.

In order to accurately design this application, we identified the type of users we would have and the functions needed to make this application successful. Our users are generally students who

transitioned from traditional, paper calendars/schedules to online planners. The interface requires the functions of adding, deleting, editing and saving tasks that include title, description, time and location. These functions give the user the ability to manipulate their schedule, and add assignments that were not synced directly from Canvas.

User Journey

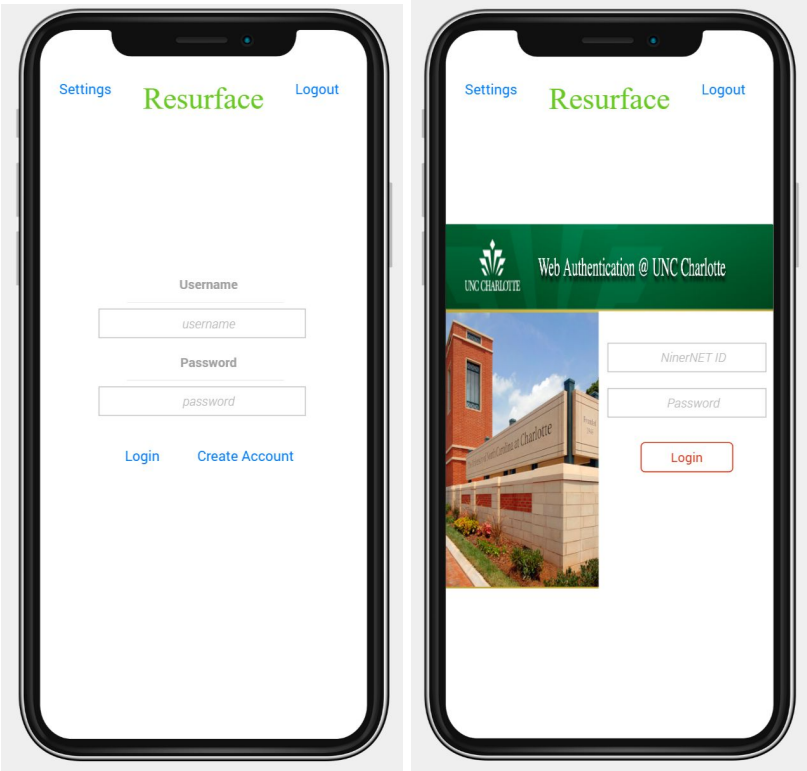
The typical Resurface user would be a responsible college student. We say responsible because we are presuming that the student prioritizes school and strives to get passing grades in their respective coursework. Both students with a history of forgetting due dates and students who stay on top of their work can benefit from this application.

The student would start by downloading Resurface and creating a Resurface account. The next thing the student would do is sign into Canvas using their UNCC NinerNet credentials. After they have successfully signed into Canvas, the student will be prompted to sync their Canvas schedule to their Resurface schedule. The student will also be prompted to turn on push notifications and give the application permission to send notifications. After these steps have been properly executed, the student can freely manipulate their schedule as they see fit. The first step in schedule manipulation would be opening the Resurface calendar interface. Within this interface, the user will see a calendar with one cell block representing each day of the month. The user can interact with each cell block by selecting the date. For example, the user opens the November calendar and selects the date November 8th, 2019. This cell block redirects the user to a ”To-Do List” page. On this page, the user can add, edit, delete and save assignments by selecting a function. For example, if the user selects the ‘add’ function, they will have an open

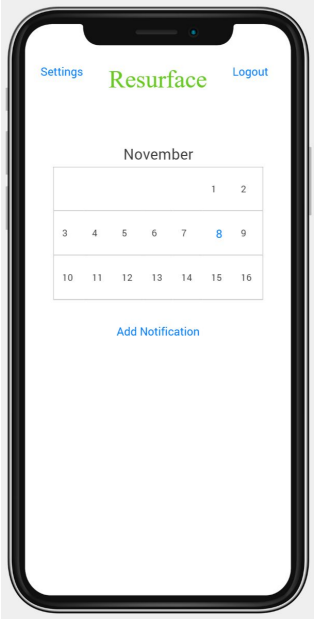
textbox for title, description and date. The user fills out these textboxes by typing into them and saves them by selecting the ‘save’ function. After that is executed, the user will be able to see the assignment in the November 8th, 2019 “To-Do List”. The student can add, delete, edit and save assignments as well as set different reminders for different assignments. This interface is designed to not be a distraction to students. We expect users to be using this application when they need to manipulate their schedules. We do not expect users to be spending a lot of time browsing through Resurface, therefore, the freedom of the application’s functionality is limited.

Design Prototypes

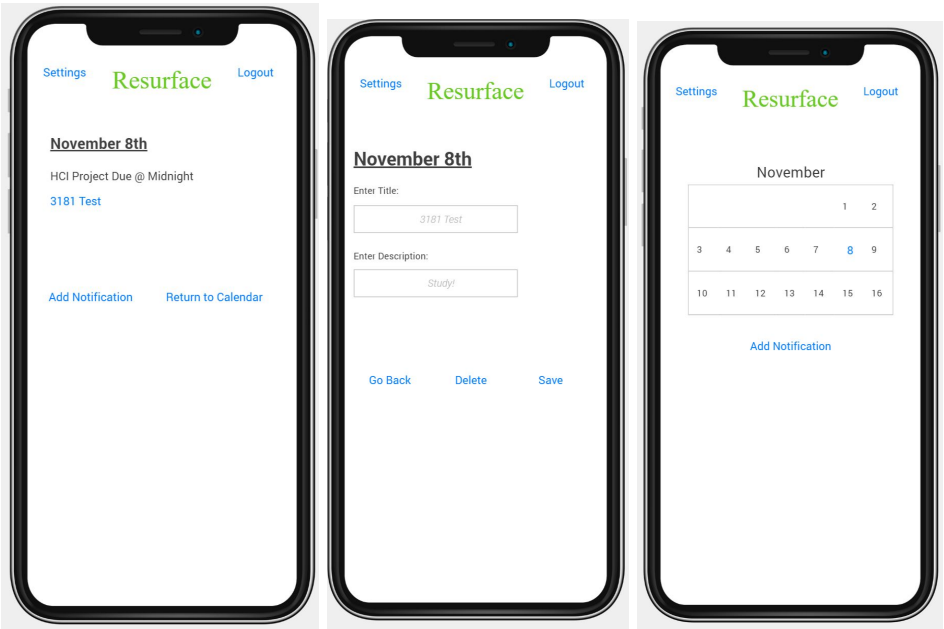
The first function of our app Resurface, is the logging in functionality. When first using the app, you are allowed to make a new account with a valid email address and password. Also, we have made Resurface linkable to canvas. With this, it allows our app to take all the assignments from canvas and automatically make notifications for each assignment. This is an essential time saver as the user will not need to put every single assignment into Resurface, only the assignment that are not in canvas.



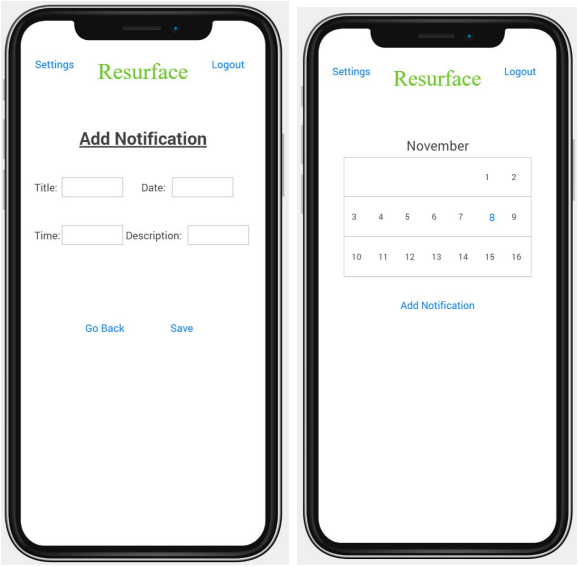
After logging into your account, and linking the account to canvas, it takes you to the default page. The default page has a calendar and it has dates highlighted blue if that date has a notification. The picture below shows that we have a notification or more for the date November 8th. This default page also allows you to add a notification from scratch if you would like.



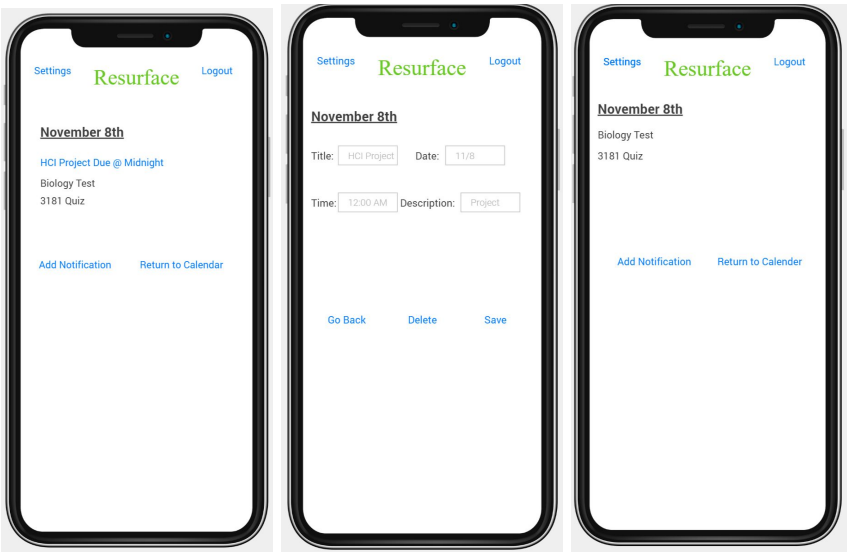
Once you click on November 8th, you will go to the page with all the notifications for that date. On November 8th page, you can click on one of the notifications, add a notification for that day, and finally return to calendar. When clicking on “3181 Test”, you get to edit this notification. On this page, you can change the title or description. Once you finish updating the notification, you can click save and you will return back to the default page to see the calendar.



Adding a manual notification is key since not all professors put in every assignment. Mainly test or final exams, professors normally tell you at the beginning of the semester when they are but never put them on canvas until it's too late. This is a key function to our app. This allows you to title the notification, add a date and time, and a description. Once you click save, the notification is saved to that specific date and the app takes you back to the default view.



Finally, Resurface has the functionality to delete a notification. Sometimes teachers cancel an assignment and no student would want to receive notifications for an assignment you no longer have to do. Deleting is as easy as clicking on the date the assignment is due, then clicking on the assignment and clicking delete. Once you click delete on that notification it will take you back to that date and show you the remaining notifications for that date.



The prototype of Resurface goes all the way through logging in and logging out at anytime at the top right corner. Connecting to UNC Charlotte Canvas is key to our whole design to make it easier on users to add notifications straight from canvas. Manually adding notifications and deleting notifications are two more key features that we had to add for easy usage of Resurface. Finally in our settings tab, it allows you to manage your account, by adding email notifications and changing when they want the push notifications on their phones.

Usability

The design goals that we had for Resurface started with logging in and linking the UNC Charlotte Canvas account to Resurface. This was our main design goal as we wanted to make it easy for our users to transfer the assignments from canvas over to Resurface. With this feature, every single assignment that is in canvas will transfer over to Resurface and automatically make a notification for each assignment. Other design goals that we wanted to make sure to have was to manually add notifications, edit notifications, and delete notifications. Not all assignments are

always put into canvas by teachers. Say a book assignment that you need to turn in on paper wouldn't be a canvas assignment. So these notifications will need to be manually put in.

On the flip side of this, being able to delete notifications. When teacher cancel an assignment you need a way to delete that notifications so you don't get notifications about something that is no longer due. Editing notifications is also key to this. Assignments get pushed back and you want to reflect that on Resurface. So with the editing feature we want to allow people to change the date and time of a notification and also change title and description of it. Finally, the last two design goals we had was to mark a notification as complete and have a settings page. If you finish an assignment before the due date and are still receiving notifications we wanted a way to mark it off so you stop receiving notifications. Also having the settings page to let you edit your push notifications and also if you want to add email notifications.

The goals of our Usability Study were to know how our design affects user experience, and how to improve user experience. As well as learning how Resurface can be used for different students and different majors. Lastly, how big of a problem forgetting assignments are for different students. We made these goals to find out what we need to do to make Resurface better. We wanted to make Resurface easy and straight-forward to use for anyone that uses it. Whether they are good with technology or not Resurface should be usable for everyone. We also wanted to study people from different majors to make sure that Resurface will work for all. We did this because some majors don't have teacher that use canvas. If they don't use canvas then Resurface cannot take the assignments and create notifications.

Lastly, we wanted to see if students will actually use Resurface. Do students forget assignments often? If so, then this Resurface will be perfect for them.

Interview

In order to dive deeper into our application to see if there was anything we could do to make the interface and user experience better, we completed five interviews with different college students. We completed the prototype of Resurface by leveraging some downfalls we saw from Slack in hopes of creating a much more functional application. The pre interview consisted of asking the participants questions such as:

1. Have you ever used another application to set reminders for anything?
2. What are your initial thoughts on the idea behind Resurface and the home page?
3. Do you think Resurface would be beneficial for college students?
4. What characteristics would you describe a student who is using an application such as Resurface?
5. What are your first impressions of the layout of the application once you login?

These questions helped us identify first impressions of our application without diving straight into the functionality of the interface. We were able to learn that some participants used Canvas' calendar as a reminding tool but they didn't really like that Canvas doesn't allow you to add additional alerts or assignments to your to-do list or calendar. They really liked the idea behind a Canvas 2.0 but not in the aspect of keeping up with all your classes but in the aspect of serving as a reminder for every assignment but also different things in your life. All the participants through the layout of Resurface was simple yet effective because it provided all the necessary

details of logging in and out, adding notifications and navigating throughout the app in a way that provided an ease of use for the user. Lastly, every participant thought it would be very beneficial for college students, especially those with harder majors and organizations to keep up with. We learned that several participants were a part of various clubs in which they have additional assignments and tasks to keep up with on top of their schoolwork.

The post task interview questions we asked were:

1. What are your overall impressions of Resurface?
2. What do you think of Resurface now that you've navigated through all of its functionality?
3. If you had to rate Resurface on a scale of 1-10, what would you give it?
4. What are some of the things that you liked about Resurface?
5. What did you dislike about Resurface?
6. Are there any features that you think would be a good addition for the interface of Resurface?
7. Would you return to Resurface in the future?

(Evaluation of the post task interview questions are in the evaluation section below)

Participant Observation

In class we did three participant observations. We created task for these three people to do and let them drive the computer as we watched to see hard points that they had to see where we can improve our design and application. We had one person at a time go through a list of steps throughout Resurface to see if the app is clear enough to do the steps and to see whether we need

to make changes or not. The biggest complaint that we got from the participants were the editing page. The editing page was not clear at all. When editing, nothing showed up so they didn't know whether they were creating a new notification or editing the old one. Another confusing aspect in our study was the date function. No one knew what format that we took. People asked whether to put in a date like "03/15/2020" or "March 20th, 2020". Other than these comments, we got mostly positive feedback.

Evaluation

After conducting interviews and analyzing participant observations, we gained significant insight on how our interface affects the user experience. We noted both the positive and negative comments and critiques our users and participants stated. The first impression that the participants experienced was that our interface was legitimately useful and easy to use. After navigating through Resurface and seeing the settings available for use, they loved how you could create your own notifications and allow for push notifications to be created. On average, the participants rated Resurface 9/10 due to its simple, yet effective user experience. This helped us understand that we had accomplished one of our main design goals which was to create an interface that would actually help students stay organized and on track with their schoolwork.

Another positive feature users and participants appreciated was the ability to link their Canvas accounts to Resurface by logging in with their myuncc.edu credentials. This feature is crucial to our interface because it automatically syncs the students coursework from Canvas to their Resurface calendar. After syncing their Canvas to Resurface, the student only has to add assignments that are not included on Canvas and then turn on push notifications. This accomplishes another one of our design goals which is to create an accurate schedule and save

students as much time as possible when using our interface. The only disadvantage that each participant pointed out was that the application was fairly similar to the interface of Canvas itself but it was almost as if Resurface was a Canvas 2.0 in terms of reminding students of all their assignments. The participants all agreed that they would use Resurface in the future because they think it could add a lot of value to their lives as students by reminding them of every assignment or duty in their life but only if they want to be reminded. In reference to additional features to be added to Resurface, participants would've liked to see different markers or icons on the calendar to mark all the assignments and their respective due dates.

After celebrating our good reviews, we turned our attention to the negative comments. When evaluating an interface, it is absolutely imperative to consider, contemplate and tackle the negative issues that our users and designers find when testing the prototype. One issue we found was that there was no way to show which calendar cell had assignments stored in them for their respective dates. To clarify, when looking at the main calendar, the user would not know if there were assignments due on a certain date without opening up that specific calendar cell. To fix this issue, we would implement a dot icon on each calendar cell that has assignments due that day.
For example, November 8th has at least one assignment due that day. To portray this to the user when looking at the main calendar, there would be a dot icon on under the 8 in the calendar cells. The user would see this and know there are assignments due that day, when they click on the dot, the interface will display a list of assignment titles, descriptions and dates. The dot icon is necessary because it clearly indicates to the user that there is an assignment populating that cell block without cluttering the main calendar. To see the specific assignments and descriptions, the

user can tap on the calendar cell and open up the task list for that day. This would achieve our design goal of displaying a clear, concise calendar that would not confuse the user or cause an ambiguity.

Another feature regarding the Resurface calendar that we could fix to improve the strength of our interface and its usability would be to implement a way for students to navigate between different months on the calendar. Our prototype currently only shows the month of November and the assignments that we stored in it. During our prototype testing, we instructed participants to select the November 8th cell block and add/delete assignments in that block. This gave the participants the chance to manipulate the calendar and assignments list. This was not featured in our prototype because we could not figure out how to install a calendar via justinmind.com. This hindered our ability to properly implement a fully functioning calendar.

Summary

The overall design of our application was solely based on it being a mobile application that people can use. The first modality of Resurface is touch because since the application is functioning on an electronic device such as a phone or screen in general, the user will need to touch the screen for navigational purposes. As a group, we wanted to create a concept of a design that was supported on a single platform such as a mobile device which leans into our next modality: mobile. This would allow us to pinpoint how we would implement certain features but also provide an ease of use for the interface. The interface of Resurface acts as a device because the user will have complete control over the system including whether or not they want to add more notifications or only relay notifications from Canvas itself. A metaphor of a device is

intertwined with modalities such as touch and mobility because it's accompanied by user control and the ease of use encompassed by the interface being solely on a phone. The interface will also act as a robot because whether the user adds extra notifications or not, push notifications will act as an autonomous implementation where the "clock" of the due date will keep moving until a reminder notification is sent out. It almost acts as an automated machine that alerts the user when an assignment needs to be completed even if they aren't controlling the application at the time. A metaphor of a robot is intertwined with the modality of touch because you must navigate through the interface to create a foundation for your self-controlled alert system.

The prototype met most of our design goals. It was hard to make the prototype work the way we wanted. The one big issue we had was trying to make all the buttons on one page work. Since it is just a prototype, if we let all the buttons work on a single page, then we would of had to make a million different screens on JustinMind. The one design goal that we ended up missing was having dots below dates that have notifications. We tried to figure out the best way to do this but there wasn't a calendar option so we had to make due with a table then putting in the dates manually. For the future of this project we need to do some refinement and add some new features that were suggested from the interview study, participant observation, and from overview looking from Professor Gonzalez and TA help. The first refinement that we need to do is add the dot under the date. That was one of the design goals we made that we didn't meet. Wanting to make sure that we fulfill all the promises we made in the beginning with our design goals. Next, we need to implement a way to go between months. Currently we only have November showing in our prototype and no way to go to the next month, or previous months.

The last feature that we have thought about adding is voice modality. This will allow you to skip manually putting in the notifications. All you have to do is to talk to Resurface and let the app do it for you. Say what the title is and the date it's due and it creates it for you.

As a group, overall we learned a lot of lessons during this project. The attention to detail is more than we ever thought it would be. We learned that creating an application is so much more than just thinking about an idea, making a viable prototype and starting the development of the application interface. As a group, we learned that it’s incredibly valuable that you collect data from different people in the form of surveys, focus groups, interviews, etc to narrow down how you want your application or prototype to be used and the goals you want to reach. We learned that you need to solidify specific design goals that you want to accomplish in order to actively create something that is tailored to your users but also in the overall goal of the application. Creating Resurface made us think more in-depth about the application itself but also in the concepts we wanted to implement throughout the interface. It caused us to think differently about apps that we use on a daily basis and how much time and energy went into the creation of such apps. As a group, we underestimated the process of creating an application from the ground up and this project provided us with fundamental knowledge that will be beneficial as we move into the professional workplace in the future.