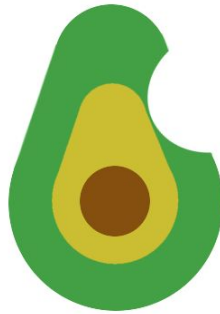


Qwirk



Final Report

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1. Documentation of App

The recording tool that we used was QuickTime Player. We created a screen recording of the android studio emulator.

2. User Testing Report

User Testing Goals: We want to know if our users are more likely to use the list view as opposed to the calendar view. Are the features useful in helping users accomplish their task or are they unnecessary? How familiar are they with task management or social app features? Our user group consists of college students so we assume that they have an understanding of some of these features.

3. User Test Plan

- Greet the user and give a quick introduction of the app.
- The task is described in detail to the user.
- The user gives confirmation that they understand the task.
- User test is started with the app on the default page.
- Confirm that the user can comfortably see and interact with the device.

Yuxiang and Cooper will be responsible for note-taking.

Duy will be responsible for video and audio recording.

We will make a recording of each user during our interview so we can carefully review the testing process in the future.

3.1 User Information and Logistics

Interviewer	Interviewee	Date/Time	Place
Shirwa	Mashfique Anwar	12/9 - 7pm	Keller Atrium
Ben	Luke Schneider	12/9 - 11pm	Apartment
Ben	Michael Franz	12/9 - 12am	Apartment

Testing Logistics: We will give our users a basic overview of your prototype, then allow them to explore and step through the tasks on their own without help. The tasks include the following:

Task 1: Logging Assignments

This task consists of logging an assignment using the application. We will provide a small handout about the assignment details and ask the user to log it. The task will be prefaced with a small scenario in which the user is in class and has just been assigned a new assignment.

Task 2: Viewing All Assignments In One Place

After they complete logging, we will ask them to view the assignment that they just uploaded and carefully analyze each step they apply to reach the goal state, then make adjustments according to their actions and feedbacks.

Task 3: Find Someone to Collaborate With

We will add a few mock users/assignments to the feed indicating that they are working on some homework. Then, we will ask the user to find a specific person or a specific class/assignment. The user will then contact them through their profile and request them to work together.

3.2 Introduction

Hello [participant name]. Thank you for willing to participate in our user study.

Remember that you will be evaluating the usage of an application and that you will not be evaluated. If at anytime you feel the need to stop, please let us know and we will end the session immediately.

To give a bit of context, Qwirk is an application that helps facilitate collaboration among college students and allows users to keep track of their assignments.

We will have you walk through a few tasks and show us how you would accomplish these tasks using Qwirk. For each task, you will be given a description of the task and a scenario to go with the task. When you finish a task, we will take a minute to debrief and talk about your experience before moving on to the next task. We encourage you to think out loud as much as possible to help us get a better understanding of what your thought process is. If you feel like you are stuck, then feel free to move on to the next task. Are you ready to start?

3.3 Instructions

For the first task, let's say you have just been assigned a problem set for your calculus course and you want to log it so that you can refer back to it later and keep track of when it's due. Here are the details of the assignment. <Give user assignment handout>
How would you go about doing that? <Task 1>

Great! Now let's move onto the next task. Now that you have logged this assignment, how would you go about viewing it? <Task 2>

For our third and final task, we ask that you try and find someone to work with on this assignment. <Task 3>

Awesome! Thank you for taking the time to participate in our study. We would really appreciate any feedback on how these tasks went for you. <Ask interview questions>

The following information is what we gave to our users prior to the testing session:

For Task 1,

Could you log this assignment to Qwirk. Here is an assumption that you need: You just got this assignment in class and you have a class across campus to run to so you need to log your homework as quickly as possible.

Assignment details

Course Name: CSCI 4041 Data structures and algorithm

Assignment title: HW3

Description: I'm going to start on Friday at around 9am and try to finish in 6 hours.

For Task 2,

Later, you are looking through your homework and you forget what the assignment was. You should now go to your calendar to view the assignment that you just created.

For Task 3,

You were unable to solve the last problem in HW3 for your CSCI 4041 Data structures and algorithm class. You want to ask for help from one of your classmates so you need to find this person through Qwirk. In order to find someone, you search for the following:

Course information: CSCI 4041 Data structures and algorithm

Assignment title: HW3

3.4 Interview Questions

Users will be interviewed after the testing session. These questions are meant to gain information that could not be collected during the testing or types of feedback that would require a more personal approach with the user.

- Which features stood out the most and why did you like/dislike them?
- Is the app intuitive? Easy to navigate?
- Would you continue to use this app?
- How would you compare Qwirk to other task management apps?

3.5 Data Collection

We will track each step that our users take to reach their goal state as well as their feedback through note taking. We will also be recording the testing process so that we can later review it as a group. This will allow us to catch subtle details that we may have otherwise missed.

There are two note takers because it can be difficult to keep up with the user if they have a lot of thoughts and it will also allow us to organize and compare all of our notes together.

3.6 Testing Plan

- 1) Ben/Shirwa: Orient the user.
- 2) Ben/Shirwa: Post-test interview.
- 3) Yuxiang, Cooper: Log user actions on tracking form.
- 4) Duy: Record the interview process.

3.7 Anticipated Problems

If the user gets stuck, we will not give them hints, but we will put them back on course if they stray from the task. The note-taker should address these occurrences in his notes so that we can make our app more accessible for the next testers. It's important that we don't hold their hand throughout the process or we could end up with only the results that we want to see.

If multiple users select the same non-operative feature, we should strongly consider adding the feature into our app.

3.8 User Testing Results

A brief reflection on the experience of conducting the user evaluation sessions.

The user testing process itself went smoothly. We met up with our users, introduced them to our app, and gave them the instructions and tasks. Our users had android phones so they were familiar with its features like the floating action button. Our interviewers, Shirwa and Ben, were careful not to say anything that would influence their decision making. We wish that we had more tools to collect data like the eye tracker or

one-way mirror in the usability lab, but unfortunately those were not available to students.

If we were to do the evaluations with a larger sample size, then we would change the questions around. Yes/No questions don't lead anywhere unless you prod the user for more information. We think that it would be a good idea to include more two-part questions (i.e. How likely are you to? Why did you answer that way?). One other way that we could do the testing differently is by having the user's rank certain things. We could ask them questions such as: What were the three most prominent/memorable features on this page and how would you rank them by order of importance?

How users responded to our app:

In general our tester's reacted positively to the concept and aesthetics of our app but there were several design choices which were not up to the user's standards. We found that many features we initially believed to be intuitive in the planning stage had room for improvement on the implementation side.

Worked well:

1. The add assignment button in the home page is really easy for users to find since we followed the usual android platform format.
2. The calendar page is working very well. We thought it would be tough to implement but we found a way to make it work properly. We are proud of this.
3. User's associated the page icons on the toolbar with the appropriate tasks. For example, when we asked our users to view the calendar page all testers immediately swiped to the the tab containing the calendar icon.
4. Users were familiar with the layout of our app and the tab system almost immediately because we adhered to material design principles to make the app recognizable.
5. Users would like to keep using this app. One of our users Mashfique told us: "The app is really easy to use" and can help him to manage his future assignment more efficiently.

Did not work well:

1. Our initial design for the add assignment page had a shortcut for the course name which was next to the first input bar. This design violates Fitt's law since the icon size is too small for users to click and they would have to move their finger across the screen, so we decide to use text auto complete to bring this convenience to users.
2. All user claimed that the two buttons (now and later) at the add assignment page are very confusing. The reason is we didn't give enough hints for them to understand the purpose of these buttons. Here is what Mashfique said during the user testing: "What's the meaning of these two word. Does click "Now" mean I

will start my assignment immediately, can you guys provide more hints to user? What is the purpose of these two buttons?”

3. Our initial design had a profile page, but now we decided to switch it to the list view of all user's active assignments. The reason is when users click the image of another user on the feed, it will show the profile information of that user so this function overlaps with the profile page. We decided to help users get their active assignment more easily, so we added a new page for checking the current active assignment.
4. Users initially struggled with how to interact with the calendar page but quickly grew familiar with the functionality of each button. Here is what Mashfique said during the user testing: “I am not very sure how to make a correct action to allocate time for my assignment so you should think about adding some helpful pop-up messages to first-time user, helping them to get familiar with the calendar page more quickly.”
5. User testing revealed that the add assignment button on the homepage overlaps feed posts. There was no extra space on the bottom of the feed so the bottom comment was partially obstructed and the user could in no way position the feed to see the bottom post's contents.
6. The border size for the add assignment page does not conform to the other pages. Headings are not consistent since the first two input bars for add assignment have keyword “Enter”, but the third input do not have this word.
7. All pages' title we had in the previous version is the name of our app which is Qwirk, This actually is a pretty bad design since when user goes to add assignment page for the first time they don't know what is the purpose of this page. Mashfique said during the user testing: The first time when I enter to this page, I don't even know the purpose of this page so you should changed title to add assignment.

Improvements:

1. We can provide some pop-up messages (hints) on the calendar page to help first-time user to get more familiar with our app more efficiently.
2. We can find a way to implement the add assignment button in our home page more dynamically to prevent overlapping with the bottom feed post.
3. Instead of just removing the Qwirk titling in the rest of page except the add assignment page, we could have also added a secondary title to explain, while keeping the necessary branding that might be warranted.
4. The user could receive notifications when someone comments on their post or invites them to work.
5. Make it more clear which assignment belongs to which time block outside of the color.
6. We changed the border size in add assignment page to the same as the rest of page and remove the keyword “Enter” in the first two input bar in add assignment page since we need to follow the third point in heuristic evaluation: consistency and standards.

7. Error message for time conflicts when adding assignments (Help users recover heuristic)

4. Design Log

Oct 10 - We decided to go with our second prototype model

Before: The dashboard has buttons that lead to each page. You can only access the add assignment option from one page. Feed shows a picture with speech bubble.

How: Through peer feedback.

After: The static bar is more user-friendly and efficient. Adding an assignment can be accessed through a button that appears on certain pages. There is also a time box that shows how long ago an assignment was submitted.

Why: People said they liked the bar better when we showed them our low fidelity prototypes.

Oct 12 - Added an additional list view to the calendar page.

Before: Calendar page only has the calendar.

How: User feedback

After: Assignments are color coded and tapping on them will open a drop down. Users can choose to switch to an optional list view where assignments are shown vertically.

Why: Users may prefer seeing their classes and assignments in a view that is simpler and already displays information.

Oct 16 - Changed add assignment option.

Before: Add assignment option is in the static bar.

How: Through peer reviews.

After: Add assignment is now a floating action button.

Why: We decided that people prefer the floating button because it doesn't clutter the bar and it is a recognizable and familiar feature for app users.

Oct 23 - Add pop ups and confirmations when users submit a form.

Before: Submitting a form will bring you to the corresponding page.

How: This was decided during our Cognitive Walkthrough.

After: In addition to bringing you to the new page, the app will also display a quick dropdown to inform the user that their action was successful.

Why: We want to help users understand underlying features better.

Oct 26 - We want to implement an autofill for the user inputs.

Before: Users could type in different variations of the same class name which could result in a lot of clutter.

How: Determined through our Heuristics Evaluation. (Flexibility and Efficiency of Use).

After: Frequent inputs will be suggested to users so they can use the app quickly.

Why: Students will be adding many assignments so it will be annoying to type in the same assignments or classes multiple times.

Oct 26 - The current tab that the user is on will be highlighted.

Before: Unhighlighted.

How: Cognitive walkthrough

After: Current tab will have a darker tint.

Why: This change will cut down on user confusion when trying to navigate around the app.

Nov 9 - Separated button for profile and post comment

Before: Clicking a user post would lead you to the comment page. The profile page was a separate tab.

How: Team Decision

After: Clicking the picture will lead to the friend's profile. Clicking the text field will lead to their comment page.

Why: We wanted to make it similar to apps like Facebook where clicking a user's profile picture will send you to their profile

Nov 10 - Added autocomplete for the search page

Before: No autocomplete suggestions

How: Team Decision

After: The app will now display a class or friend name so you can find people easier

Why: It's harder to get an idea of what to search for without the suggestions

Dec 3 - Use text auto complete to bring the shortcut to users

Before: The add assignment page had a shortcut for the course name which was next to the first input bar

How: Cognitive walkthrough

After: use text auto complete to bring this convenience to users

Why: This design violates Fitt's law since the icon size is too small for users to click and they would have to move their mouse across the screen

Dec 9 - Changed page titles to display the appropriate page.

Before: Every page said Qwirk at the top.

How: User Testing

After: We added new titles like "Add Assignment" and "Calendar"

Why: Our user said it was unnecessary to have our app name on every page and it would help them get around easier if they knew what page they were on

Dec 9 - Pressing "Enter" will move to the next input

Before: Enter inserts a newline

How: User Testing

After: Users can login much quicker by typing in their info and pressing Enter

Why: Users were used to pressing Enter to get to the next part of the form and they were annoyed when it kept adding lines instead

Dec 10 - Changed our navigation drawer color to match our app

Before: The drawer color is green which is not matched with the background color of our app

How: User Testing

After: Changed the color to red so that it now is matching to our app

Why: We should follow the consistency and standards from 10 usability heuristics

Dec 10 - Moved the home button in the middle of navigation bar

Before: The home button is in the front of the navigation bar

How: User Testing

After: Moved the home button in the middle of navigation bar

Why: User prefer home button in the middle of navigation bar because they are more familiar with this format so we decide to follow their intent

Dec 11 - Including hints on the buttons in add assignment page for the user

Before: There are only two buttons in add assignment page and we didn't give a very detailed instructions on the purpose of these two buttons

How: User Testing

After: Put another textview to give user a more clear information that those two buttons will help them to allocate time on the calendar page

Why: All users found these buttons are very confusing so they might think click now means start their assignment immediately and click later means starting their assignment later

Dec 11 - Added checkbox in add assignment page to make sure whether user would like to share their post into public feed or not

Before: We did not include this function in our design

How: User Testing

After: Put a checkbox in add assignment to ask users whether they like to share their post into public feed

Why: A user suggested us to add this function since some people may not share their activities to the people that they are not familiar with

5. What's Next

One way that we can improve our app is by using a database to store user login information. In order to reach a wider user population, we believe that we would need to extend the app to students of other grade levels, like high schoolers. It likely would not be used by workers because their meetings are normally scheduled through emails. Our user testing also showed us that there were a few features in our app that users disliked, even though we previously thought that they were fine. One example of this was how users reacted to the idea of allocating time for an assignment. Some users

suggested that they didn't find this feature prominent and in fact could lead to a bit of confusion. Also, we found that including helpful pop-up messages in the calendar page would be beneficial because allocating time was very confusing for one of our users. He didn't realize that you had to manually tap the time you wanted before setting the time. Another major issue was the add assignment button overlapping with the posts on the feed page. It covers the post and blocks the user from commenting.

We can improve the user experience by allowing them to customize their profile page, pushing notifications when another user comments on their post, and allowing them to form groups. There were many different features we could have added at the start, but we were scared of losing focus and rushing past the most important pieces of our app. Now that we have completed those, we can safely move on to these additional features. Finally, we think it would be very beneficial to conduct more user testing to gain a better understanding of how users would interact with our application, some of the common pain points they have with task management and what features they find important to them.

6. Project Self Assessment

How Good was the Project? What Grade Does the Project Deserve and Why?

When we first started planning for our app, none of us knew what we wanted to create. We had many different ideas that we threw at each other, but there didn't seem to be one that stuck. So we brainstormed and eventually came up with one issue that impacts every college student. Procrastination.

Our low fidelity prototypes received positive feedback, for the most part, but we did have a few issues that other students pointed out during our first presentation. Then, when we went through the heuristics and did user testing, even more issues popped up.

Receiving feedback from others was one of the most useful forms of support for us. The five of us worked well together and we were on the same level, but the disadvantage of that was that we didn't point out mistakes that another group member may have made.

By taking those suggestions and modifying our project over time, we were able to end up with a product that both us and our users can enjoy. When we finished, we looked back on our progress and the contrast between our paper prototype and final project was very surprising to all of us.

In the following paragraph we will be presenting points as to why we believe we deserve an A for this project. We have shown considerable growth from our initial idea and paper prototype and have demonstrated the ability to implement those designs in an aesthetically pleasing and intuitive way. When designing our app we took into account concepts learned in class such as material design, Nielsen's heuristics, and Fitt's law and worked with these conventions. In the feedback for our presentation there were many critiques that contained praise for the aesthetics of our user interface with all but one reviewer giving us a 10 or 9 out of 10 (the outlier being one overall rating of 8). We have demonstrated the ability to take user feedback into consideration and actively work to address the issues highlighted. Nearly all gripes revealed to us by user testing shown in our presentation were addressed and updated in some fashion in the current version of the app which is shown in the video. Every member of our group worked extremely hard to ensure that our app was of high quality and up to snuff with current design conventions learned from class and we are all proud of what we have accomplished in the limited time frame we had available.

The following table shows how we divided our app among the group members.

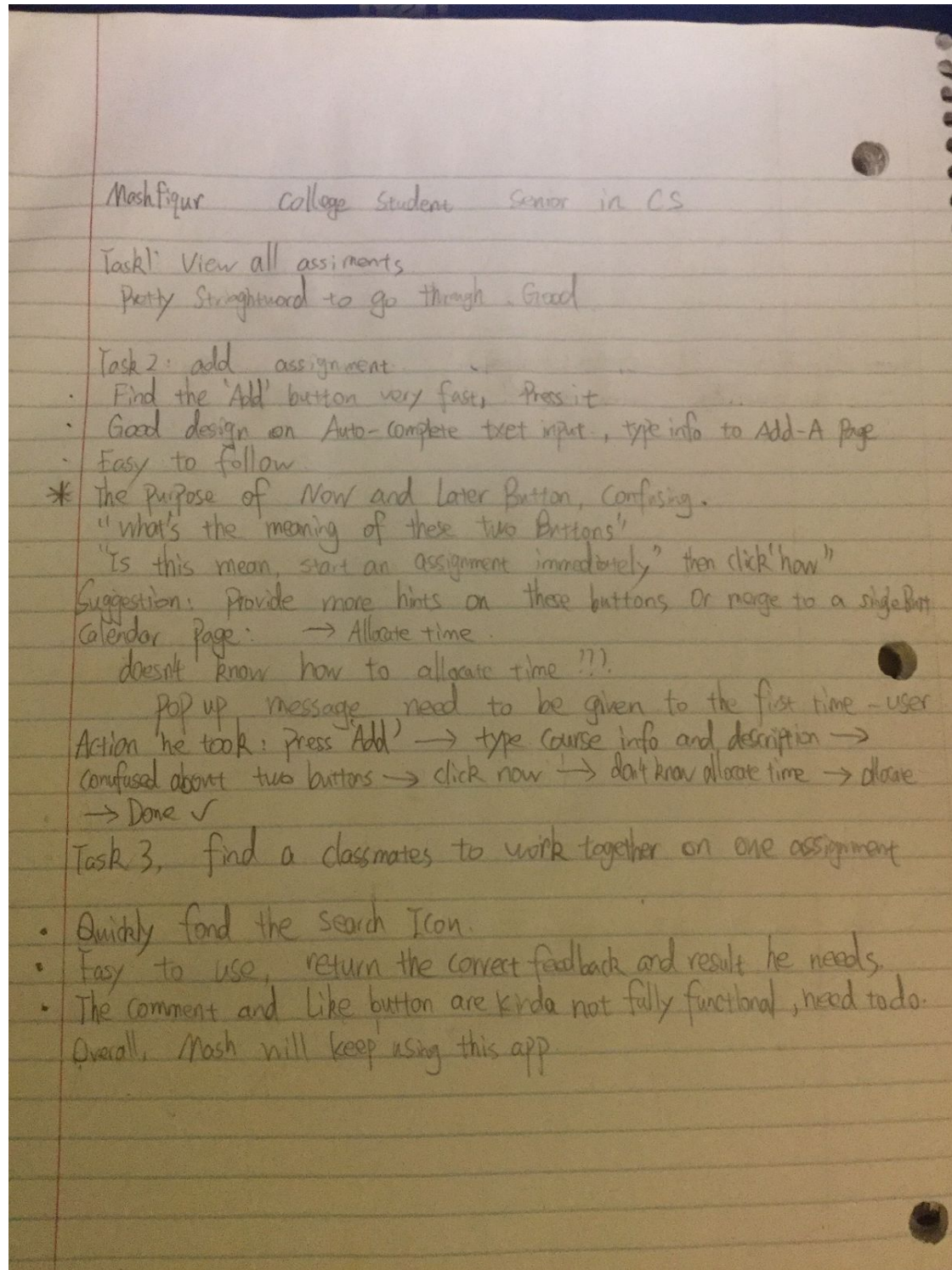
Major steps:	Completed by:
1.) Establish FB style feed	Shirwa Mohamed
2.) Add Assignment page	Yuxiang Wang
3.) Calendar page	Ben Hunder
4.) Login Page	Shirwa Mohamed
5.) Add Friend Screen	Duy Nguyen
6.) Add Search Function & Assignment List	Cooper Dombeck
7.) Side Menu & Misc Options	All

We usually meet three times a week. Mondays and Wednesday after our class meeting and Friday from 4:00 - 8:00 pm.

Lessons learned from this class: The feedback for the “add assignment” button showed us that users want features that are not only familiar, but stand out as well. While innovation may be beneficial, we want users to be comfortable using our app and using popular features is one way to accomplish that. We also learned of the importance of managing feature creep. When we were first planning out Qwirk we thought of many interesting features which made the app more enticing. When we reached the stage where we began actually implementing these features we realised that many of them were frivolous and maybe even malignant in the sense that they would take away work hours from the app’s core design and function. An app with all core functionality intact is more valuable than an app with many features that fails to perform it’s main purpose. Another major change was removing our prototype with the dashboard. This page only adds an extra step for the user when accomplishing a task. User research is essential for our product to succeed since programmers usually don’t understand how users think or how they interact with the system or UI. Also, we have learned that keeping the design and layout simple and clean can encourage users to use our app more often and ensure that user needs are met.

We have also learned that group projects demand a certain level of accordance between partners. There will be a lot of conflicts that appear when a group of five people are working together. For example, there may be time conflicts between their schedules, making it difficult for everyone to meet as a whole. Even if four people find a certain time to meet at, the fifth may have a test to prepare for or a meeting with a TA. We made this easier by comparing our schedules and focusing on everyone’s free slots, which was typically after class. Google docs’ real time editing was extremely helpful to us as it allowed us to work remotely and simultaneously on a document. Some people would like to choose the task or program functionality that he/she is familiar with, but we made sure to divide the work up equally so that one person wasn’t doing everything.

User Testing Raw Notes (from Yuxiang)



User Testing Raw Notes (from Ben)

user testing notes

Luke (college student, early 20s, android user)

- change color of ugly green nav drawer
- add assignment button overlaps content
- calendar can crash when it's empty
- after clicking add assignment button, didn't know what the function was, thought maybe add class?
- discussed now/later buttons in add assignment page being confusing
- discussed ambiguity of 'complete' button in calendar page

Michael (carpet salesman, early 20s, iOS user)

- frustrated with log on screen. Shaking/tilting device causes log out.
- doesn't know how to get rid of keyboard after finishing text entry
- suggests 'home' icon should be in the middle
- says calendars on small screens in general are unpleasant to look at (not just ours)
- confused about now/later buttons