Team

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Problem and Solution

Students are known for having busy schedules and a limited amount of time to complete all their assignments. After a long day of studying, it can be hard to students to analyze how they have spent their time and if they are managing it efficiently. Several scheduling applications exist on the market, but are often forgotten about and go unused. We would like to create a design that will provide an incentive to stay on task and to continue using our application. The incentive to stay on task will help users complete their tasks in a timely manner and help reduce wasted time. The incentive to continue using our application will allow users to see how they spend their time over a long period and help assess how they can improve their time management skills and analyze their overall work ethic.

Contextual Inquiry Participants

Our group conducted three contextual inquiries to better understand the habits and needs of our potential users, engineering students. Since our project focuses on how students spend their time and deal with distractions, we used a unique approach for our inquiries. First, recorded our participants while studying in their usual study environment (home, library, etc.). As the student was studying, we would take notes on when the user seemed to get sidetracked in their work. After an hour, we stopped the recording and watched it with the participant. While watching the video, we would pause when the participant became distracted and asked for clarification on why he or she veered off from their work. Over the course of these contextual inquiries, we supported various tasks such as completing a homework assignment, studying for an exam, getting back on track after being distracted or interrupted, and reflecting on how the participant spent their time after the study session.

Austin was our first participant. He is a 3rd year mechanical engineering student here at the U. He works as a technical writer and has a full class schedule. During the inquiry, the main task he worked on was a heat transfer lab. It was based in MATLAB, and he referenced a paper copy of the lab assignment. When working on homework by himself, he admitted that he is less prone to distraction. He noted that he is most susceptible to distractions during group study sessions. The inquiry was conducted in his home, at a desk, where he normally does his homework. We selected this participant because of his busy course load and quickly approaching deadlines.

Jennifer was our second participant. She is a biomedical engineering student at the University of Utah. She in enrolled in both online and on-campus courses. Her assignments during the inquiry included watching lecture videos and writing a paper. The inquiry took place at her home, where she normally studies. She believes that she is sensitive to distractions from other people, but can stay on task when a deadline is approaching. We selected this participant because she is taking online courses. Some students have a harder time staying on track with online courses since they do not meet regularly.

Alyssa was our third participant. She is a 2nd year computer science student at the University of Utah. She is a full-time student with a full-time job as a daycare assistant. During the inquiry, she worked on math homework and watched a lecture. The inquiry took place at the usual study spot for her, her home. She described herself as a very distracted student. She describes that she counteracts this by giving herself extra time for each task. We selected this participant because she has a fulltime job, which reduces the amount of time she has to work on assignments and makes her time more valuable.

Contextual Inquiry Results

Most of our participants were distracted by something in particular. The common distraction was social. Our participants were often distracted by texts, Facebook messages, and face to face communication. If we could combat these social distractions, it might turn into a useful aspect of our application design.

Another common theme shared among all of the participants was that having an app to track study time would be too annoying and it would make them feel bad about their study habits. From what we've gathered, we need an elegant, easy to use solution for tracking digital time usage that also doesn't make it seem like distractions are a terrible thing. Instead of just showing people how easily they were distracted, we could show progress/goals accomplished etc.

While our interviews confirmed our problem that people don't understand how their time is spent, it pointed out something that perhaps isn't quite as obvious, that they have a solid grasp of what actually distracts them. Further, they knew what specific situations they were likely to keep on task, such as a personal study, or deadlines. The understood theme from this shows that maybe the best solution for tracking time, would be to allow the user to pick the time he or she wants to track. This would solve the problem of an app that is too cumbersome to use.

Something that came up that presents a real opportunity for finding a solution to our original problem, is figuring out how to keep track of things that aren't connected to a digital device, such as being distracted by other extraneous events.

Another common theme shared with most of the participants is that they didn't mind getting distracted if the assignment was not due in the immediate future. Our participants were less concerned about being distracted if they started the assignment in advance with plenty of time before the deadline.

During the design process, our team noticed that users will need an incentive to start and continue using our application. From designing and performing the contextual inquiries, we noticed people who get distracted easily will be less likely to use our application whereas people who do not have as much trouble staying focused will use our application more.

Task Analysis Questions

1. Who is going to use the design?

   This design will be helpful for students with heavy course loads and study for several hours each day. It will be particularly useful for science and engineering students. Additionally, people who work from home could also benefit from the design.

2. What tasks do they now perform?

   Currently, students must study for long periods of time and must be self-aware of how they are spending their time and if they are using it efficiently.

3. What tasks are desired?

   Primarily, students want a way to learn about how they actually spend their time, as opposed to how they think they are spending their time. It would be helpful to see how study habits change depending on if the student is working alone or with a group. It could also be helpful to have timed reminders to see if the user is reaching specific milestones for a project in a timely manner. Students also would like an incentive to stay on track and complete assignments.

4. How are the tasks learned?

   If a student wants to see how they actually spend their study time, they would either need to record themselves or log what they are doing as they are working. Having an application for smart phones with an easy user interface to add tasks and mark the tasks as complete will allow the user to easily see their time breakdown and steps that can be made to improve efficiency. This would also help the user use the design without investing too much time. The application should also have a competitive reward system to incentivize the users to keep using it. A solution that is predominantly hassle free and incentivizing would greatly increase the usage.

5. Where are the tasks performed?

   The tasks are performed off and on throughout the course of a day. They can take place anywhere, but are most commonly performed in the library or at home.

6. What is the relationship between the person and data?

   The student must be able to analyze the breakdown of their time spent during a study session and compare it to how he or she believes they spent their time. They can use this data to see how they can improve their efficiency. They can also see how they stack up against their friends and classmates to see if they are spending more time on an assignment than average for the class. After several logged sessions, they can see patterns in how they work and what they believed has helped them stay on task and what breaks their concentration.

7. What other tools does the person have?

   There are several calendar applications available for people to download or purchase. Some people also use to-do lists to stay organized and have a list of tasks that must be accomplished for the day. However, these tools do not analyze how the user accomplished their tasks or if they could have been completed more efficiently.

8. How do people communicate with each other?

   When studying in groups, student communicate with each other in person, on the phone, by email or text message.

9. How often are the tasks performed?

   The tasks are performed whenever a student decides to study. This happens primarily during weekdays sporadically throughout the day and in the evening.

10. What are the time constraints on the tasks?

    The time constraints for the task depend on the due date for each individual project or assignment. They can vary from a few weeks to a couple hours.

11. What happens when things go wrong?

    When students cannot stay on task, they can fall behind in their course work and grades will suffer. This tool can be useful for both people who are good at and not good at staying on task while studying. Students who are easily distracted can find ways to improve their study habits. Students who are able to stay focused can analyze how they spend their study time and try to find ways to improve their efficiency. The only way the application can fail, is if a student stops using it or chooses not to use the information it provides.

Proposed Design Sketches

Design 1

The first design is a mobile application that allows users to schedule tasks. The application will also allow users to rearrange a list of tasks based on due date, time remaining, or type of task. Users can also check how much time is left over for recreational time. An additional page will include a time breakdown and allow the user reflect on how their time was spent. Users will be able to specify the amount of time allotted for non-study applications and receive notifications when that time has elapsed.

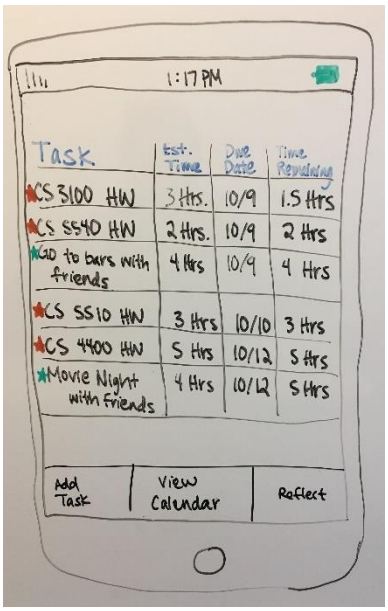


Figure 1: List of tasks

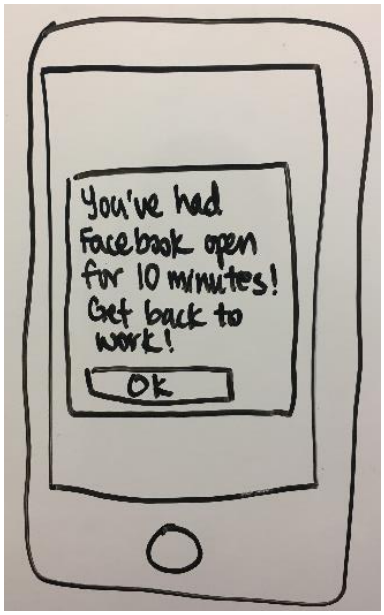


Figure 2: Notification of too much time on a non-study app

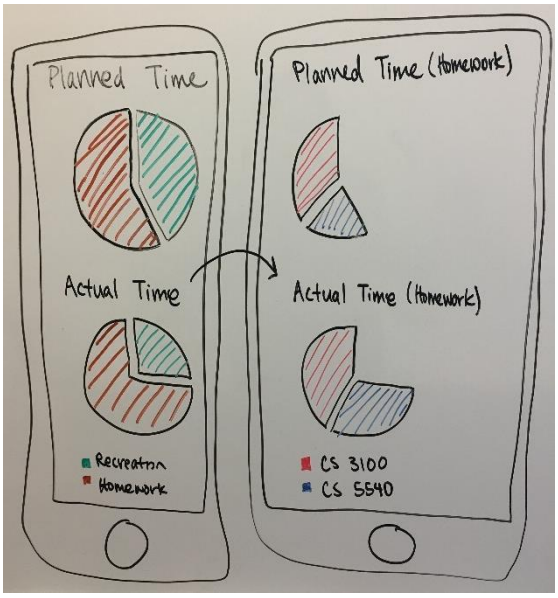


Figure 3: Time breakdown

Design 2

The second design is a mobile application that allows users to schedule study times. The user can set a timer for how long their study session will last and how often they want to be reminded of the time left for the session. Every time the reminder interval has expired, a notification is sent to the user showing how much time is left in the study session. Once the study session has concluded, users have the option to create a new study timer or take a five-minute break.

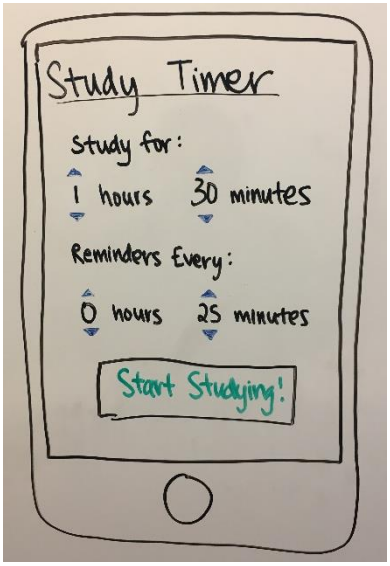


Figure 1: Set a study and notification timer.

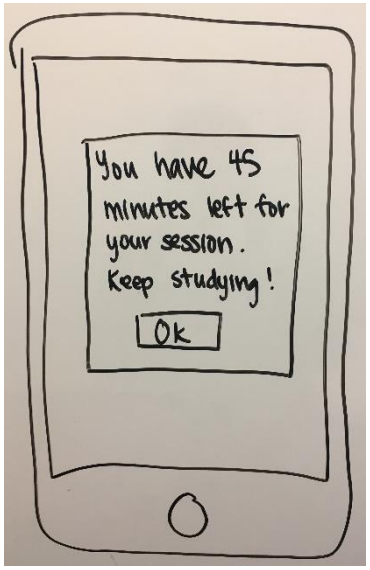


Figure 2: Reminders to stay on task during a study session.

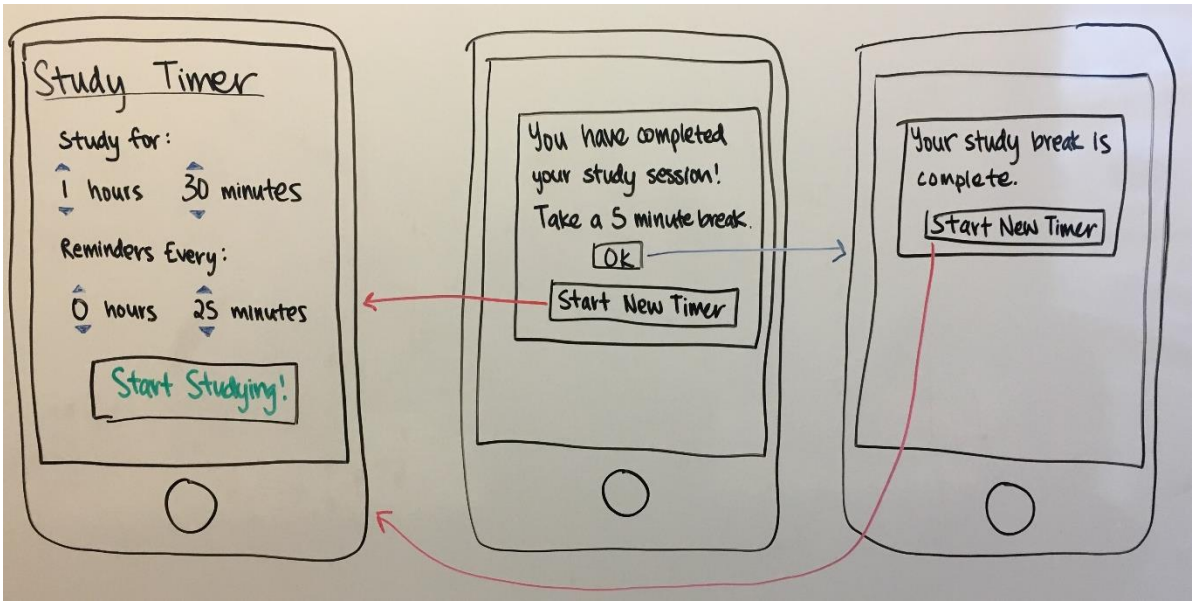


Figure 3: After completing a study session, users can take a break or start a new study session.

Design 3

The third design is a mobile application which features a social incentive program where users compete to earn the most points. Once the user completes a task, a point will be rewarded. Once the task is marked complete, the user can log how long it took to complete the task and the grade received for the task to earn additional points. Additional features include a point leaderboard and the option of receiving notifications when friends receive points.

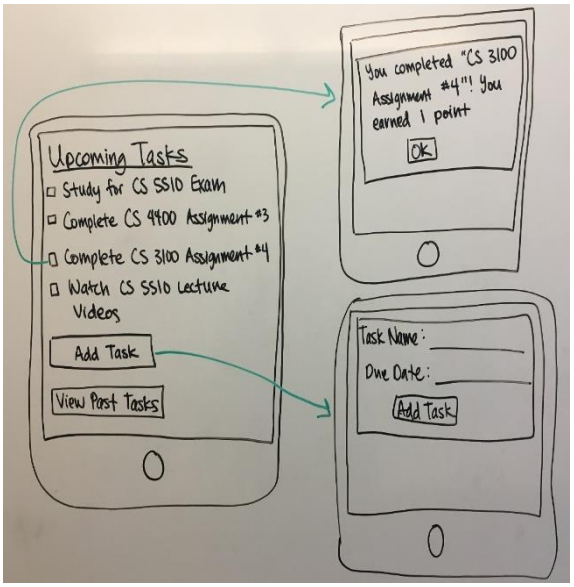


Figure 1: From the "Upcoming Tasks" page, users can add new tasks or mark current tasks as complete to receive a point.

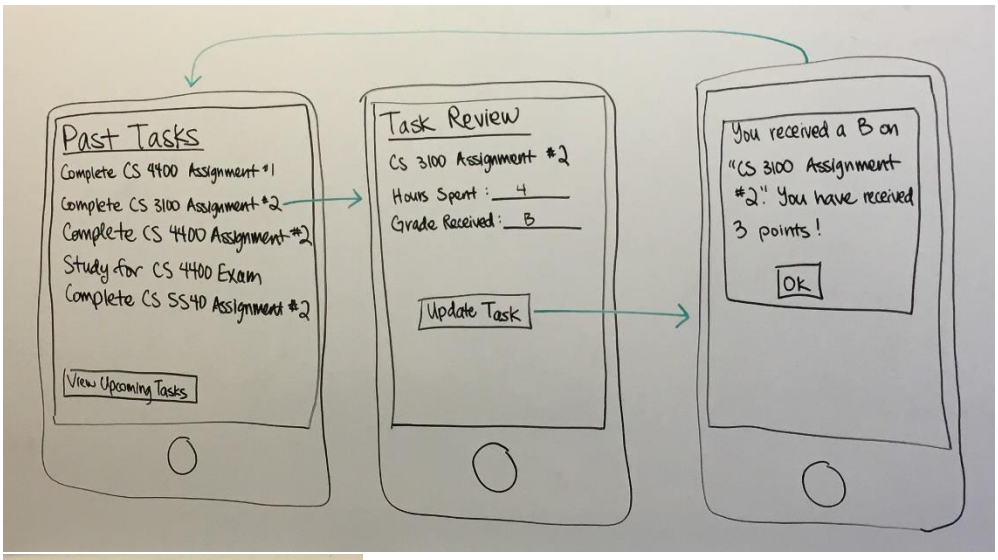


Figure 2: From the "Past Tasks" page, users can specify how long it took to complete an assignment and the grade received to earn additional points.

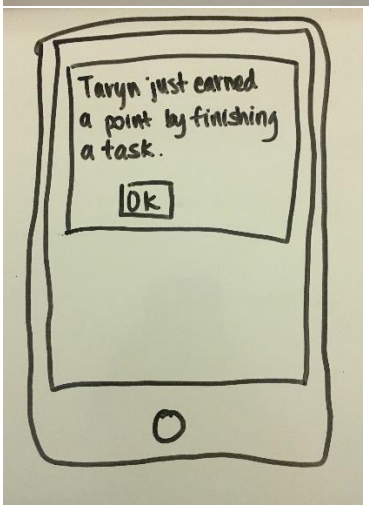


Figure 3: Notifications when friends earn points.

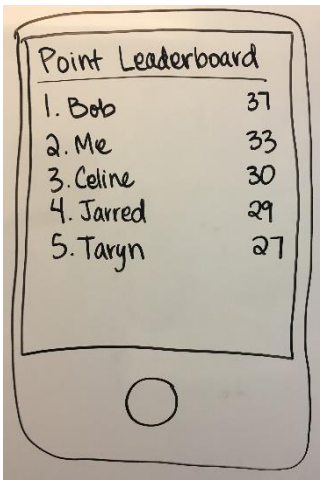


Figure 4: The point leaderboard shows how users compare to their friends.

Design Choice

For our final design, we decided to focus on two tasks: finding an incentive and reflecting how time was spent. With the feedback from our peers, and looking over our original three designs, we decided that the third design matches our tasks in the most simple and succinct way. This design is a mobile application which allows users to earn points by completing tasks and compete against friends.

The main reason we chose this design is because the subjects throughout all our contextual inquiries agreed that they didn't want something that tracked their every movement. They all wanted something that they could use how they want, when they want. The second motivation for choosing this design was the way that it solved the incentivizing task. We realize that a design cannot please everyone, but decided the best way to motivate users to continue improving their time management skills and also keep using the application is to ingrain a sense of competition with other participating users. This, however, presented a problem of how to create a competitive system which abstracted the actual scheduled task, and focused on how users were using their time. We did this by giving a point for completing a scheduled task, then using feedback to reward the user with additional points based on how well the user completed the task. Since some students take more classes than others, this also introduced a problem of how to account for students that generally have more tasks than other students. In order to address the fairness problem, we will have individual class leaderboards and an overall point leaderboard. This way, students can see how they shape up with other students on a class level and how they compare in overall academic achievement.

Finally, we decided to enhance features of our original design plan to allow users to better reflect on how they spent their time. Since users can already provide feedback for completed tasks, such as how much time was spent and the grade received for the task, we believe it would be helpful to see an overall view of this information. This new feature of our design will allow users to see an overall breakdown of all of their tasks or breakdowns of individual task categories. This allows users to easily compare how efficiently they are spending their time in all academic areas.

Written Scenarios

Scenario 1: Reflect on How Time Was Spent

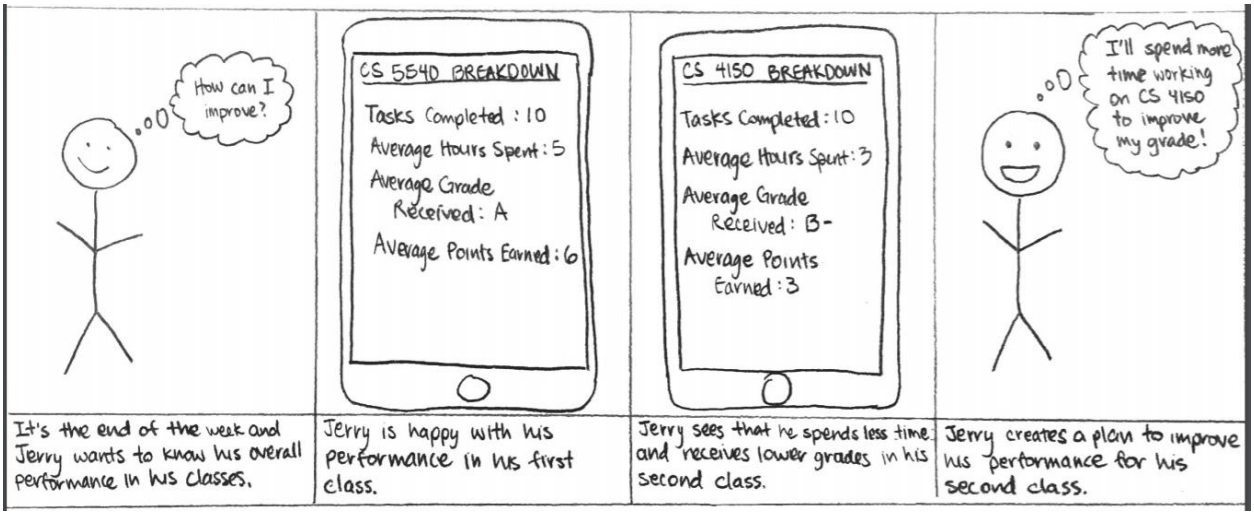
It's the end of the week and Jerry wants to know his overall performance in all his classes. Jerry looks at the breakdown of his first class and is happy with his performance. Jerry then looks at the breakdown of his second class and sees that he spends less time and receives lower grades for this class. Jerry wants to improve his performance in his second class and decides to spend more time on the assignments in his second class to try to improve his grade.

Scenario 2: Finding an Incentive

Bob has been on top of the TimeSaver leaderboard for weeks, but receives a notification that one of his friends has just surpassed him. To reclaim his top spot, Bob completes an upcoming assignment and adds feedback for a recently graded assignment to earn points. Bob is once again on top of the leaderboard and has completed his work due to some friendly competition.

Storyboards of Selected Design

Storyboard 1



Storyboard 2