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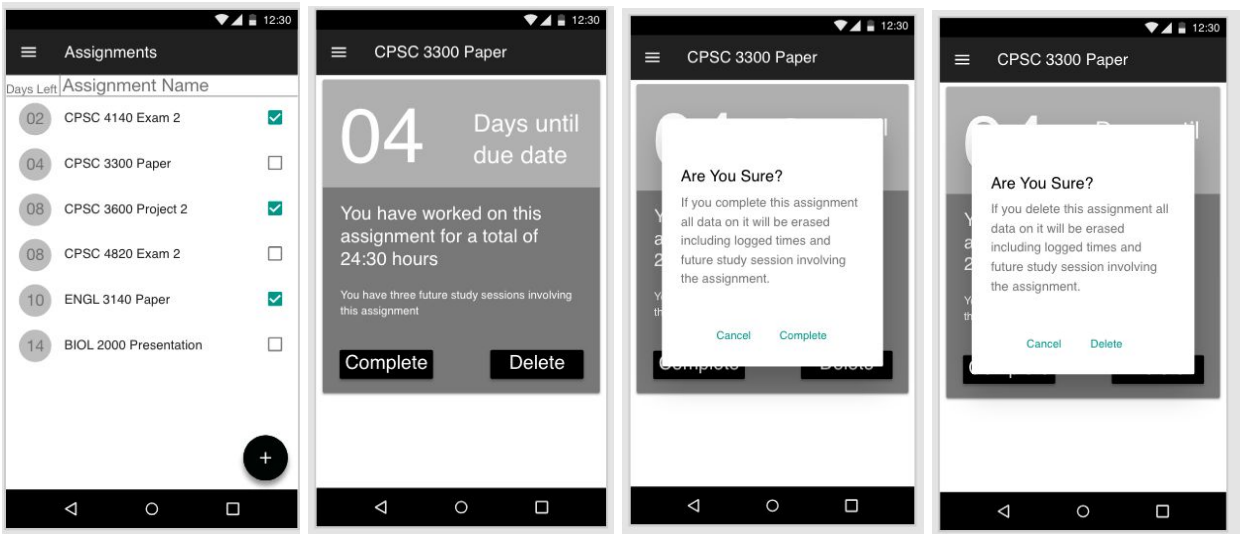
Milestone 2: Designing Drastically Different Designs

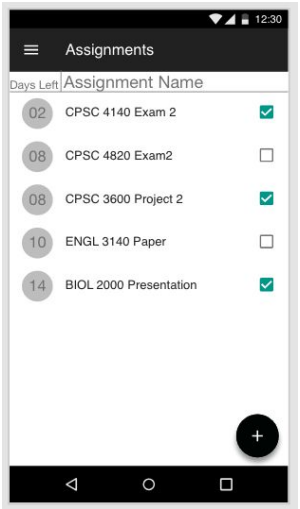
Design 1: Productivity Buddy

Design Description

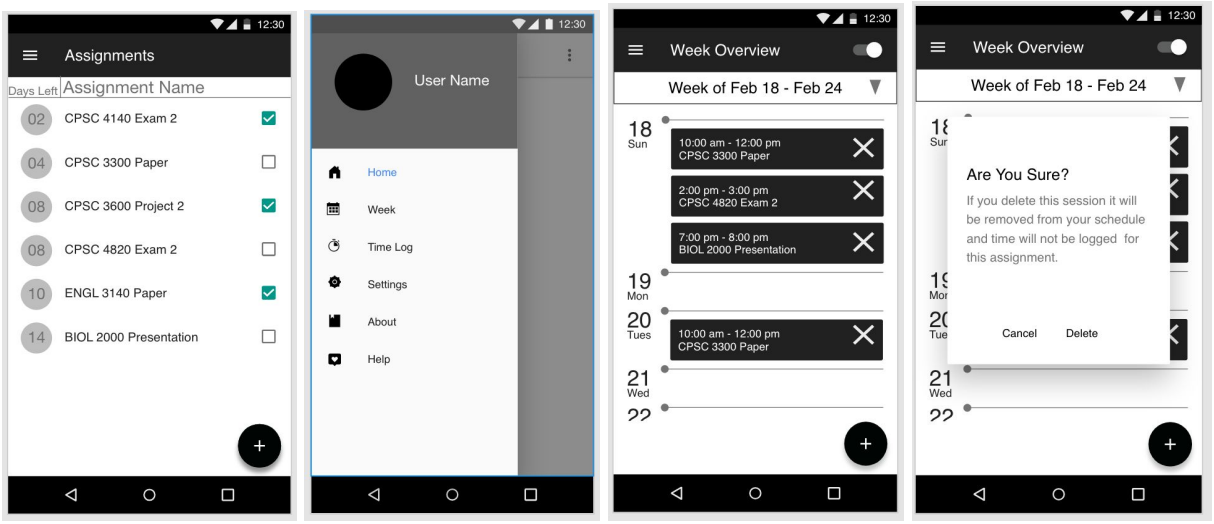
Productivity Buddy will be an app to help users more productively use their time before a task needs to be done. Through tracking of multiple tasks, users can plan when and how long to dedicate time to them. With a more structured schedule, users can use the time they have more effectively.

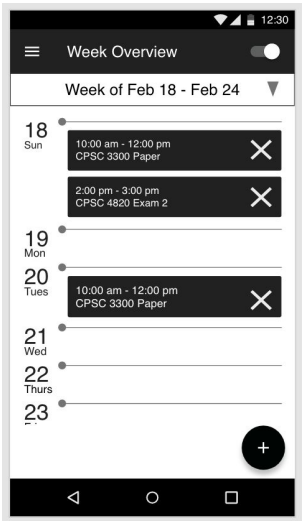
Design Narratives





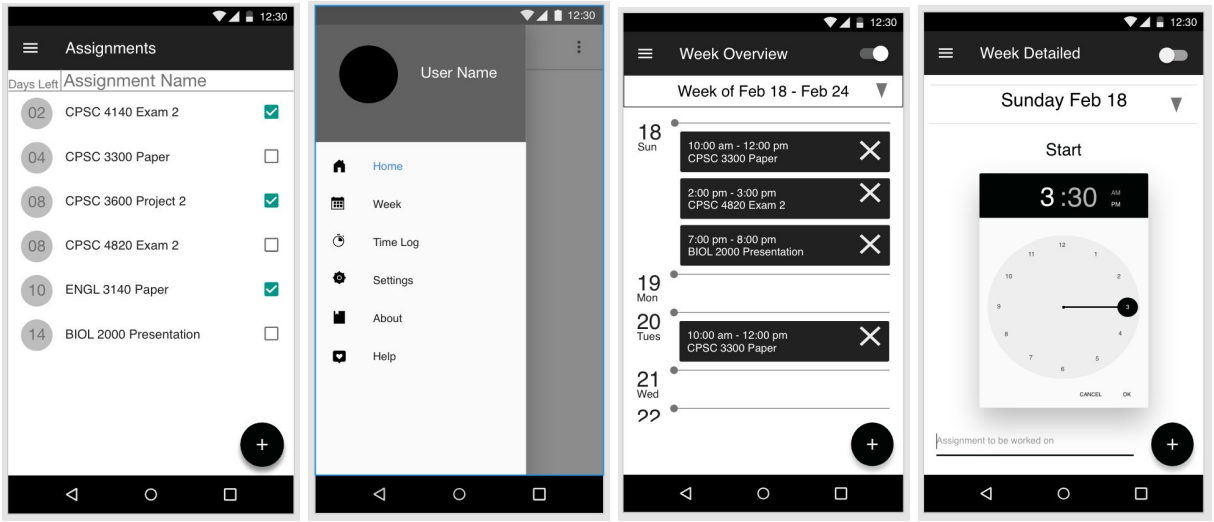
The user will open the app on the home page, which will list all assignments they have marked to study and/or work on. The user wishes to have more details on the assignment “CPSC 3300 Paper.” When the user clicks on the assignment, they will be navigated to a page dedicated to this assignment giving specific details. The user now wishes to either delete or mark this assignment as complete, which will give them a dialog box to confirm that is what they wish to do. If they choose to complete the action, they will be navigated back to a updated homepage. If they choose to cancel, then they will be navigated back to the homepage with their assignments.





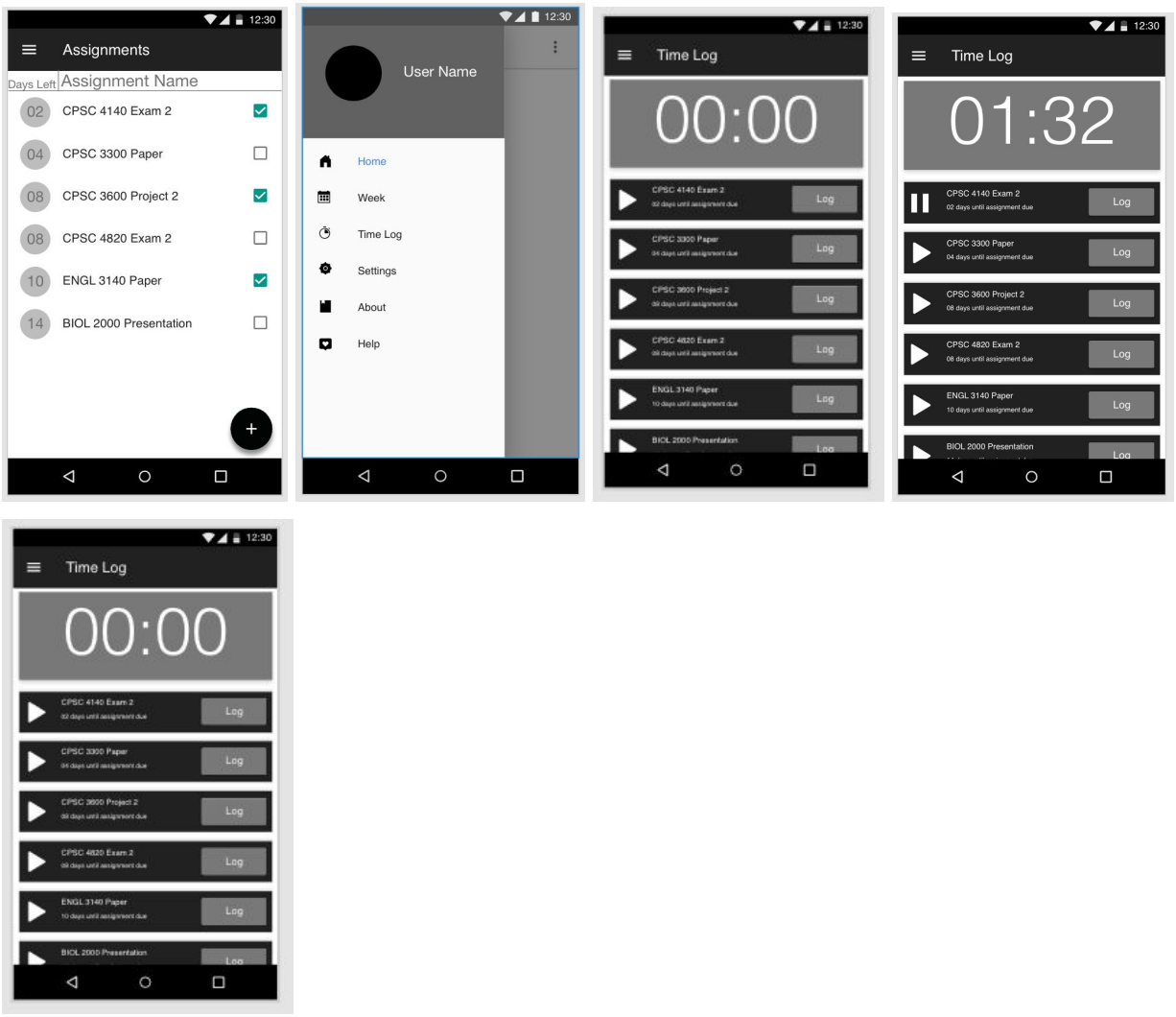
The user opens the app and is presented with the app home page showing the current assignments they are tracking. The user wishes to see what their current week looks like, so they open the side menu and select “Week.” They are navigated to the week overview for the current week, which shows scheduled appointments by day. They have recently realized that they cannot use the time allotted on Sunday to prepare for their BIOL 2000 Presentation. They click the

delete button on the far right of the item and are presented with a confirmation dialog. They are sure they wish to delete, so they click delete and are shown a newly updated week overview.



The user opens the app and is presented with the app home page showing the current assignments they are tracking. The user wishes to see what their current week looks like, so they open the side menu and select “Week.” They are navigated to the week overview for the current week, which shows scheduled appointments by day. They realize that they need to devote more time to the “CPSC 3600 Project 2” assignment, so they click the plus button to add a session. They are navigated to a screen where they can enter a start time for the session and the assignment they are working on. The user can start work on “CPSC 3600 Project 2” at 3:30 pm on Sunday. Once they enter the start time, they are navigated to a similar screen to enter when they wish to end the session. The user has prior plans at 5:30 pm, so they must stop work on the

project at that time. When the user confirms both start and end time, they will be shown an updated week overview.



The user opens the app and is presented with the app home page, which shows all currently tracked assignments. They have some unplanned free time to work on an assignment, so they open the side menu and click the “Time Log” option. The user is navigated to the page dedicated to logging unplanned time on any currently tracked assignments. They see that they have an exam in CPSC 4140 coming up, so they decide to study for that. They click the Play button on the left of the panel for that assignment, which then starts the timer at the top of the screen. After some time, the user wishes to stop studying so they click Pause on the assignment then click the Log button to log their unscheduled time.

Design Justifications

With the first design, the idea is to create a more productive you by tackling productive planning. As this concept has stiff competition from basic pen and paper agendas/to-do lists, the focus that came to mind was improving beyond basic reminders. According to our student survey, 37.5% of students started assignments later as opposed to sooner, and 62.5% claimed they often got distracted. For these reasons the idea of including a countdown of days until an assignment, examination, or project is due became a priority. We came to the conclusion that this visible reminder of how much time there is until a deadline arrives would provide both warning and incentive to actually get to work, rather than pushing activities off until the last possible moment.

Another aspect that came to mind when generating this design was the application handling multiple assignments. As students and workers could potentially work with multiple project deadlines, the features of editing, adding, and deleting planned projects was a necessity. In response to this issue, our team decided that it was best to try and simplify the interface as much as possible, with precise buttons or motions to add new assignment data, as well as edit or remove existing data. With the removal feature, it was also agreed that great care is taken, as users can be easily frustrated if a delete action is taken by accident and our design only allows for singular assignments to be added one at a time. For those reasons it was decided that a confirmation text box would be added.

One more aspect that the team agreed upon was the spacing out of assignment sessions. From the additional comments of our student survey, tackling assignments in intervals was a method for being more productive. Planning out assignments in short spaced out intervals has proven to be an impactful strategy for completing tasks, learning, and retaining information [1]. As such, we felt it was best to incorporate micro-planning into the application so that projects could be broken up into sections, to be completed or manipulated as much as a user needs.

Strengths and Weaknesses of this Design

This design offers a concrete and structured way for users to create and follow a study plan in order to prepare for exams or complete assignments. It allows for high flexibility in planning; users can set exactly when, how often, and for how long they want to work or study. It also provides a visual deadline warning (e.g., saying there are 4 days until an exam/assignment due date instead of just displaying a date and time.) This makes it immediately clear how much time the user has until the deadline, which may provide a greater sense of urgency and motivation to work or study. The routine of early and repeated studying this design aims to facilitate will help users retain information, as opposed to last-minute cramming or work that

often results in lower exam grades, lower-quality finished assignments or loss of knowledge in the future.

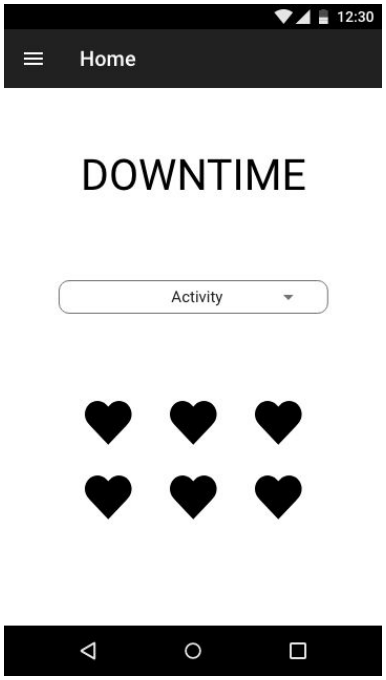
This design requires some initial effort and time commitment to get current upcoming exams and assignments added to the system. Events must be added one-by-one and manually, which may be time-consuming for users. Schedule and event information must also be continuously updated by hand as they change. This may end up being a barrier for new users who don't already keep track of their information digitally, since they may not want to bother collecting their schedule and assignment information and manually putting it into an application. Since the system stores the user's schedule, it may also pose a security risk if unauthorized users get access to this data and use it to track where the user will be at certain times of the day. The design may also still be too close to a conventional to-do list application, which would make it face a lot of competition from countless already-existing apps and paper-based to-do lists.

Design 2: Productive Commute

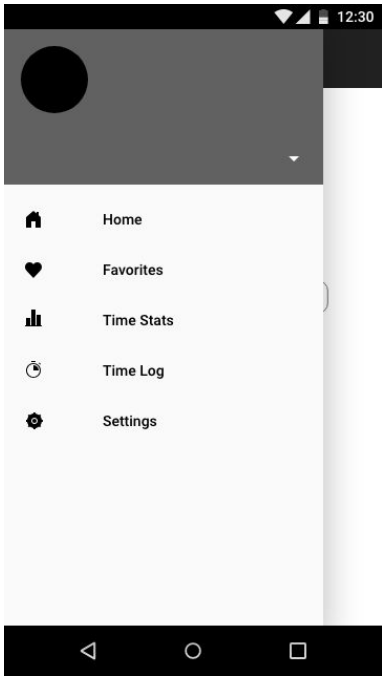
Design Description

Productive Commute will help users become more productive in their day to day commute. Providing many avenues to the user to become more productive when commuting (driving, walking, riding public transit, etc.) will be how this app excels over others. With many productive options, users can utilize time they would otherwise be wasting.

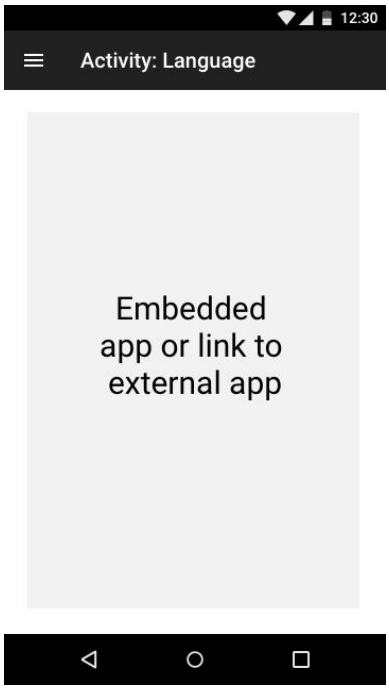
Design Narratives



The user opens the app to the home page where they have the option to choose an activity to pass commute time with. They can choose that activity from a drop-down menu of all the activities, or they can choose that activity from self-set favorites (that can be modified through the sidebar menu.)

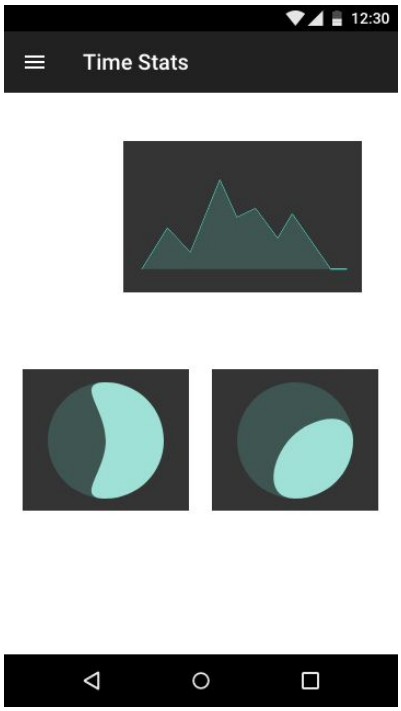


The user has a sidebar where they can access all the main pages to navigate to.



When the user selects an activity, they get redirected to a page where they can choose a specific app that fulfills that activity to open (with the app being potentially embedded so the

user doesn't have to download new apps). This activity is timed for the whole duration the user is participating/listening to it and added to their time log and statistics.



The user can look at stats that take all the data of how much time they spent using the app while commuting and how it's distributed among the different activities. This information changes as the user logs different activities over time. They can change the timeline that the page analyzes so that they can look at their activity over different spans of time.

Through the menu bar, the user can navigate to the time log page. On the time log page, the user can see all past logged activities, the time they spent, when they did it, and any notes they added. The user can filter through all the logs by time/date or activity in case they want to look at specific details/days.

Design Justifications

With this next design, the creation of a more productive you is achieved by focusing on making the daily commute more productive. Similar to our first design, there is stiff competition to make commuting time productive, between audiobooks, music, news, etc. As such, it was ultimately decided that the design for productive commute would simply act as a form of centralization for pre-existing solutions to make the most of commuting time.

The main issue with this design is the centralization of activity for the commuting environment. According to our survey on commuting, 67% of our responders listen to music, news, or audiobooks during their morning commute. All of these activities in one way or another have apps dedicated to providing the latest and greatest of each [5][6][7]. Despite potential overlap between users and applications that provide music, news, and audiobooks, it is unlikely that equivalent apps serve all potential users and fulfill those users' needs. As such, we feel that providing a central hub for various apps that host these applications would provide users with easy access to go to of their current apps, as well as equivalents that they might equally enjoy for benefits not available from having a single entertainment app of that kind.

Another benefit to the central hub provided by our design would be the flexibility and access to options. Of those that participated in our commuters survey, 33.33% claimed that their commuting time was not being well spent on their current activities. As such we feel that opening up options to entertainment apps for the morning commute would rectify this sense of wasted time by creating a sense of satisfaction. The greater access of options could also bring a sense of variety as users won't necessarily have to rely on the same old apps they've used countless times before to spend the time on their daily commutes between destinations.

Strengths and Weaknesses of this Design

This design offers a convenient "all-in-one" selection of activities for users with multiple interests (e.g., a user who likes to both listen to audiobooks and music can do either with this design.) It also offers a quick "go-to" way to access one or more activities; when a user wants to do something while commuting, they just have to open this one application instead of searching between multiple separate applications to find the one that they want. Having a set of options means the user has some flexibility and variation in how they spend their time while commuting; they can listen to music on one commute, work on learning a foreign language on another. This design allows users to visualize and quantify the time they utilize while commuting, which may provide some level of personal satisfaction. Having multiple activities in one application may also allow them to have a consistent, standardized interface, which may make using the system for multiple activities easier; users won't have to remember the different interfaces for different applications.

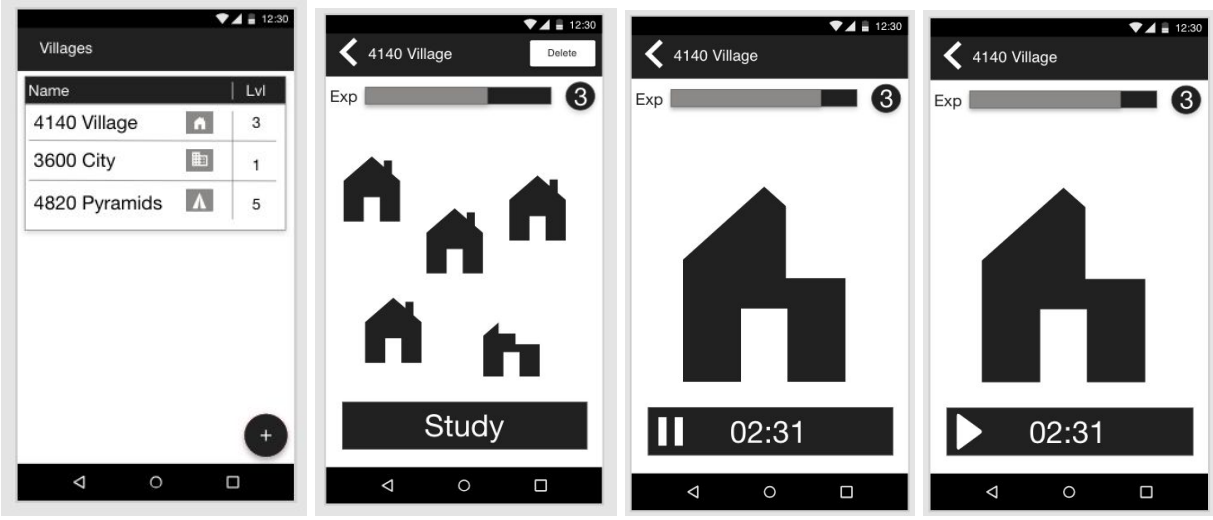
Most weaknesses in this design stem from the fact that it aims to contain multiple activities in one place. Having access to multiple activities means the system will either have to link/connect to external software (e.g., redirect the user to an audiobook app if they want to listen to an audiobook) or contain everything locally. The former option may pose challenges with linking to outside applications. The latter option could cause an issue with storage space, depending on how many activities the application offers and how data is managed. The selection of activities would likely be fixed, which likely won't satisfy every user's wants. The system may lack some activity the user wants, or may be so bloated with options the user doesn't care about that they won't want to use it. A customizable selection of activities would remedy this issue, but would be difficult to program. Another weakness to consider is the possibility of distraction for the user. Since this design is intended to be used while commuting, (i.e., on the move) it may cause trouble for users who need to be aware of their surroundings, since it may reduce their situational awareness. It could also be difficult or impossible to create a highly streamlined, standardized user interface for multiple different activities.

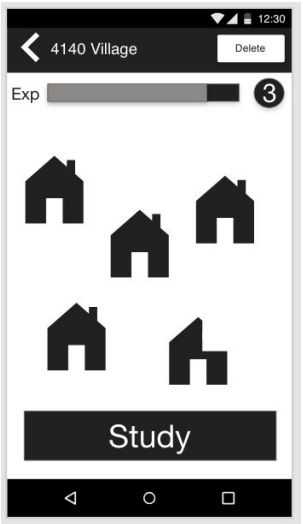
Design 3: Gamify Productivity

Design Description

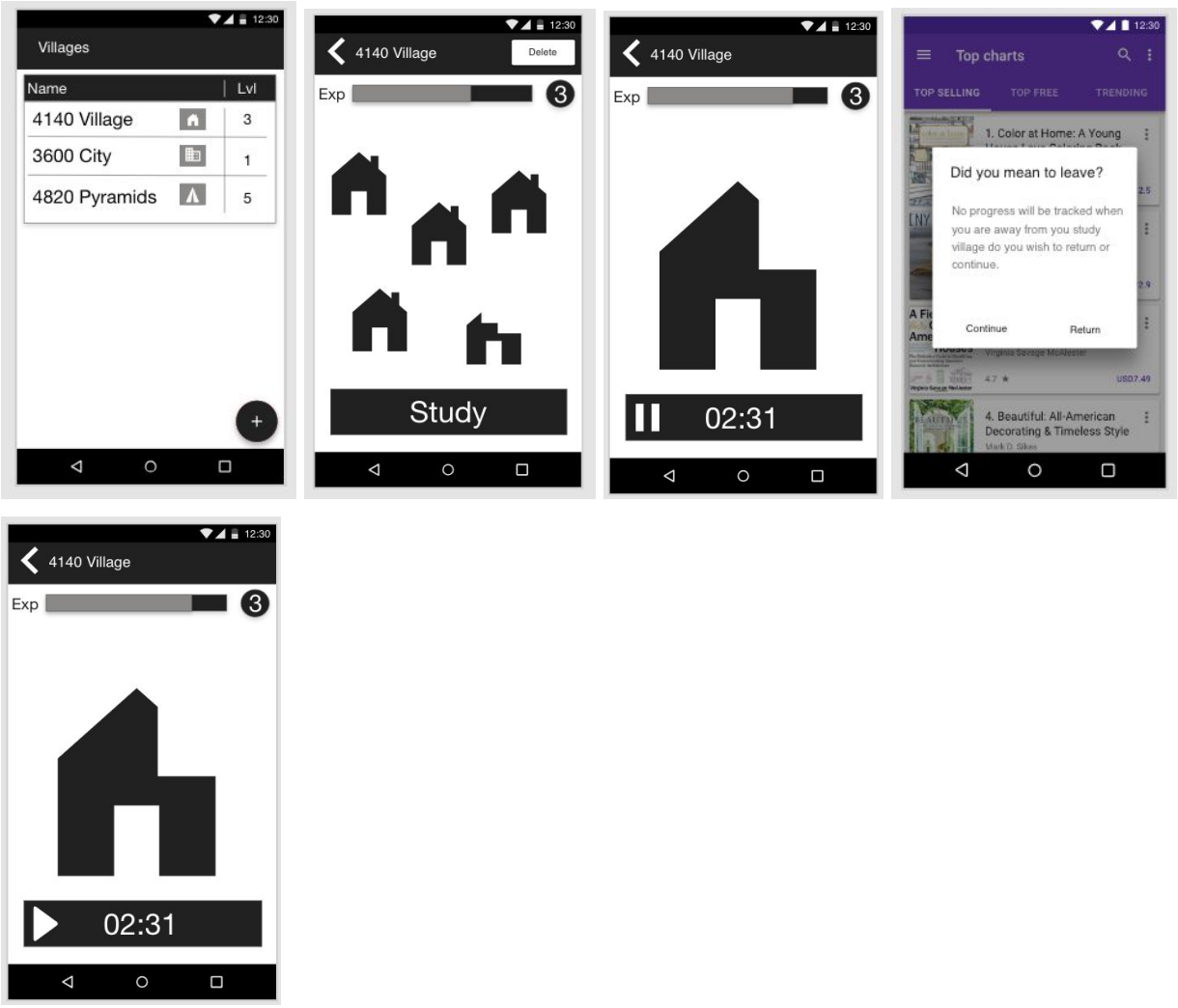
Gamify Productivity looks at making the action of being productive more fun for the user. Using a virtual village to show progress or regression will help motivate users to be more productive. Giving the user something to gain or lose will help keep them on task and productive.

Design Narratives



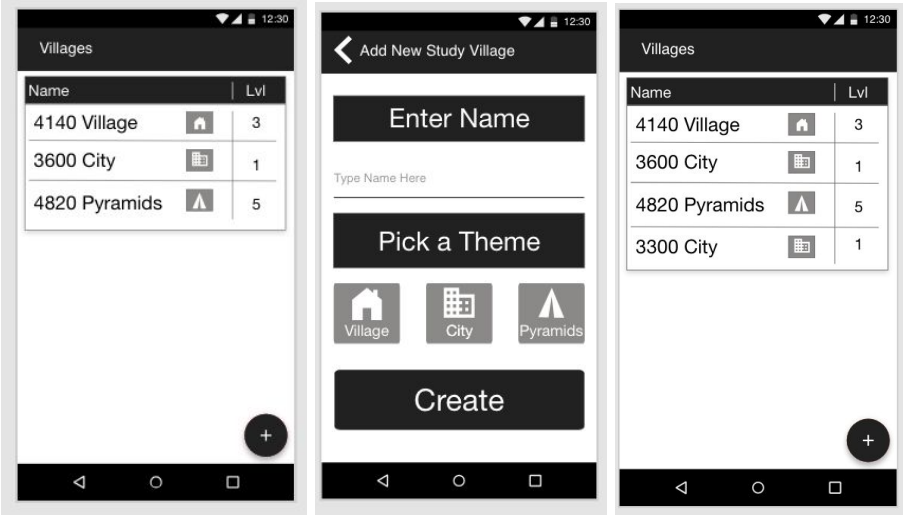


The user opens the app onto the home page, which shows the various villages they have active for classes. The user wants to study for CPSC 4140 so they select that village and are brought to a page for that specific village. They can see the current progress of that village and their current level. They press the Study button, which begins a timer, and begin to study for the class. As they study a piece of the village is being worked on to go into their village. After time has passed and the user is satisfied with their session, they click the Pause button on the timer and click the Back button. Clicking the back button saves and updates their village so that when the page is reopened, their level progression and buildings are up to date.

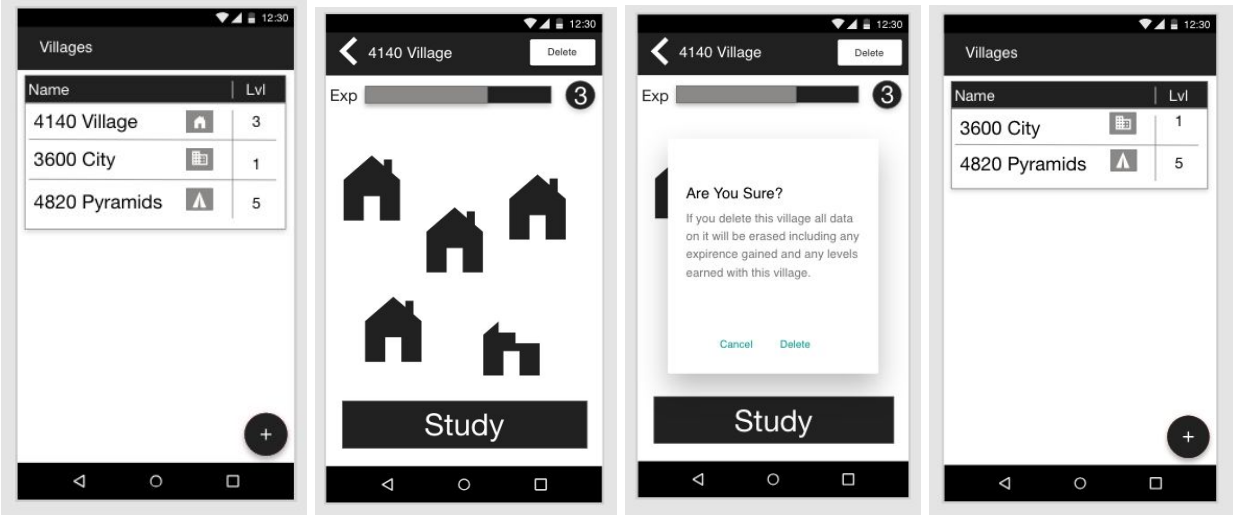


The user opens the app onto the home page, which shows the various villages they have active for classes. The user wants to study for CPSC 4140, so they select that village and are brought to a page for that specific village. They can see the current progress of that village and their current level. They press the Study button, which begins a timer, and begin to study for the

class. As they study, a piece of the village is being worked on to go into their village. The user gets a notification and navigates away from the app. A notification appears to make sure they wish to continue navigating away even though their village will be affected. The user wants their village to keep being built so they press return and can resume the study timer.



The user opens the app onto the home page, which shows the various villages they have active for classes. The user wants to create a new village for a class so they click on the plus (+) button to add a village. They are navigated to the page dedicated to information about their new village. The user wishes to name the village “3300 City” and chooses the city theme. They then press Create and the new village is made and the homepage is updated. After clicking Create, the user will be navigated back to the home page to see their new village.



The user opens the app onto the home page, which shows the various villages they have active for classes. The user realized they are no longer in CPSC 4140 and need to delete that village since it will no longer be used. They click on the village which brings them to the page dedicated to that village. They then press the Delete button at the top right-hand corner and are presented a dialog box asking if they are sure this action is what they want to do. The user is sure, so they click the Delete button which then erases the village and all data on it. They are then navigated back to the home page to see the updates made to it.

Design Justifications

Finally, with the third design, we approach the problem of creating a more productive you with the aspect of entertainment. As expected, there are several pre-existing solutions that tackle productivity in a variety of gamifying ways (role-playing games, habitat builders, etc.) such as those in [2]. On top of the stiff competition, we came to realize how much time would need to be taken to make a productivity game app ranging in the thousands of hours [3]. With those pre-existing solutions and development time in mind, we ultimately decided to approach this problem in a less complex manner.

The first aspect we approached in terms of gamifying productivity was interactivity. By adding gameplay elements to this solution, a certain level of input and output between user and device was to be expected. However, the main concern that arose from this expectation was how to keep focus. As found by our student survey, 62.5% of participants claimed that they often got distracted from the task at hand. Naturally, the game aspect of the solution could exacerbate the tendency to get distracted due to focusing on the enjoyable reward of the game in the present rather than the task in need of attention for the future [4]. With such consequence in mind, we opted for a more hands-off type of game so as to cut down on potential distractions for the user.

We also tackled the issue of motivation. As the lack of interactive features does lower the possibility of distraction, it does lead to the concern that users will lose motivation to use the design. As such we came to the decision to incorporate feedback. As the design is in use for allotted time, positive effects take place within the game, and as the design is ignored in favor of distractions, negative effects would be encountered. With the promise of reward for positive use and punishment for deviation from the task at hand, we hope to increase user motivation to use the design and keep up productivity with the task at hand.

Strengths and Weaknesses of this Design

This design is simple and easy to interact with; the user just has to set the system to start running a timer while they work or study, then tell the system when they have finished their session. Minimal interaction to start and end a session means that using the system is quick and easy, even when done frequently. The design shows the accumulation of progress/time spend working or studying over multiple sessions, providing some satisfaction for users. It aims to motivate users to work or study by appealing to positive emotions. Seeing the virtual village grow would trigger positive reactions from users, leading them to associate these positive emotions with doing something productive. The design can also let users know when to take a break, which may help prevent users from overworking themselves.

The main weakness of this design stems from the fact that it is a game that is detached from whatever studying/work it is being used to motivate. There is no integration with school material or the task at hand, making it potentially awkward to use in tandem with some productive activities. The user also has to remember to start and end each session for their productivity to be accurately tracked by the system and reflected by the virtual village. This design also faces steep competition in the form of already-existing apps that "gamify" productivity, such as those listed in [2]. The idea of gamifying studying or work may also end up being counterproductive if done poorly, as the game itself could distract the user from their current task, either physically (the user is watching the virtual entity instead of working) or mentally (the user thinks about what the virtual entity is doing instead of focusing on the task at hand.) The design also does not have any way to account for distractions outside of the device the system is being used on, such as the user's physical surroundings (sounds, sights, other people, etc.) or other devices (a desktop computer, TV, etc.) There is also nothing stopping the user from simply running the game while doing nothing, which defeats the purpose of the app when it's intending to motivate the user to work or study. Developing the game that would be used with the system would also be a challenge, since game development in itself can be highly complex and intensive, and would require its own layer of user-centered design to make it appealing to users.

Response to Feedback on Studio 2

Based on the feedback from other groups, we have chosen to address several design choices that weren't entirely clear. For our first design, we made sure to include a menu for managing multiple deadlines and assignments. The design's home page also displays the closest deadline/assignment to give users a visual reminder of what task should be their top priority. With our second design, we have made it clear that the app is simply a central hub for other pre-existing apps rather than competition for those apps. While it will be difficult to either embed or link to external apps we feel that providing a homepage to make commuting more productive is at least a step in the right direction. Finally, with our third solution, we decided to go for a more laid-back approach. With gamifying productivity we want to make sure the game does not distract from the user's tasks, so we've opted for a simple design with minimalistic assets and a simple premise of building up or tearing down your virtual city based on usage of the app to productively complete or unproductively shirk assignments. However, our third design does have one issue that we cannot directly fix: the user's surrounding environment. With outside systems that can distract users from productivity, the gamify productivity design is dependent on the user to focus on the task at hand and ignore distractions outside the system, such as using noise-canceling headphones or being in an envrionment where they can focus.

Addendum: Milestone 1 Updated Task Analysis

Important Characteristics of Tasks

Users of our system will have a variety of different goals and different ideals that they want to work towards. Some users will find social media to be a necessary use of their time in order to relieve stress and detach from working for a time [8]. This allows people to retain their sanity and composure over time, as nobody can work and be "productive" 100% of the time. Of the students we interviewed in our initial data gathering, about half said that they had no issue managing their time, while the other half said that time management was something they had an issue with. Those who said they had an issue with time management said they would at least be willing to try some kind of technology to help them manage their time better, and said that there is some activity, mainly social media, and gaming, that they spend more time than they intend to on, which could be decreasing their overall productivity.

Users of our system could include many different types of people, however. Students are an obvious demographic we would like to help with our design, but this design could help anyone who is willing to take the time to analyze and try to improve their time management to become more productive. This could include employees, employers, teachers, professors, and anyone else who is able to access this technology.

Since the user base has the potential to be so vast, the implications for our design are vast. The design must be able to be used by any user with or without any technical experience. Any language used in the interface will need to be able to be read and understood by the users no matter the education they have received. The interface will need to be very quick and easy to use since these users are aiming to be more productive so wasting time will frustrate them. To cater to a larger user base, the interface could be customizable to help a user accomplish their specific goals. Finally, any infographics the interface has will need to come across clearly so that the user will be able to adjust any habits to become more productive.

Based on the required tasks performed by users in the problem space, the following characteristics should be implemented in our projects eventual solution:

- Should easily understood and easy to follow
- The tasks should give the user correct information about their time
- Should be quick and unintrusive
- Tasks should help user work towards being more productive

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Important Characteristics of the Task Environment

Based on the problem space that this project entails, the task environment would likely incorporate the following characteristics:

- Environment is essentially anywhere
- May or may not have access to internet
- May not be able to physically interact with device (i.e. behind the wheel of a car)

These characteristics will impact the design of our interface greatly. Since the environment can be anywhere, the interface will need to be completely mobile. This means that data or internet connection would be needed for some aspects of the interface, but some features could be programmed with an offline mode. The users would need to be warned when they are in offline mode or should switch to it. The interface would also need to be housed in something durable due to the fact that it is mobile and thus can be taken into different weather conditions. Finally, if the interface is to be used in a car, then a hands-free mode would need to be provided so that users can remain safe while operating a vehicle.

Sources & Documentation

[1] The University of North Carolina at Chapel Hill. Studying 101: Study Smarter Not Harder. Retrieved February 27, 2018 from https://learningcenter.unc.edu/tips-and-tools/studying-101-study-smarter-not-harder/

[2] Christine Yee. 2017. Top Ten Gamified Productivity Apps that will Boost your Life. (February 2017). Retrieved February 27, 2018 from http://yukaichou.com/lifestyle-gamification/the-top-ten-gamified-productivity-apps/

[3] Joseph Mirabello. 2014. How Long Does It Take to Make an Indie Game? (April 2014). Retrieved February 27, 2018 from https://www.gamasutra.com/blogs/JosephMirabello/20140407/214931/How_Long_Does_It_Take_to_Make_an_Indie_Game.php

[4] Pamela D. Garcy. 2015. 9 Reasons You Procrastinate (and 9 Ways to Stop). (June 2015). Retrieved February 27, 2018 from https://www.psychologytoday.com/blog/fearless-you/201506/9-reasons-you-procrastinate-and-9-ways-stop

[5] John Corpuz. 2017. Best Audiobook Apps 2018 - Free & Paid Apps for Android, iOS. (May 2017). Retrieved February 26, 2018 from https://www.tomsguide.com/us/pictures-story/704-best-audiobook-apps.html

[6] Stacy Fisher. 2018. Rock Out with the 12 Best Free Music Apps for Mobile Devices. (February 2018). Retrieved February 28, 2018 from https://www.thebalance.com/top-free-music-apps-1357073

[7] Mark Jansen. 2018. Keep up-to-date with the best news apps on iPhone and Android. (February 2018). Retrieved February 28, 2018 from https://www.digitaltrends.com/mobile/best-news-apps/

[8] Emily I.M. Collins, Anna L. Cox, Jon Bird, and Daniel Harrison. 2014. Social networking use and RescueTime: the issue of engagement. In *Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct Publication (UbiComp '14 Adjunct)*. ACM Press, New York, NY, 687-690. DOI: https://dl-acm-org.libproxy.clemson.edu/citation.cfm?id=2641322