MedSked Mobile App
IST649: HCI Analysis and User Needs Test Report
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1.1 Project selection and planning

Project Overview

The aim of the project is to create an application to aid people in properly taking their medication. *MedSked* notifies the individual when it is time to take her medication based on the predetermined schedule set up within the application.

*MedSked* would be particularly useful when a person is taking a complicated set of medication. Here is the following scenario:

Jack is 89 years old, and takes 11 prescription drugs daily. Each pill is on a different schedule, which frustrates him. Michael, Jack’s son, does not live with his father, but he is worried that he will keep forgetting to take all the medication at their prescribed times. *MedSked* lets Michael set up Jack’s medication schedule on his phone and his father’s phone where Michael will receive a text notification whether Jack took his pill or not.

The application consists of two different parts: *User* and *Caregiver*. Everyone has access to both functions — *User* just has to give permission to *Caregiver* so he can assist *User* in using the application. *User* is the part for the person who takes medicine. Here, one can check the name and the image of the drug that should be taken. Users can connect with each other, so one can set up schedules for each other and the user can report taken pills to the others. *Caregiver* allows a person to set up schedule for each medication; set up images for each pill so the user can find it easily; set a name for each pill; and any other preference settings such as notification and reporting. The *User* portion of the application has a simple design so older people can easily use
*MedSked*, while the *Caregiver* portion allows more tweaks. The core difference between *MedSked* and existing medication apps is that *MedSked* allows people to connect to each other and help them look after their loved ones.

**Application Development Timeline**

This is an estimated timeline and each phase may have one or two week’s variability.

**Project Commencement: Selection and Planning (2 weeks)**

This is the first phase that we will undertake in developing the mobile application. During this phase, all facets of planning and deliverables are constructed and or have already been developed. During this phase, we will gather resources and materials, set up timelines, determine our execution and finalization dates of the project. At the end of this phase, the plans for the design and architecture are already been shaped.

**HCI & User Needs Analysis (2 weeks)**

By conducting a concept test, this part of the phase is will determine the user’s requirements. A detailed sketch will be created to provide the target audience an illustrative prototype of the app. Survey, study and analysis of the target audience’s feedbacks will be conducted in order to determine the users’ needs.

**HCI Design (3 weeks)**

During the design phase, mockups are created to show how the application will look like. Also, the aspects of the end product are determined on this phase. At this phase we will determine the deployment platform, application interface, user interface (i.e. browser), database design and color schemes that will be used for the mobile application.

**Application Development (6 weeks)**

We will program and code the application at this period. Segments will be implemented such as navigation, user interaction, database integration, web services, and e-commerce platforms; all must be integrated to the application at this phase. At the end of the development phase, we will ensure that the first application is working properly.

**Testing (3 weeks)**
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At this phase, we will be testing the actual application. Testing is detrimental to the overall execution of the application. We must ensure that the application is working properly and that possible errors are resolved. We will make the application go through series of tests and simulation including testing its compatibility with other devices. At the end of this phase, we are already confident that the application works properly.

Deployment (6 days)

At this phase, we will distribute mobile application to the Apple store and Android marketplace for customer downloads.

Cost-Benefit Analysis

Costs

1. Money
   a) The Apple’s iOS Developer Program is required in order to develop and distribute iOS apps in the App Store: Cost: $99/yr
   b) Technology investment to create the application:
      1. Four Laptops: Cost $2000 + tax
      2. Four Apple iPhone 4s: Cost $0 with (Verizon)
      3. Four 16GB Apple iPad (Wi-Fi + Cellular): Cost $629 + tax
      4. Mockup Prototyper (Balsamiq) Volume License (4 people): Costs $316.00 + tax
      5. Verizon’s Small Business Phone and Internet Bundle: $89.99/Month + tax
      6. Verizon’s 50 GB Voice & Data Cellular Plan (Business Plan): Cost $375/Month + $160/Month (Smartphones) + $10/Month (Tablets) + tax
   c) Apple’s App Store takes a 30% cut of sales. MedSked will be free to download, but there will be advertising within the application. An ad-free version can be purchased at $1.99.

2. Time

---

Comment [M52]: No consideration for if the app gets rejected, or is told you need to fix something?
Comment [M53]: Which model laptops?
Comment [M54]: Why the 4s instead of a current model?
Comment [M55]: It isn’t clear to me why you need these plans…
Comment [M56]: Aren’t you also deploying this on Android? Is there no cost involved for that?
Since we will be developing the application, creating the prototype, and testing the product ourselves, dedicated time must be set aside to ensure this takes place. Although this could be considered a labor of love, this is still time spent working on the application instead of pursuing other interests.

3. Users

Two sets of representative sample of users will need to be identified for testing the application and providing feedback. Volunteers aged 55 years and older will be needed to represent the “User” and those that are younger than 55 will represent the “Caregiver.”

Benefits

1. Reminder System

The application will sound an alarm when it is time for the user to take one’s medication—thus improving the likelihood of a person taking their medication as prescribed. If the medication must taken with food, a reminder alarm can be scheduled ahead of time to assist the person in ensuring that they are taking the medication properly—for example, with food or a certain number of hours before eating.

2. Monitoring

If a caregiver has been selected, that person will receive a text message/email notification (at a predetermined time) when the user has or has not taken the medication.

3. Eliminates Confusion
   a) Individuals will be able to verify that they are taking the correct medication based on the corresponding picture of the medication.
   b) Because MedSked can be set up to schedule an alarm when it is time to take each medication, it will help an individual take the correct medication at a certain time.

4. Independence

MedSked allows the user to maintain a sense of independence when taking their medication instead of having the medication being dispensed by a caregiver.
2.1. Requirement determination

Functionalities of the MedSked Mobile App

- Provides a tool to setup a schedule for medication intakes
- Provides an opportunity to share medication information with caregivers
- Alert system serves as a notice for the users to take the medication
- Serves as a reminder tool for users to renew prescriptions
- Allows users to log on, export or print detailed report for use by their doctor, nurse or caregiver.
- Alerts caregivers when the users were or were not able to take their medications.
- Allows input of additional caregivers to ensure that the medication is administered in a timely manner
- Enables users to limit the amount of personal medical information shared with the caregiver

2.2. User-needs test

A six-person focus group interview was conducted. Due to time restraints, only one session was held. The forty-minute conversation took place over Google Hangout. The demographics of the participants were as followed: Three of the participants were over the age of 60 and three were between 35 and 55. There were 4 men and 2 women in the group. There were two married couples in the group.

During the interview, common themes were found surrounding the taking of medication. First, taking medication was important for those who have a chronic disease. Second, all of them agreed that taking medicine in a timely manner is important. This was emphasized when a participant shared a story about an old acquaintance that passed away the night he missed his antihypertensive medication. Third, keeping track of one’s medication could become a challenge. One participant said that she is always trying hard not to miss taking her medication, which included checking her pill counts and scheduling her doctor’s appointment accordingly.

Although they agreed that an application on a mobile device would help taking their medication, they were worried that the complexity of the interface would become another challenge for people who are not familiar with such technology. This suggests that the application should be simple to use.
2.3 Context Analysis

Physical context
The application will be used on a smartphone or a tablet. Typical screen size ranges from 4.5 – 4.9” for iPhones and 8 – 10” for tablets. The use of the devices can occur anywhere—it is dependent when the medication needs to be taken.

Technical context
The hardware initially used will be either an Apple's iPhone or iPad. The application will be designed for the iPhone but will scale to appropriate size for iPad users. There are plans to develop an Android application in the future.

Organizational context
None. The user’s affiliation with an organization will not play any role in using the application.

Social/cultural context
The initial target audience will be users from the United States. The application will be written in English, but there is an expectation that additional languages will be supported with MedSked.

2.4. User Analysis

Demographic
Potential users for the application include people who are taking medication and those seeking for help in taking them properly. Additionally, another group of potential users would be those who serve as caregivers and need to monitor/aid in a medication-related activity.

Traits/skill sets
There is no specific level of traits, skillsets, or intelligence that are related to using MedSked. Still, some competence with technology is required to fully enjoy the functions that the application provides. Since this may be a challenge for some individuals, MedSked aims to have a sharing function that enables people to help each other while using the application.

Job- or task-related factors
Uses may be aided with location information when they are trying to refill their prescription. A part of this application requires more complicated interaction, such as scheduling, taking photographs and assigning, linking accounts, and setting up alerts.
2.5 Task analysis

Use cases

- Seniors tracking many medications
- Adults tracking a parent’s medication
- Reference for adults when needing a list of a parent’s medication
- Adults tracking their own medications taken on a semi-regular basis (once a week for a month, twice a month, etc)
- Teens (taking medication) gaining independence by doing it themselves
- Parents/caregivers tracking a teen’s compliance

Goals

- User should be notified to take their medication at the correct time
  - User creates a record for the medication in MedSked
  - User creates a schedule for the medication in MedSked
  - User sets reminder preferences (e.g. “Every 5 minutes until taken”)
  - MedSked tracks the current time & the scheduled time, sends notification at appropriate time
  - User receives notification & indicates whether medication was taken
  - MedSked logs that medication was or was not taken (e.g. bottle empty, lost pills, etc.)
  - MedSked sends reminder according to preferences if a “taken status” is not logged
- Caregiver should be able to view & modify a User’s medication schedule
  - User creates record for the medication in MedSked
  - User creates a schedule for the medication in MedSked
  - User allows Caregiver access to medication/schedule through the app
  - MedSked notified Caregiver that new access was granted
  - Caregiver logs into online site to view User’s medication list
  - Caregiver (optionally) makes changes to schedule
  - MedSked notifies User of the change
  - MedSked syncs changes to User’s device
- Caregiver should be notified according to Caregiver’s preferences
  - Caregiver sets communication preferences (e.g. phone, email)
  - If Caregiver desires to be notified when the User has logged a “taken status”, Caregiver must opt-in to individual status(es) [e.g., ‘taken’, ‘not taken - bottle empty’, ‘not taken - lost pills’, etc.]
    ▪ When User indicates medication status, MedSked sends a notification to Caregiver’s contact information (phone/email) according to set preferences
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- If Caregiver desires to be notified when User has not logged a “taken status”, Caregiver must opt-in to the notification
  - Caregiver must set preferences for delay before notification (e.g. after 5 reminders sent to User.) This helps prevent the Caregiver from being overloaded with false alarms.
  - MedSked tracks User’s schedule, “taken status”, and reminder settings for each medication, at each scheduled time.
  - MedSked sends a notification to the Caregiver if the User’s scheduled time and X number of reminders passes (as set by the Caregiver’s settings.)
  - User receives a text message or email with the notification

User & Caregiver should be able to see full audit log (timeline) of everything that happened in MedSked
  - MedSked writes every change action to log, with record of who initiated the change
  - MedSked logs each time a schedule time “comes up”
  - MedSked logs each time a reminder is sent
  - MedSked logs each time a “taken status” is recorded
  - MedSked logs each time a notification is sent
  - User views “audit log” (timeline) in-app
  - Caregiver views audit log on the web site

2.6 Evaluation Metrics

Physical
- 85% Able to read the text and images with ease
- 85% Does not think the application will impose health concerns
- 95% Feels the application’s alarm is audible but not loud enough to hurt the user’s ears

Cognitive
- New users should be able to navigate and use main functions within 5 minutes
- Application users are able to get to the main tasks within a maximum of two clicks.
- The number of complaints should be less than 1 in 100 uses.

Affective
- 80% of the tested users should have (a) aesthetic, (b) trustworthy, and (c) satisfactory rating of at least 4 out of 5.
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- At least 80% of potential users would trust the application with their medication information.

**Usefulness**
- Users are able to use the application’s alarm system as a reminder to take their prescribed medication at the correct time.
- If a caregiver has been selected, he can schedule the medication times of the user. If a caregiver has not been selected, the user can schedule his or her own medication schedule.
- Caregivers are notified both when the user has taken their pills and when they have not.

2.7 Alternative Selection

**Full-featured “companion” app for caregivers**
A full-featured app for caregivers to monitor a loved one’s medication would be the optimal goal. However, to save time & money on the initial release, we chose to have this functionality provided through a web interface.

The mobile website will allow the caregiver to view & update their loved one’s medication schedule, receive alerts, and see a log of when medications were taken. A native app for the caregiver would be much more comprehensive. Features we’ll be missing in the web app include push notifications and a generally more polished experience.

**More robust design interfaces**
We intentionally kept the design concise and included large, bold action buttons. Since our target audience is largely an older population, we wanted to be sure the actions were clear and easy to follow. A future update may allow for enabling “new” parts of the interface. Some thoughts for those updates include custom list sorting (dropdown), rapid input of multiple medications, and stored (reusable) schedules.

**Greater platform support**
In our current iteration of the app, we’ve chosen to go with iOS-only. We considered alternatives of developing Android and/or Windows phone apps. Due to resource limitations, we decided to choose a single platform for initial launch.

iOS became our platform of choice because of its large market share, ease of use, and ease of development/testing. If we had selected Android, the time required for testing our app would have easily been extended by up to several weeks. iOS allows us to
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build and test on a very specific set of devices, instead of the hundreds required by Android.

The platform’s ease of use also made it a clear choice for our initial launch. Android or Windows phones can have a large learning curve -- something our older audience likely would not tolerate.

2.8 Formative Evaluation

In evaluating our MedSked mobile app, we will be choosing test participants mainly from friends and families who are between the ages of 17-65 years old. The greater number of participants will be selected from the age group of 55 years old and up because most of the patients that are taking medications are mostly from this age group.

This test evaluation will be a nine-step process:

- Step 1: Selection of 30 participants between the ages of 17 – 65 years old.
  - 10 out of these 30 participants will be the first group to participate in the test and evaluation.
- Step 2: Initial testing of the app among the first group.
- Step 3: Gathering of test results and feedback.
- Step 4: Test evaluation and ratification of errors.
- Step 5: Second testing with the second group of ten participants.
- Step 6: Gather the second set of test results and feedback.
- Step 7: Evaluation and ratification of errors from the second test.
- Step 8: Final test with the third group of participants.
- Step 9: Evaluation and finalization of the app.

Comment [MS13]: Is there research to back this up?
**MedSked Mockup**

**Settings**
Settings available under the "User" access

**List of Caregivers**
Andrew
Elisa
John
Stephen
Add a Friend
GROUP 5: MEDSKED

Medicine Scheduler

Notification Alert Scheduler
GROUP 5: MEDSKED

Current Schedule of Medicine

“Time to take your medicine”

Comment [MS14]: Does the system have images pre-programmed in, or does the user have to take all the images him/herself?
3.1 Interface Specification

Our first step was to determine what users would expect from our medication management app. To do this, we began by evaluating their current practices for managing medications. Most patients would require a few major components and app like this. First, the user must be able to keep a list of their medications in the app. Next, user should be able to receive notifications when it's time to take their medicine. We also found that it would be helpful to share the medication lists with the patient's caregiver or significant other. Our interaction design revolved around these three main components.
**User should be able to add a new medication**

The task of adding a medication to the user’s list should be clear and easy to follow. To introduce this process to users, the concept of a “medication list” was formed. Tracking a new medication, to the user, would involve simply adding a medication to their list. In adding that medication, the app creates a new record to track related data. Setting up schedules and sharing data all require this initial record to be created. The task is simplified by only showing the process one step at a time.

**User should be able to schedule a repeating reminder for each medication**

Setting a medication reminder generally occurs in two types: (1) initial setup for a new new medication, and (2) subsequent changes, if the schedule needs to be updated. A change to the schedule is most typically a change to the prescription, so we followed our “list” idea here. Initial set-up is done as a part of the medication, as it is being added to the list. Subsequent updates are accessed through the main medication list, under a detail page for the medication. This helps reinforce the fact that the app is storing the schedule directly with the medication record.

**User should be able to share their list with a caretaker (or significant other)**

Since this is a feature that our elderly target audience likely won’t be setting up without help, we abstracted it from the main “list.” Our younger audience polled typically viewed sharing as a function of the app -- not of a “list.” For this change in context, we located the sharing functions under “Settings” in MedSked. Our goal was to have this translate into “Share access to Grandpa’s MedSked from here.” Once sharing is turned on from the settings page, the user will have options to filter access by person. This filter would include the ability to hide specific medications. Adding a user to the “sharing” list will send them an email to confirm the link. The recipient will then be able to access Grandpa’s MedSked through an online interface.

**Metaphor Design**

Our chief metaphor was that of the traditional “medicine list.” Before starting our design work, we looked at the current process most people have for managing medications. From friends and family, we heard a variety of solutions. We found that people with a only a few medications (one or two) typically kept track without a list. This however, didn’t scale to our the majority of our audience (individuals with many medications). People with many medications, we found, kept track of their medication schedule with a paper list. ‘Wednesdays at 9pm’, for example would remind them to take their Tylenol. Some people would set alarms to remind them to take medications at
specific times during the day (morning, lunch, dinner, etc.) To share their medication list (with family or a caretaker), people would often make photocopies or send an email with the list.

These things translated extraordinarily well to a digital form. Visually, our medication list is remarkably similar to the pen-and-paper version. Even users inexperienced with a smartphone were able to clearly understand the meaning. MedSked’s pill reminder feature functions nearly identically to that of a traditional alarm clock. With the app however, there is no concern about forgetting to reset the alarm for the next day.

The sharing feature has a slightly larger learning curve for users unfamiliar with smartphones. Users familiar with digital social networks do understand the concept, so we used that a cornerstone of the design. The closest metaphor here would be a literal list of people “allowed” to see the user’s medications.

Media Design

Once the concept of a medication reminder system was formed, our next decision involved choosing a medium for delivery. Here, a touch-based smartphone was the best for our criteria. Criteria included: a device that (1) had widespread adoption, (2) was easy to use, (3) wouldn’t involve significant training, and (4) was not cost-prohibitive, for most users.

Apple’s iOS served as our platform of choice. iOS is available on several generations of touch-based smartphones and tablets. For development, we would benefit from the ability to build and test within a single, unified interface (XCode). Additionally, for our users, the platform is already in widespread adoption. Users tend to generally like the platform, and we’re confident that this will translate well to our app. Further, the low learning curve makes it easy for new users to integrate our app with their daily life.

Touch-screen capabilities and size were also factors in our decision. The iPhone’s small, portable size makes it easy for users to always have it when they’re taking their medicine (even if it’s on-the-go). In addition, the touch screen allows us to make buttons as large (or small) as they need to be. This was especially important for older populations, who prefer larger buttons.

Dialogue Design

Designing dialogue for this application was especially complex, given the sensitive nature of the app and its wide-ranging target audience. The tone for which we strived was that of calm, friendly, assertive, and reassuring.

Sending a reminder to an elderly parent’s child that their loved one hasn’t taken their medication is a difficult notification to get “right.” Send the notification too soon, and
you’ll cause undue panic; perhaps Grandpa simply didn’t see the phone. The first thing that could come to mind is “Oh my God, something’s wrong.” However, a notification could also be sent too late; Grandpa needs to take his Coumadin every morning at 10:05 -- Johnny needs to remind him if it’s 10:15.

In addition to proper timing, tone and language are equally critical. Across a large target audience, this can be difficult. We’ve found that younger audiences prefer an app to hold a more friendly tone, while older audiences prefer “just the facts.” We chose to err on the side of “just the facts”, with a calm, friendly, and assertive tone. Instead of causing alarm with “Grandpa isn’t taking his medication,” we opted for “We sent five reminders to Grandpa over 30 minutes and the medication was not logged as taken.”

Presentation Design

The app’s screen flow was carefully designed to show all the critical information up front, with more exposed as interactions continue. The main medication list is the central “home” point of the design. From this screen, the user can view all of their medications, including times next scheduled. Clicking on a medication allows the user to drill down for more details. To make the app easy to use for our elderly target audience, font size, button size, and contrast were all increased from the norm. A limited set of paths from the home screen prevent new users from getting lost.

Beyond the standard (basic) actions, users can click the Settings cog in the bottom-right to access the full capabilities of the app. This allows the users to explore the app, without the pressure of having all the options on-screen.

3.2 Formative evaluation

For the formative evaluation, a lab experiment was conducted in order to focus on specific tasks that MedSked users would encounter while using the application. A low fidelity prototype was used to allow for limited exploration of the application’s pages. A .pdf version of the Balsamiq mockup of MedSked was uploaded onto a smartphone in order to give the experiment participants an idea of how the application would appear. Participants were able to “click” on select buttons to view different screens and see how it would work on the smaller screens that are currently available on smartphones.

3.2.1 Participants

Ten individuals participated in the formative evaluation. Seven of the participants are smartphone users. Although the three remaining participants have “dumb” phones, two of the three are tablet owners.

3.2.2 Evaluation target

Comment [MS16]: EXCELLENT!
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**HCI Concerns**

- Physical: Application fits user’s physical strengths and limitations. Not harmful to our health.
- Cognitive: Application fits user’s cognitive strengths and limitations. Serves as cognitive extension of the brain.
- Affective: Application is attractive and satisfies the user’s aesthetic and affective needs.
- Useful: Application proves rewarding.

3.2.3 Method

During the experiment, participants were able to navigate through the application to accomplish certain tasks. The following tasks were evaluated during the evaluation:

- Viewing the daily schedule of medication that needs to be taken by the user
- The process of updating the application to reflect the user taking of his medicine
- Adding medicine to the schedule
- Adding caregivers to the application
- Setting up caregiver alerts
For example, the participants saw the following screens as they interacted with the mockup to see how *MedSked* works in taking medication at the prescribed time.

3.2.4 Results

**Physical**
Based on the mockup, participants found the application easy to read on a smartphone. The size of the medication images was large enough for the user to identify the medication that they were scheduled to take.

**Cognitive**
The specific tasks that were tested on the mockup were easy for the participants to learn and to use.

**Affective**
Although this was just a mockup of the *MedSked* application, the users found the simplicity of the layout aesthetically pleasing.

**Usefulness**
All participants agreed that the application would be useful for both them and for their loved ones to assist in the proper dispensing and taking of the medication.
4.1 Prototyping: Tools used
For prototyping, we started by sketching out early ideas on paper. These sketches allowed us to quickly draft out new concepts & ideas. Once we had the general idea for a section down with a sketch, we started putting it together in Balsamiq. The app allowed us to quickly refine our ideas and create more polished revisions. Balsamiq’s UI library was essential to maintain a rapid iteration timeline. By linking our Balsamiq mockups together, we were able to easily build functioning prototypes. Balsamiq allowed us to highlight clickable areas, simulating a fully interactive interface. These prototypes took form in PDF documents, which we then loaded onto laptops & mobile devices. With our PDFs loaded on our devices, showing the interface to users was remarkably simple.

4.2 Formative Evaluation

4.2.1 Participants
Five participants were in this formative evaluation. All of them understood how to use smartphones. Three were females and two were male. Age ranged between 29 and 57. This part of formative evaluation concentrated more on finding problems regarding the prototype.

4.2.2 Evaluation target
**HCI Concerns**
- Physical: Application fits user’s physical strengths and limitations. Not harmful to our health.
- Cognitive: Application fits user’s cognitive strengths and limitations. Serves as cognitive extension of the brain.
- Affective: Application is attractive and satisfies the user’s aesthetic and affective needs.
- Useful: Application proves rewarding.

4.2.3 Procedure
Participants were notified that video and audio recordings are taking place during the interview, and that the study is only for in-class reporting. Morae was used to check participants’ activity, although the tasks were relatively short. There were two tasks: one was to take medicine and notify the “caregiver”; and the other was to browse through settings and remember the functions so they can answer the follow-up survey. In the end, a brief interview was conducted to monitor how they perceived the application.
### 4.2.4 Results

**Physical**

Based on using the mockup, no significant errors were found. Participants reported that the texts, images, buttons, and icons were clear and easy to manipulate. On their first try, all the participants were able to finish task #1.

**Cognitive**

Based on the survey results, all five participants were able to identify and explain the functions they found in the preference menu, and match it on the survey.

**Affective**

Most of them found the prototype interesting. The youngest female participant found it a bit lackluster. This was because she thought that although the application efficiently provides its proposed functions, it was hard to find a reason to use the application when she can memorize medication schedule for herself or her beloved ones. She could not find any potential attraction in design even though she fully understood that it was only a prototype. Overall, the participant did not feel that she the usefulness or the attractiveness of this app would compensate the feeling of negligence on her beloved ones by letting an app takeover her responsibility.

**Usefulness**

Participants were mostly pleased by the usefulness of the proposed application. They thought that the application did the proposed job efficiently, and perceived it to be trustworthy.

One participant suggested that the application might be useful in a situation when a parent has to take care of their children’s medication. The participant said that it is sometimes frustrating because it is easy to forget if she gave medication to her sons, and she did not want to accidentally double the dosage on her children. This required the a single caregiver to handle multiple patients with the app. The team discussed adding this function and came up to a decision that the main objective for the project is to establish firm support function by allowing only 1 on 1 or 1 patient on multiple caregivers for the moment.
Survey for 4.2 Formative Evaluation

Q1 Age Range
- Under 21 years old (1)
- 21-30 years old (2)
- 31-40 years old (3)
- 41-50 years old (4)
- 51-60 years old (5)
- 61 years or older (6)

Q2 Gender
- Male (1)
- Female (2)

Q3 Do you have an experience with medication scheduler?
- Yes (1)
- No (2)

Q4 If yes, what did you use?

Q5 What do you think about the design (color, image, icon) of the interface you just used?
- Extremely Unsatisfied (1)
- Unsatisfied (2)
- Neutral (3)
- Satisfied (4)
- Extremely Satisfied (5)

Q8 How pleasant was your experience with this application?
- Extremely Unsatisfied (1)
- Unpleasant (2)
- Neutral (3)
- Pleasant (4)
- Extremely Pleasant (5)

Comment [M521]: I am glad you included this, but it is important to be clear where the questions came from, or if you created them on your own.
Q9 Was it easy to use it as a Patient?
- Extremely Uneasy (1)
- Uneasy (2)
- Neutral (3)
- Easy (4)
- Extremely Easy (5)

Q10 Was it easy to use it as a Caretaker?
- Extremely Uneasy (1)
- Uneasy (2)
- Neutral (3)
- Easy (4)
- Extremely Easy (5)

Q12 Do you think you can trust this application to do its job of notifying medication schedule?
- Extremely Untrustworthy (1)
- Untrustworthy (2)
- Neutral (3)
- Trustworthy (4)
- Extremely Trustworthy (5)

Q13 Please check functions that you found from the following list
- How to add a medication (1)
- How to add a schedule (2)
- How to check medication schedule (3)
- Where to find your patient/caregiver (4)
- Notification settings (number of alerts) (5)
- How to send notification to a caretaker (6)
- How to receive notification from a patient (7)

4.3 Summative Evaluations

Considering the results of the tests and the feedback from the users, the satisfaction rating for the medical application based from the users experience is conclusively high. The first test with ten participants from ages 17-65 had a positive result with only minor issues. The common issue was the slow start-up of the application which was immediately resolved for the second test. The second test which
was participated by another group of ten between the ages of 17-63 resulted to no errors with positive feedback. Final test was conducted to the third group of participants composed of ten individuals between the ages of 17-62 which determined the readiness of the application for distribution.

One noteworthy observation during the conduct of the tests was the manner the younger participants took the survey. Compared to the older participants, the younger ones were able to complete the survey in shorter period of time. Based on our observation, this can be attributed to the alertness and better vision that the younger participants possess.

Based on the feedback and the analyses of the test results, we found out that it is easier for users between the ages of 17-35 to use the application than the others. As we further determine its possible causes, the major factor that we discovered was the number of prescription drugs that an individual may have. This age group generally has lesser prescription drugs to take than the others, hence making it easier for the individuals to monitor and take medications by using the app. On the other hand, the older users still found this application to be useful despite this fact.

In conclusion, all the test participants approved of the medical application. The few issues that the participants suggested maybe resolved by incorporating the solutions to the medical application’s monthly patches and upgrades. Based on the results of the tests and feedback, it is conclusive that the majority of the users that will likely use this medical application are older folks and individuals with medical disabilities. Younger individuals will also be using this app but mostly for monitoring vitamins or food supplement intakes. Also, this application will not only be useful for the individuals taking the medicines but for their caregivers as well.

Comments: Great work on this team! I think this is a super useful app that would find an audience if you choose to follow through and continue work on it! In terms of improving this report, I picked out some points above that I thought could have been a little more clearly addressed. Most notably, I had expected (or at least hoped) you would share the prototype with me for review as I indicated from early on in the course that you would actually be building a working prototype. The second point for improvement is that even though this is not a research paper, it is always important to ground your justifications for evaluation, and to cite any/all corresponding sources. It is likely that investors, superiors, or other stakeholders would want to know where your metrics came from.
Anyway, I'd still be happy to see your prototype if you could pass it along to me. And again, I think your idea is absolutely fantastic, and I am happy to provide any ongoing support if you plan to continue to develop it.