Sprint Assignment 1 Report

By Team D

COEN/ELEC 390
Department of Electrical & Computer Engineering
Concordia University

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Introduction

As it was concluded in Milestone 2, our team decided to continue with the idea of a mobile application for seniors that will remind and warn them to take their medicine on time using notifications

The application will be connected wirelessly to a set of sensors that will be located in a pill box, and will keep notifying the user until the sensors detect activity. The application will also notify a caregiver or a guardian if no activity is detected for a predefined period of time. The application will also educate the patients about the medication taken by providing valuable information to them about the medicines. Those information will contain an illustration of the medication, the recommended intake frequency, the ingredients, the side-effects, what diseases it treats, etc.

We believe that our project will increase the effectiveness of pharmaceutical treatments by resolving the recurring problem of patients that forget to intake medications and by educating them at the same time.

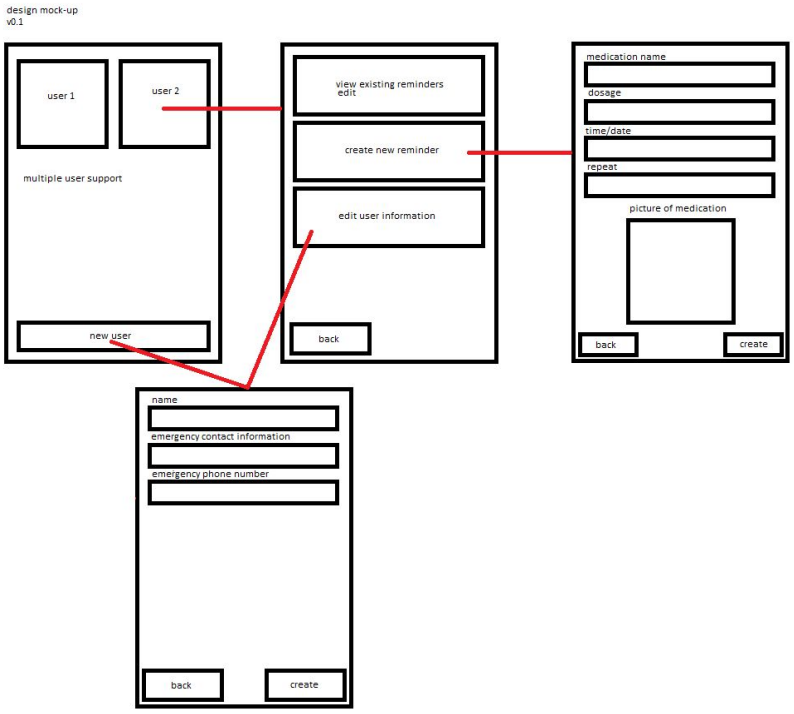
The next step in the development of our mobile application will be the first sprint in which we plan to create the first version of our software and a working hardware. The software will be the skeleton of our application and will contain basic options such as a login page, a settings page and a reminder scheduler. For the hardware, we plan to create the best possible pillbox that will include sensors.

Product Backlog

Story ID	Story Title	Card	Story Points	Sprint	Status	Conversation	Confirmation
BK-1	open box detector	*As a senior person, I want the medication box to be able to detect when I open the pill box, so that I can get a notification when I miss the time to take my medicine.*	3	Sprint 1		1. what sensor should we use? 2. how sensitive should we set for the sensor?	1. does the sensor be good enough to detect the action of "open box" correctly.
BK-2	notification sending	*As a senior person, I want the application to send me an alert when I don't open the medication box on time, so that I will not miss the chance to take medicine in proper time.*	5	Sprint 2		1. what kind of notification should we use? Text message? Voice message? Or sound? 2. when do we send the notification?	1. Can the notification successfully send out. 2. does the notification send in right time.
BK-3	schedule setting	*As a nurse, I want the application can allow me to set a "mediction taking" schedule on my patient's cellphone, so that I don't need to check their personal document and remind them time for pills.*	3	Sprint 2		1. how can we form a schedule on peoples' phone and let them check easy? 2. should it be only hospital worker can change the schedule? 3. how can we prevent the schedule not erased by any accident?	1.does the application allow this user to set the schdule? 2.can the application reset the schedule?
BK-4	notification for guardian	*As a guardian, I want the application be able to inform me if my senior does not take their medicine a period time pass the schedule, so that I can contact them and get more detail of why they miss the right time to take pills.*	13	Sprint 3		1. What is the period be we send the notification to the guardian, if the senior does not take their medicine? 2. How can we store the information of guardian? 3. How can the application automatically send the notification to the guardian phone when the senior does not take the pill pass a period of time?	1. Does the notification send when the sensor does not detect a action passing a certain of time? 2. Does the notification sucessfully send to a particular phone?
BK-5	educative interface	As a senior person, I want to be able to have access to information concerning the medication I take so that I know the benefits, dosage and secondary effects of the medication I'm intaking.	20	Future		Having this feature will allow the user to be better informed on the benefits, dosage and secondary effects of the medication, thus allowing him/her to make better choices and to encourage him/her to take the medication	1. Can the user understand clearly the information provided? 2. Is the information up-to-date with current research and development? 3. Is the information stated in a way which invites the user to read and does not bore them?
BK-6	Audible notification	As a senior person, I want the notification to be loud enough so that I can be sure not to miss it	5	Sprint 2		Having this feature will eliminate some of the risks that the notification will not be heard	1. Can the user hear it clearly within a radius of 15m in an average room?
BK-7	privacy protection	As a senior, I want to be able to have protected access to the application so that I can preserve my confidentiality	13	Future		1. What technology are we using to complete this function? 2. Who can access the data?	1. Is the users information only obtainable by specific individuals? (i.e Nurse, Doctor, Guardian, User)
BK-8	Skeleton	As a senior, i want to be able to log into the Medication Taking Reminder app, check the information about my medication, allow my nurse to set the medication intake schedule, and input guardian contact information, so that I may reduce any possibility of missing my medication intake	8	Sprint 1		1. It is a prototype of our application. 2. it should have several button for those function	1. Does it have a login button? 2. Does it have a check schedule button? 3. Does it have a set medicaction schedule interface? 4.Does it have set guardian information button? 5.Does each button take the user to a different page?

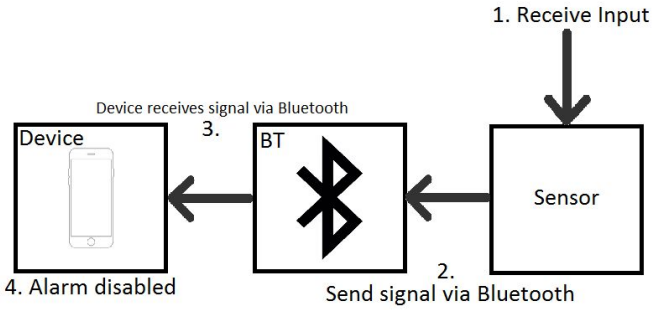
Table 1: Product Backlog

Design



The wireframe shown in figure 1 is a preliminary design that best interests the needs of seniors since they will occupy the majority of the user base. The user interface will have many big buttons and easy to read text and the user will be able to navigate to any screen with just two button presses. This design is not final and is subject to change.

Figure 1: Preliminary wireframe



This system architecture will be as shown in figure 2. The motion sensor will receive an input from the user and will send a signal via bluetooth to the device. Once the signal is received, the device will process the signal and shut off the alarm if the correct signal is received. Optionally, the device can send a text message to a guardian to inform them of any problems.

Figure 2: System architecture

For now, this is as far as the design for the system goes. The design will improve over the coming sprints and will become more concrete.

Sprint 1 Backlog

Sprint 1 Goal(s): At the end of sprint 1, we will have "Skeleton" of our application, which contains login page, button of setting and checking schedule and button of guardian information setting. Also, we will have the simulation medication box with SparkFun OpenPIR Motion Sensor, which can detect if the medication box opened or not.

Story ID	Task ID	Task Title	Task Description	Ideal Hours	Status	Comments
BK-1	1.1	**Ideal Medication Box**	Build an ideal medication box with SparkFun OpenPIR Motion Sensor.	5 hours	Planned	
	1.2	**Sensor Signal Algorithm**	Understanding the operation of the sensor and collecting the data of the effect on different actions on the medcation box.	5 hours	Planned	
	1.3	**Sensor Position**	Base on the data of the effect on different action on medaction box, find out the best position for the sensor	3 hours	Planned	
	1.4	**Sensor Signal Conversion**	Create a program which can verify the medication box is opened and show a message on the screen of cellphone.	5 hours	Planned	
BK-8	2.1	**Login Page**	Creation of a login page and links to its related activities	5 hours	Planned	
	2.2	**User Information**	Shareprefence for user profile: if the user is new, direct him/her to profile setting.	5 hours	Planned	
	2.3	**Schedule Activity**	Have a list view of the date, time and information about the scheduled task to be done	5 hours	Planned	
	2.3.1	Reading model	Creation of the reading mode of this activity	5 hours	Planned	only allow to read the schedule
	2.3.2	Editing model	Creation of the edit mode of this activity	5 hours	Planned	enables the edition of information
	2.4	**Guardian Information Activity**	Contains a menus, submenus,and "add" button. The menu will show the guarding name, submenu will show guardian's phone number.	5 hours	Planned	
	2.4.1	Reading model	Only displays the guardian's credentials. The submenu are untouchable.	5 hours	Planned	
	2.4.2	Editing model	Requires password to access this model. And under this model, the submenu are touchable and changeable.	5 hours	Planned	
	2.4.3	Adding button	Link to guardian information adding activity	2 hours	Planned	
	2.4.4	Adding button 2	Create a new sharepreference for new guardian	5 hours	Planned	
	2.5	**Guardian Adding Activity**	Contains a guardian information form, and "save" button	5 hours	Planned	
	2.6	**Testing**				
	2.6.1	Buttons	Test and check that each button in the application meet their respective requirements	5 hours	Planned	
	2.6.2	Schedule Activity	Test and check two model of this activity working well	5 hours	Planned	
	2.6.3	Guardian Information Activity	Test and check two model of this activity working well	5 hours	Planned	
	2.6.4	Sharedpreference	Test if each sharedpreference is working well, no overlap or the information stored in different files.	5 hours	Planned	
	2.7	**Integral testing**	Test the entire application	5 hours	Planned	Involves unit and component testings
	2.8	**Defect correction**	This is reserved for solving any error that may arise due to task/feature malfunction	5 hours	Planned	

Table 2: Sprint 1 Backlog