Bi-weekly Report 7 - OpenMRS Hypertension 12/02/2016

Team Members: Chevy Ng, Sam Mai, Diana Darie
Project Client: UCL - Prof Philip Treleaven & Bupa - Alex Matei

Overview

Over the past two weeks we have been working on further completing the Android client as well as thinking of an easy way to implement a two way chat system between the patient and their doctor.

We have managed to complete the "Manually Input" page, which involves manually adding the data which will be sent and saved to the OpenMRS database. This includes the food log as the user can input their breakfast/lunch/dinner choices, which at the moment is hard coded but this option will be changed into a database search of the required food later on in the project.

Furthermore, the user can input their activity log (type of exercise completed as well as the time taken to complete it), heart rate, height and weight values. We have also managed to get the data from Google Fit and Fitbit, and we're now working on implementing these activities into our existing project.

We have been working on the "Graph" page which involves getting the heart rate values from the OpenMRS database for the last five days, and displaying them as a linear graph. We have some problems with it at the moment as the graph is not as responsive as we expected it to be, and sometimes it doesn't display all the required date values.

Moreover, we have started coding the "Chat" Page such that the patient can send any comments at any time that will be automatically saved. The problem we encountered was that the OpenMRS platform came with its own database, which can not be modified (e.g. adding new tables), unless a new web service it's created for the specific table. However, we have found a method without having to modify the platform's database. The page will work as follows: for any conversation between a patient and a doctor, a new concept will be created with a new unique id (let's say "chat1" between "patient1" and "doctor1").

For any comment that the patient will send to the database, a new observation will be created such that a new row will be added to the "obs" table containing the concept_id and the patient's message. We suppose that a doctor can have more than one patient but the patient can have only one doctor. Hence when retrieving the data we are going to use the concept_id value in the "obs" table and retrieve all the text messages ordered by the date added.

Tasks Completed

During the past two weeks we have managed to:
- Create the "Input" Page which involved manually inputting:
  - Food log
  - Activity log

- o Heart rate values
  - o Height and weight values
- Getting the data from Fitbit and Google Fit
- Have a demo of the "Graph" page
- Have a demo of the "Chat" page which allows the patient to send any comments

Next Aims

For the next two weeks we are going to:
- Create the "Sync" page such that the user can save the data from Fitbit and Google Fit to the OpenMRS database
- Finish the graph that displays the user's heart rate values over a period of time
- Finish the "Display" Page such that the user can see their progress over a given period of time
- Finish the "Chat" page (the doctor can send messages too; both the patient's and doctor's comments will be displayed when the "chat" page will be accessed)
- Modify the Android client such that different pages will be displayed depending on the user that will login in (either patient or doctor)
- Research a way to refresh the "chat" page such that the patient-doctor communication can happen in real time
- Make the "chat" page run on background
- Implement a notification option such that the user can know when they received a new message

Members Contribution

Diana

Over the past two weeks I have been working on the "Input" page such that user is now able to add their food, activity log, heart rate, height and weight values to the OpenMRS database. I have been researching which way is the easiest to implement a two way communication between the patient and doctor. My first solution was modifying the OpenMRS database, creating a new table for messages. The problem is that the REST module that was installed onto the OpenMRS platform only works for the given database. If a new table needs to be added then we have to create a new web service for the specific table such that we can use the GET/POST request to add new values to the table. Another idea that my teammate, Sam, had was saving the data in the "obs" table. Therefore, for any discussion a new concept is created. This concept will be used to save any comments as a new observation. When displaying the values, only the comments with the same concept_id will be retrieved. So far, I have implemented a demo of the chat page such that the user can send any messages.

Chevy

For the past two weeks, I have been working on integrating the synchronization of Fitbit data to our main Android client, as well as fixing bugs which I discovered while trying to integrate the Fitbit API in our main Android client. I'm also working on sending the Fitbit data directly to the OpenMRS database once the user click on "Sync Fitbit".

Sam

During the past two weeks, I have been working on improving the implemented methods that allow our client to send Google Fit data to the OpenMRS webapp. The app will now update the old observation instead of sending two observations if user happen to sync Google Fit twice on the same day. I have also implemented a graph that shows user's 5 latest observations of a particular concept.