Team Health

Assignment 5: LowFi Prototyping and Pilot Usability Testing

Members:

凱捷 - Design, user-testing
承洋 - Design
際禎 - Design, report
George - Report
Wei Yang - Initial sketches

Introduction:

Mission Statement:
Our team intends to raise awareness and ultimately prevent the epidemic of near-sightedness. In the world with countless new gadgets, our eyes are suffering and technology is not helping. People, especially kids, are unaware of eyesight deterioration because they don't have any measurement.
We introduce a new wearable, smart glasses, to conveniently and seamlessly notify user of bad posture and record data of everyday eye activities. Each user gets a monthly grade based on collected data and if the grade reaches A, he/she gets to enter a raffle for a reward. We plan to work with the government to sponsor these rewards.

Value Proposition:
The Glasses to save your vision.
("save" has two meanings here - prevent && record (data)

Initial Sketches:

a) Smart glasses 1

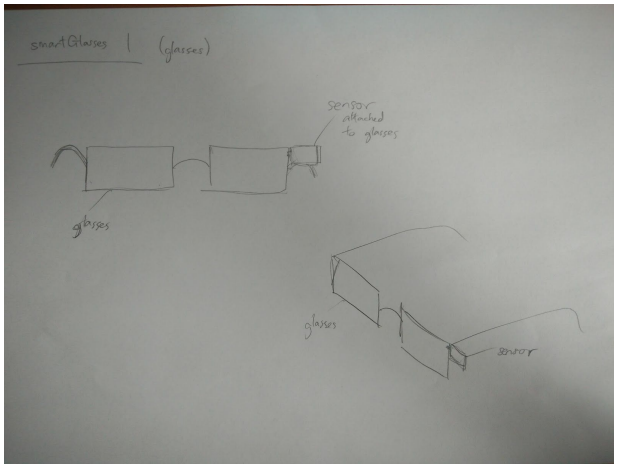

Fig 1.1.1

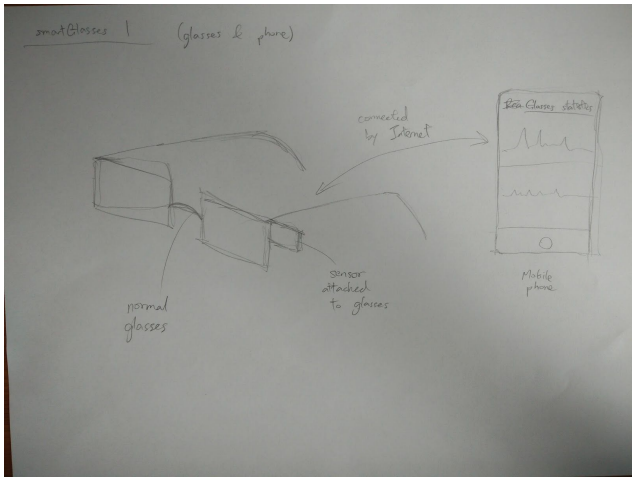

Fig 1.1.2

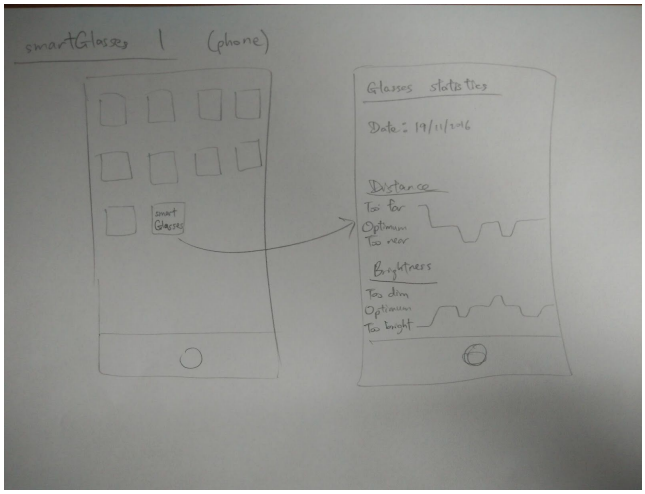

Fig 1.1.3

b) Smart glasses 2

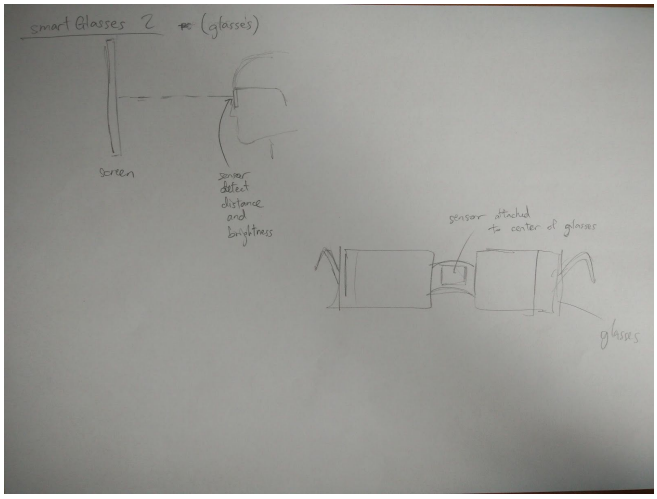

Fig 1.2.1

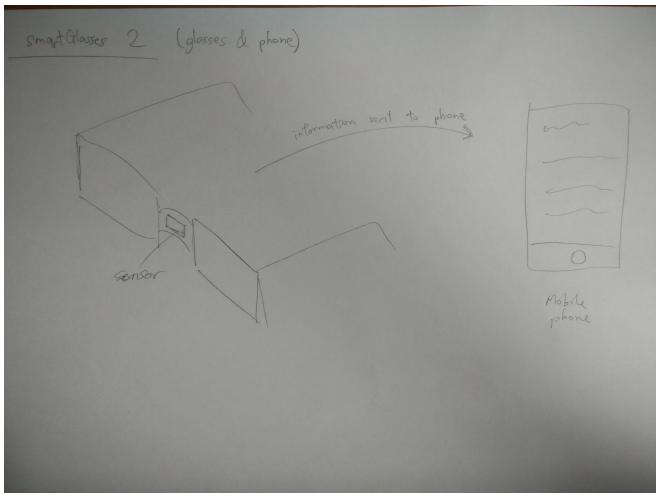

Fig 1.2.2

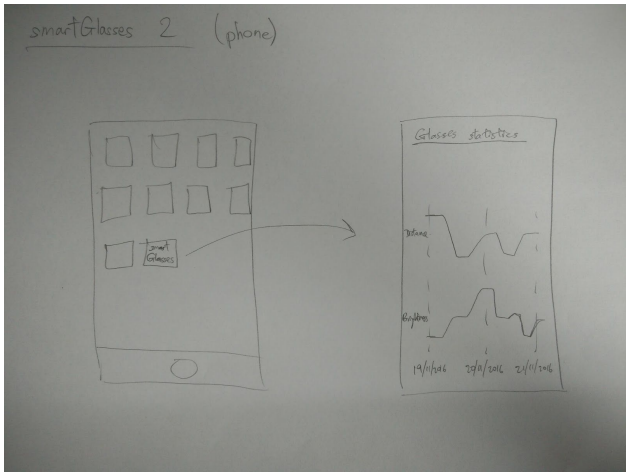

Fig 1.2.3

c) Smart Sensor

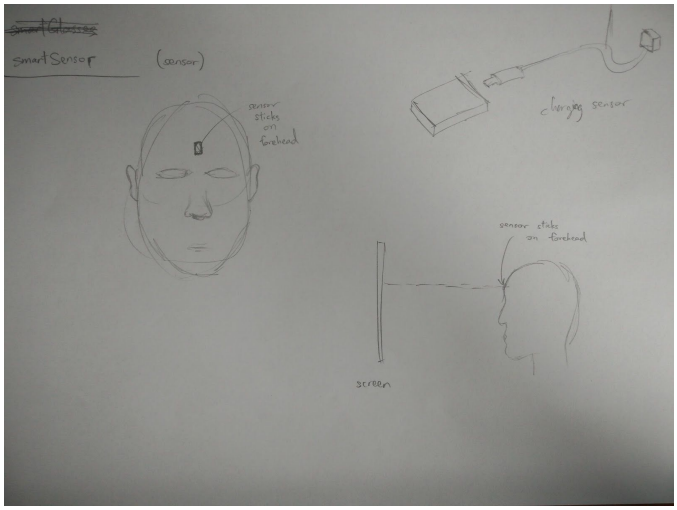

Fig 1.3.1

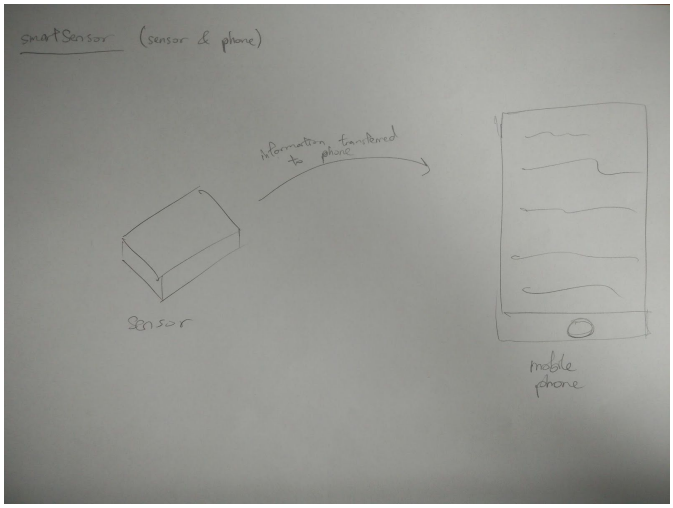

Fig 1.3.2

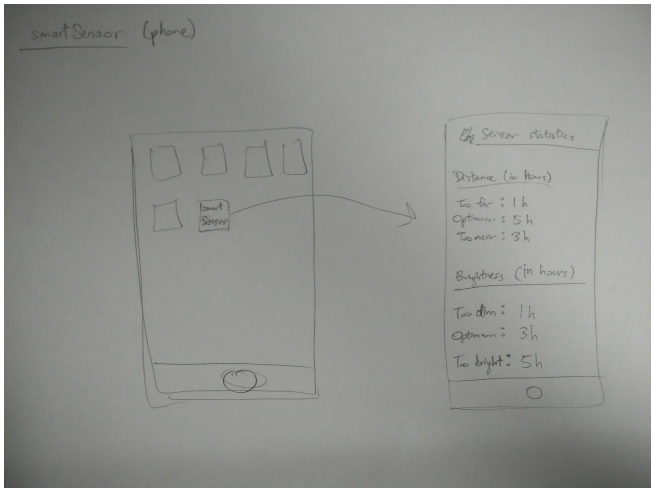

Fig 1.3.3

d) Smart Hat

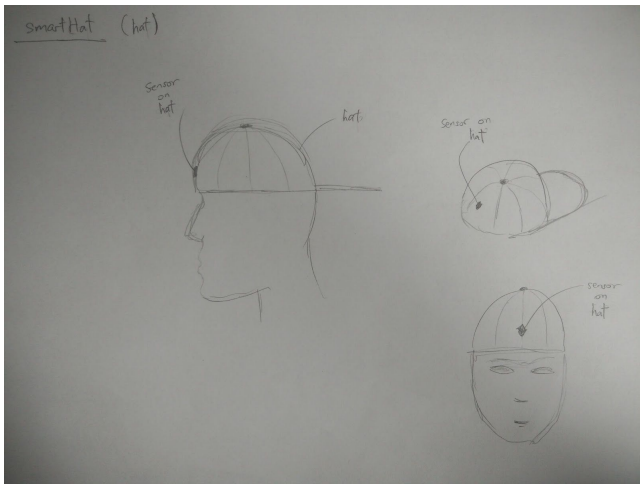

Fig 1.4.1

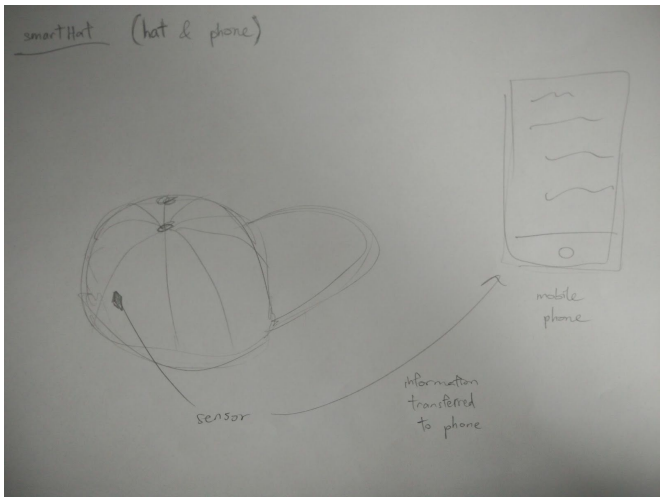

Fig 1.4.2

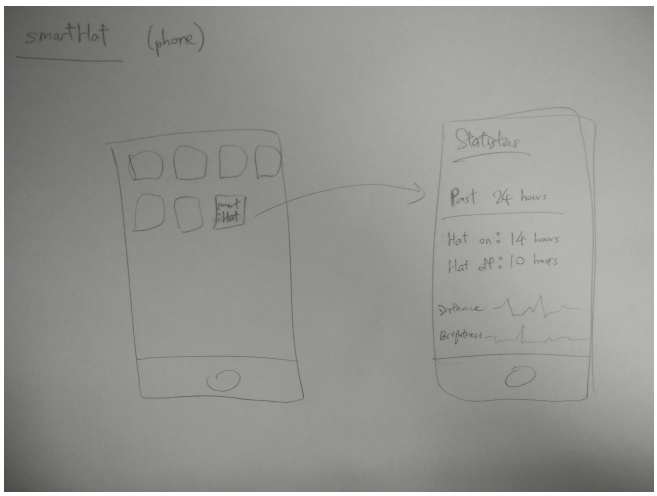

Fig 1.4.3

e) Smart Headband

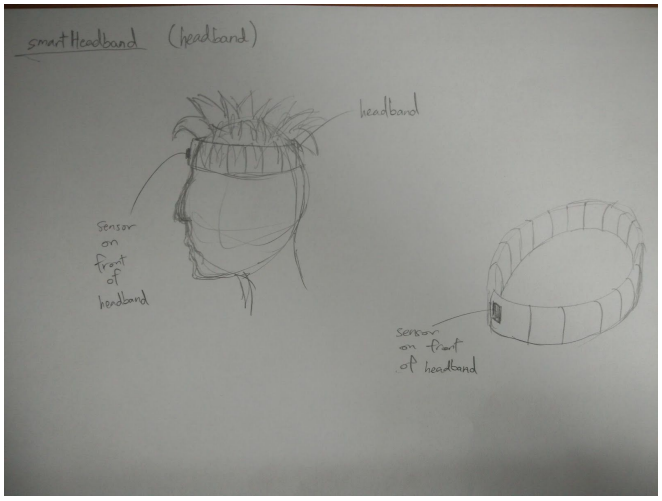

Fig 1.5.1

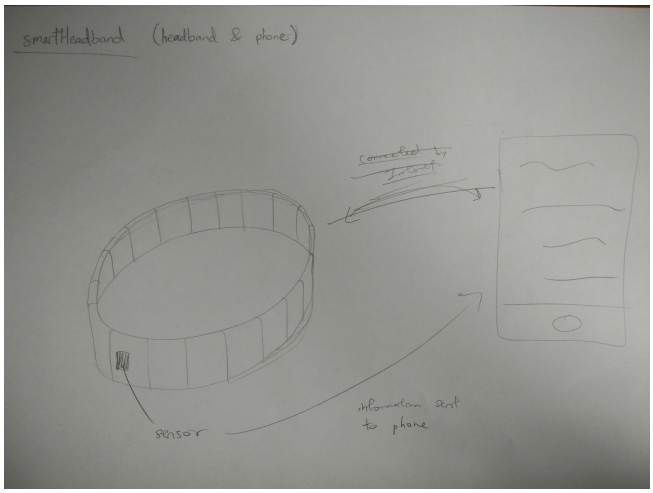

Fig 1.5.2

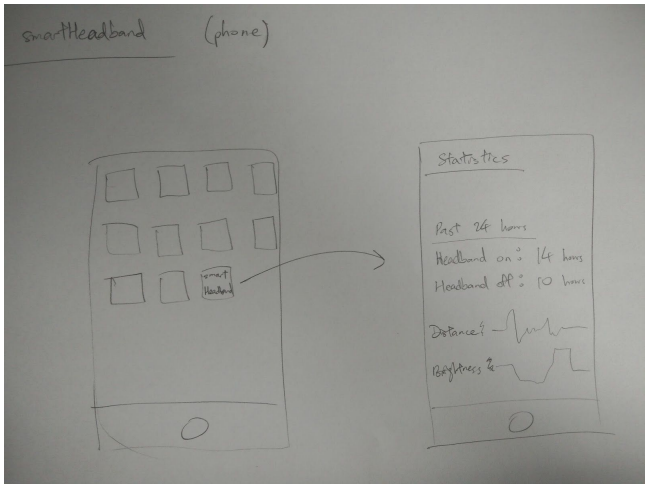

Fig 1.5.3

Selected Interface Design:

Reason for selection:
We are integrating the concept of Internet of Things into everyday device, a pair of glasses in this case, to help users get a understanding of the enormity of bad habits and from those analyzed data, to start changing their lifestyle one small step at a time. Sensors are convenient, small in size and very cost-effective. The methodology is similar to losing weight. In order to lose weight successfully and efficiently, people need to know their calories intake as well as calorie burnt through exercises. Getting these valuable information can help them adjust their lifestyle accordingly to perhaps eat less, more healthy and do more exercises. Nowadays, however, there is no useful way of tracking and user is found clueless.

Glasses are already a common apparel to wear. Plus the fact that users always have their smartphone on them so the notifications through phone is not a problem, rather a convenient since we are so used to getting notifications from phone already. One of the most common practice to prevent near-sightedness is to “用眼30分鐘，休息10分鐘，看書保持35-45公分距離.” (from 國民健康署網站). However, it is difficult for people to know 30 minutes have passed or keep 35-45 cm at all time. We believe it is easy to rest for a short time such as 10 seconds if the user is notified.

Furthermore, in the future maybe we could implement our APP into upcoming smart glasses with capable sensors, for example, Google glass. So our proposal is expandable.

Design Overview:

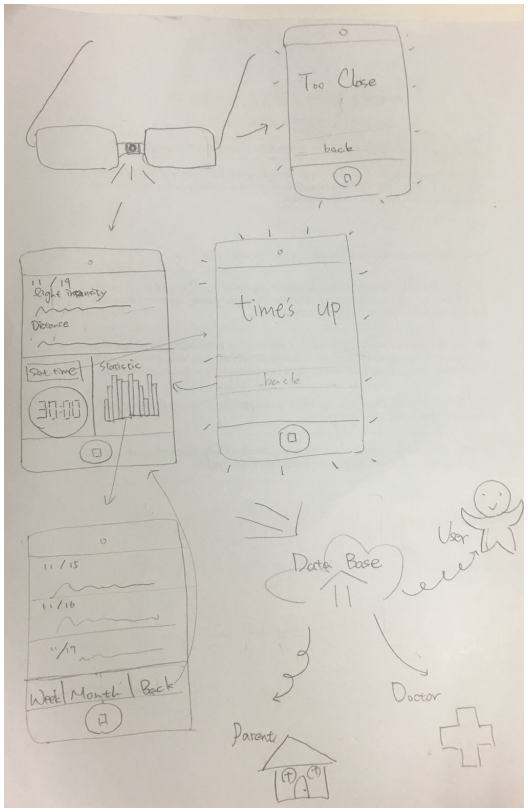

Fig 2.1

Storyboard:

(1)

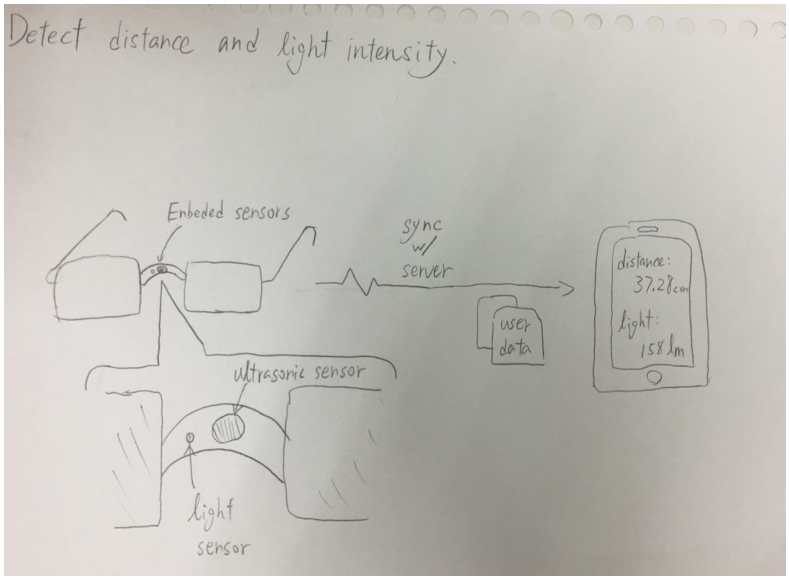

Fig. 2.2.1: In order to satisfy task 1 of detecting distance and light intensity, embedded sensors on the glasses use ultrasonic sensor and light sensor to detect and send data to the phone.

(2)

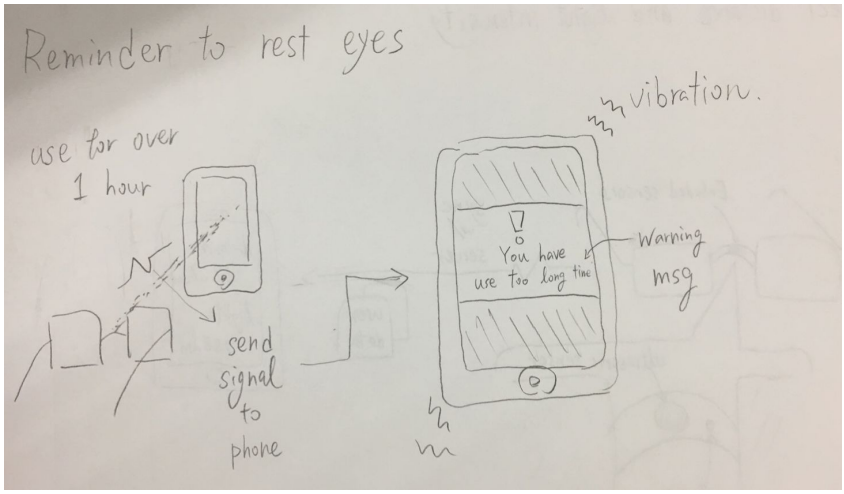

Fig 2.2.2: To allow users to rest after using their eyes for too long, our sensors on the glasses detect non-stop activity and if the time reaches over 1 hour, for example, it sends signal to the phone and the phone then sends a notification (just like a LINE message).

(3)

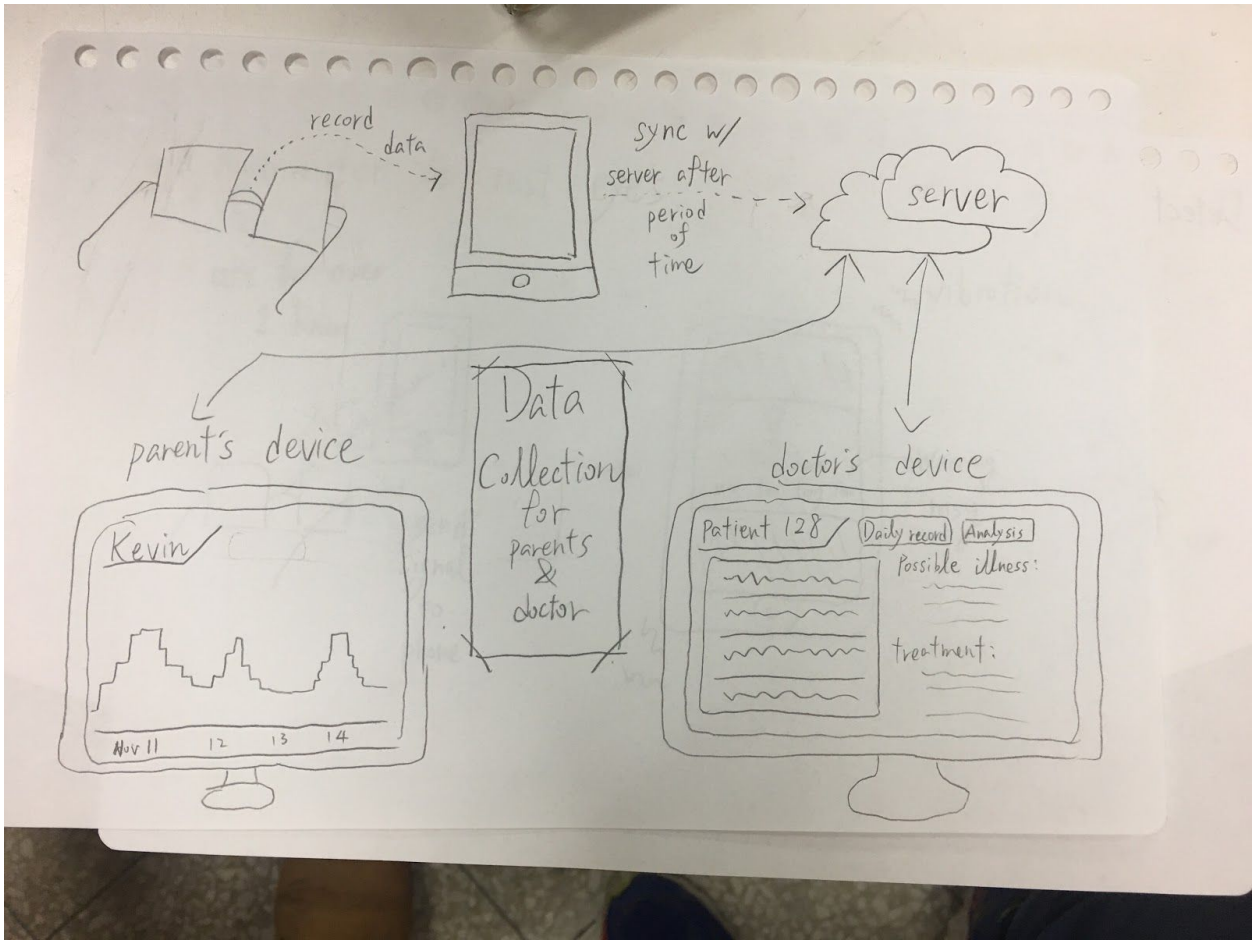

Fig 2.2.3: From the phone, the recorded data is uploaded to the cloud server periodically and the server automatically sends these data to the parent's and doctor's device for them to see how their children/patient is behaving and make necessary adjustments accordingly.

Prototype:

(1) (2)

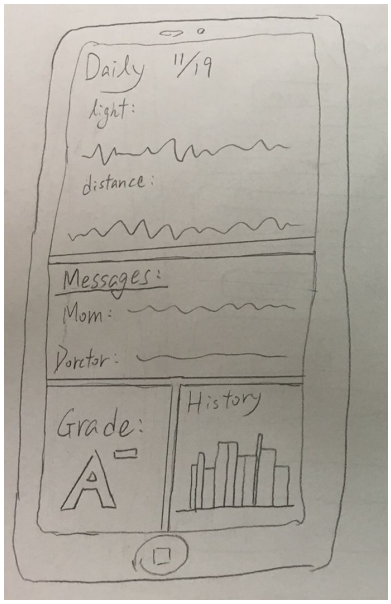

Fig. 2.3.1: Main Interface: user Can check their performance today. Also there bottoms connecting to “Message”, “Grade”, “History” pages.

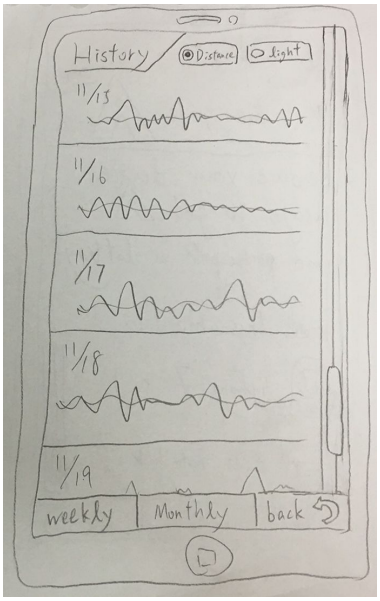

Fig 2.3.2: History page: where user can see their record for any day/week/month. People can click the bottoms above to switch from showing “light”, “distance” or “both”.

(3)

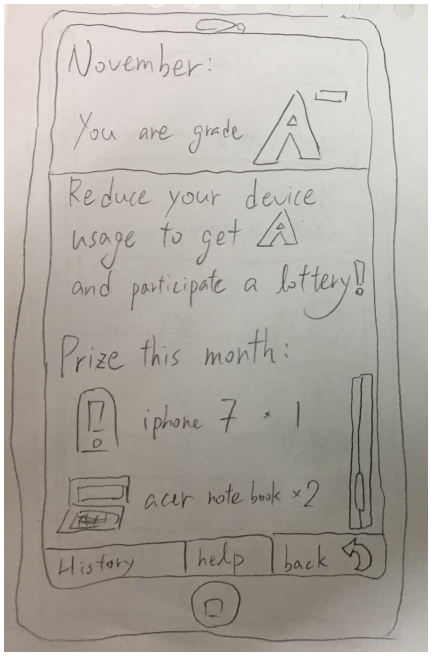

Fig. 2.3.3 Grade page: user can see their performance. An algorithm decides whether the user performed well or not this month. If the user did

(4)

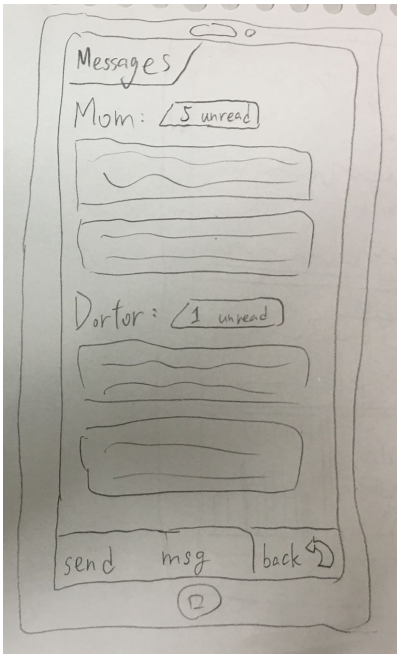

Fig. 2.3.4: Message page: user can check messages from their parents or doctor here.

good enough, they can participate a raffle (sponsored by the government or hospitals).

Method:

1. Participants: demographics, how recruited/compensated

We randomly pick participants in campus. We first ask them whether they are available to have time to try our prototype. We have 5 participants tested. Since we had made sure they accept no reward survey, we did not prepare any compensation expect a thank.

2. Environment

We pick participants randomly in campus, most of them are people walking around 德田館. We invite them to go in 德田館, and surveyed them in classroom.

3. Tasks

Task(1): All participants we chosen are people with glasses, we put on a sensor(not real ones)on their glasses and tell them what sensor do.

Task(2): We demonstrated the message/warning appear on phone when people are to close to phone or the environment was not suited for using device. And told people if they used too long time, the device can also alert them.

4. Procedure

凱傑 was mainly the team member who do the surveys, he recorded user behaviors and answer their problem. Also, if people have a problem, he did his best to answer them.

5. Test Measures

During the experiment, we check where the user pressed intuitively. We found that sometimes the user became confused and asked the we questions. We noticed when a user enjoyed a particular feature by noting their body language.

Results:

Feedback:
(1)
- In the UI, “set time” is not intuitive enough and user did not know what is it for.
  We have made it so that timer starts automatically when sensors detect eye activity.
- Users get to choose to decide whether send data back to the parents. For instance, users age 21 or older may good self-control and do not need any parents or seniors to supervise them. In this case, they can just see the data on the phone itself and adjust accordingly.

(2)
- What does distance stand for? User did not get it at first sight.
- User wondered if it the phone always receiving? Does the app run as background process? Would the app track location and invade privacy?
- Setting time/time reminder is more effective than data collection. User believed that entering raffle to win reward is cool.

Our response: Yes, time reminder is more effective for users with good self-control and it also looks more practical on paper. However, some people may not take those time reminders seriously enough, if so, data collection can determine growing gravity of too-much-eye-strain and ultimately analyze those collect data to send a final signal to tell users to “STOP NOW.” Also, it can be used to assign a grade and the grade determines the reward.

(3)
- Young kids may not set the time by themselves.

Our response: The time reminder starts automatically when the sensor detects ete activity.
- There needs a simple analytics or summary on those collected data. Some parents are busy all the time and they may not have lots of time on looking at the app.

(4)
- First response: laughter.
- Kids do not care much about nearsightedness, it is more for parents. (Parents have a supervising, control role in children’s life).

Conclusion:
From the feedbacks, we learned that our prototype was not intuitive enough in a way that the buttons the icons are not very straightforward. For example, initial UI had “Set Time” and “Statistics” and user did not understand the need for a timer and what do the stats know clearly. We needed to make it clear to the user what the specific elements do. Therefore, we made some improvements and changed the wording and representations.

Word Count: 1194

Appendix

Consent Form

The Health team application is being produced as part of the coursework for HCID Fall ’16 at National Taiwan University. Participants in experimental evaluation of the application provide data that is used to evaluate and modify the interface of Health team. Data will be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers 張承洋、羅際禎、張凱捷、 George Wang、Wei Yang or with Professor Hao-Hua (Hao) Chu, the instructor of the course.

Participant anonymity will be provided by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the experiment and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to the Health team experiment. I also give permission for images/video of me using the application to be used in presentations or publications as long as I am not personally identifiable in the images/video. I understand I may withdraw my permission at any time

Name _____
Participant Number _____
Date _____
Signature _____
Witness name _____
Witness signature _____