Email to Yongheng

Hello Yongheng,

We are contacting you with the current status of the project that was assigned to us. We have been very solution-driven up to this point, however many needs that you currently have may be addressed by a different system than the one you are currently considering. I believe that this will take more time to complete, but for right now we are sending out a new user survey that is less solution-oriented for people to be able to design a system that would satisfy a larger number of end users. By leaving out some features that may seem nice to have, a simpler system could be made that would be more reliable and easier to operate for more users. Some aspects of the digital lock concept may still be used if they directly resolve current user issues.

With this given update, we hope to be able to meet with you to talk more about our current plans and concept ideas for this project. We are available to meet on zoom on Sunday, November 19, any time between 4 to 7 PM. Does this time work for you?

-Team 1

Miguel Cruz

Brayden Chipman

Ashwin Halepet

Vance Padilla

Plan to meet Monday Next Week, BEFORE WEDNESDAY

In Meeting Notes 4:04PM BC 11-19-23

We need more survey sent out

We might not go digital based on user needs and wants

-a lot of people when using the lab won’t want to have to use their phone to unlock the fridge every time they do it, or might not even want to unlock lock the fridge at all, so a lower tech solution might be better

-potentially just a sensor and the latch

-put settings on phone app (potentially) such as set it unlocked for a certain time period

-more problem of forgetting the fridge is open

-autoclosing could be too much engineering

-Yongheng REALLY wants to be able to figure out who is accessing the fridge

-main priority force people to close it

-making sure you know the door is open or closed

**-RESPONSIBILITY? (weird af logic imo)**

**More seems to want ppl to be held accountable over fixing the actual problem?**

**-Wants commercial product**

-Are we creating the product more for user-friendliness?

-Even if complicated, the boss might force you to use it

-how often do you open the lab refrigerator (SHOULD BE A SURVEY QUESTION) ***FREQUENCY***

-These fridges (by the client) are not actually used too often

-Biological doors is what yongheng is emphasizing

-Different fridges may be used more often than others

**-RESEARCH TYPES OF FRIDGES, AND FREQUENCY OF USE**

- minus 80C you definitely do not open a lot, 4C you use more, minus 20C you should avoid opening a lot

-Should we add this to the survey?

-yes

-chemistry fridges are used more than biological fridges

- -20C less used, 4C more used

Who did we send the survey to last time? We can send to ppl who hopefully are all bio labs like his

**We could ask people to experience labs, and different types of labs**

**-Biological fridge**

**-Chemistry fridge**

**Design latch for one type, Can’t work for both (UNLESS….?)**

-pin pad on fridge that locks it, and if you want people to hold accountable for it, you can assign the person a different code

-sensor (thinking of one of the small laser ones so when one of the laser ones break it’s open)

-method to close it forcefully, some mechanism on the side of the hinge that can close it by forcing it back into a 90 degree angle

What is the problem between chemistry and biological fridges

Chemistry

* -80C not used that frequency
* You can keep some chemical at -20 but if it’s thawed it’s no problem
* Not as cautious (good practice but not must)

Biology

* Thawed -> massive problems
* Losing RNA will cost more and will biodegrade
* A lot more people stay later

-Having alarm and notification system might beredundant

**CLIENT WANTS A LOG-IN SYSTEM IF SET AFTER/BEFORE 5-9 PM.**

**Alarm, client also likes?**

SUMMARY (for Adam/Miguel)

4:39PM 11-19-23 BC

Met with client, client got annoyed that the TAs and teachers suggested a lower security option. We found that the reason for this was because the client is mostly focused on the -80C fridges in his biological lab, which hold VERY valuable items that denature easily. Additionally, and most importantly to the source of the disconnect, the fridges that are intended to be locked are not opened frequently.

A second point that’s less important is that the client wants people to be held accountable for forgetting to close the door, which felt a bit punitive so we redirected him towards something that more alerted people immediately so that they’d close the door.

We also discussed some ideas with him and he found our early concepts favorable.

Biggest take-away is that we probably have to either send a different survey, send the survey towards specifically people with these higher security fridges, or most likely both.