Deliverable D

GNG 2101
Submitted by: Group 5

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1. Summarize the client feedback that you received during your second meeting for your conceptual design and clearly state what needs to be changed or improved in your design.

The following statements conclude the second client meeting:

- Recapped the previous meeting with the client to ensure a clear understanding of the conceptual designs fabricated for the client.
- Presented the client with the Deliverable C and went over all stated designs
- Client was concerned with the reliability and feasibility of the top three designs
- Client requested that the implementation of the code be simplified, so some working project is better than nothing.
- The client went over the fact of how important this project can be to the patients and stated that he started to work on this earlier
- Client stated that he will get in touch with us and provide us with the source code that he has so we can continue what he started
- The client requested that we have a clearer understanding of the design by the next meeting and have a thorough plan established.

Based on the second client meeting, the understanding of the project has clarified, to the point where the conceptual designs can have technical aspects accompanied to them. Such as the break down of the code, how it can be implemented, and how the modulus hardware components of the device can be manufactured. The main priority of the project would be to construct and optimize the code, once that has been accomplished, the hardware components of the device can be finalized.

2. Develop an updated and detailed design of your concept, based on your client meeting:

The overall system has not changed drastically since the client meeting. Rather, the approach and specifics of implementation have been determined further. In this section, a detailed overview of both the hardware and software of the product are presented.

Based on topics for the client meet, an update (for detailing) was made to the system. This update can be seen in the system level block diagram here**.**

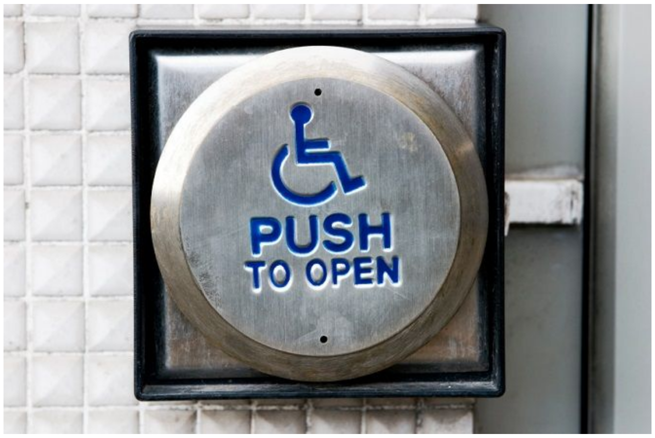


Figure 1.

Our idea works like the push to open button on doors but in this case the user pushes a button and it automatically connects them to wifi.

For a software approach we will focus on this software prototype model. Our idea involves a very basic software which basically prompts the wifi to connect when the source code is run and the wifi password is connected for the patient.

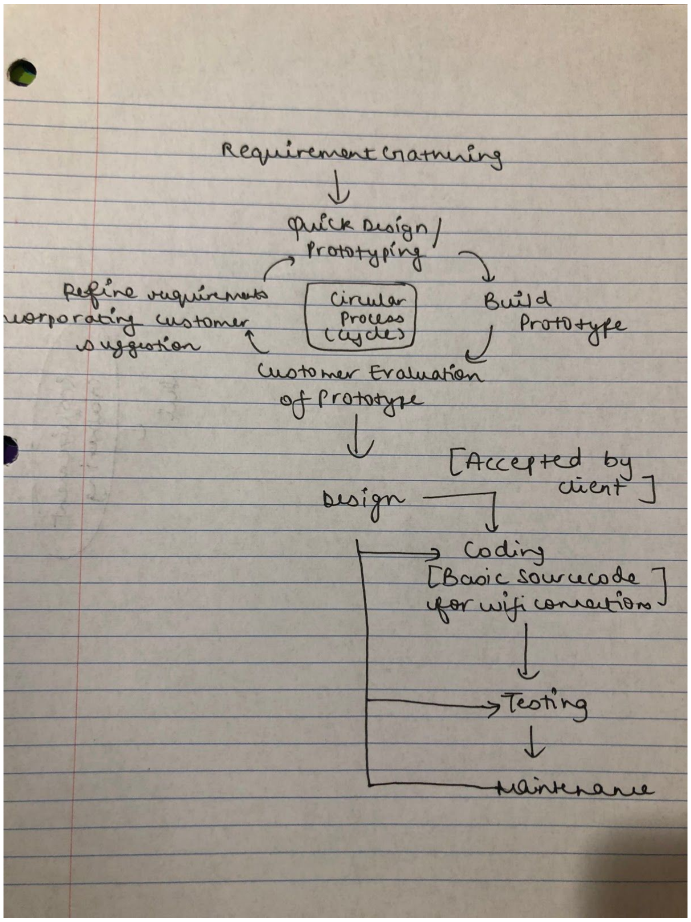

Requirement Gathering
Quick Design/ Prototyping
Build Prototype
Circular Process (cycles)
Customer Evaluation of Prototype
Refine requirements ncorporating customer suggestion
Design
[Accepted by client]
Coding
[Basic sourcecode for wifi connections]
Testing
Maintenance

Figure 2.

3. As a group, we developed critical product assumptions and divided them into 3 branches which includes,

Problem: we came up with many critical problem assumptions many of them were right and the others were wrong, in order for the project to be successful, we avoided making unreasonable critical assumptions for example; “there is a problem for that or everybody has that problem”. We selected the best critical product assumptions and it became our problem statement “A need arises for patients with different problems at Saint-Vincent hospital, who find it difficult to sign into wifi connections at home or workplaces. The client Bocar N'diaya requires a password manager software application with hardware components that vary following patients problem (eg; buttons), the software enable password autofill, stores passwords and creates new passwords every month. solving this problem makes wifi connection easy for Bocar”.

Solutions: we came up with many critical solution assumptions, many hard what our clients required and the others were fruitless, in order for the project to be successful, we also avoided making unreasonable critical assumptions for our solutions for example; “ I have the right solution! What other solution could there possibly be?!”. The solution for our project is “the program will extract the password from a given document and proceed to input the data into the appropriate columns. The program will ensure that if and when the internet connection is lost, it will proceed to reconnect with minimal assistance from the user. The program will be accompanied by modulus hardware attachments that can be tailored to fit the patient's needs. The modulus capabilities will be able to assist patients with a variety of disabilities ranging from being visually impaired to having missing limbs”.

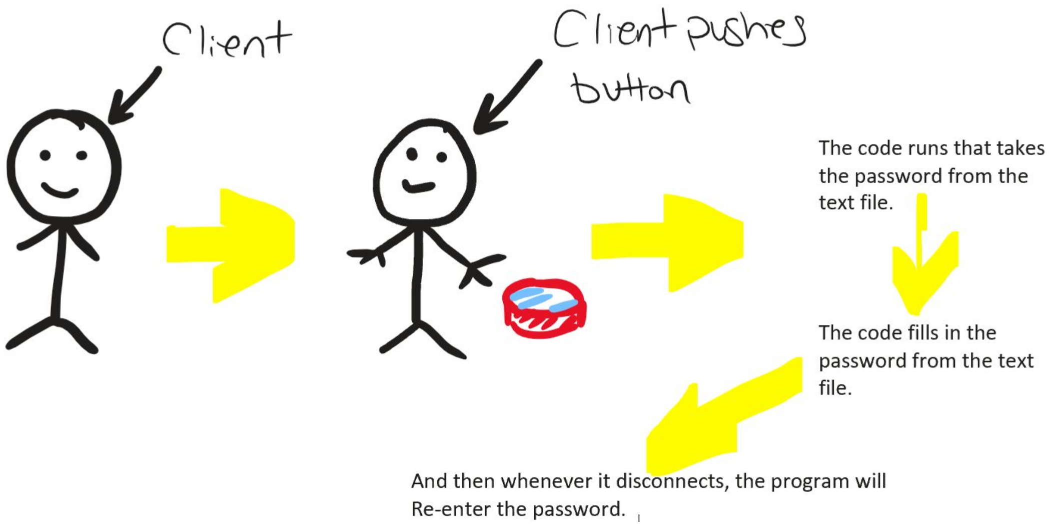
Implementation: we came up with many critical assumptions for implementation of our solution, many of them were right and the others were wrong, in order for the project to be successful, we avoided making unreasonable critical assumptions for example; “How hard could it be to implement that? What could possibly go wrong?”. These are all incredibly dangerous to the success of the project. We are carrying out our implementations based on the set-out design constraints, benchmarks and target specification below are the target specifications needed for the project.

- Efficiency: How efficient is the software and device? Does it allow the patient to connect to the wifi with minimal effort and complexity? Should take minimal effort and connect within two minutes.
- Modulus of hardware: We don't want too much hardware for the patient to store and have to move around if a room-change were to happen. Easy for transportation. The user will transport with them at most one device.
- User-friendly: We want all users to be able to use the device, meaning we have to have multiple devices to work with user's disability and needs. At least be able to connect when alone.

- Expense: The overall project can’t reach a high number in expense due to limited funding. Maximum one hundred dollars.
- Software needs to be updated exactly once a month
- Hardware must work for all disabilities.

4. Document your prototype using as many sketches/diagrams/pictures as required and explain the purpose and function of your prototype.

We begin our prototyping with the low fidelity prototype because it allows us to manage cost, develop an idea or set of ideas rapidly, Iterate, test, evaluate, and validate many assumptions about the proposed solution in a short amount of time with limited resources. It also allows team members to explore different ideas and discuss the usefulness of various possible solutions. We are making use of sketches, simple cardboard models, storyboards, etc.



The code runs that takes the password from the text file.

The code fills in the password from the text file.

And then whenever it disconnects, the program will Re-enter the password.

Figure 4. is a storyboard describing how the client should make use of the device and the actions the device carries out.

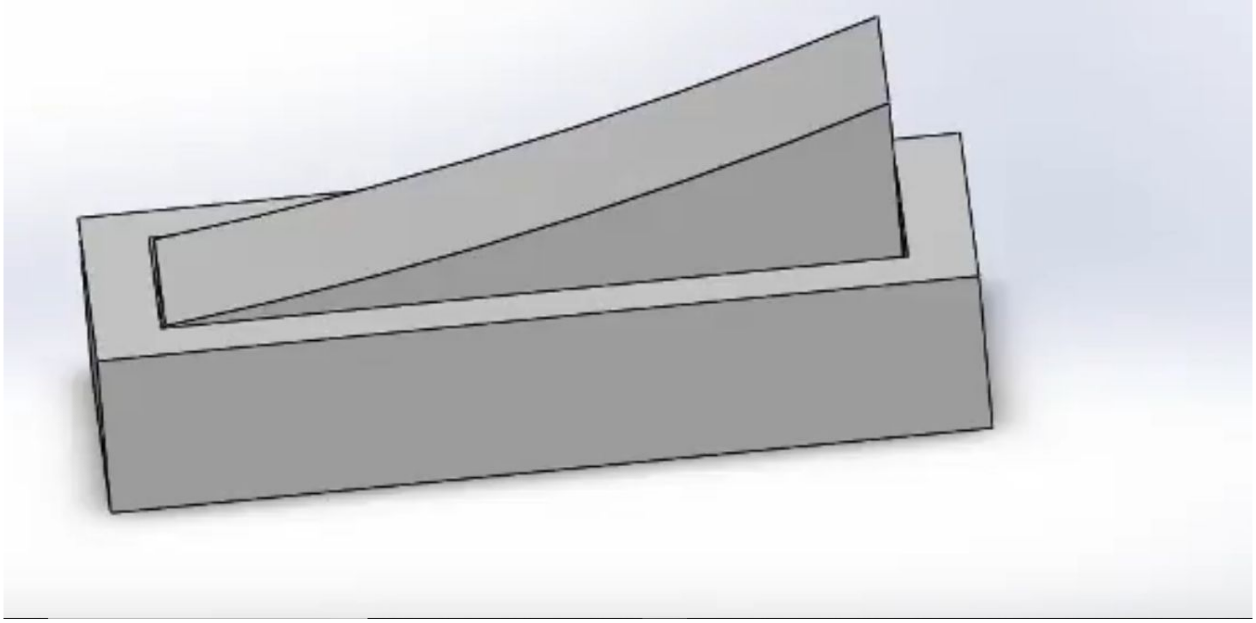


Figure 5; this is a Solidworks sketch for the exterior part of the project.

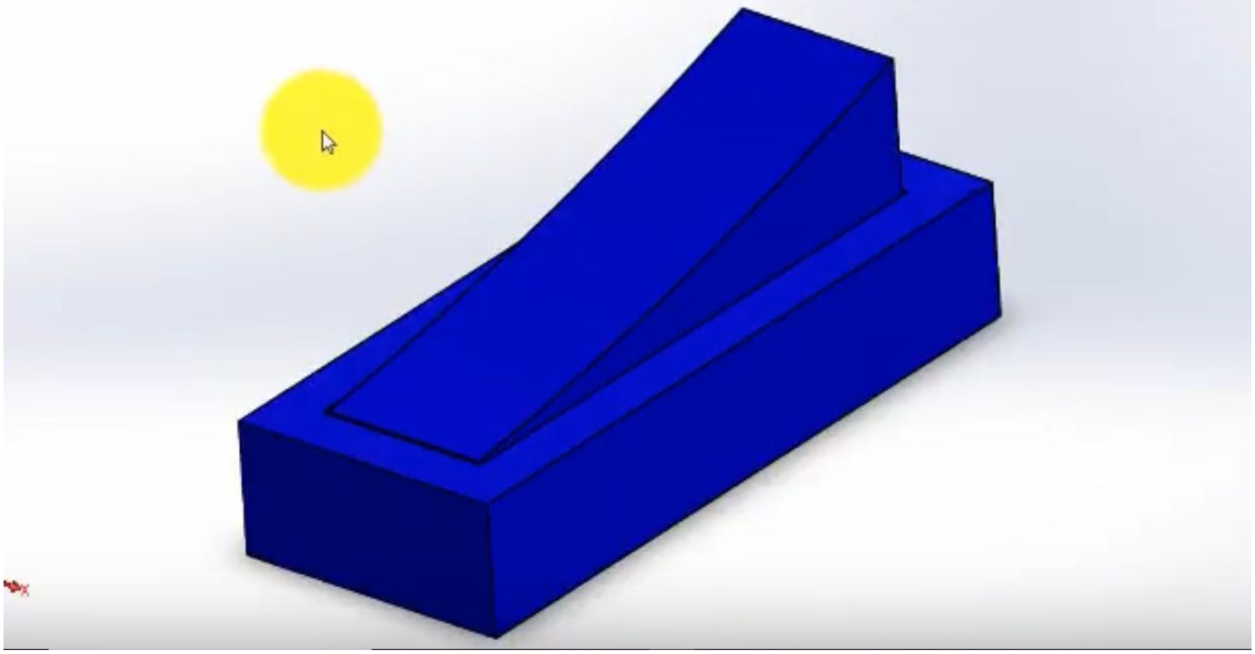
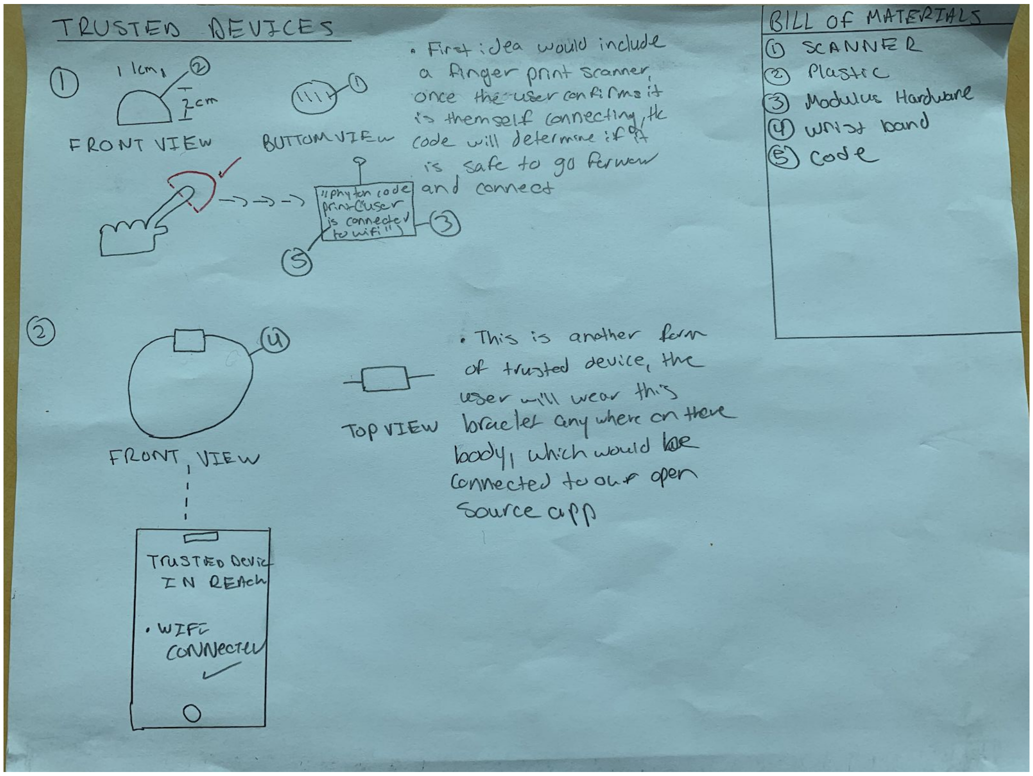


Figure 6; more sketch with a different color.



- First idea would include a finger print scanner, once the user confirms it is themself connecting, the code will determine if it is safe to go forwar and connect

- This is another form of trusted device, the user will wear this braclet any where on there body, which would be connected to our open source app

BILL OF MATERIALS
① SCANNER
② Plastic
③ Modulus Hardware
④ wrist band
⑤ code

Figure 7.

The purpose of this product is to allow the client logging into his wifi network with just a push of a button or switch so that the client does not need to input his password. The solution is that the program will extract the password from a given document and proceed to input the data into the appropriate columns. The program will ensure that if and when the internet connection is lost, it will proceed to reconnect with minimal assistance from the user. The program will be accompanied by modulus hardware attachments that can be tailored to fit the patient's needs. The modulus capabilities will be able to assist patients with a variety of disabilities ranging from being visually impaired to having missing limbs.

5. Carry out prototype testing, analyze and evaluate performance compared to the target specifications developed in Project Deliverable B and document all your testing results. Present your testing in an organized, tabular format that shows expected versus actual results.

The table below shows the test result in relation to the target specification of our project for our first prototype.

Test	Target specification	Result
Efficiency	The software takes minimal effort and connects within two minutes.	Needs more work
Modulus of hardware	Easy for transportation, meaning the user will transport with them at most one device.	Good
User-friendly	We want all users to be able to use the device, meaning we have to have multiple devices to work with user's disability and needs.	Good

Table 1.

6. Outline what your team intends to present to your client(s) and what information you would like to gather at your next client meeting.

The next time we have a client meet, our group intends to present a finished prototype, this prototype will include our final design and give the client a clear understanding of what we have been working on for the past couple weeks. The prototype is a button that is connected to our code through our Arduino, at the meeting we plan to have all the hardware done but we will still be working on the code. Further information we will need to gather from our client is the exact type of disability the users will have and the up-coming passwords for the wifi. Once we gather the passwords needed to access the wifi we will be able to implement that into our code and have it fully operating.