Prototype 1

Project Deliverable E: Prototype 1, Project Progress Presentation, Peer Feedback and Team Dynamics
GNG 2101 – Introduction to Product Development and Management for Engineers
Faculty of Engineering – University of Ottawa

Group B1.4

Problem Description

- Client is non-verbal and needs a way to communicate with his caregivers
- Has *cerebral palsy* (Not enough arm/finger dexterity to type quickly)
- Client is in a wheelchair.
- High-tech devices like tablets are too expensive.

Customer Needs

Big buttons: easy to press with just a fist.

Mounting/clamp device: attaches onto the wheelchair.

Suggested buttons: change TV channel, hungry, thirsty, bathroom, yes/no.

Target Specifications

Budget: $100

Ease of Use: Client likes using our device.

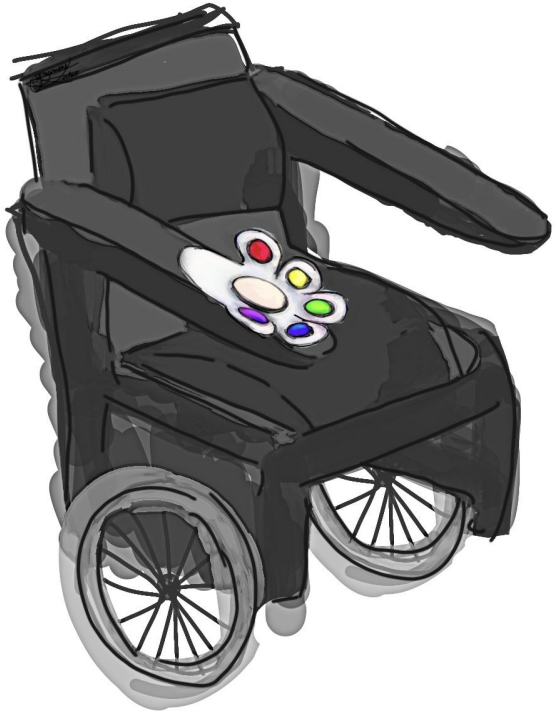
Durability: Device doesn’t break when dropped onto the floor, or the arm snaps with accidental force.

Client Feedback - Initial Ideas

- “Would be perfect, but”
- Demands too much dexterity

Would have been great for a client who:

- Has greater dexterity
- Desires a more discreet, compact device



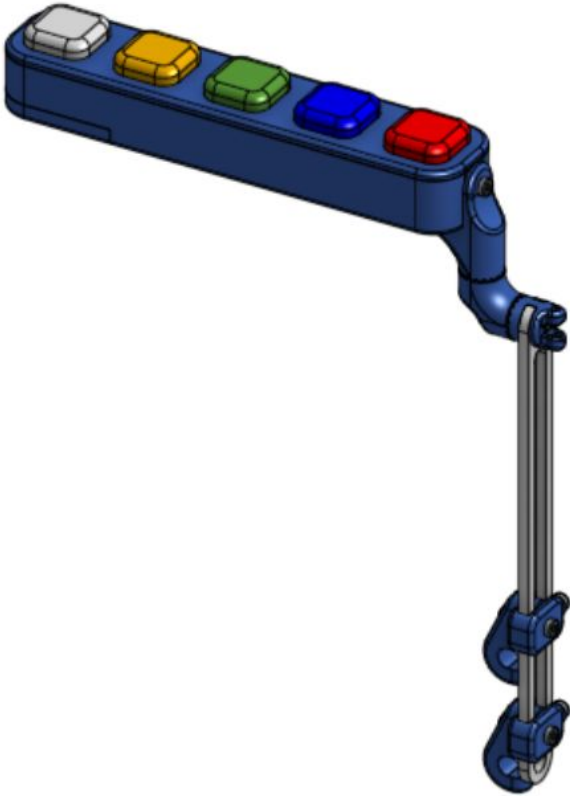
Client Feedback - Initial Ideas

- “That’s cool”
- Too complicated for immediate use
- Dexterity issues

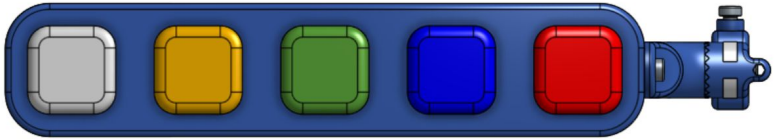
Would have been great for a client who:

- Has greater dexterity
- Requires more phrases in their day-to-day life

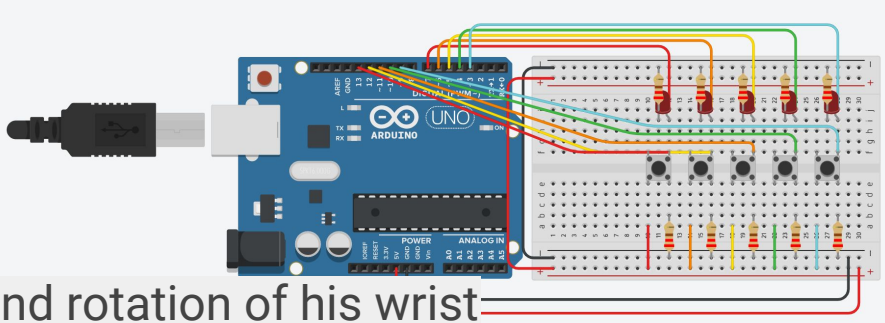
Client Feedback - Our Current Design Moving Forward



- “Great, I like your design”
- Travis (the caregiver) believes that this design, or a very similar design would work best
- Not much additional feedback
- Requires an analysis of our client’s mobility before finalizing



Project Plan



- Find out the client's degree of motion and rotation of his wrist
- Focus on getting the materials we need

Things we want to test for in our prototypes:

- Test that the electronics work well together and can use a single power source
- Test that the client has enough mobility to see all the buttons
- Test that the device can withstand the client's strength
- Test the clamping ability of the device to the wheelchair

Our First Prototype + Test Results

PD A: Contract, client meeting preparation and project skeleton	**4 days**	**Wed 24-09-11**	**Sun 24-09-15**		
Client meet 1	1 day	Mon 24-09-16	Mon 24-09-16	1	
PD B: Sustainability and DFX	**5 days**	**Wed 24-09-18**	**Tue 24-09-24**	**7,1**	
PD C: Problem, concepts and plan	**4 days**	**Wed 24-09-25**	**Sun 24-09-29**	**8**	
Client meet 2	0 days	Mon 24-09-30	Mon 24-09-30		All
PD D: Detailed design	**8 days**	**Wed 24-10-02**	**Fri 24-10-11**	**16,23**	
Detailed design	2 days	Tue 24-10-08	Fri 24-10-11		Justin,Keno,Yasmine, Max
BOM	1 day	Wed 24-10-09	Wed 24-10-09		Noah,Jeremy
PD D quality check	1 day	Thu 24-10-10	Thu 24-10-10		All
PD D projet plan update	1 day	Mon 24-10-07	Mon 24-10-07		Jeremy
PD D Submission	1 day	Thu 24-10-10	Thu 24-10-10		Jeremy
In class design review					
PD E: Project progress presentation	**4 days**	**Wed 24-10-16**	**Sun 24-10-20**	**24**	
PD E.1: Prototype 1	2 days	Tue 24-10-15	Wed 24-10-16		Max,Yasmine
PD E.1: Testing	2 days	Thu 24-10-17	Fri 24-10-18		Keno,Noah
PD E.2: Presentation	1 day	Fri 24-10-18	Fri 24-10-18		Justin,Jeremy
PD E quality check	1 day	Sat 24-10-19	Sat 24-10-19		All
PD E projet plan update	1 day	Tue 24-10-15	Tue 24-10-15		Jeremy
PD E submission	1 day	Sun 24-10-20	Sun 24-10-20		Jeremy
PD F: Design constraints	**7 days**	**Sun 24-10-27**	**Mon 24-11-04**	**31**	
Client meet 3	0 days	Mon 24-11-04	Mon 24-11-04	38	
PD G: Economic and IP considerations	**4 days**	**Wed 24-11-13**	**Sun 24-11-17**	**38,44**	
PD H: Design day	**10 days**	**Fri 24-11-15**	**Thu 24-11-28**	**45**	
Design day	0 days	Thu 24-11-28	Thu 24-11-28		
PD I: User manual	**4 days**	**Thu 24-11-28**	**Tue 24-12-03**	**45**	
PD J: Final presentation					

We are tracking our plans pretty well using Ms projects to assign each member of our group tasks to work on.

So far we've been on schedule during all parts of this project

Questions?