Group 4.4 - Project Progress

Project Key Components

- The client needs a set of 5 durable buttons with tactile feedback to attach to a precisely fit case and keyguard. These must act as styluses for the AAC app on a 10th generation iPad.
  - Buttons must be highly capacitive to work reliably when pressed.
- There are other products which provide similar results but do not attach to the iPad keyguard.
- Ideas for making the buttons tactile: Compliant mechanisms, classic spring-loaded buttons, stamp mechanisms, and magnetic repulsion buttons.
- Ideas for attaching the buttons to the keyguard: Magnets, and dovetail joint.
- Ideas for the case: Acrylic 6-piece laser cut case, and vacuum-formed or 3d printed sleeve case.

Client Feedback

- The client favors the idea of a glued 6-piece case but elaborated that it should use sliding joints to secure the iPad, rather than just use glue.
- It was suggested to add a tether to the case to prevent throwing.
- The use of magnets and small parts was discouraged.
- Client expressed preference for dovetail joint connectors to attach the buttons to the keyguard.
- Client liked the ideas of both box and sleeve type cases.

Project Plan – How we Stay OTOBOS

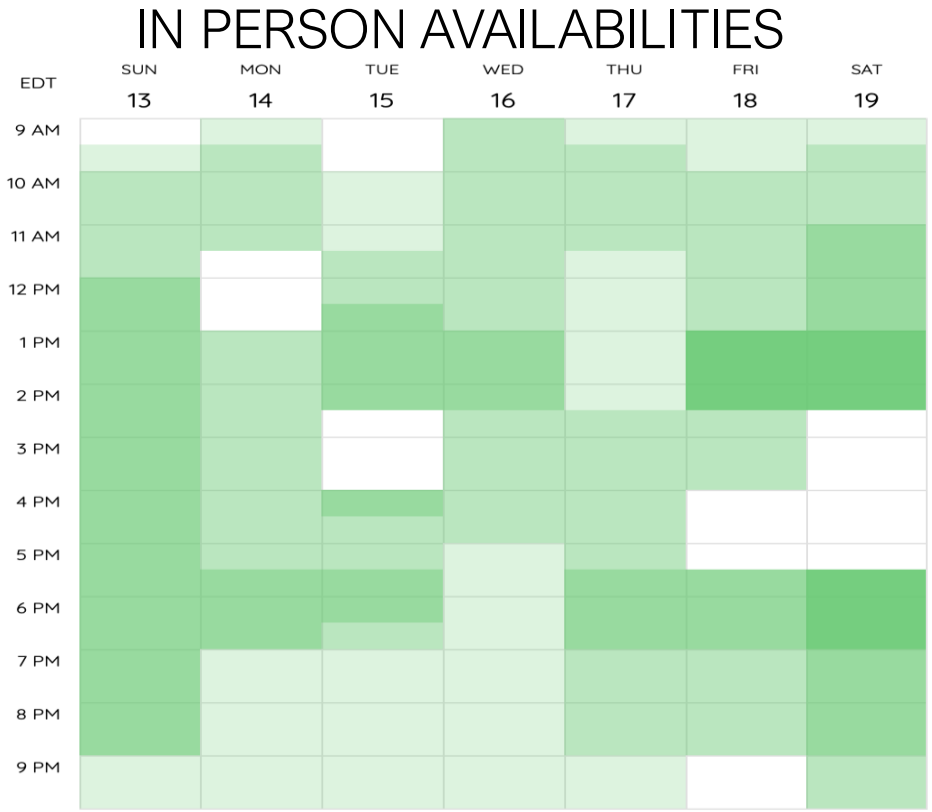
- On Time: Agile meetings to foster open and frequent communication
  - Gantt Chart Deliverable
  - LettuceMeets software
  - Discord task updates
- On Budget: $0 spent of $75
  - As it stands, we have not used any of the allocated budget for this project
  - Materials have been sourced from personal items and funding
- On Scope: Detailed in Project Key Components
  - Detailed benchmarking
  - Defer to Client Feedback

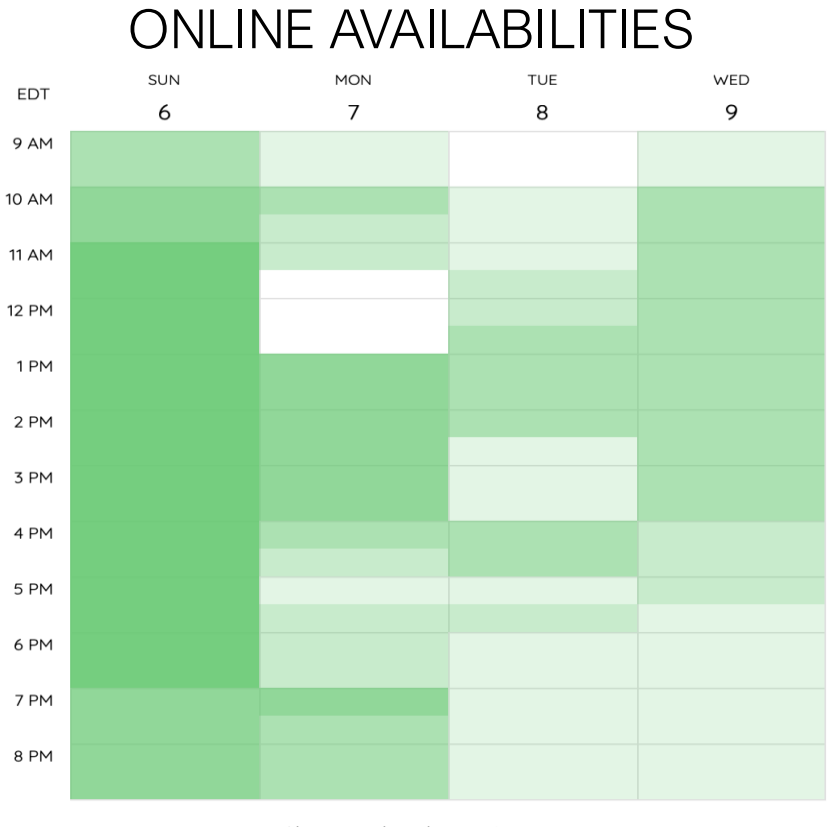
	B4.4 - AAC KEYGUARD BUTTONS	90 days?	Wed 24-09-04	Tue 24-12-03
	Project Milestones	73 days	Sat 24-09-21	Tue 24-12-03
	Client Meeting 1	0 days	Sat 24-09-21	Sat 24-09-21
	Client Meeting 2	0 days	Sat 24-10-05	Sat 24-10-05
	In-Class Desing Review #1	0 days	Tue 24-10-08	Tue 24-10-08
	In-Class Desing Review #2	0 days	Fri 24-10-11	Fri 24-10-11
	Project Progress Presentation D1	0 days	Tue 24-10-22	Tue 24-10-22
	Project Progress Presentation D2	0 days	Fri 24-10-25	Fri 24-10-25
	Client Meeting 3	0 days	Fri 24-11-08	Fri 24-11-08
	Class Review D1	0 days	Tue 24-11-19	Tue 24-11-19
	Class Review D2	0 days	Fri 24-11-22	Fri 24-11-22
	Design Day	0 days	Thu 24-11-28	Thu 24-11-28
	Client Meeting 4	0 days	Thu 24-11-28	Thu 24-11-28
	Final presentation D1	0 days	Tue 24-11-26	Tue 24-11-26
	Final presentation D2	0 days	Fri 24-11-29	Fri 24-11-29
	END OF COURSE	0 days	Tue 24-12-03	Tue 24-12-03
	PD SUBMISSION DATES	73 days	Sat 24-09-21	Tue 24-12-03
	Project Deliverable A	0 days	Sat 24-09-21	Sat 24-09-21
	Project Deliverable B	0 days	Sat 24-10-05	Sat 24-10-05
	Project Deliverable C	0 days	Sat 24-10-05	Sat 24-10-05
	Project Deliverable D	0 days	Sat 24-10-12	Sat 24-10-12
	Project Deliverable E	0 days	Sat 24-10-26	Sat 24-10-26
	Project Deliverable F	0 days	Sat 24-11-09	Sat 24-11-09
	Project Deliverable G	0 days	Sat 24-11-23	Sat 24-11-23

Task Name	Duration	Start	Finish	Predecessors
PD C Submission	0 days	Sat 24-10-05	Sat 24-10-05	76
Client Meeting 2	0 days	Sat 24-10-05	Sat 24-10-05	
DESIGN	7 days?	Fri 24-10-04	Fri 24-10-11	
PD D: Detailed Design	6 days?	Sat 24-10-05	Fri 24-10-11	
D.1 - Detailed Design	6 days?	Sat 24-10-05	Fri 24-10-11	
Review Client Comments	2 days	Sat 24-10-05	Mon 24-10-07	78
Prepare Mechanical Concept Drawings	3 days	Tue 24-10-08	Thu 24-10-10	82
Prepare Electrical Concept Drawings	1 day	Tue 24-10-08	Tue 24-10-08	82
Review and Revise Concept Drawings	1 day	Thu 24-10-10	Thu 24-10-10	83FF,84FF
PM/TA Meeting	1 day?	Fri 24-10-11	Fri 24-10-11	85
Detailed Design Completion	0 days	Fri 24-10-11	Fri 24-10-11	86
D.2 - Bill of Materials and Parts	1 day?	Fri 24-10-11	Fri 24-10-11	87
Material Research	1 day?	Fri 24-10-11	Fri 24-10-11	
BOM Presentation	1 day?	Fri 24-10-11	Fri 24-10-11	
PD D Quality check	1 day?	Fri 24-10-11	Fri 24-10-11	88FF
PD D Update Project Plan	7 days?	Fri 24-10-04	Fri 24-10-11	
In-Class Design Review	0 days	Fri 24-10-11	Fri 24-10-11	85
EXECUTION	46 days?	Fri 24-10-11	Fri 24-12-06	
PD E: Project Progress Presentation	12 days?	Fri 24-10-11	Fri 24-10-25	
E.1.1 - Prototype 1	9 days?	Fri 24-10-11	Tue 24-10-22	
E.1.2 - Testing	2 days?	Wed 24-10-23	Thu 24-10-24	96
E.2.1 - Presentation	1 day?	Fri 24-10-25	Fri 24-10-25	97
PD E Quality Check	1 day?	Sat 24-10-26	Sat 24-10-26	98
PD E Project Plan Update	12 days?	Fri 24-10-11	Fri 24-10-25	

MS Project – Gantt Chart

Meetings – LettuceMeets





Prototype 1

- We focused on creating capacitive buttons.
- To avoid wasting material, the prototype focus was the button, with very little focus on the housing for the iPad.
- The prototype targeted Design for Simplicity and Durability.
- With this prototype we achieved 98% reliability activating the touchscreen.

Prototype 1

- An aluminum wire snakes through the separate pieces to connect to a stylus attached at the rod.
- This connects human touch to the screen and allows the button to have a high reliability rate.