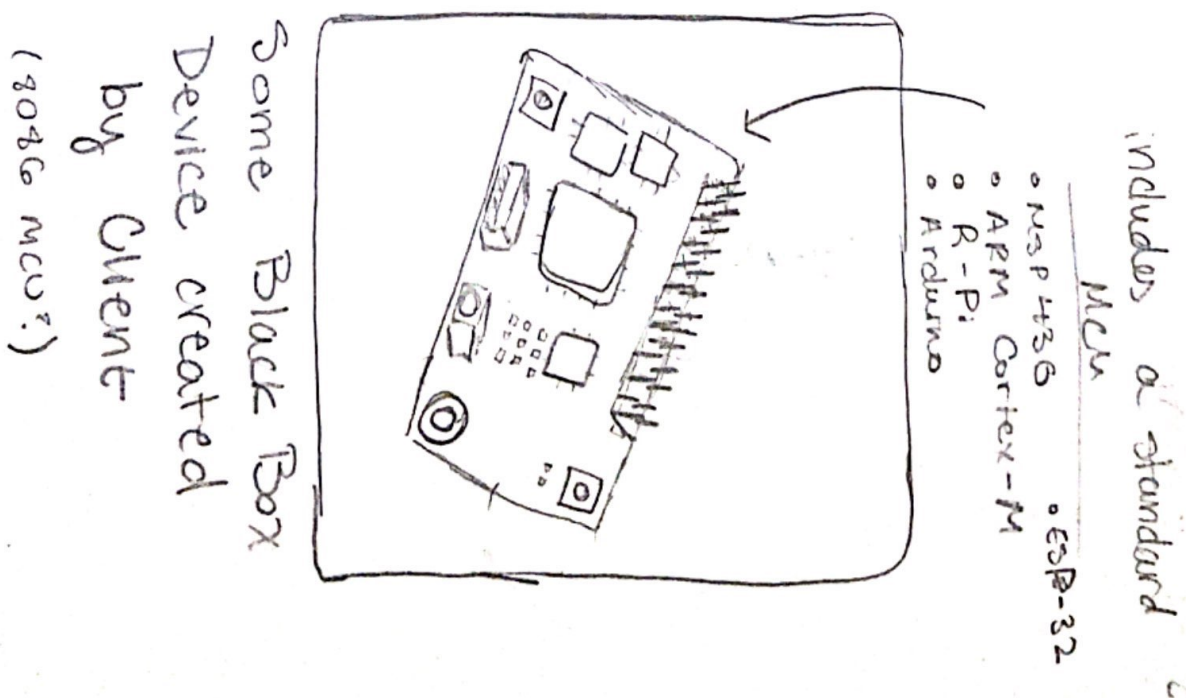
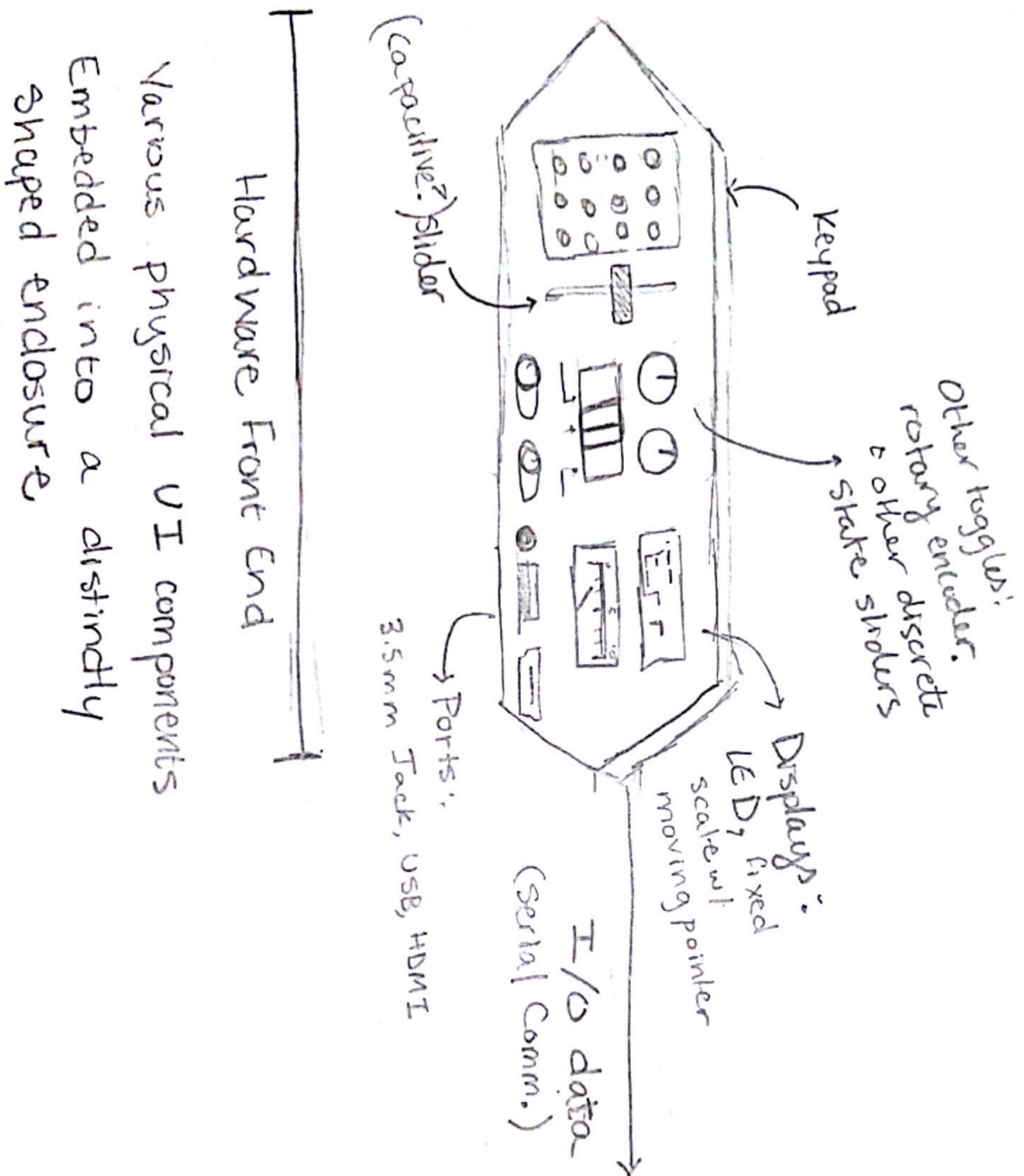
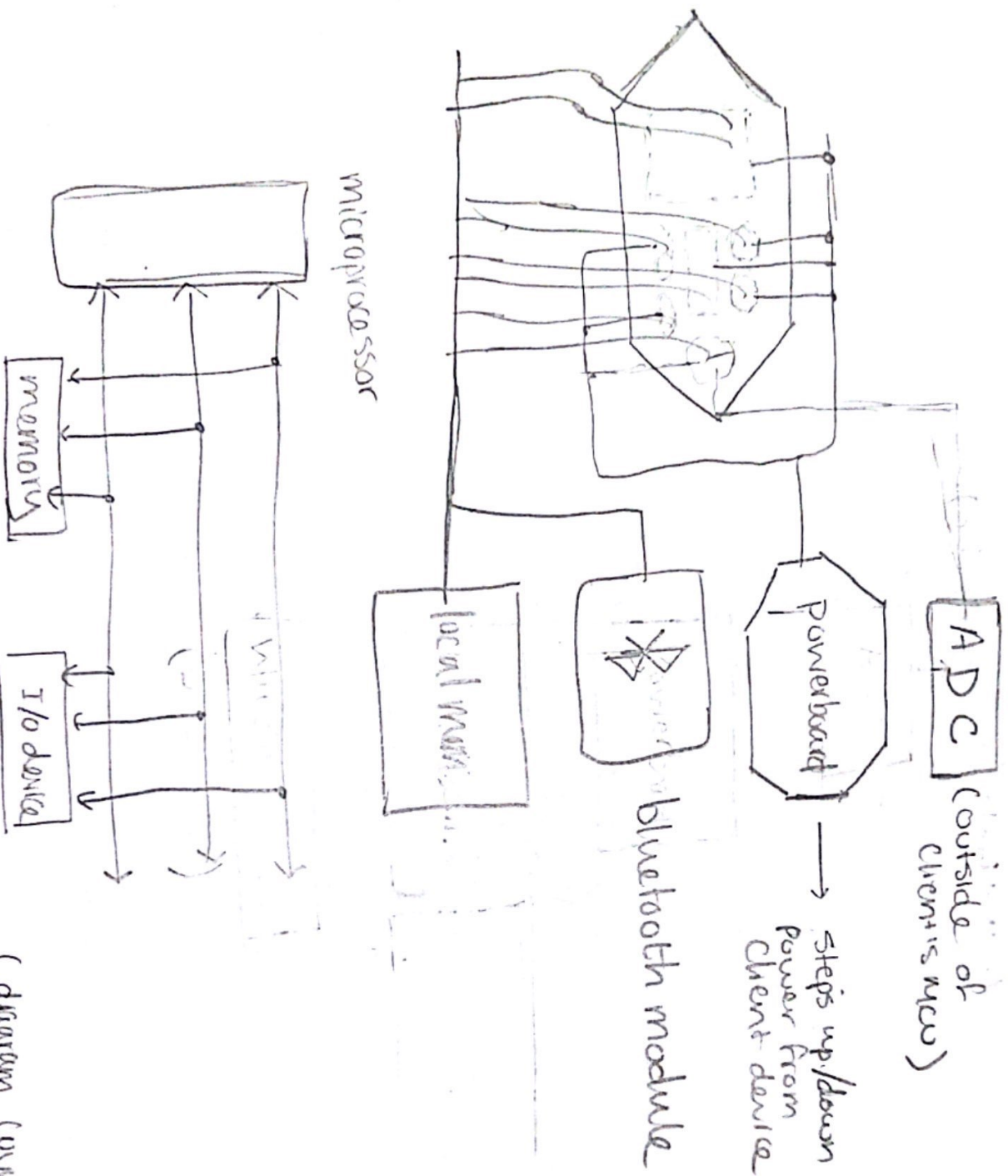


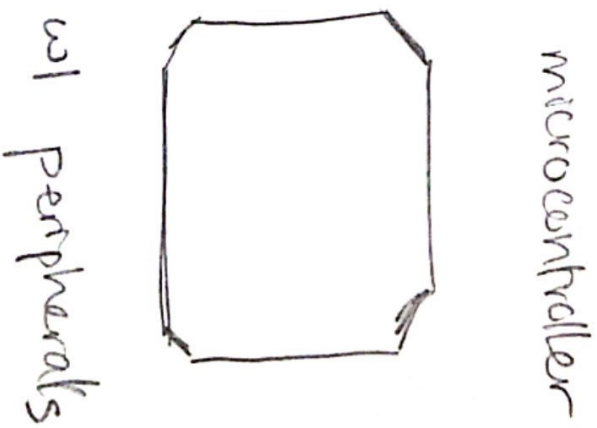
Concept Drawing 1 : The Base Idea



Concept Drawing 2 : Hardware Back End



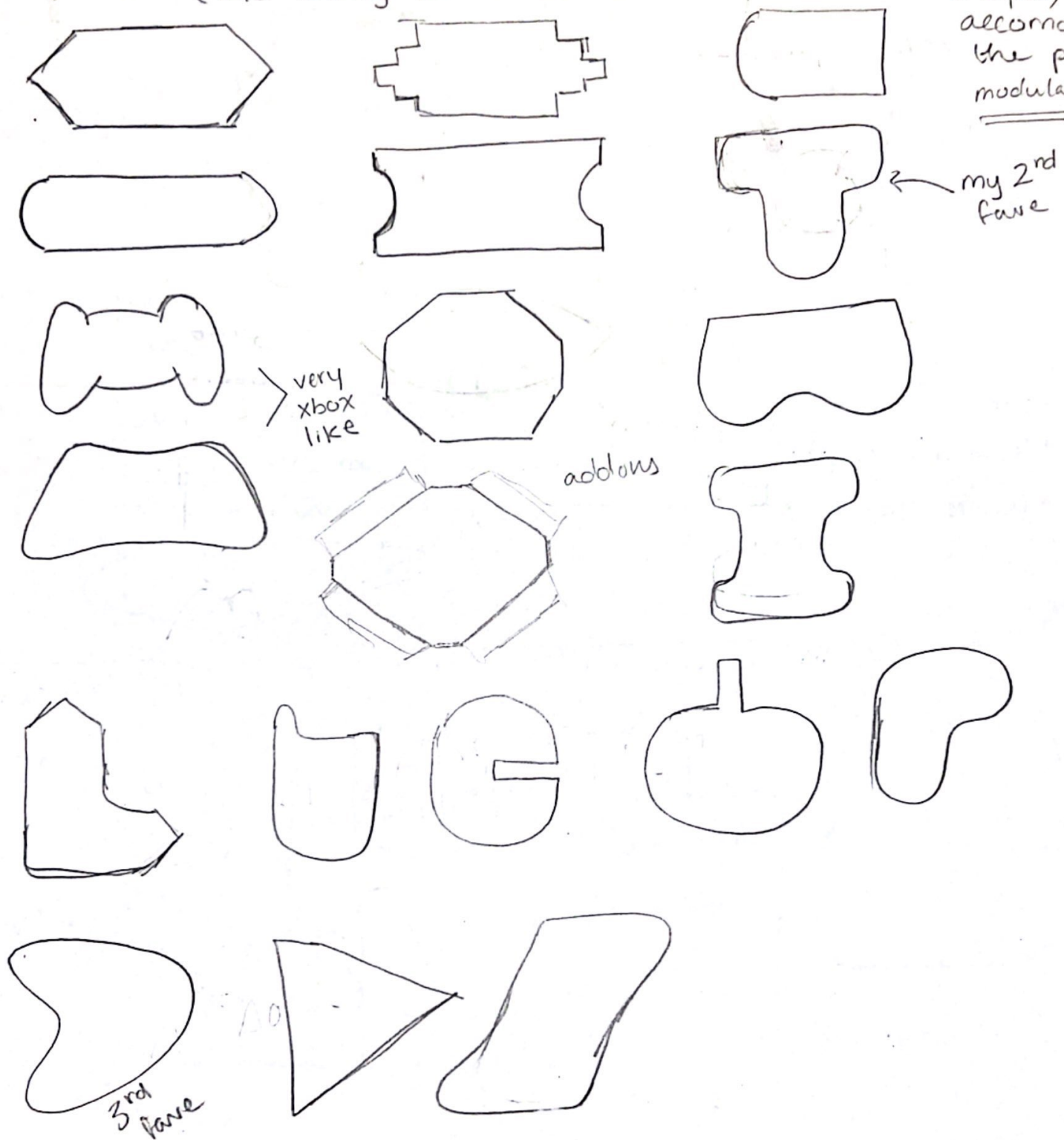
Part of client dev. *



(diagram courtesy of tutorials point com)

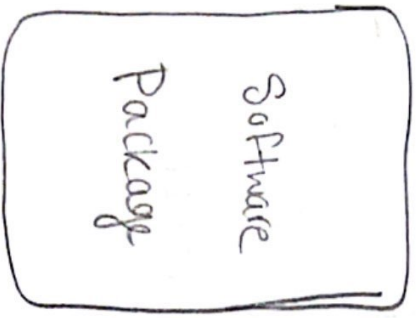
Concept Drawing 3: Enclosure Shapes

The panel must have a distinct & Recognizable Shape
(w/o losing too much usable area, ergonomics, stacking)
simple, accommodate the pieces, modularity

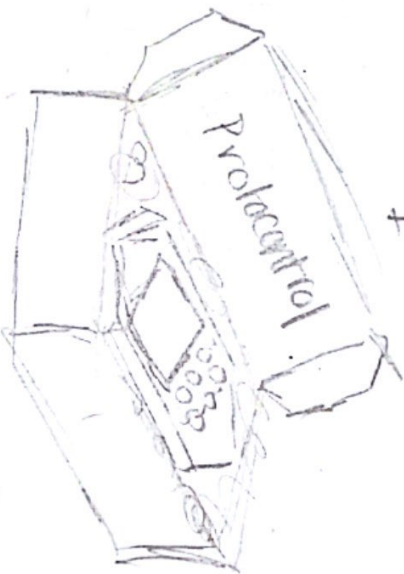


- 3D printed w/ ProtoControl logo
- environmentally friendly materials (recycled plastics)
 - TPU
 - Tive TPE
 - R-PLA
 - high impact polystyrene

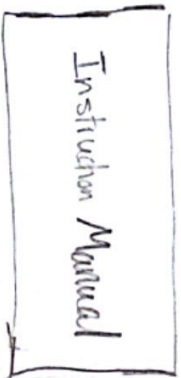
Concept Drawing 4: The Dev. Kit



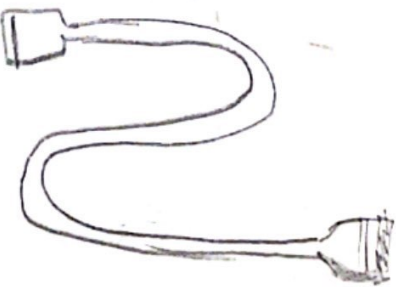
+



+



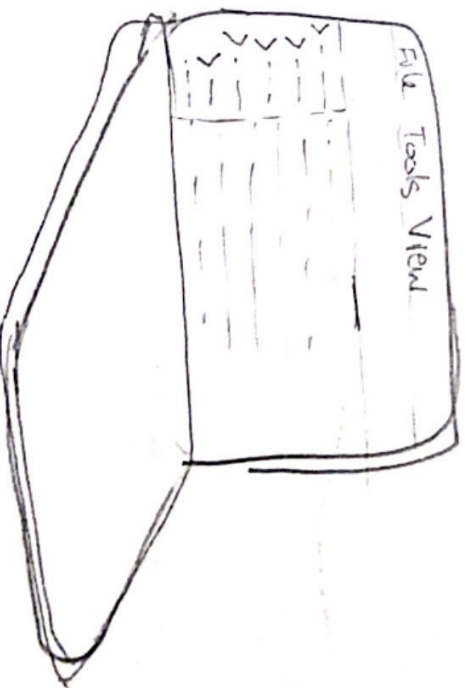
+



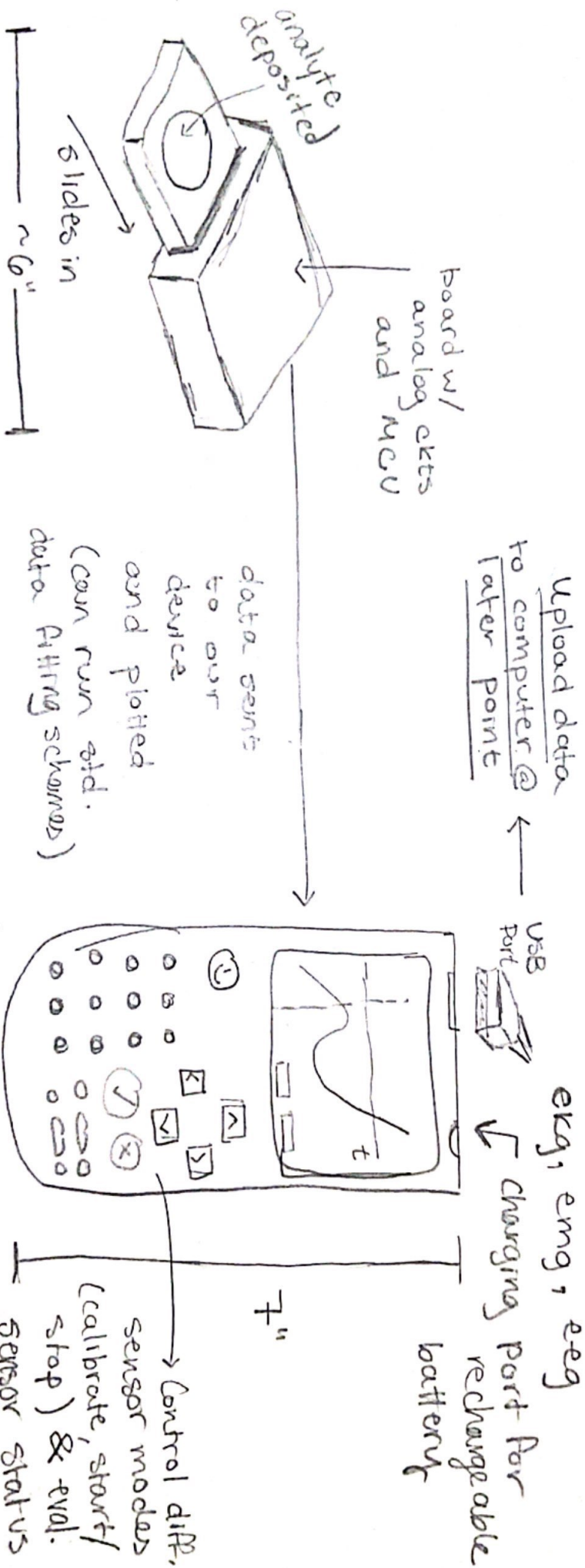
USB to USB-C

- Libraries
- APIs
- IDEs
- Testing tools & compiler
- Documentation

(panel comes w/
custom designed
layout of selected
pieces)

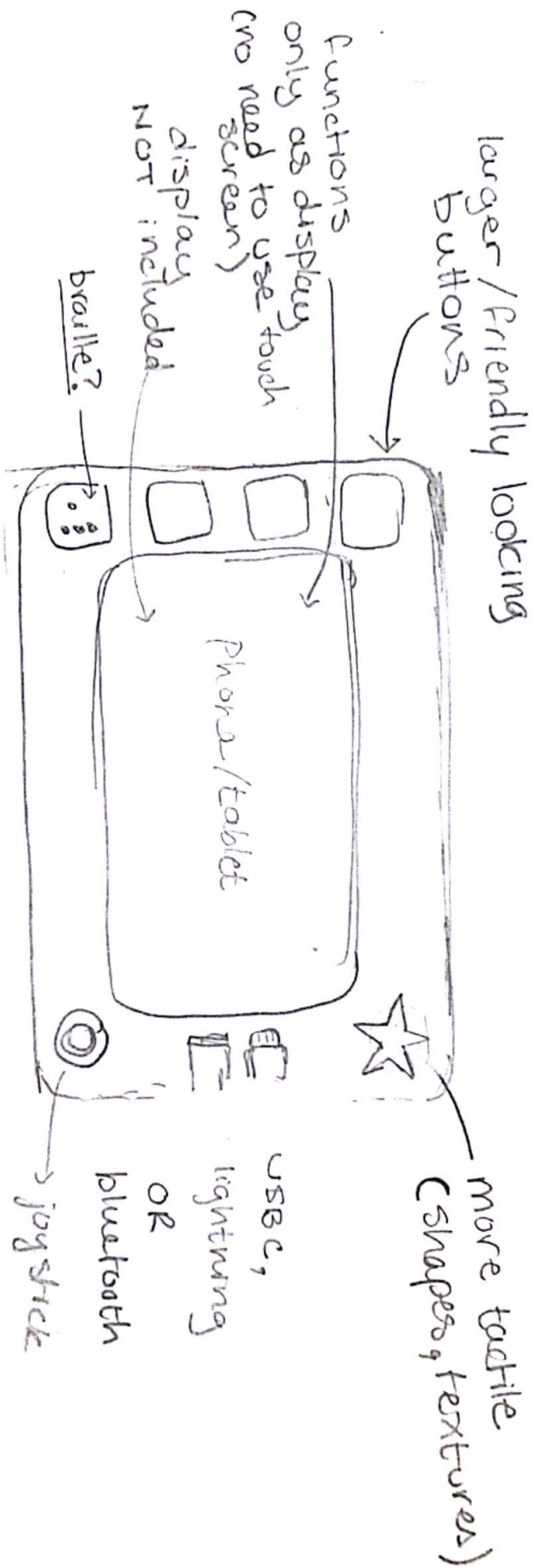


Concept Drawing 5: Industry Application (biomedical instrumentation)



- * Although data fitting & plotting is nothing new, it is worthwhile to have portable devices when testing must be on site (avoids hassle of only conducting tests in lab w/ computer)
- * There are privacy & security laws regarding medical data & this system keeps data safe until it can be uploaded to larger comp system later.

Concept Drawing 5: Console to insert phone/tablet w/ App interface (children's toys/apps)



- Console hardware must interface w/ popular phones/tablets
- Console receives data from apps & button function shifts dep. on the game
- like nintendo switch?
- works w/ various apps!
- Could have applications for differently abled (blind, autism)
- could function as educational tool

... various apps.

- Could have applications for differently abled (blind, autism)

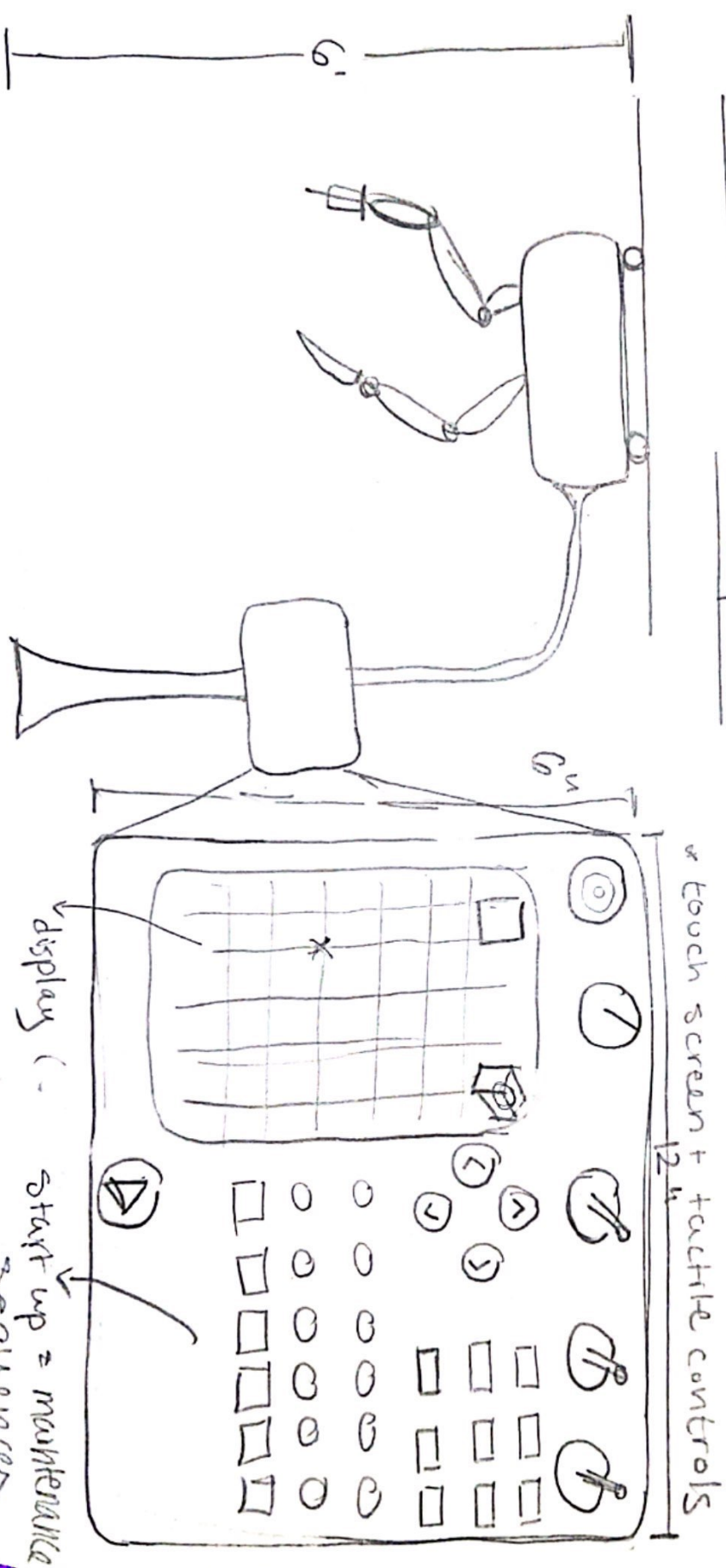
Concept Drawing 7: Industry Application

(Industrial/large scale robotics)

ex. Robotic Surgery

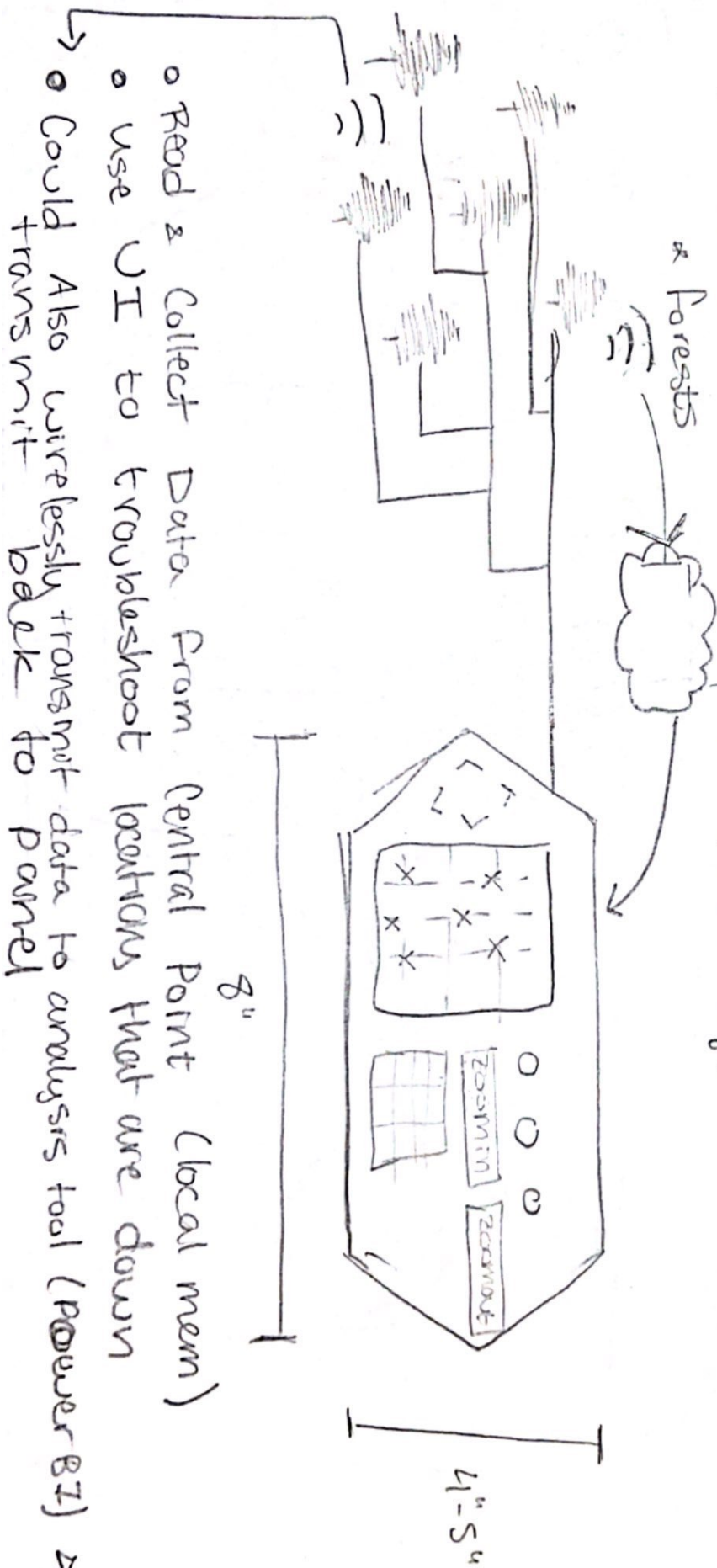
- novel feature compared to prev. drawings: positioning system for surgical arm
- Control system developed by client but interfaces w/ our panel

control (automatically or manually)

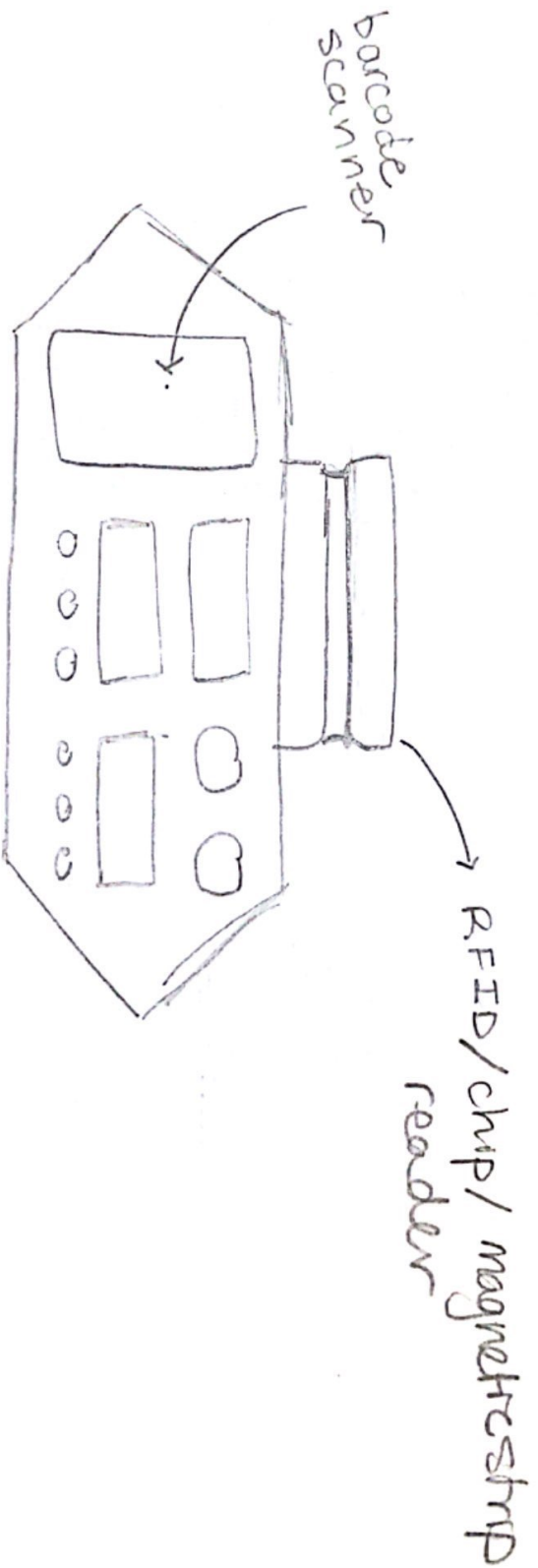


Concept Drawing 8: Monitoring a Network of environmental sensors systems One might want to monitor

1. Plumbing of building
2. Municipal water
3. electrical systems (w/ building, generation)
4. environmental data (pressure, humidity, seismic, soil, camera traps)



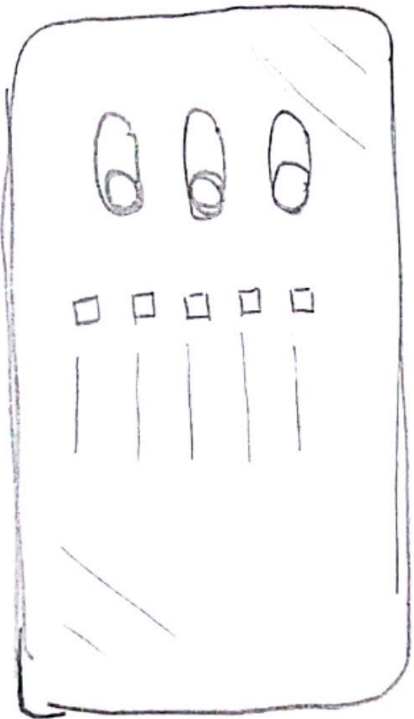
Concept Drawing 9: Accepts Payment/Identity Info



- Ticketing @ Public transportation
- Vending Machine
- Ticketing @ events
- collecting environmental data on tagged species/locations

data - this system keeps data safe until it can be uploaded to larger comp system later.

Concept Drawing 10: Touch Screen UI



- panel is approximately phone sized (3" x 6")
- all toggles are touch screen
- hardware back end is roughly the same as drawing #2