

Milestone 1 – Idea presentation
9/14 Wed

If you have formed your group, put your name on the ELMS->People->Group->Semester-long Project

Documentation Due 9/18 Sun

Fall 2022

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4 students



▸ Semester-long project 5 Semester-long project

4 students



▸ Semester-long project 6 Semester-long project

4 students



▸ Semester-long project 7 Semester-long project

3 students



▸ Semester-long project 8 Semester-long project

1 student



Semester-long project 9 Semester-long project

0 students



Semester-long project 10 Semester-long project

0 students



5 min presentation + 3 min Q& A

2 Options:

a) Haven't decided on the idea:

Present 3 of your best ideas and explain to us with sketches

b) Know what to do:

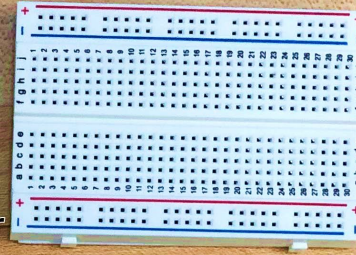
Present your final idea – what are the functions, challenges and potential solutions

5 min presentation + 3 min Q& A

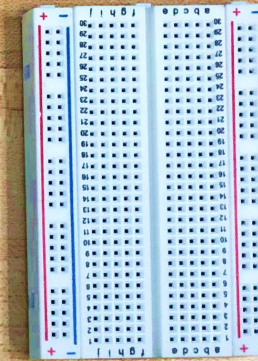
Submit a google doc with:

- a) Problem Statement & Idea
- b) System Block Diagram
- c) Input/Sensing+Output/Actuation
- d) Challenges + Potential Solutions
- e) Bill of Materials(BOM)

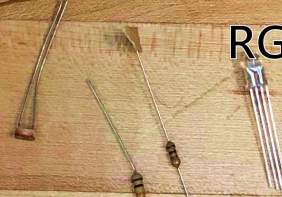
Jumper wire



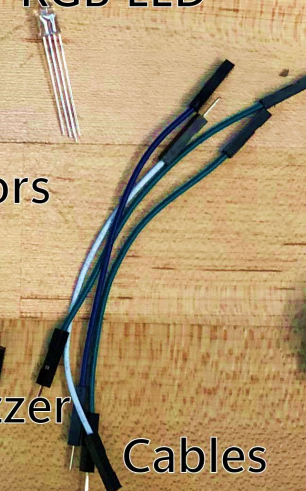
Breadboards



Photoresistor



RGB LED



Resistors



IMU



Buzzer



Cables



Ultrasonic Sensor

Capacitor



LEDs



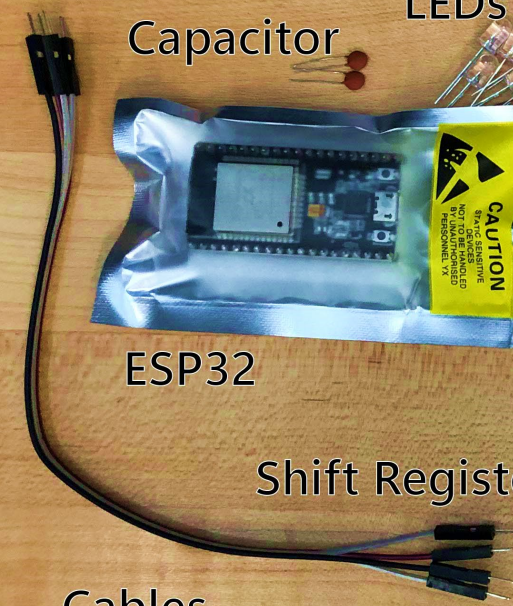
ESP32



Shift Register



Cables



USB Cable



Servo





Portable Braille Label Maker

Huaishu



CONFERENCE ROOM

Perkins SMART Brailier



\$ 2K+

6 Dot Braille Label Maker



\$ 775

Reizen Braille Labeler



\$ 40+
But fully manual
Hard to use

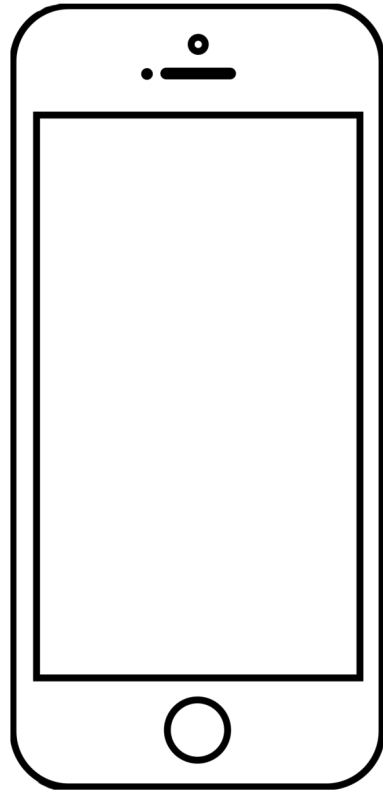
The idea

Low-cost, portable braille labeler that can be used by everyone

Can be used both
Indoor and outdoor

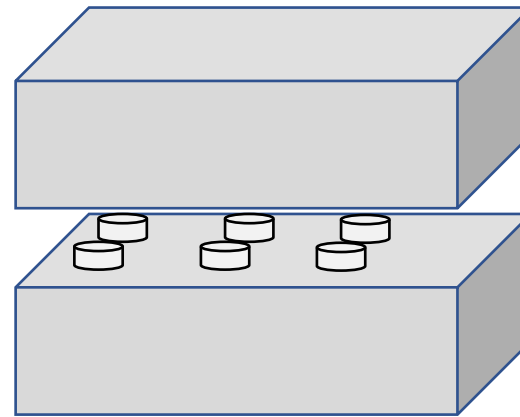
We can create braille
label for them

How



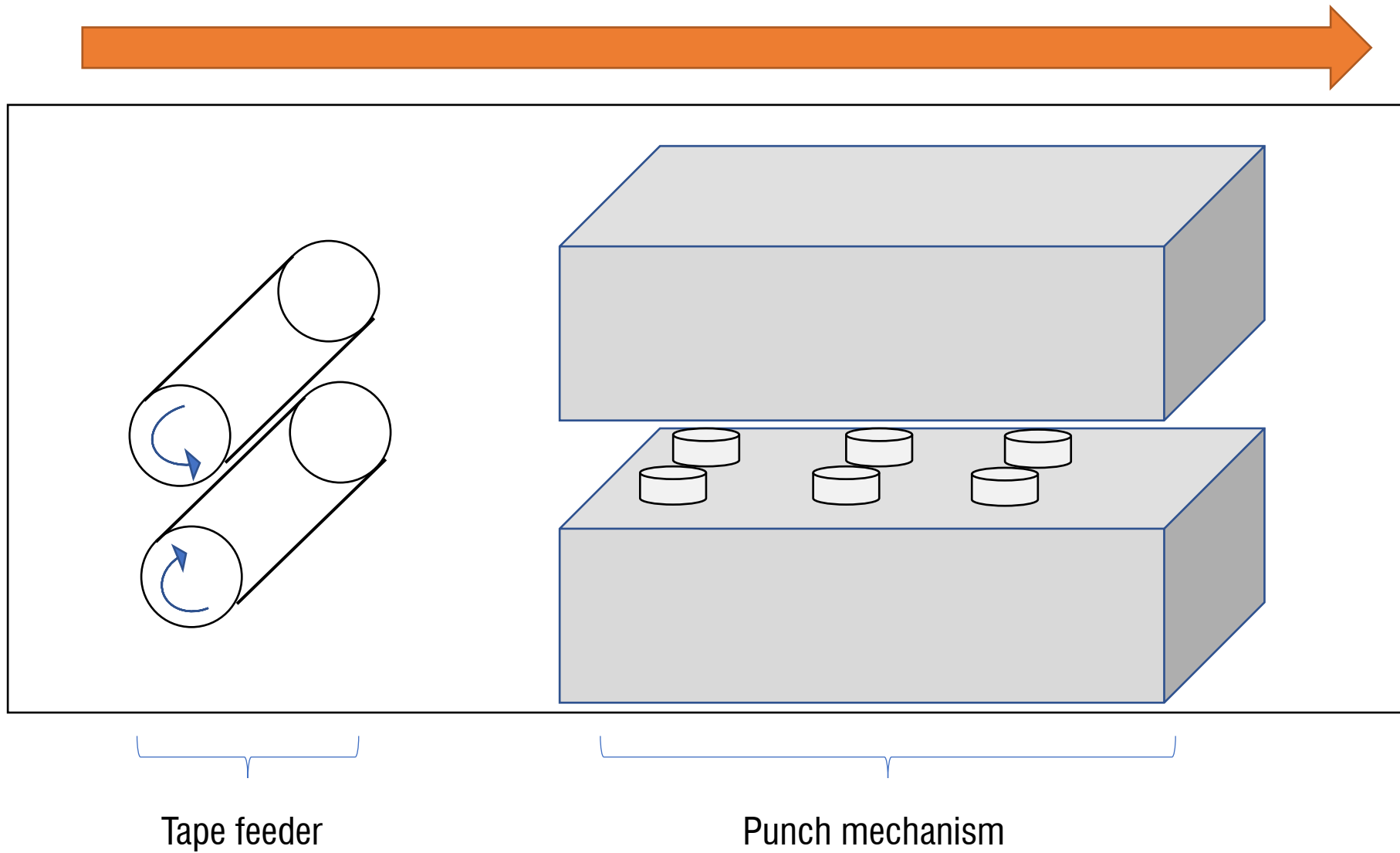
input platform
Either voice or type

+

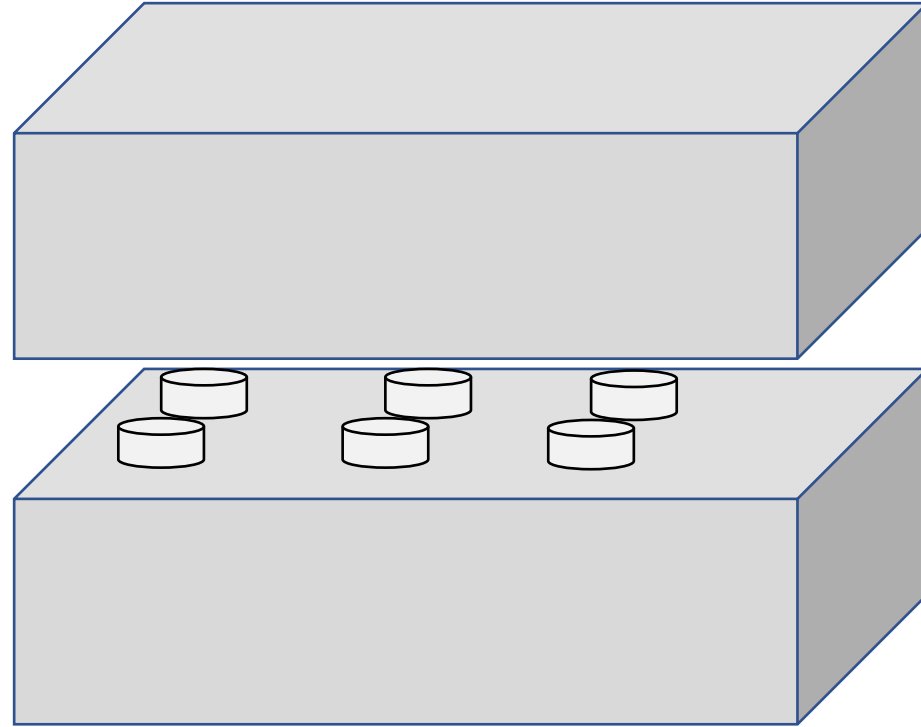


custom build machine
6 pin controlled with Arduino
punch holes to tape

How

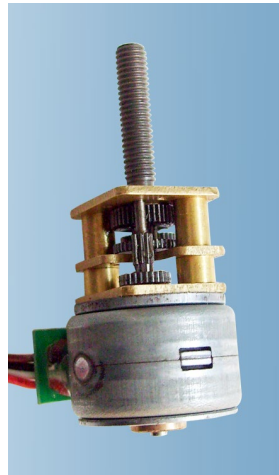


Main challenge



1. Limited physical space, dots need to be close to each other – how to arrange motors to control each of the 6 pins
2. Need large force to create hole or embossing

Potential solutions



Plan for the next milestone

1. Figure out the motor to create embossing
2. Create one working prototype that can create 2 dots at a close distance

Questions?

Rest of today's lecture -> Fusion 360 Assembly