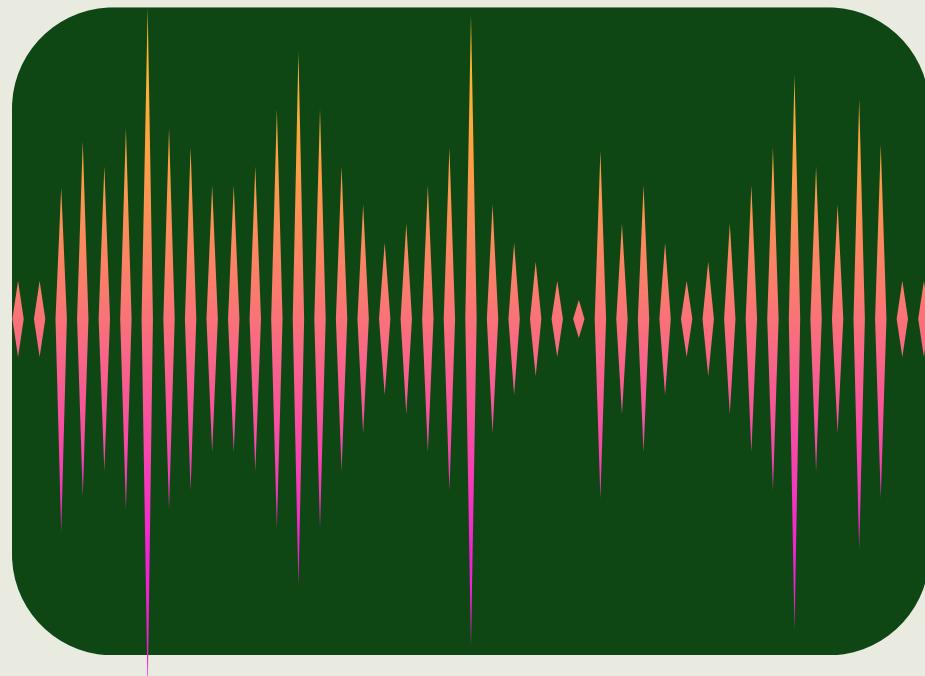


VANI

Device to enable two way
communication for the deaf-blind



Presented By:

Group 5

TECHNOLOGY INVOLVED

For designing a device that uses vibrations to communicate several technologies and materials will be key to making it both functional and comfortable

1 Vibration
motors

2 Micro
controllers

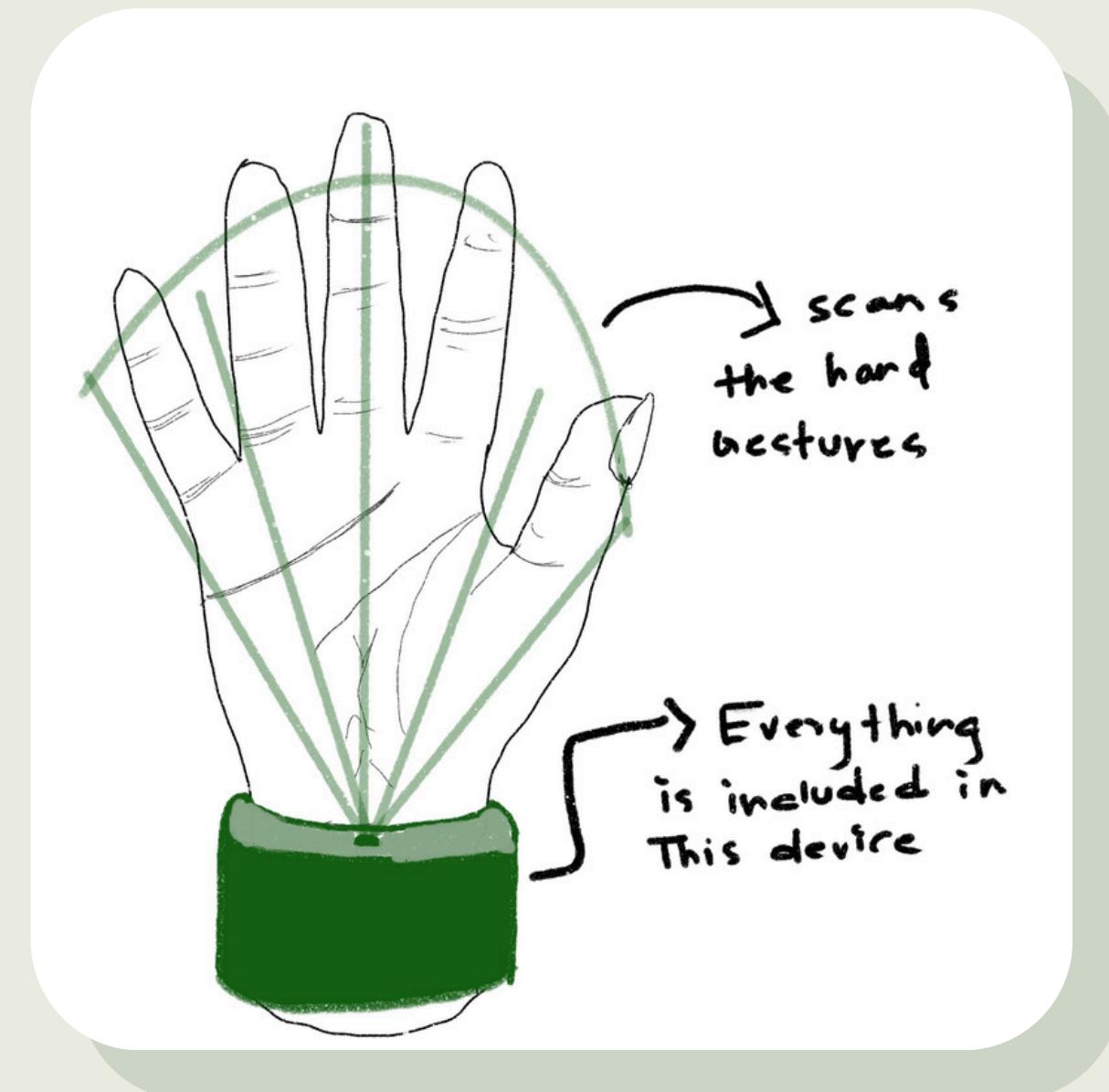
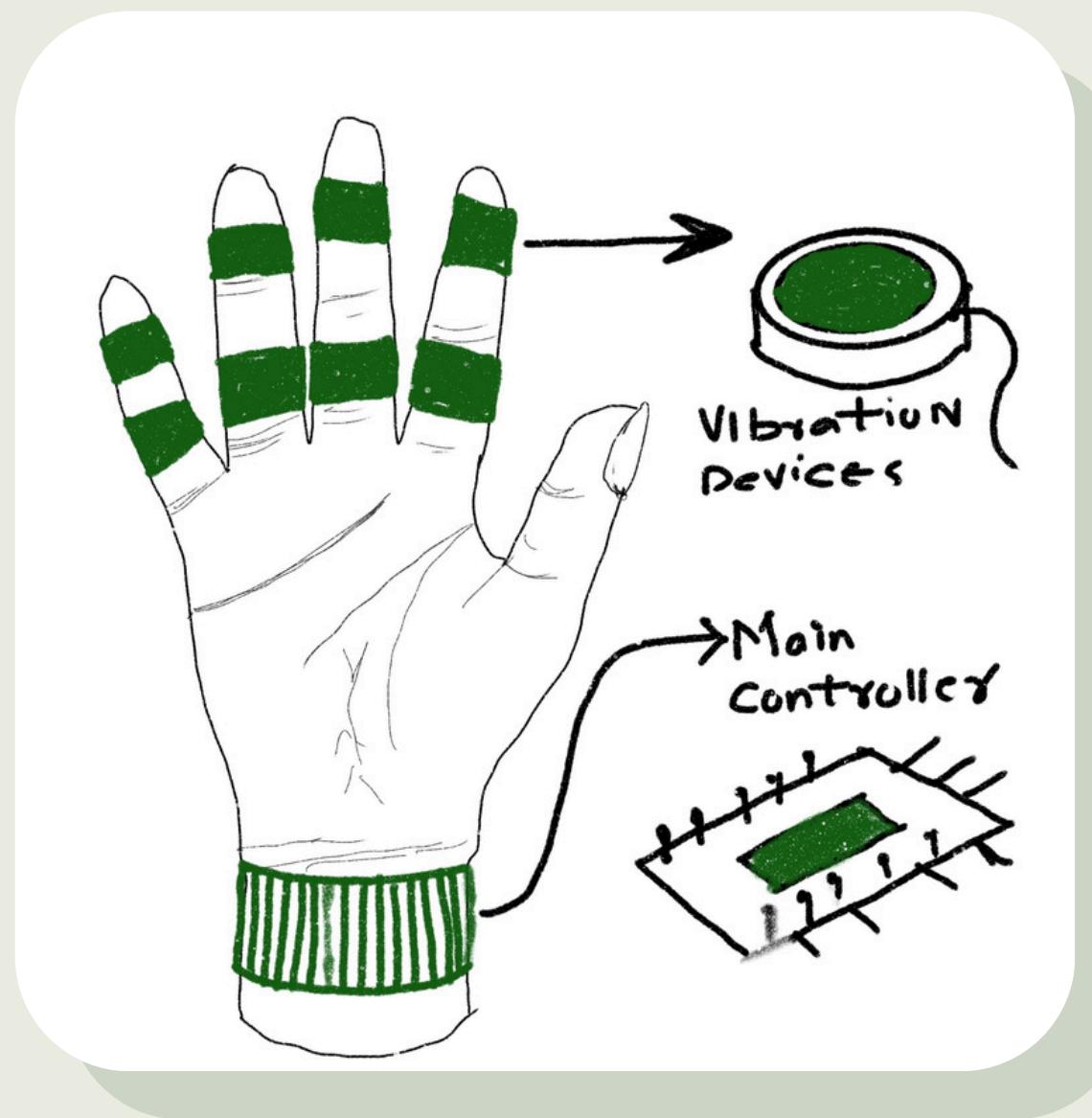
3 Wireless
Communication

4 Power
source

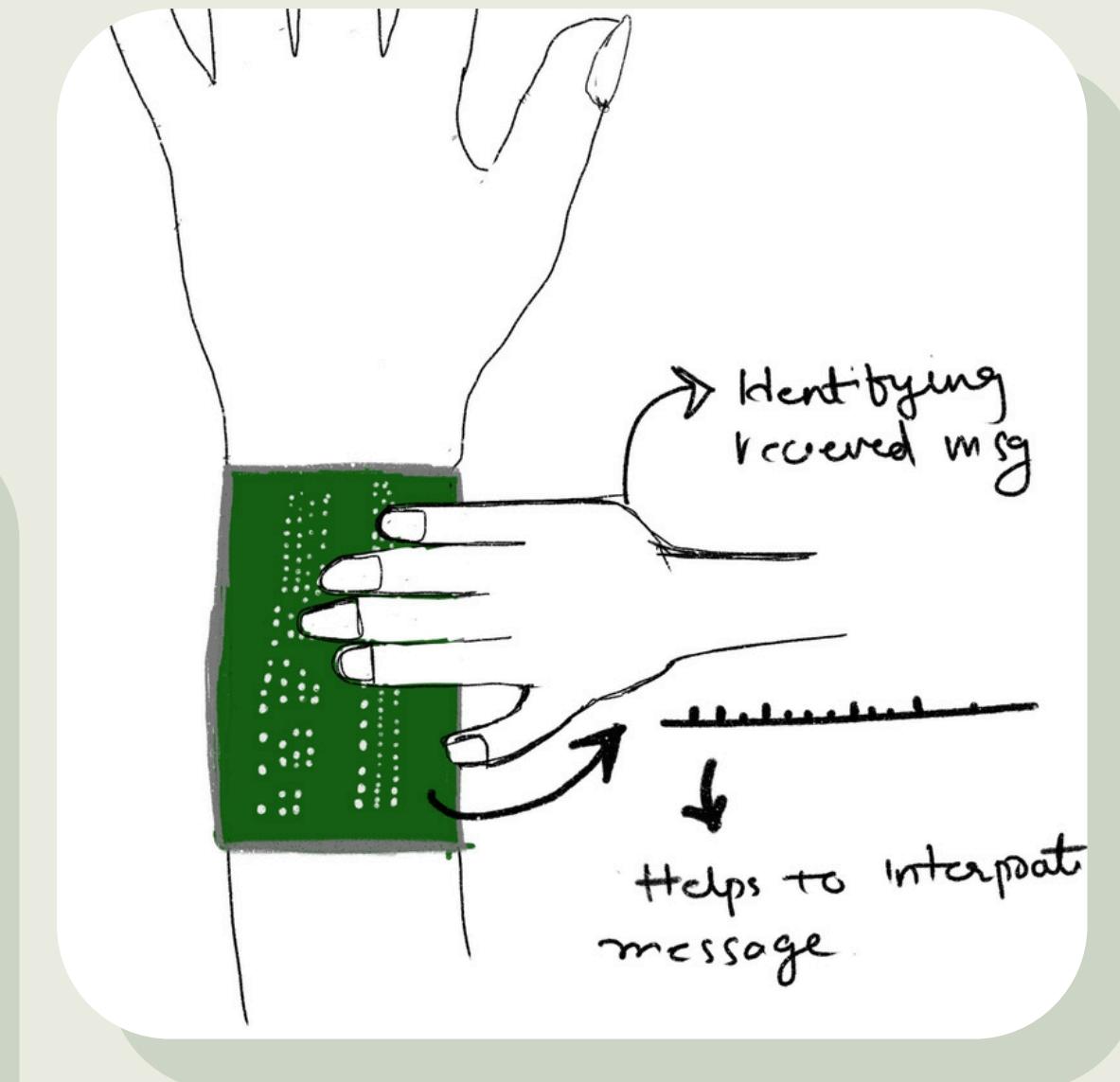
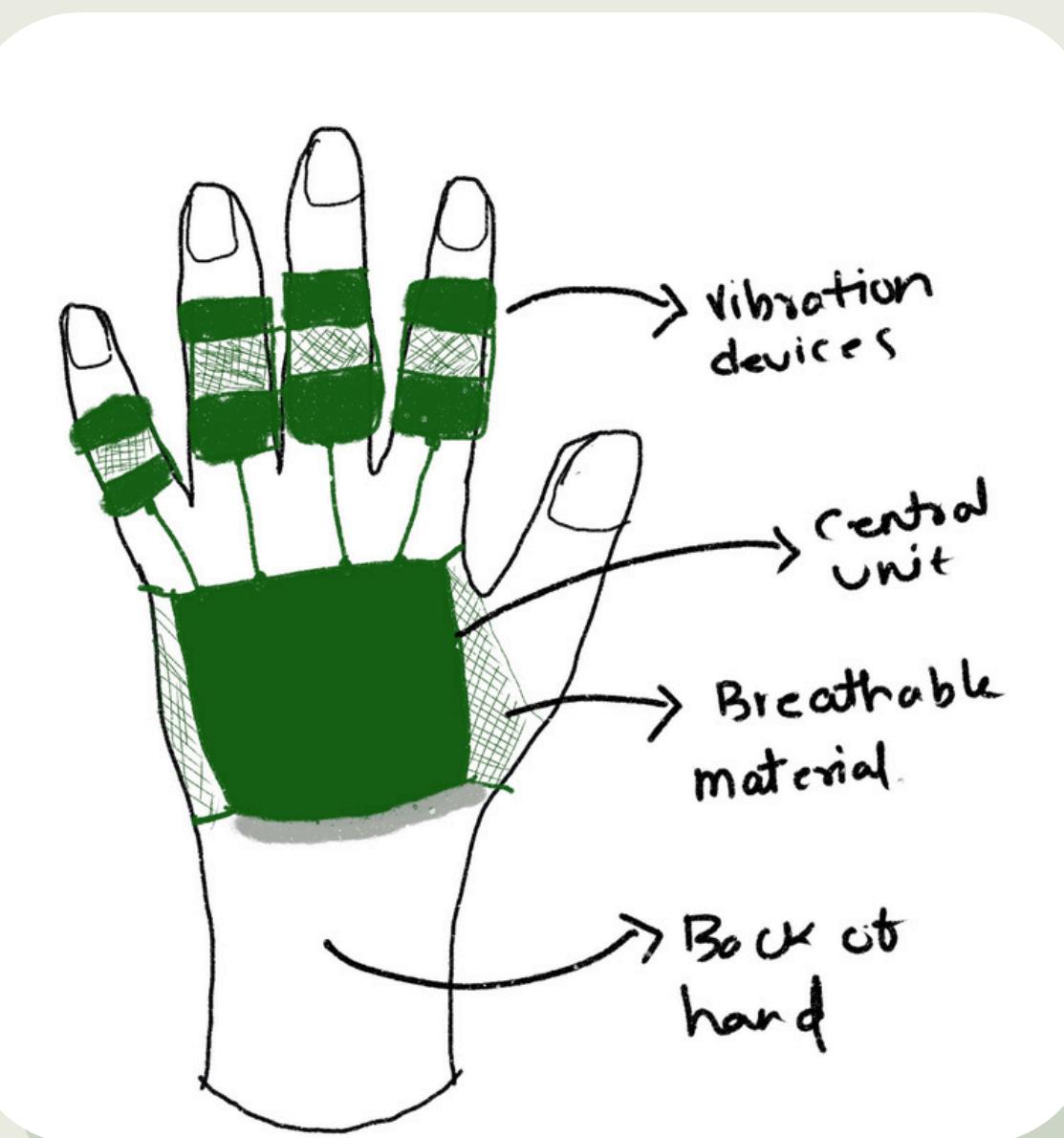
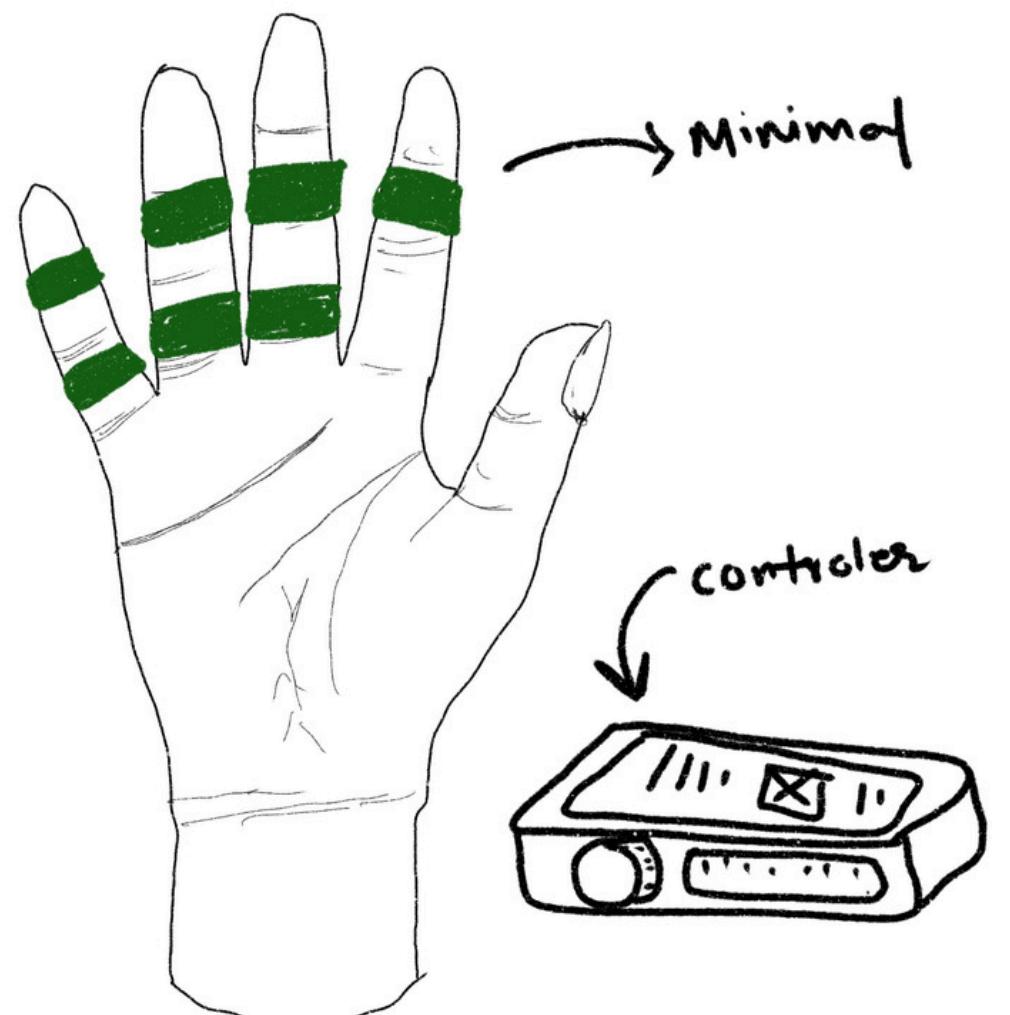
5 Braille Translation
(Embedded)

6 Pressure/ Touch
Sensors

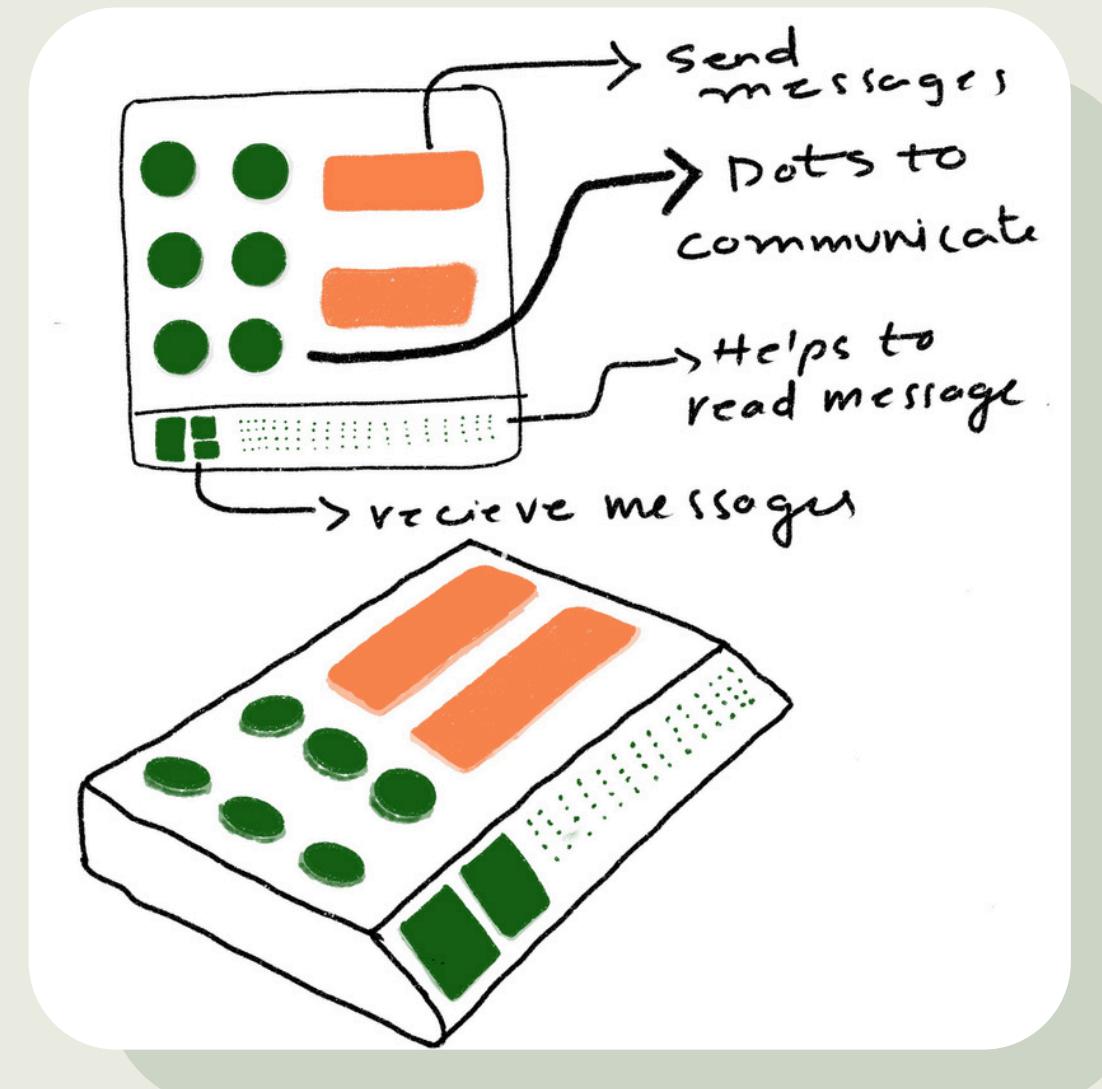
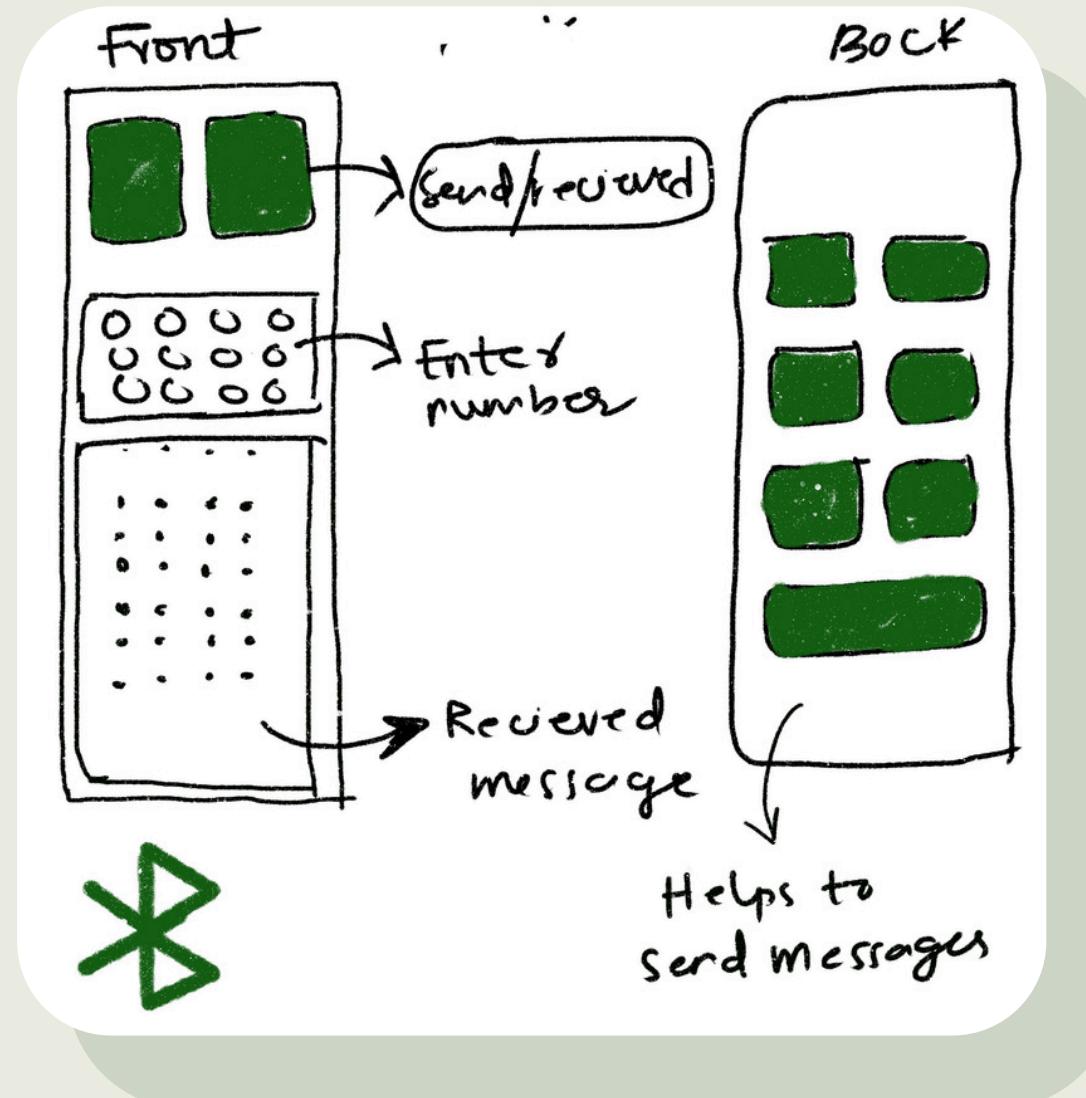
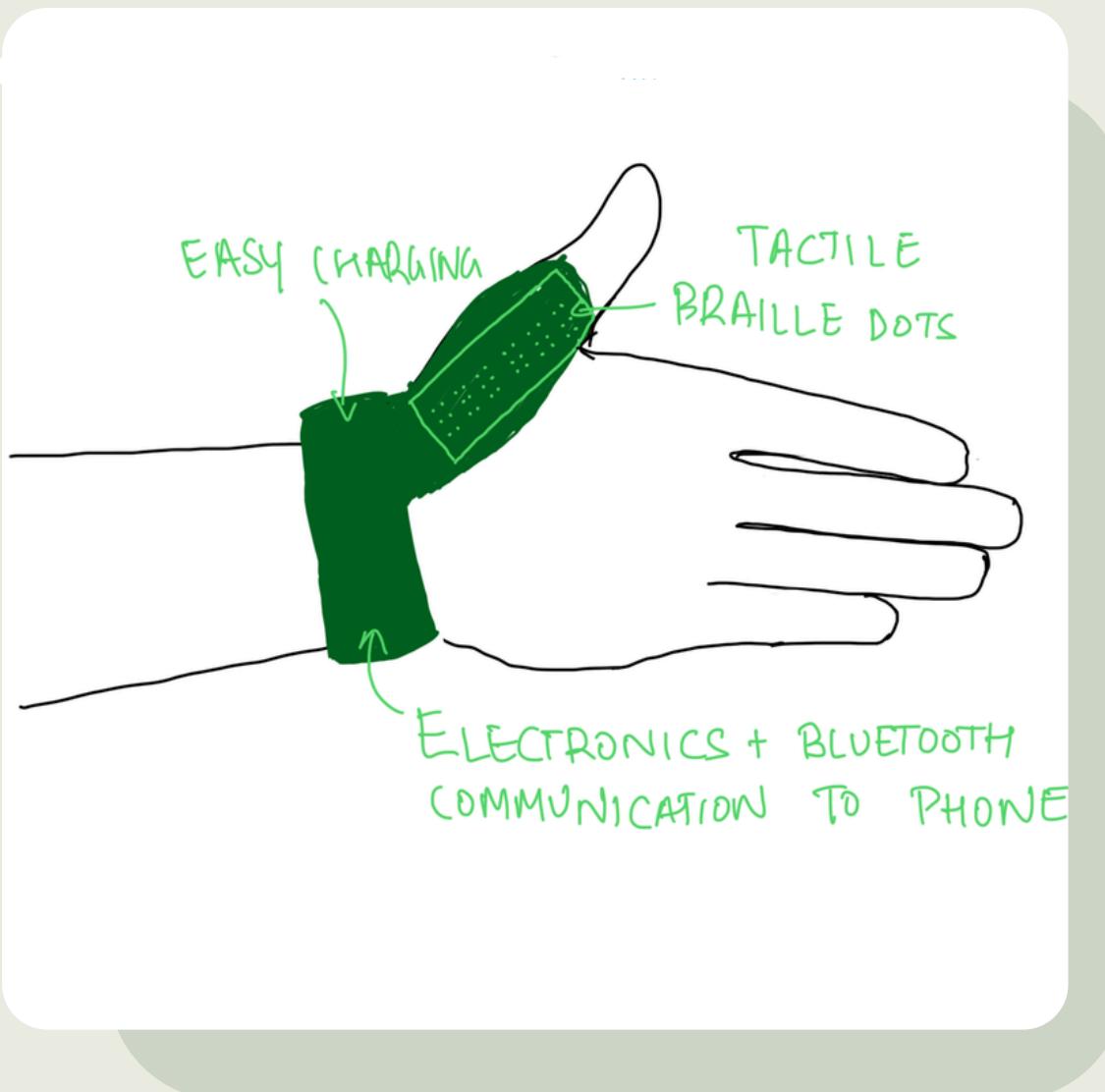
CONCEPTS



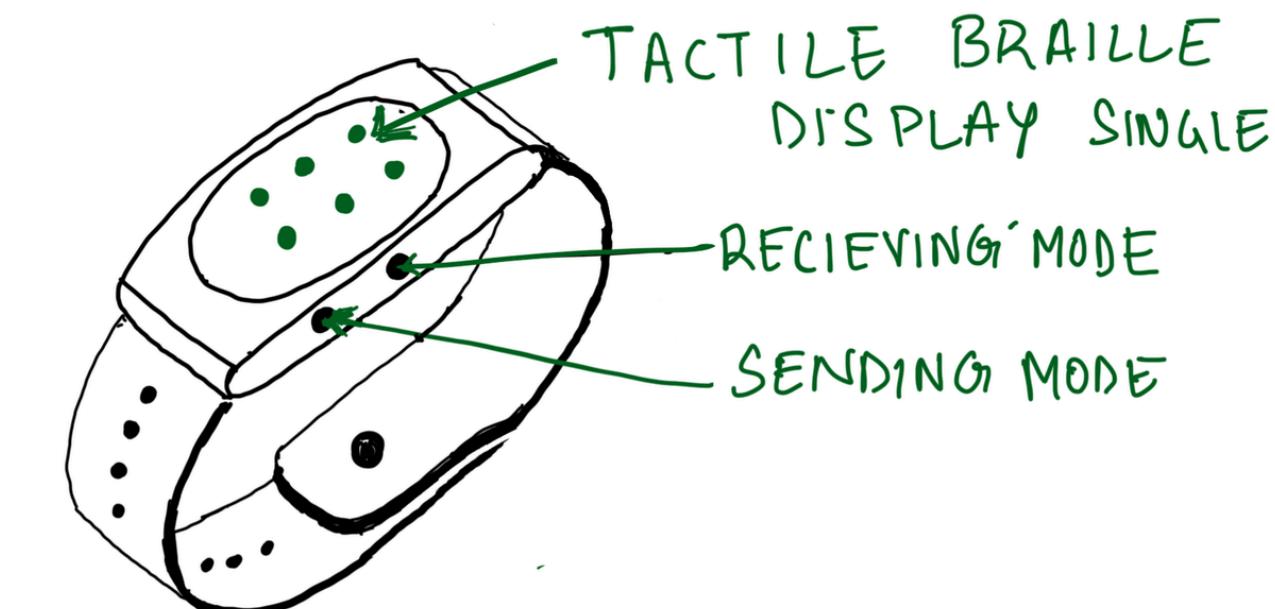
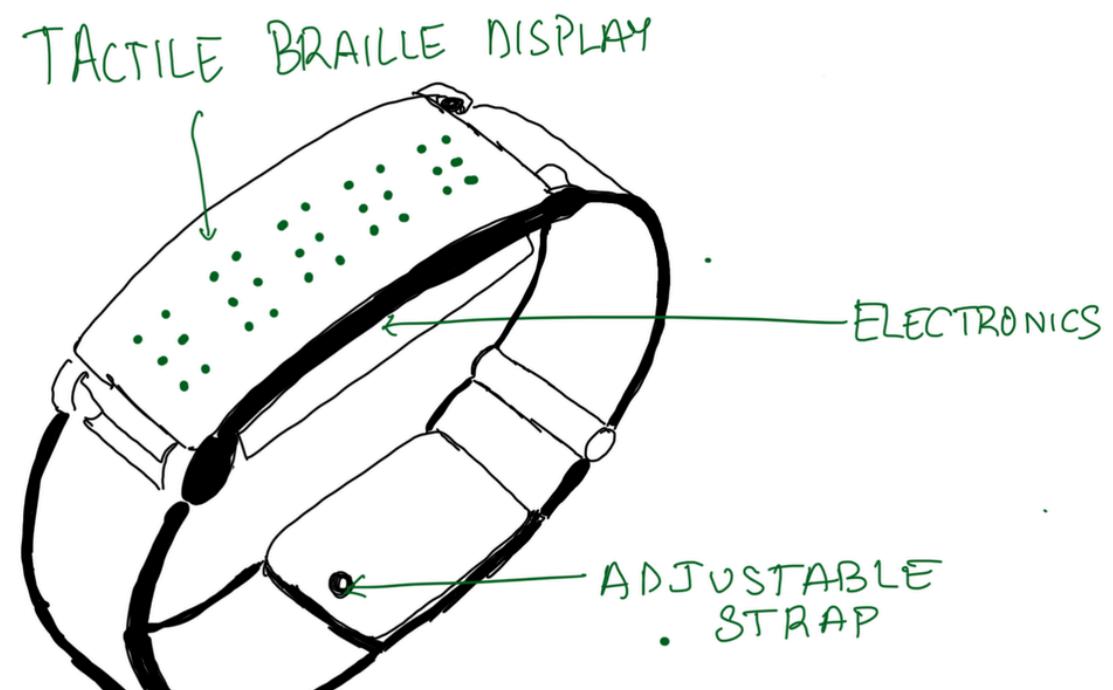
CONCEPTS



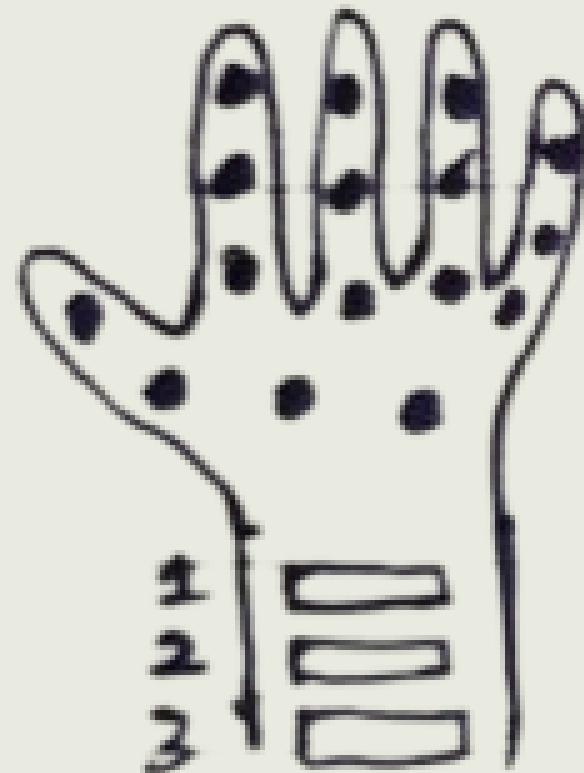
CONCEPTS



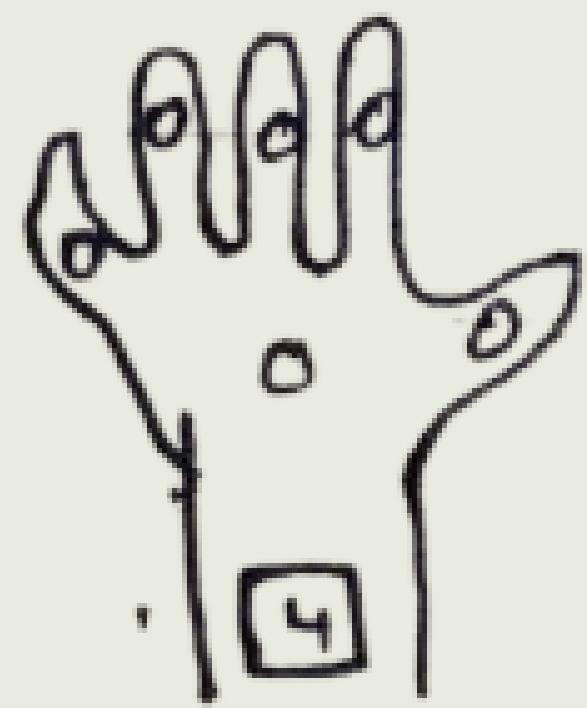
CONCEPTS



CONCEPTS



back hand



front of hand

0 → Piezoelectric Actuators
(vibration for braille)

1 → IMUs
(for gesture recog)

2 → microphone

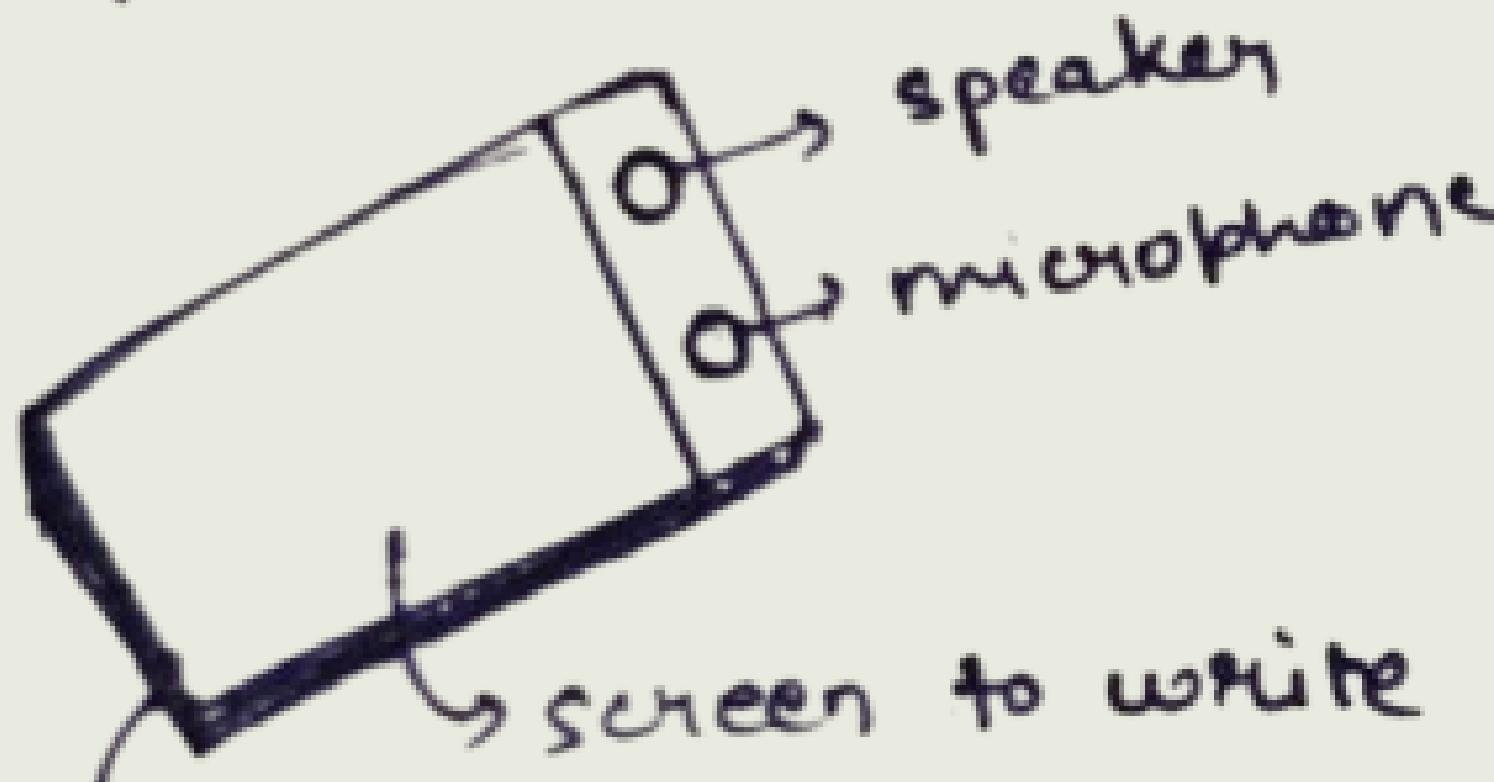
3 → speaker

4 → Microcontroller

5 → Battery

CONCEPTS

front

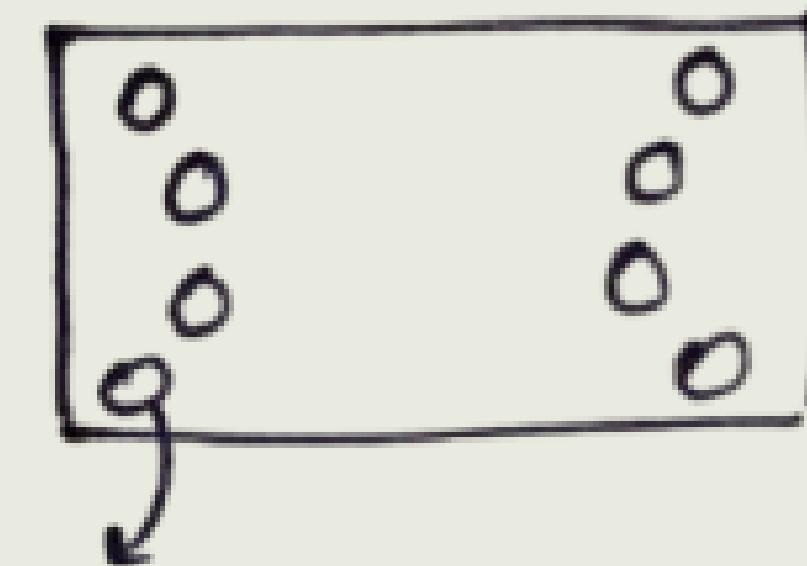


Inside items:-

battery

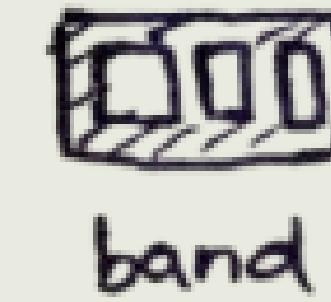
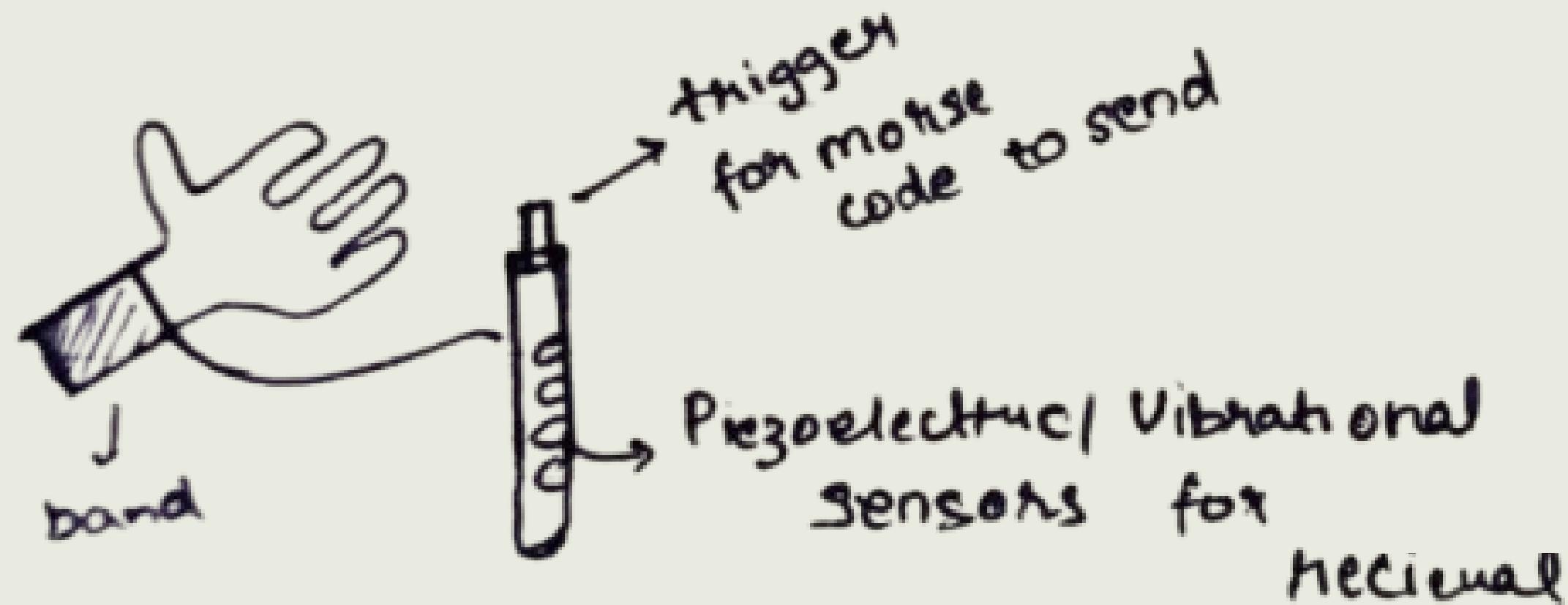
microprocessor

back.



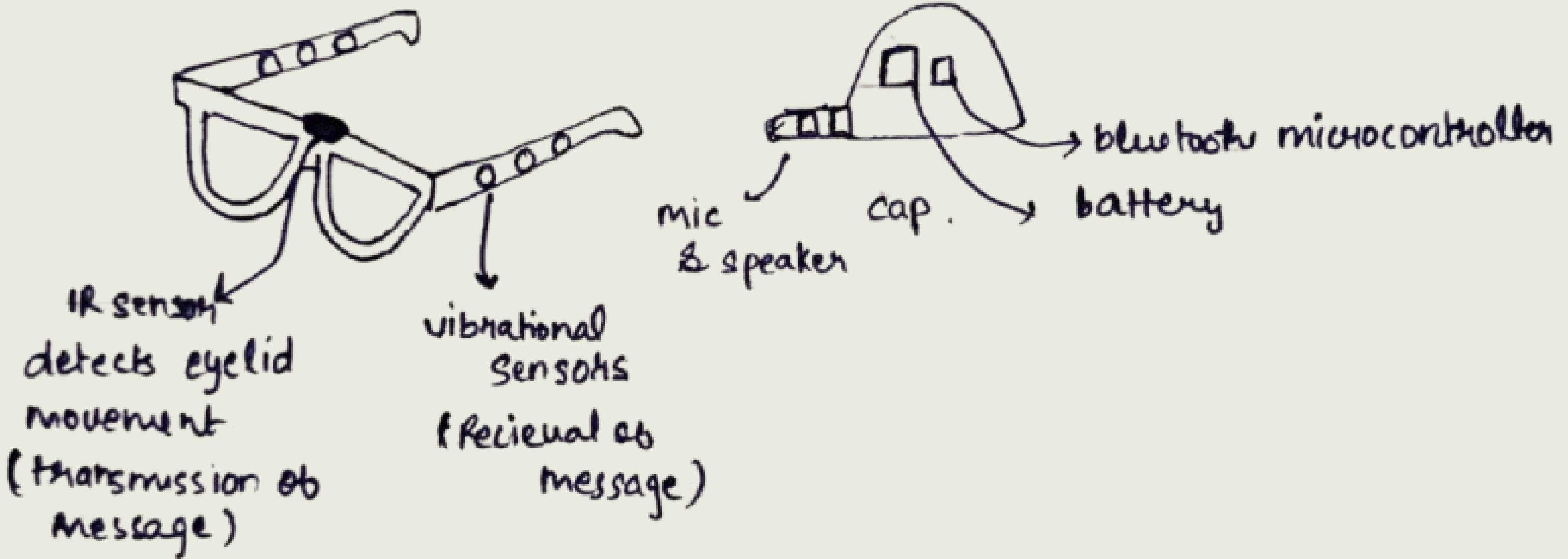
Piezoelectric Actuators
(will be used for both to receive
and send signals)
(specially designed for fingers)

CONCEPTS

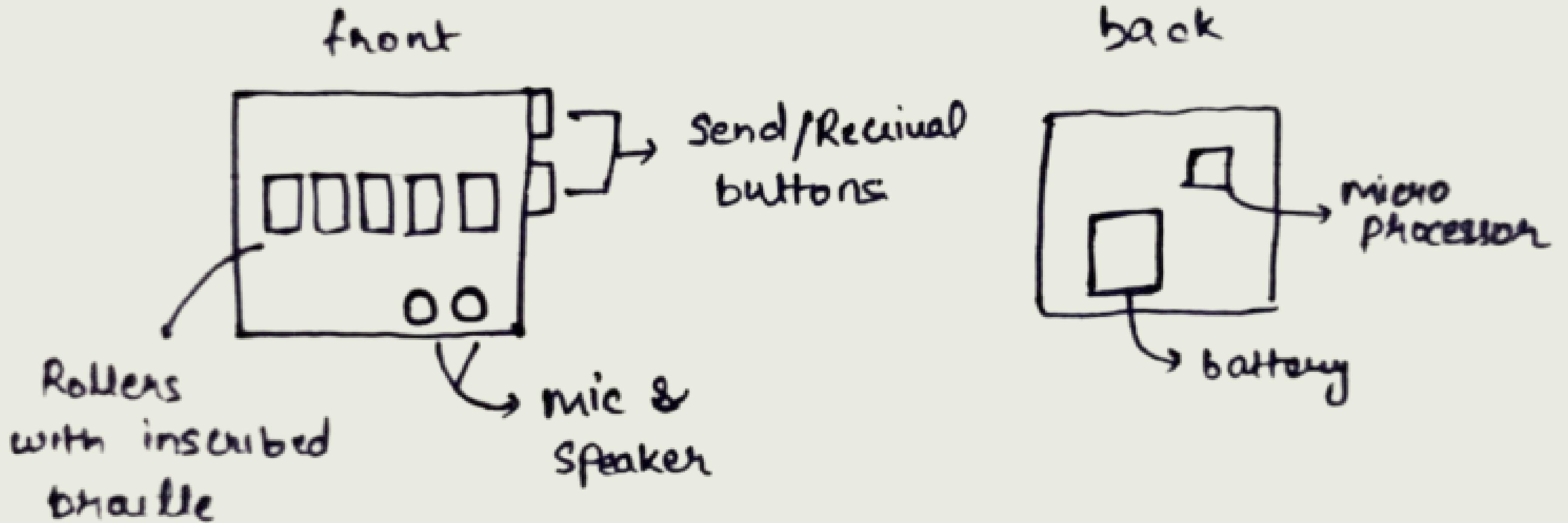


battery
microphone speaker
microcontroller

CONCEPTS

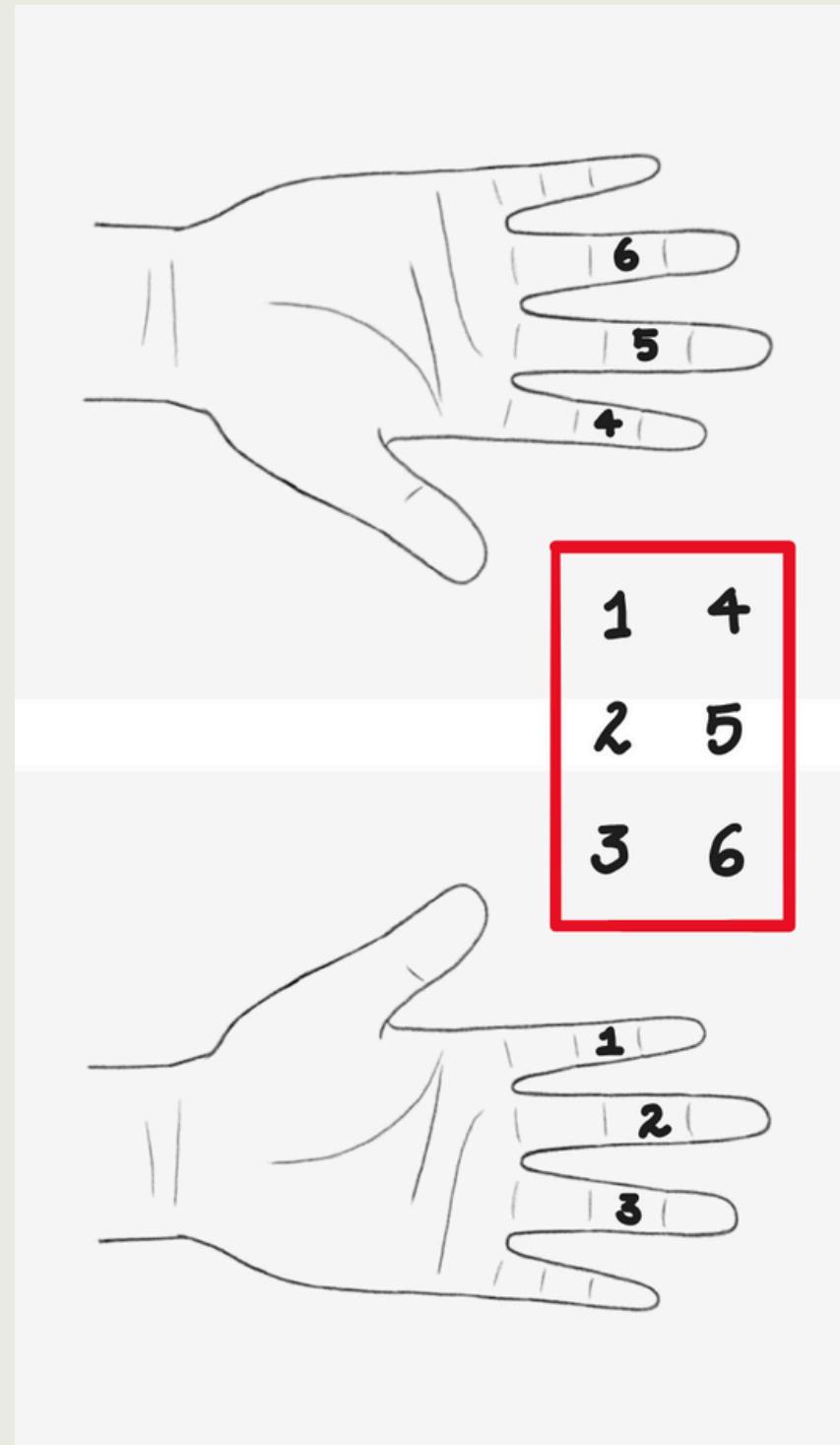


CONCEPTS

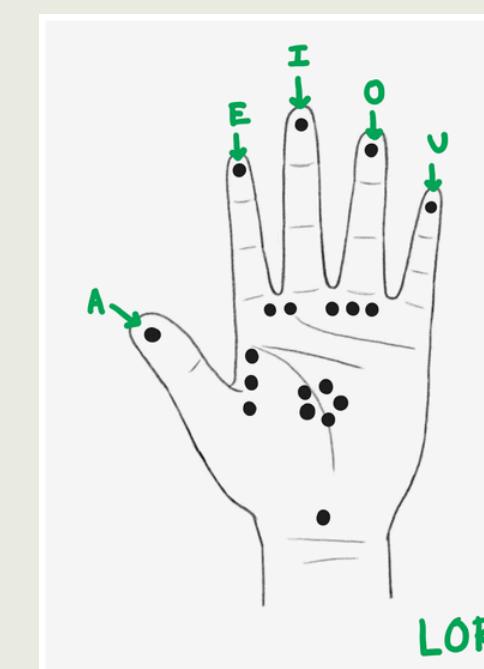
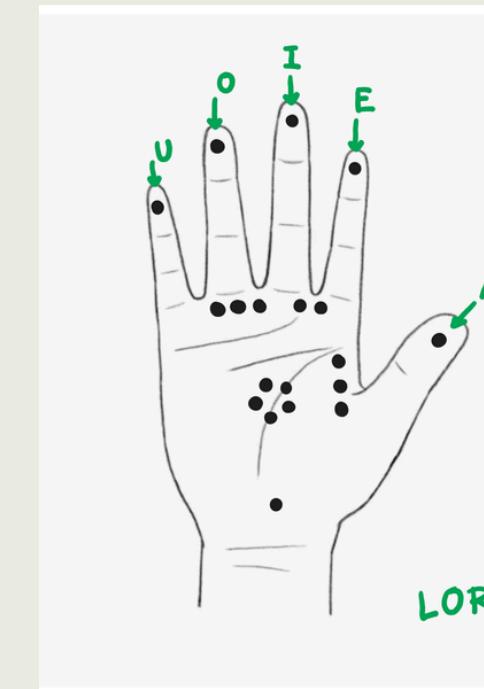


COMMUNICATION METHODOLOGIES FOR THE DEAF BLIND

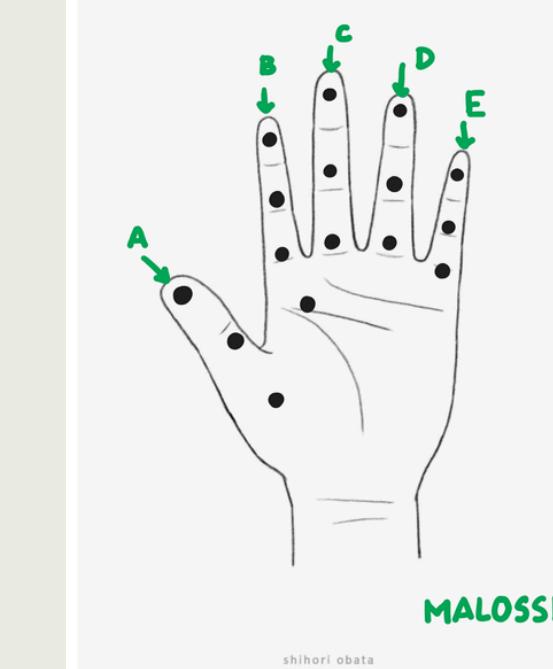
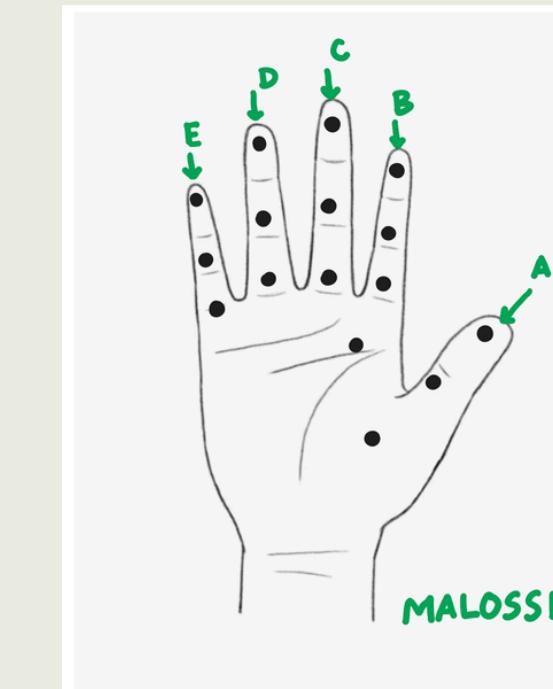
FINGER BRAILLE



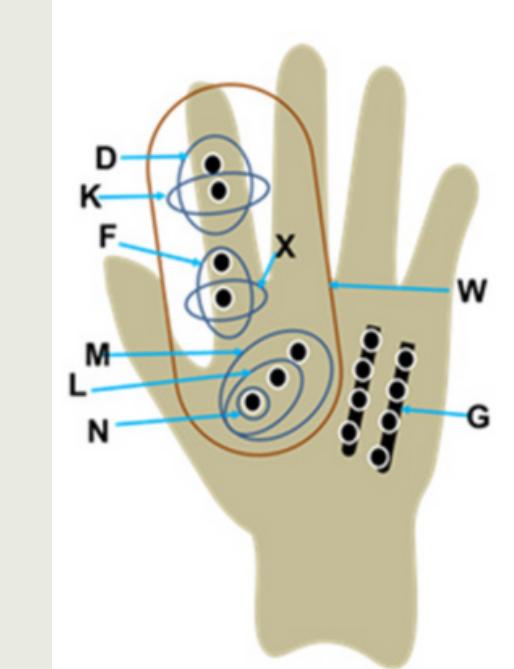
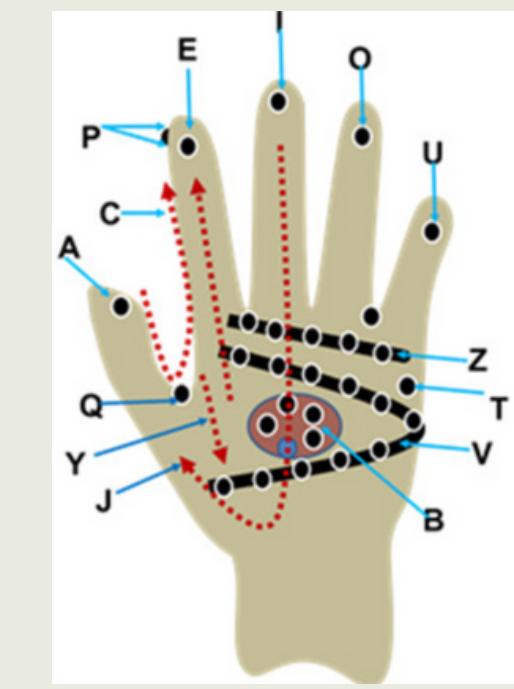
LORM



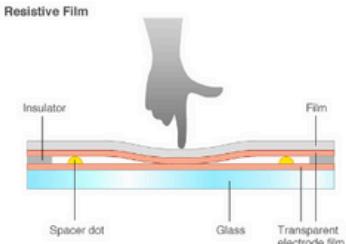
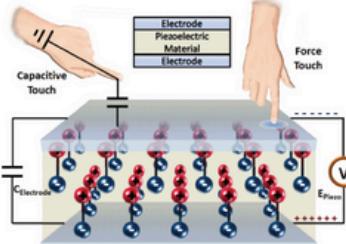
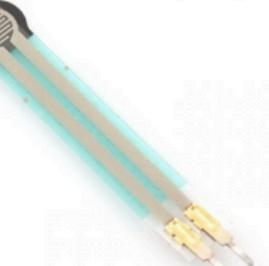
MALOSSI



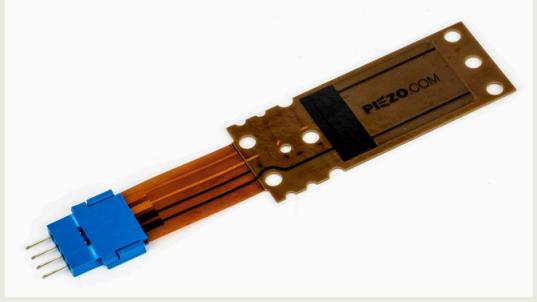
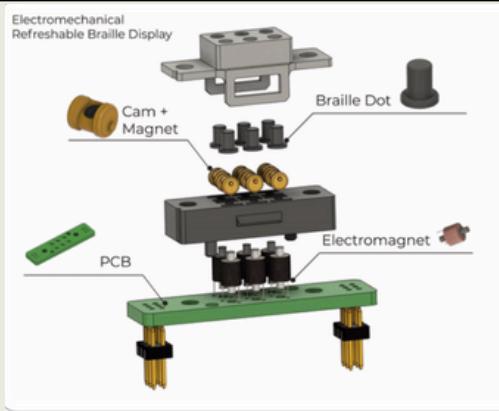
BSL



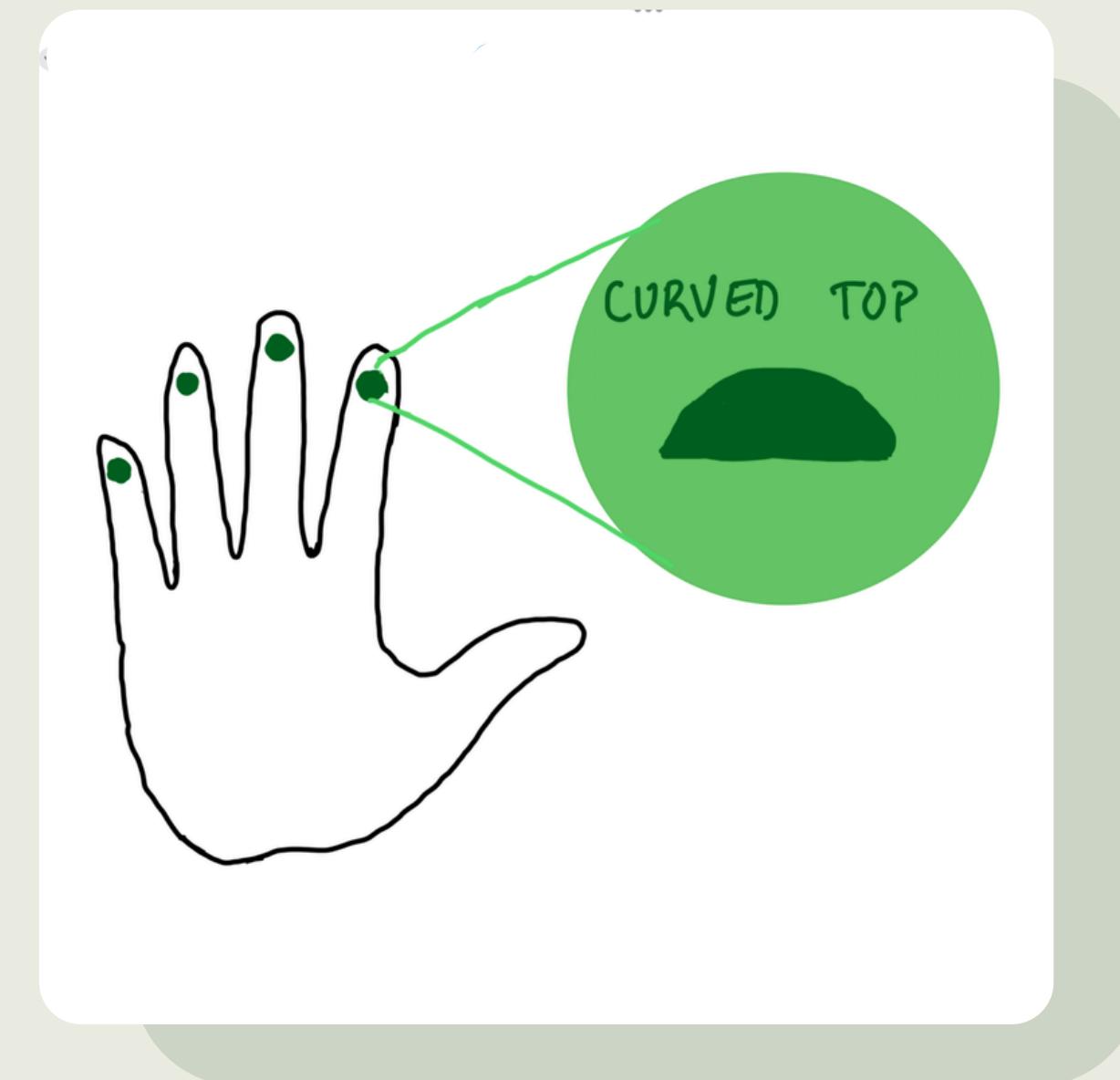
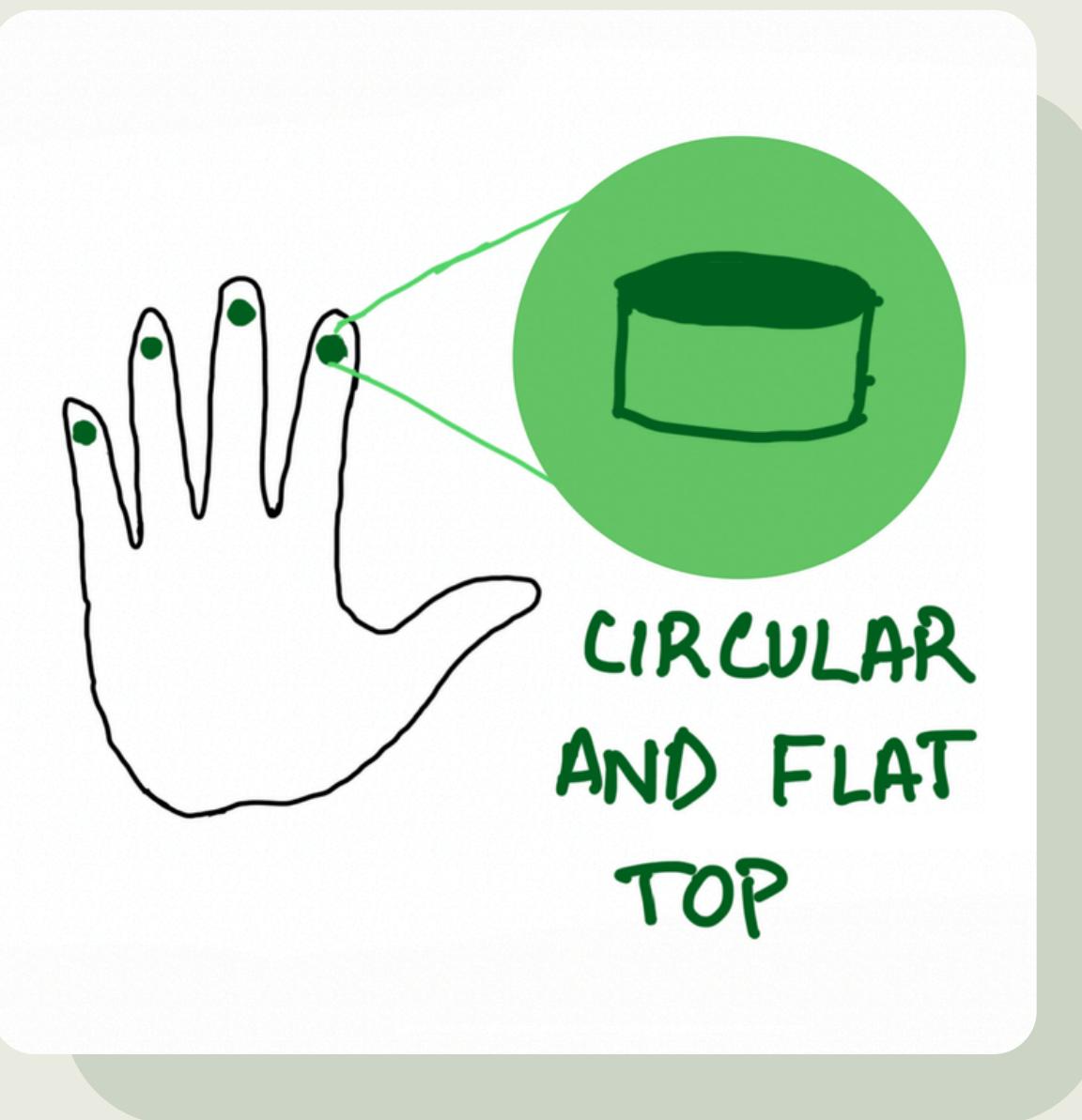
TOUCH TO DEVICE COMMUNICATION

Material	Design	Safety	Sustainability
1. Capacitive		Safe non-invasive	Generally
2. Resistive		Generally safe, but can be deformed under pressure	Moderate
3. Piezoelectric		Safe	Moderate to high
4. Force Sensitive		Safe, Flexible, Comfortable	Moderate
5. Push Buttons		Smooth and Safe but can wear out over time	Moderate

ELECTRIC SIGNALS TO MOTION

ITEM	NAME	PRINCIPLE	DEVICE
	Peizoelectric Actuator	Bends Perpendicular to axis to move up and down	Wrist Bands, Hand Held Devices
	Vibration Motor	Moves up and down	Gloves, Hand Held Devices
	Tactile Braille Display	Uses Micromagnets to make small dots move up and down	Wrist Band , Hand Held Devices

CONCEPTS FOR TOUCH TO HAND

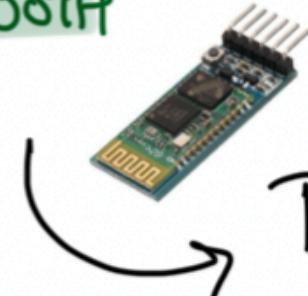
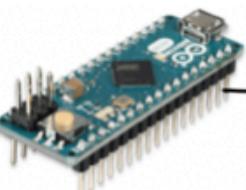


COMMUNICATION TECHNOLOGY

ARDUINO MICRO

+

H05 BLUETOOTH
MODULE



To convert braille
to text, and vice
versa

To enable bluetooth
communication
between device and
Smart phone

ESP 32 MODULE



microcontroller +
in built wifi and
blue tooth
communication

THANK YOU.