VANI

Bidirectional tactile communication glove for the deafblind using Braille.

Two way communication

Send/ receive messages

Breathable design

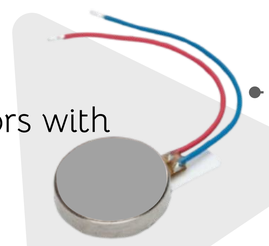
WIFI/Bluetooth

Accessibility

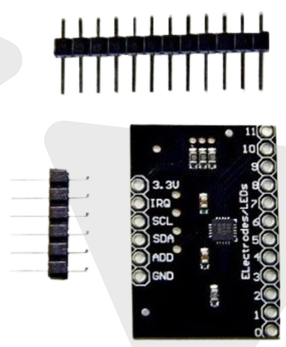
Minimalistic

LIPO rechargeable battery

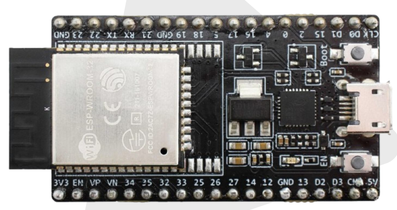
ERM vibrating motors with TPU Caps



MPR121 capacitive touch sensor



ESP 32 WIFI MODULE



ITERATION

A GLOVE ENABLING REAL-TIME, TWO-WAY COMMUNICATION FOR DEAFBLIND INDIVIDUALS THROUGH TACTILE INPUT AND FEEDBACK. IT COMBINES TOUCH SENSORS AND VIBRATION MOTORS FOR INTUITIVE INTERACTION, CONVERTING SPOKEN INPUT FROM A MOBILE APP INTO BRAILLE-BASED TACTILE FEEDBACK. THE SPECIALLY ABLED USER CAN RESPOND BY TAPPING ELECTRODES CORRESPONDING TO BRAILLE CHARACTERS, ENABLING SEAMLESS COMMUNICATION.

OVERVIEW OF WORKING

UNIMPAIRED PERSON ⟶ DEAF BLIND USER

SPEECH INPUT → NATURAL LANGUAGE PROCESSING → TEXT DATA → GLOVE → SPECIFIC ACTUATORS VIBRATE IN SPECFIC PATTERN

TEXT DATA → EPS 32 WIFI MODULE → SPECIFIC ACTUATORS VIBRATE IN SPECFIC PATTERN

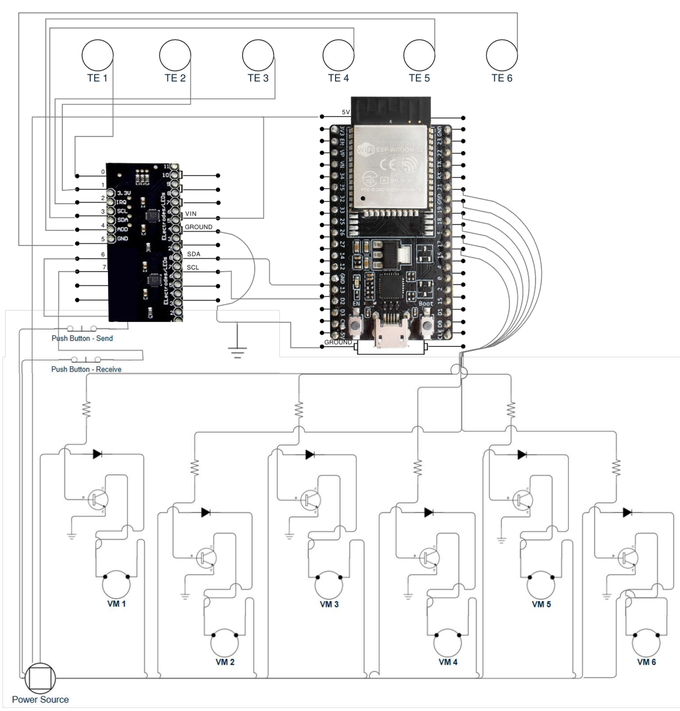
VIBRATING MOTORS WITH TPU

DEAF BLIND USER ⟶ UNIMPAIRED PERSON

USER WILL SELECT SEND MODE → TOUCH INPUT USING SENSORS ON THE GLOVE → TOUCH IS CONVERYED TO TEXT BY THE PROCESSING OF THE GLOVE → SPEECH OUTPUT

TOUCH INPUT USING SENSORS ON THE GLOVE → COPPER ELECTRODES CONNECTED TO MPR121CAPACTIVE TOUCH SENSING MODULE → TOUCH IS CONVERYED TO TEXT BY THE PROCESSING OF THE GLOVE

DETAILED WORKING OF ELECTRONICS



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DIVYANSH MITTAL
SHRUTI RAMCHANDRA DALVI
MOKSHAGNA PRATTIPATI
SHREYA
VARUN SAPPA
PAKI GUPTA