ABSRACT

Team members:

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Motivation:

Disabled people, due to lack of body movement and speech can't express their emotions. Our proposed system works by reading the tilt direction of the user's hand and converts it into text.

Description:

This device needs to be mounted on user's hand. Certain hand movements have some signature message to be conveyed. Tilting the device on our hand in different directions conveys a different message. or, simply, 'Sign language' can be converted to text/voice to make hassle free communication with even who doesn't understand Sign language.

Components required:

For transmitter :

1. **Arduino uno**
2. **433 MHz RF transmitter**
3. **Accelerometer ADXL335**
4. **Breadboard**

For receiver :

1. **arduino uno**
2. **433MHz RF receiver**
3. **Lcd display (16x2) (4 bit mode)**
4. **Breadboard**
5.

Working:

Here we use accelerometer in order to measure the statistics of motion. It gives a particular X, Y, Z coordinates for particular hand gesture. It then passes on this data to the microcontroller. For every certain gesture, message is pre-loaded into the microprocessor. The microcontroller processes the data and displays the particular message as per input obtained. The microcontroller now displays the associated message on the LCD screen. It also sounds a buzzer along with message as soon as it receives motion signal from the accelerometer. The patient motion recorder device consists of an RF transmitter in order to transfer the data signal. An RF receiver on the other side receives the data and then decodes it before passing it to the microcontroller for processing the input and responding to it.

Software specifications :(to be learnt)

- Programming with arduino.

Time line:

· Week1:

Learn the software required and get a broad idea how to implement them in our project. Buy the required components.

· Week2:

Start the design of our project with proper understanding of working of various components.

· Week3:

Get started with the coding part. (Convert hand movements to text) and also working with calibration of accelerometer.

· Week4:

Assemble all the components and aggregate it with our code.

· Week5:

Testing and debugging the device.

· Week6:

Buffer week.

Cost estimation:

5,000/-