SPEAKING SYSTEM FOR MUTE PEOPLE

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ABSTRACT- The problem of mute people is considered. To help mute people in their work this speaking system is to be developed. Since regular people are not trained on hand sign language, the communication becomes very difficult. Here this is idea about a smart speaking system that help mute people in conveying their message to regular people using hand motion and gestures. So we have a fully functioning smart-speaking system to help mute people interact with normal people using wearable device that is easy.

1. INTRODUCTION-

It’s very difficult for mute people to convey their message to regular people. Since ordinary people are not educated in sign language on hand, contact is extremely difficult. This becomes very difficult in emergencies or other occasions when a mute person traveling or communicating with or conveying a message to new people becomes very difficult. Here we suggest a smart speech device that allows mute people to express their message to common people using hand motions and gestures. The machine uses a hand motion reading machine fitted with movement sensors, flex sensors and a speaker unit. The program consists of approximately 10 coded messages such as “need assistance”, “where is the toilet / washroom” and so on to assistance mute people interpret simple messages.

The machine reads hand movements of individuals for different variations of hand movement. It also consists of a trigger sensor to show the person would like to activate the device and say something. This ensures the system does not speak when the person is just involuntarily making hand motions. The microcontroller processor constantly receives input sensor values and then processes it. Now it searches for messages that match the collection of sensor values. When this message is identified in memory, it is recovered and spoken using the Bluetooth module for speech processing it gives sound through mobile with the help of Bluetooth module. So we have a fully developed smart-system to help mute people connect with normal people using a wearable device that is easy.

2. DESIGN AND DEVELOPMENT:

Section 1-In this power supply of 12v is applied to microcontroller. There are five Flex sensors connected to microcontroller, basically flex sensor gives output according to hand gesture or movement of hand in the form of variable resistances, whenever a bending action occurs in flex sensor the resistance of flex sensor changes, this changing resistance is given to microcontroller. We have programmed the microcontroller with binary codes (0000-1111) according to the resistance value between straight and bending action of flex sensor, Microcontroller contain some messages in it according to binary values (output of flex sensor) microcontroller compares that output with the stored messages and processes it with respect to resistance of flex sensor. The microcontroller gives this output to LCD and Bluetooth module. Bluetooth module acts transmitter between microcontroller output and speaker (cell phone).

Section 2-Major components used in hardware system is Flex sensor. When supply is turn ON the device start with a ideal message “Speaking System”. Flex sensor provide electrical resistance as a output. Depending on the bending of the adjusted gesture a Flex sensor resistance value vary. This value is compared with the Threshold value set in program in PIC microcontroller. We set corresponding binary value for resistance changes when a match found PIC microcontroller generate a output which is suitable for LCD to display the message as well as we can hear the message through the speaker. Device stop and wait for another signal.
Figure 1.3 shows the variation in resistance due to the bending of the flex sensor using the multimeter, corresponding binary values

<table>
<thead>
<tr>
<th></th>
<th>Resistance value range (straight to bend)</th>
<th>BINARY VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thumb</td>
<td>3.79-4.50</td>
<td>0001</td>
</tr>
<tr>
<td>Index Finger</td>
<td>3.78-4.52</td>
<td>0010</td>
</tr>
<tr>
<td>Middle Finger</td>
<td>3.80-4.67</td>
<td>0100</td>
</tr>
<tr>
<td>Ring finger</td>
<td>3.84-4.65</td>
<td>1000</td>
</tr>
<tr>
<td>Pinky finger</td>
<td>3.80-4.70</td>
<td>0110</td>
</tr>
</tbody>
</table>

The above systems help to improve communication barrier between mute people and normal people. This system is just a model to check whether system will help to identify sign language into audio and visual signal. This glove system only uses movement of fingers and not movement of hand, arm or other parts of body.

4. FUTURE SCOPE-

If present speaking system for mute people is enhanced with prosody, it will sound more natural with presence of different emotions. If mute people has emotions along with better intelligibility and naturalness, this will help for physically challenged people for conveying their feelings to others. With some addition of emotions and musical aspects, the system can be developed for poetic text conversion. Poetic text or paragraphs is part of all language literatures since long years. If emotions and musical aspects get implemented in system, it will be a great opportunity for poetic text conversion. People can enjoy this capability of speaking system along with plain text.

5. REFERENCES-


6. BIOGRAPHIES

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