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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 a 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:

Fig 1.1 shows hardware arrangement of system or flow diagram of system (Section 1)

Fig1.2 shows sequence of working system (section2)

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).

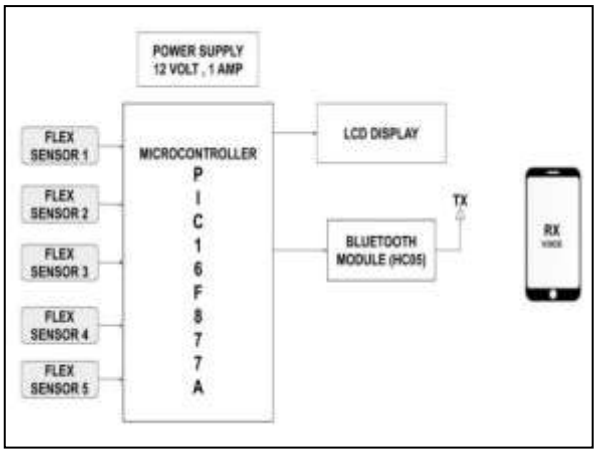

Fig: 1.1

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.

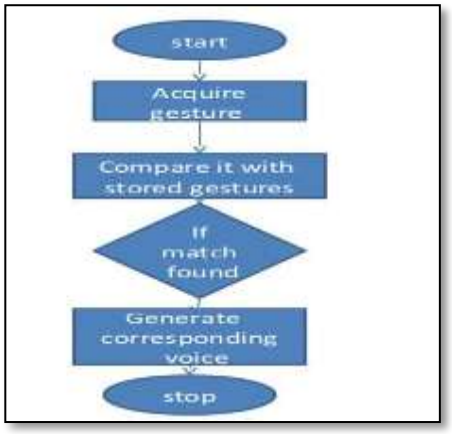

Fig:1.2

Figure1.3 shows the variation in resistance due to the bending of the flex sensor using the multimeter, corresponding binary values

	Resistance value range (straight to bend)	BINARY VALUES
Thumb	3.79-4.50	0001
Index Finger	3.78-4.52	0010
Middle Finger	3.80-4.67	0100
Ring finger	3.84-4.65	1000
Pinky finger	3.80-4.70	0110

Fig:1.3

3. RESULT AND CONCLUSION-

For specific binary value, there is one instruction is set in Pic microcontroller he tables for instruction according to binary value is given below in Fig:1.4

Binary value	Instruction
0000	-
0001	Hello
0010	No
0011	Yes
0100	Sorry
0101	Thank you
0110	Where is washroom?
0111	Can u help me?
1000	I am ___
1001	What is time?
1010	Please give me glass of water
1011	I am doing well
1100	Please give me medicine
1101	Can you guide me to this address
1110	Welcome
1111	Need help

Fig:1.4

The Above systems helps 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-

1.Amarjot, S., Devinder, K., Phani, S., Srikrishna, K., and Niraj, A. “An intelligent multi-gesture spotting robot to assist persons with disabilities”, International journal of computer theory and engineering, Vol. 4, No. 6, pp. 1290-1420,2012.

2. Alois, F., Stefan, R., Clemens, H., and Martin, R. “Orientation sensing for gesture-based interaction with smart artefacts”, IEEE Transactions on audio, speech, and language processing, Vol.28, No. 8, pp. 1434-1520, 2007.

3. Donglin, W., Ajeesh, P., Hye, K., and Hosub, P. “A Deconvolutive neural network for speech classification with applications to home service robot,” IEEE Transactions on instrumentation and measurement, Vol. 59, No. 12, pp. 2334-4620,2010.

4. Istvan, I., Zoran, M., and Nikola, D. “Hands-free voice communication with TV”, IEEE Transactions on consumer electronics, Vol. 17, No. 2, pp. 1378-1695, 2011.

5. Ibrahim, P., and Srinivasa, R. “Automated speech recognition ap-proach to continuous cue symbols generation”, International journal of power control signal and computation, Vol. 18, No. 8,pp. 434-520,2007.

6. Jean, C., and Peter, B., “Recognition of Arm Gestures Using Multiple Orientation Sensors: Gesture Classification”, IEEE Intelligent transpor-tation systems conference on electronics, Vol. 13, No. 1, pp. 334-520,2004.

7. Joyeeta, S., and Karen, D. "Indian Sign Language Recognition Using Eigen Value Weighted Euclidean Distance Based Classification Tech-nique", International journal of advanced computer science and applications, Vol. 4, No. 2, pp. 434-820, 2013.

8. Ravikiran, J., Kavi, M., Suhas, M., Sudheender, and S., Nitin, V. "Fin-ger Detection for Sign Language Recognition", Proceedings of the In-ternational multi conference of engineers and computer scientists, Vol. 2, No. 1, pp. 234-520,2009.

9. Kekre, M., and Vaishali, K. "Speaker identification by using vector quantization," IEEE Transactions on mechatronics, Vol. 15, No. 1, pp. 1034-1620, 2010.

10.V.Padmanabhan, M.Sornalatha. "Hand gesture recognition and voice conversion system for dumb people"International Journal of Scientific & Engineering Research, Volume 5, Issue 5, May-2014 427 ISSN 2229-5518.

11.GarimaRao, LakshNarang ,Abhishek Solanki ,Kapil Singh , Mrs.Karamjit Kaur , Mr.Neeraj Gupta. From amity univercity "Communication Interface for Mute and Hearing Impaired People"International Journal of Engineering Research & Technology (IJERT)IJERT ISSN: 2278-0181 IJERTV3IS050601 Vol. 3 Issue 5, May - 2014

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