

## MAGIC GLOVE (SIGN TO VOICE CONVERSION)

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### ABSTRACT

**This project aims to lower the barrier in communication .It is based on the need of developing an electronic device that can translate sign language into speech in order to make the communication take place between the mute communities with the general public possible .Mute people can use the gloves to perform hand gestures and it will be converted to speech so that normal people can understand their expression .**

**Keywords : Mute people ,hand gestures,electronic device ,gloves**

### INTRODUCTION

The deaf and dumb people communicate with the help of sign language .Sign language differ from country to country.To bridge the gap between the deaf and dunb community and the normal masses this project uses gesture recognition system . Gesture recognition is the widely explored field .Alot of work has been done .This project increase the efficiency and accuracy .In narrow spectrum it

act as a language interpreter and provide a convenient way of communication between deaf and dumb community and normal people.

### MOTIVATION

The motivation behind this proposed work comes from the advancement of technologies like pic microcontroller ,flux sensor. The mute people cannot communicate with the general people because of the communication gap .It help the people to make sign that can be converted into voice commands and also display it on the LCD screen for the deaf people to look at the command and understand the word and talk to the general people through this app.

### METHODS

PIC microcontroller work on 5 volt supply .To ensure the proper working of the system we need a reliable power supply.

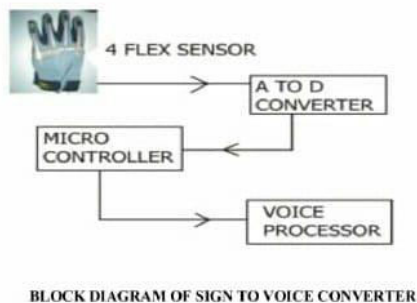
PIC 16F877 is a 40 pin 8-bit CMOS FLASH Microcontroller .The core architecture is RISC CPU with only 35 word instructions .All single cycle

instructions take only one instruction cycle except for program branches which take two cycle. The technology is based on the resistive carbon elements. They require a 5 volt input and output between 0 and 5 volt. The resistance varies with the sensor's degree of bend and the voltage output changes accordingly.

It is a single chip voice recorder and playback device. From a plus integrated circuit, make use of proprietary analog storage technique implemented using flash non-volatile memory process in which each cell is capable of storing up to 256 voltage levels.

This LCD consists of two rows and each column can print up to 16 characters. Its operating voltage is 4.7 to 5.3 V. It can also display any custom-generated characters.

## BLOCK DIAGRAM

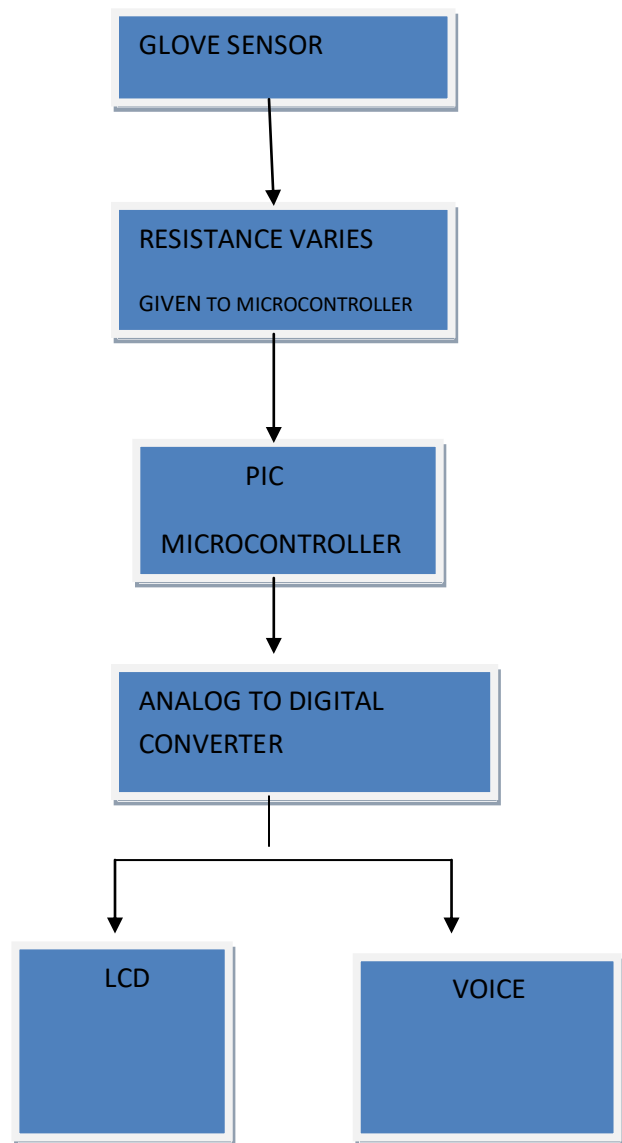


## WORKING

In this circuit diagram, power supply is given by microcontroller 7805 which maximum can give 5 volt. Here 10 ohms resistor are in parallel with flex sensor which again have the resistance of 10 ohm. On bending it changes its resistance and it increases. It has 8 LEDs which are in parallel to voice processor and in series with LCD so that we get to

know that board is taking response or not. Now in PIC16F887A pin 2,3,4 and 5 have an inbuilt ADC which are directly connected to flex sensor. LCD is connected to port D of PIC and voice processor is connected to port C. It has a RESET button which is only used to execute the program from the starting.

## FLOWCHART



## CONCLUSION

Sign language is a useful tool to ease the communication between the deaf or mute community and the normal people. Yet there is a communication barrier between these communities with normal people. This project aims to lower the communication gap between the deaf or mute community and the normal people. This project was meant to be a prototype to check the feasibility of recognizing sign language using sensor gloves. With this project the deaf or mute people can use the glove to perform the sign language and it will be converted into speech so that normal people can easily understand. The main feature of this project is that the gesture recognizer is a standalone system which is applicable in daily life.

## REFERENCES

- ▶ LabVIEW", International Conference on Intelligent and Advanced Systems 2007.
- ▶ S2V(Hand Gesture Recognition and Voice Conversion System for Differentially Able Dumb People)SHOAIB AHMED V. Department of Electronics and Communication, Abdul Hakeem College of Engineering and Technology, Melvisharam, Vellore, Tamil Nadu 632 509, Submitted to: Tech Expo-The Global Summit, London 2012.
- ▶ Steven Douglas Collins. May," ADVERBIAL MORPHEMES IN TACTILE AMERICAN SIGN LANGUAGE. GRADUATE COLLEGE OF UNION INSTITUTE AND UNIVERSITY" 1131,2004.
- ▶ Nicholas Bom, Senior project sign language Nicholas Bom., "Senior Project Sign Language Glove", ELECTRICAL ENGINEERING DEPARTMENT. California Polytechnic State University,1-49,2010.
- ▶ Kirsten Ellis and Jan Carlo Barca. "Exploring Sensor Gloves for Teaching Children Sign Language. Advances in Human-Computer Interaction" 18.2012.
- ▶ Andreas Domingo, Rini Akmeliawati, Kuang Ye Chow Pattern Matching for Automatic Sign Language Translation System using