A BRAILLE BASED MOBILE COMMUNICATION FOR DEAF-BLIND PEOPLE

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Abstract - *The main purpose of communication which gives the complete different solutions for deaf-blind people. In mainly, We are facing India is now a home to the world's largest number of blind people. Technologies are developed day by day principally in communication through mobile phones which plays a crucial role. In message application the visually impaired people only can able to read the message in on the tactile surface of the display. But the quality of the system is not good because the blind people not able to identify the text clearly. Still now Braille technology is used by the blinds only for the reading purpose. In our Method using this Braille system both reading and replying the messages possible by visually impaired people.In this system using Braille technology the blind people can access the message application in mobiles as a normal people. At the same time keypad using one by one messages will be sending in the based on the keypad options by user can easily send the information's through Message .We are Using this system uneducated people also may use the message application in mobiles and then Easily Blind People Message getting via GSM for mobile service communication.*

KeyWords: **Microcontroller16F877A, Vibratormotor, LCD, Buzzer, GSM, Keypad.**

1. INTRODUCTION

The Braille system was developed by LOUIS BRAILLE in 1824. Deaf-blindness is a sensory-impairment with a combined loss of vision and hearing. The degree of sensory loss in a Deaf-blind individual depends on the cause of their disability. It can be congenital (by birth) or acquired at later stage in life [1]. Deaf-blind individuals are a unique, heterogeneous and marginalized group of individuals whose disability is greater than the sum of the individual disabilities of deafness or blindness. There are about 500,000 deafblind individuals across India.

Such people often face social isolation and severe communication, developmental and educational problems. Typically, people with acquired deaf-blindness have the opportunity to learn and use Braille for communication. Braille is a tactile alphabet which each character consisting of a combination raised dots in a 6-cell ordered matrix.

Overview of Proposed Solution Our system acts as an interface to facilitate real-time two- way translation between the English text and Braille text. This information is transmitted via serial commu- nication between the gloves microcontroller unit (MCU) and either a PC or a mobile device with Bluetooth. Like the Lorm Glove, our system provides vibro-tactile feedback to confirm the user input, while doing away with complexity associated with continuous gestures. We instead use a set of discrete symbols of the Braille alphabet that allows a simpler design because sensors and actuators do not require to be read or fired in clusters. Using Braille also lends more simplicity (less buttons) and universality to our system when compared to other region-specific languages like Lorm or Malossi. Also, our device is less obstructive than WearaBraille, since it is worn on only one hand freeing up the other hand for other tasks (when it is not being used for inputting).
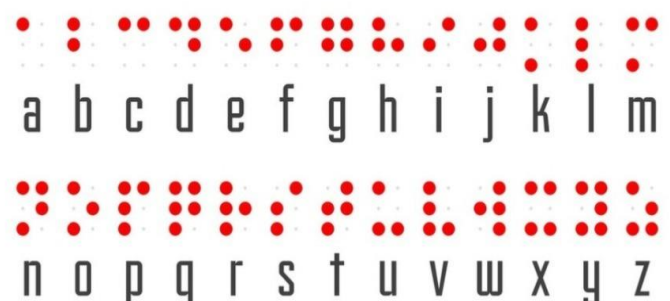
2.BLOCK DIAGRAM
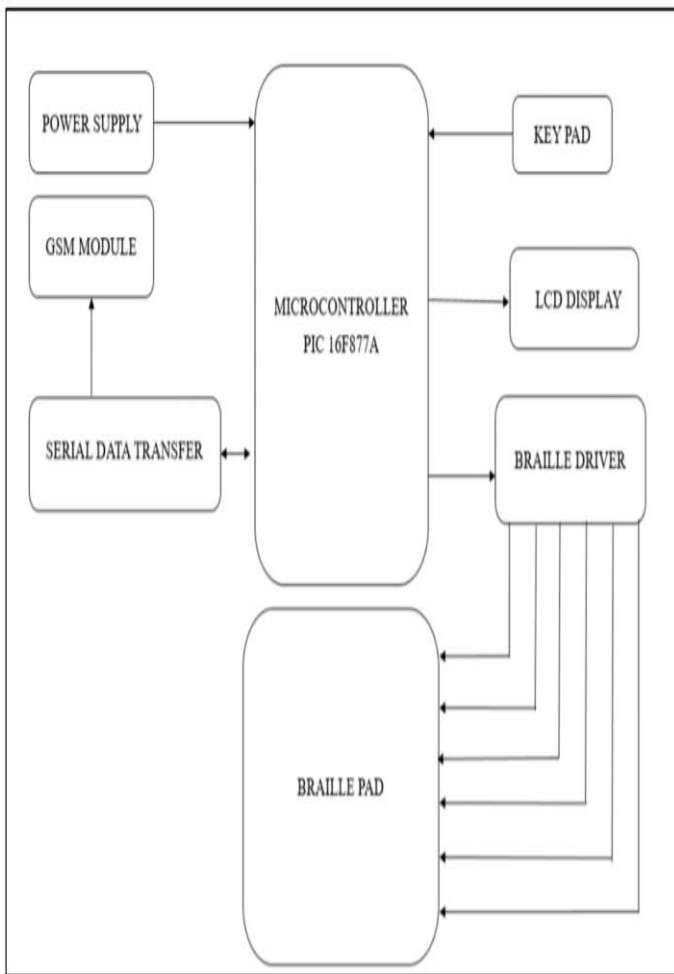
3. PROPOSED SYSTEM

The Proposed System help the blind people to communicates the message via SMS to a remote contact. It enables user to convey simple messages by capacitive touch sensors as input sensors placed on the Palmer side of the Message converted to text by the mobile phone. But here, using this Braille system both reading and replying the messages possible by visually impaired people. This system helps the blind people can access the message application in mobiles as a normal people. At the same time, the keypad is used to send one by one message based on keypad options so the user can send the information through messages easily. This system is also applicable for uneducated people. This system receive the message from the sender to the registered mobile number via GSM with the help of microcontroller. Using the serial data transfer the message sent is transferred to the microcontroller (PIC 16F877A).The microcontroller maps the corresponding letters of the message according to the Braille Script. The PIC microcontroller is connected with the braille pad

4. BRAILLE SYSTEM

Braille is writing system which enables blind and partially sighted people to read through touch. It consists of patterns of raised dots arranged in cells of up to six dots in a 3x2 matrix configuration. This system provides the privacy to read the text message through the Braille patterns. The below mentioned image helps to execute the Braille letters in a regular intervals of time.
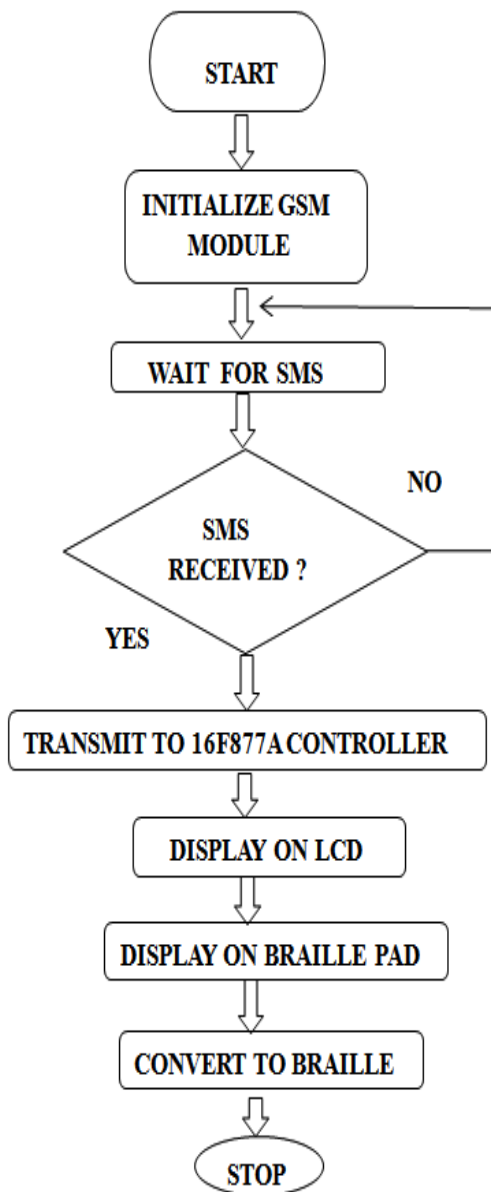

5.DESCRIPTION

5.1 For send sms:

Here the blind-deaf person can type the SMS using the keypad interfaced to the microcontroller. The microcontroller then converts the Braille letter to the English alphabets using the lookup table. After the message is translated into alphanumeric English letters the microcontroller sends the typed SMS via the dedicated mobile using AT commands.

FLOW CHART FOR SEND SMS   **FLOW CHART FOR RECEIVE SMS**
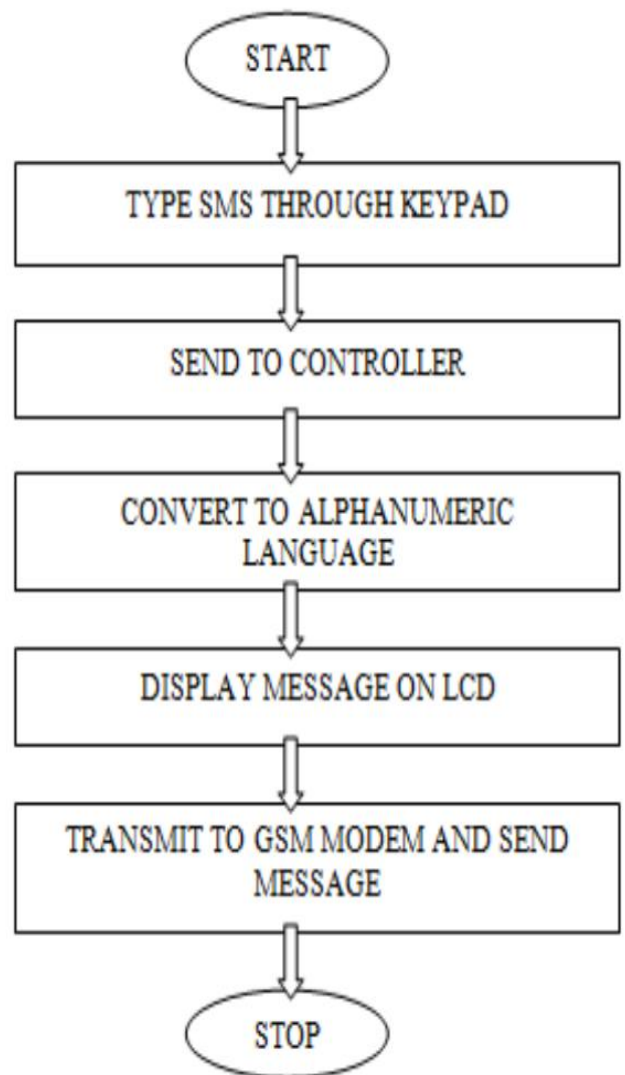
5.2 For receive sms:

Here the sender sends the SMS to the blind-deaf person's mobile connected to the controller. The microcontroller reads the SMS through AT commands and then converts the letters of the SMS into the Braille language using the lookup table stored in its memory. Then with the help of six vibrator motors the microcontroller vibrates the Braille pad on which the blind-deaf person can read the SMS.

6. HARDWARE IMPLEMENTATION
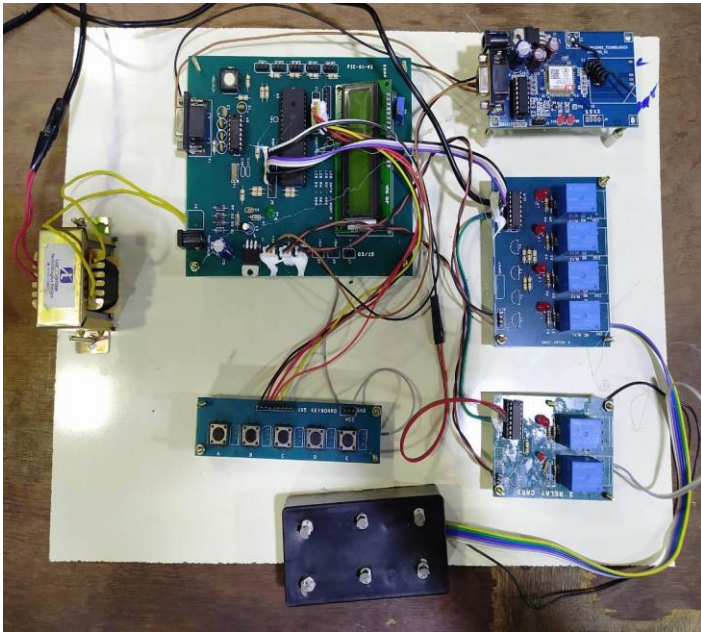
The above mentioned image is the complete fabrication of the proposed system (Braille system).

7. CONCLUSION

Thus we conclude from above study that with some modifications in conventional communicating device, we can include large no. of physically challenged people in communication system and to provide the perfect solution for the different communication problem.

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