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Braille Pad for Visually Impaired People

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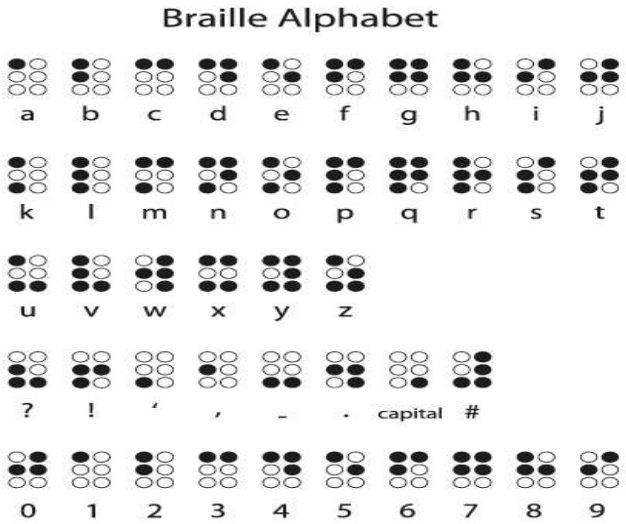
Abstract - *Braille is a nonlinear writing system which is used by and for visually impaired people. People who are blind will not only have educational disadvantage but also, they miss out some basic parts of advanced technology. Braille could be read by activating braille alphabets on a finger. The people having low vision do have enhanced abilities in their other senses so they can sense that braille pattern easily. The aim of the project is to create a device which will help that blind person to access print materials and in operating SMS received on their cell phones.*

1. INTRODUCTION

As we know how important telecommunication is in our life, and mobile phone is used for that purpose. There comes limitation on it as people having visual inability and can't access them. So, we are designing one device through which these people can access the mobile phone and read SMS from the cell, plus can read the documents, books which are saved in external SD card. We are going to use braille system as a basis. Braille is not a language but it is a code through which people having low vision can learn any language. We are going to interface GSM module and SD card module to the microcontroller so they can access data from that.

2. BRAILLE SYSTEM



Braille system is used by and for blind people for reading and writing purpose as they can't access print materials. It can handle with touch which consists of raised dots arranged in a matrix form of three rows and two columns. Any language can be written in braille code. Below is the grade 1 braille format, generally this format is used. Above is the grade 1 braille format, generally this format is used.

3. PRESENT THEORY

In 1821 a blind Frenchman Louis Braille invented the Braille system to help blind people in reading and writing purpose. Then now blind peoples been using Braille lipi consists of a cell of six raised dots arranged as above in a matrix of three rows and two columns which can be sensed with the moving fingers from left to right on the surface of printed paper of braille alphabets. As there comes limitations on availability of braille books, pages per books as well as words per pages this technique is no more feasible.

4. PROPOSED SYSTEM

Our proposed system is a small braille keypad through which people having low vision can read the data from external SD card as well as can read the text messages from their mobile. The future scope for this system is wide as blind peoples will able to access books, libraries as well as texts. Arduino will be used to process and read the text which is Latin characters from an SD card and converted it to a Braille pattern. We are going to use small vibrating motors as a braille pad keys to which blind person can touch and identify the activated alphabet. Total system can be sorted in two modes GSM mode as well as SD card mode by providing one switch. SMS from user's mobile can be read from GSM module through AT commands. Buzzer is provided to indicate SMS reception.

5. MATERIAL

1.Microcontroller

2.GSM Module

3.SD Card Module

4.LCD Display

5.Latch

6.Vibrating Motors

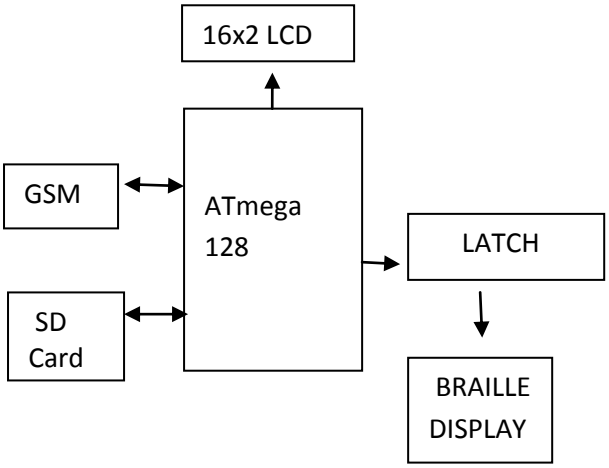
7.Power Supply

8.Wires

9.Buzzer

10.Switch

6. BLOCK DIAGRAM



7. CONCLUSION

In future the system has scope to read and access emails, newspaper etc. With some modification we can also help these peoples to access home appliances. And this system truly becomes more efficient, smaller in size and cost minimum system.

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