

Braille Language Text Conversion using Vibration Sensing Unit

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Abstract: *The major goal of this project is to design and construct a Multi-Lingual Braille System Output Device for visually impaired people that will allow them to access and read computer texts. The device collects English texts and displays them with the help of a controller. It can also make a sound that corresponds to the displayed characters. The cells are controlled by a microcontroller called a Programmable Interface Controller (PIC). The Universal Serial Bus is used to communicate between the device and the computer (USB). The program that controls this interaction is written in the VB.net programming language. For the visually impaired to keep up with technology breakthroughs, such devices must be developed on a continuous basis. The inexpensive cost, the added multilingual, and the audio features are the key advantages of this system. Many other features, such as new languages and the Grade 2 Braille System, can be added to meet the demands of the users.*

Keywords: Braille System

I. INTRODUCTION

According to the survey conducted in India 70 million peoples are deaf and 36 million peoples are blind in overall world and approximately from those 12 million peoples in India are blind and 63 million peoples are deaf. Deaf blindness is also called as DSI accounts 5,00,000 deaf blind adults and children in India. Braille is a code which was introduced by Louis Braille to help the blind to communicate with each other by using six raised dots. These dots are arranging in a linear fashion 3 rows and 2 columns. The Braille cells are also used to by the visually disabled person to read the message which consist of 6 raised dots with 3 rows and 2 column arrangement. The visually impaired persons are taught Braille at their very early age in order to develop their reading skills. This project discusses on the existing models that helps in communicating with a deaf-blind person and on how technology has helped in breaking the barrier for communication.

II. LITERATURE SURVEY

The Design and Development of a Multi-Lingual Braille System Output Device with Audio Enhancement : Michel J. Owayjan, Taimour Z. Wehbe, Elie Y. Bou Daher, Omran A. Ayoub

The device acquires both English or Arabic texts and displays them using controlled piezoelectric Braille cells. It also has the ability to produce a sound that matches the displayed characters. The main advantages of this system are its low cost, the added multi-lingual, and the audio features.

Braille-based Text Input for Multi-touch Screen Mobile Phones: Hossein Ghodosi Fard Bie Chuangjun

Multi-touch screen is a relatively new and revolutionary technology in mobile phone industry. In this research, we present new interface layouts for multi touch screen mobile phones that enable visionless people to enter text in the form of Braille cells. Braille is the only way for these people to directly read and write without getting help from any extra assistive instruments.

Electronic Braille Alphabet Reader for Multilanguage : Khajavali Kovvuru, D. Jaya Kumar, S. Nanda Kishore

In these paper authors are working up another methodology using a Braille framework to scrutinize for understudies. Braille is a material arrangement system used by an outwardly debilitated and the apparently upset. Electronic Braille Readers are becoming popular worldwide day by day for visually disabled people.

Braille Keypad : Aneeta Jimmi, Athira V, Mahesh V, Sneha Sethumadhavan

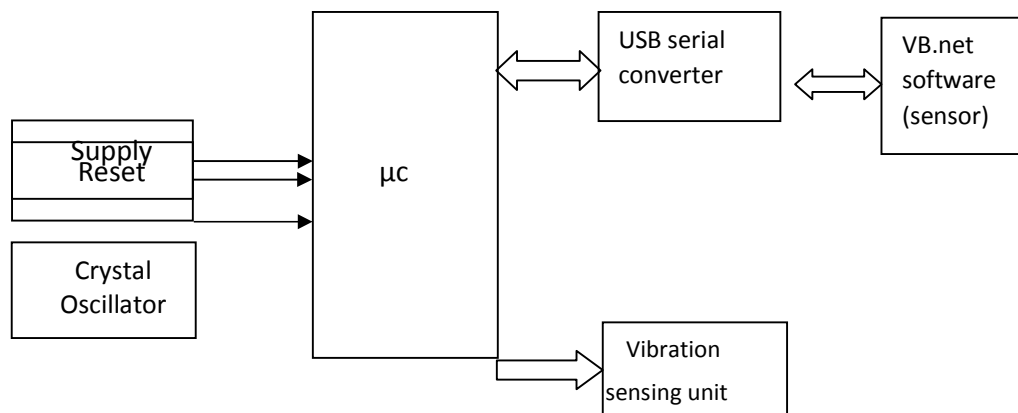
The aim of the project is to create a small portable device which will act as a braille note taker and enable the user to

access internet for sending or receiving email and it can also be used as remote to control various home appliances. The system comprises of a braille device, a host which may be a computer or ARM board and a slave device.

Learning Aid in Braille and Typography : Siddhesh Sushil Shirsekar

This paper aims to study the existing braille script, highlight their inadequacies in teaching methods for small children and suggest probable solutions. The project focuses mainly on the use of braille and typography together using the existing braille script . In addition, this study is carrying its importance towards the beneficial development for visually impaired children in our society. Thus, providing an educational aid. The main idea behind this project is to derive a piece of hardware to use to teach the visually Challenged children for future

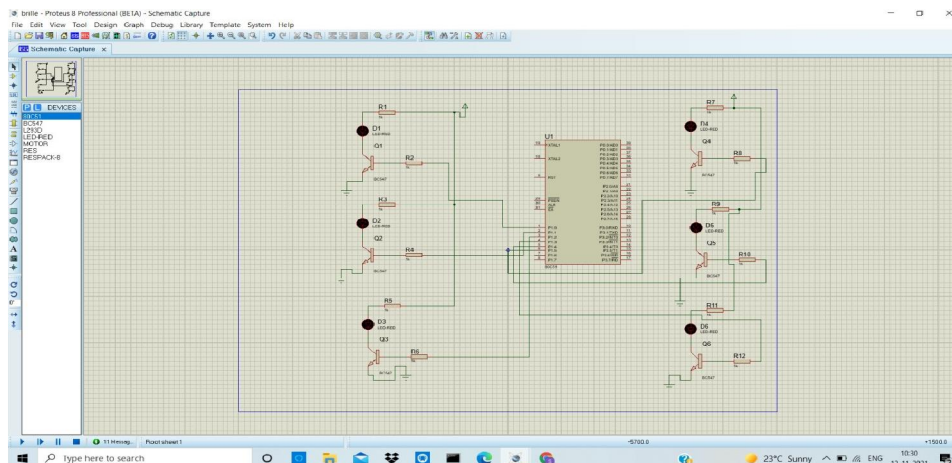
2.1 Block Diagram

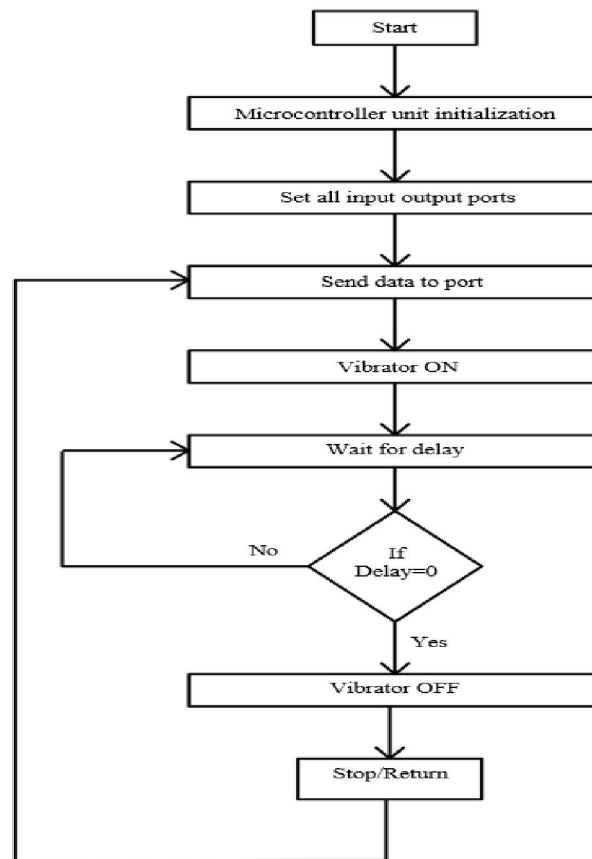


2.2 Working

Block diagram of braille language text conversion using vibration sensing unit is as shown in above fig. in that system we are used microcontroller 8051, VB.net software and mobile vibrator sensors. Here firstly we enter some data in vb.net software as we know that vb.net software has facility to convert text into speech for example if we enter some text that is “welcome to ADCET” then vb.net software will convert this text into speech and also vb.net software has facility to transferred data serially into next device . Here we use vb.net language for coding then it will give to microcontroller through USB (Universal Serial Bus) then this will convert into brille code by using microcontroller 8051 through coding. Then according to the command microcontroller passes the data to mobile vibrator sensors And this will sense the blind people by putting their palm on the vibrator sensors. According to the vibration the blind people will sense this words or numbers. In this way blind person will sense the desire word ineffective way.

III. SIMULATION





3.1 Explanation

In our simulation we use microcontroller 8051 ,transistors and LED's. LEDs are used instead of mobile vibrator sensors. First of all the bits of microcontroller will be initialized, after initializing all the bits microcontroller set all input- output ports then microcontroller send data to the ports after that vibrators will turn ON for particular period that is minimum 10 seconds then wait for delay. If delay is equal to zero then vibrators will turn OFF otherwise it waits for delay. After vibrators get turn off the procedure will repeat again from sending data to the output port.

IV. CONCLUSION

This project will be very useful for the blind and deaf people. Because Our system is too much adaptable for variety of local language viz. Hindi, Marathi, English and so many languages so our system that is brille language text conversion using vibration sensing unit is very well organized for blind or deaf people.

The system is based on vb.net software, so there are n number of facilities available in vb.net software that is speaker and it has window base platform, so the data is thrown out through speaker and this data goes serially to the next device hence it is more profitable. This not only provides long lasting learning but also communication.

There are so many technologies available for blind people that is printers, books etc. but the cost of that learning products are very expensive so, our system is more efficient because its cost is very low as compared to other system.

In today's life braille technology advancements are too much significant hence our system provides number of books, texts and also libraries to upskill their knowledge and self-reliant. So, this project that is braille language text conversion using vibration sensing unit is very efficient learning system for blind people or deaf people because it provides too many facilities for blind and deaf people and also it is cost effective system.

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