

Smart Devices for Visually Challenged People Based on IOT

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Article Received: 29 January 2018

Article Accepted: 26 February 2018

Article Published: 18 April 2018

ABSTRACT

Visually challenged people face lot of difficulties in their day to day life which includes handling the home appliances at their home by themselves without the aid of others. Our project titled “Smart system for visually challenged people based on IOT” is to help those people handle the home appliances by themselves. In this paper the proposed system enables visually challenged people to use a Braille controller embedded in their Smart device called “SMART BRAILLE REMOTE DEVICE” to control the electrical appliances embedded with a GSM so that they have everything at their reach and at the same time, they don’t feel depressed over their inability. Since IOT is one of the upcoming technologies that can be used for home automation in connecting and managing remote devices of the appliances and also store the load information that the visually challenged used. The proposed solution is to make them to control the electrical appliances inside and outside their home all alone without an aid for themselves.

Keywords: GSM, PIC microcontroller, IOT, LCD.

1. INTRODUCTION

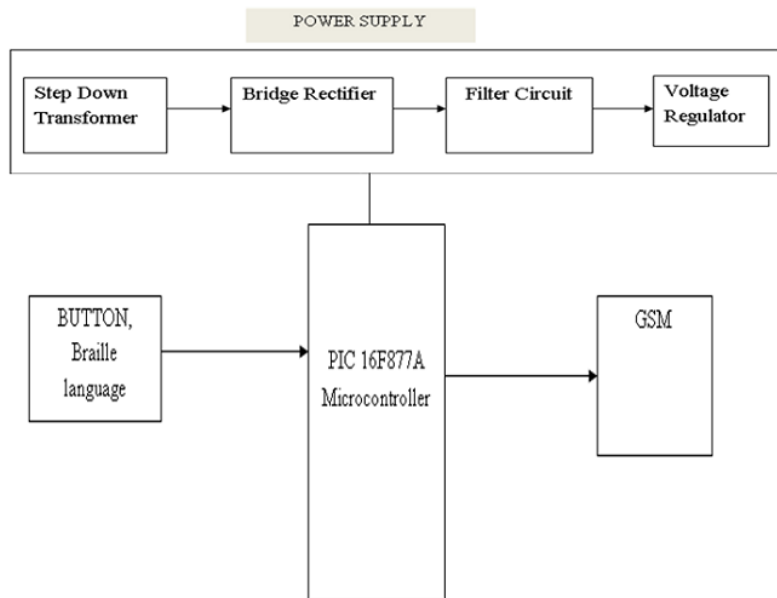
Globally, it is estimated that there are around 37 million people are totally blind, and over 15 million are from India. Some have low vision and some people have occurred some kind of visual impairment. As indicated by (WHO) it is evaluated that more than seven million individuals get to be visually impaired each year. It was reported that, 75% of visual deficiency is avoidable, 80% of visual impairment is avoidable and 90% of people with visual impairment live in developing countries. Most of the people with visual impairment are older and female are more at risks at every age, in every part of the world. In this paper the proposed system enables visually challenged people to use a Braille controller embedded in their Smart device called “SMART BRAILLE REMOTE DEVICE” to detect the objects embedded with a GSM so that they have everything at their reach and at the same time, they don’t feel depressed over their inability. The proposed solution is to make a low-cost automation system that would help them survive at their home all alone without an aid for themselves.

Braille language plays a very big role in our project. Braille is a language which is understood by the visually challenged people. Here Braille button is used in the transmitter side. There is 256 patterns available in the braille button and each pattern corresponds to the separate character. Here separate character is allocated for the several electrical appliances and gets operated based on the corresponding input given. The input is given by using the braille button.

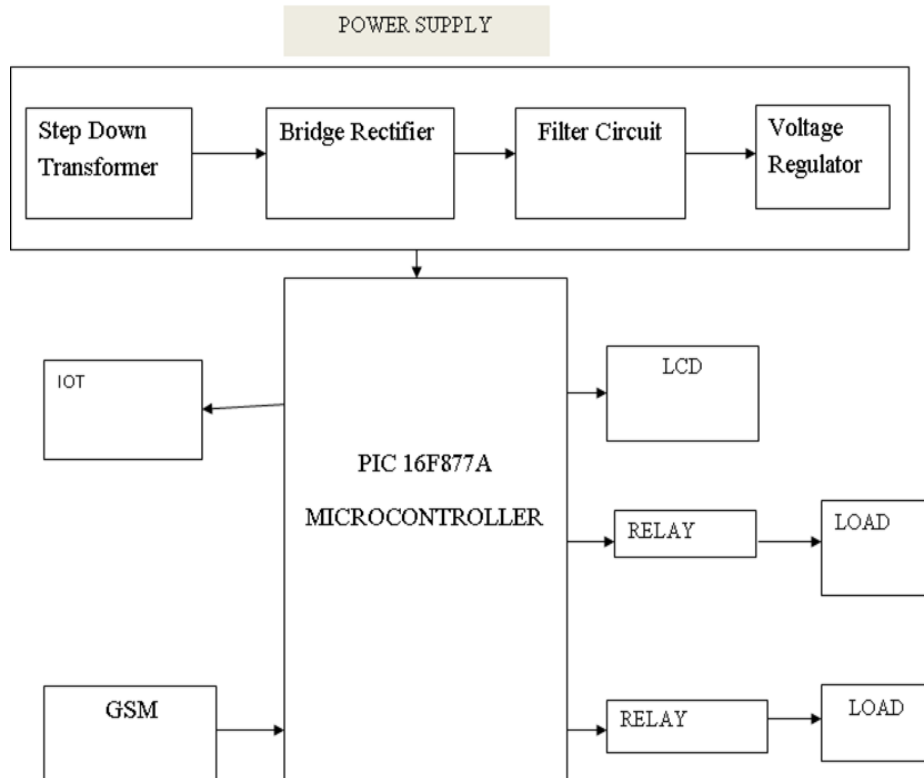
2. PROPOSED SYSTEM

The visually challenged persons give the information of what they want to automate through Braille characters which comprises of the denoting letters to activate the electrical appliances in the button. The information send to the controller via GSM which load has to activate (or) deactivate according to the input given by them. Relay is used for the switching purpose of the load connected it to switch ON (or) OFF. We could connect many loads as electrical appliances automated remotely through GSM according to their convenience. The information of what

are the appliances used by the visually challenged person will be updated on IOT. The normal persons whom are relations to the visually challenged persons can automated the appliances via IOT for helping them when they supposed to be alone. Comparing the existing systems of all other previous project. This project has improved a lot in many ways like normal persons other than visually challenged people can able to access the devices in anywhere. And the status of the visually challenged people can be monitor by their relatives in anywhere.



2.1. RECEIVER UNIT



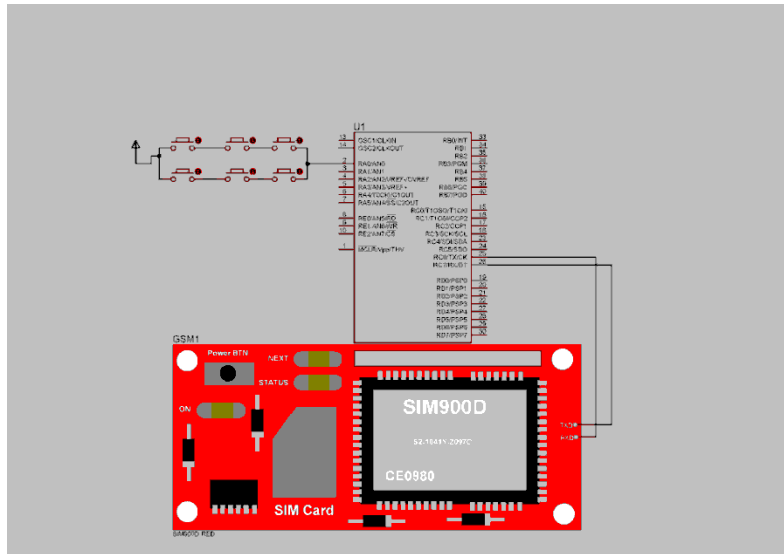


Fig.3 Circuit diagram of Transmitter unit

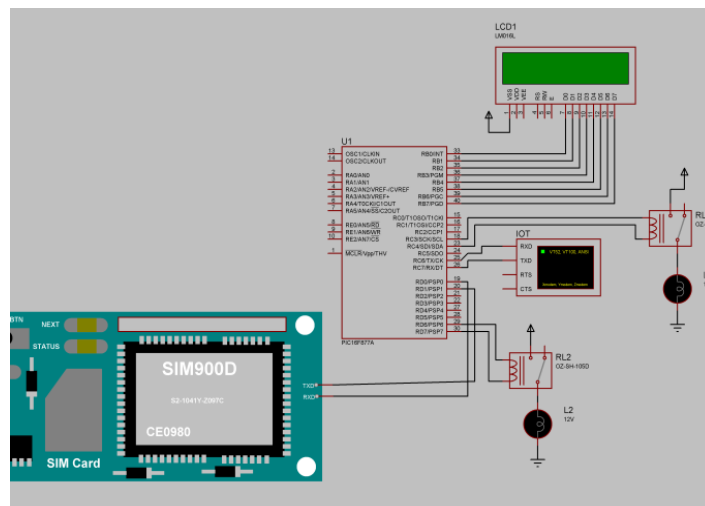


Fig.4 Circuit diagram of Receiver unit

3. RESULT AND DISCUSSION

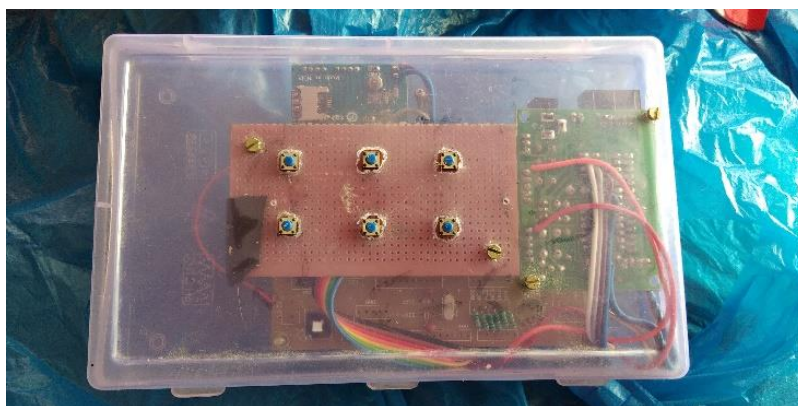


Fig. 5 Diagram of Transmitter unit

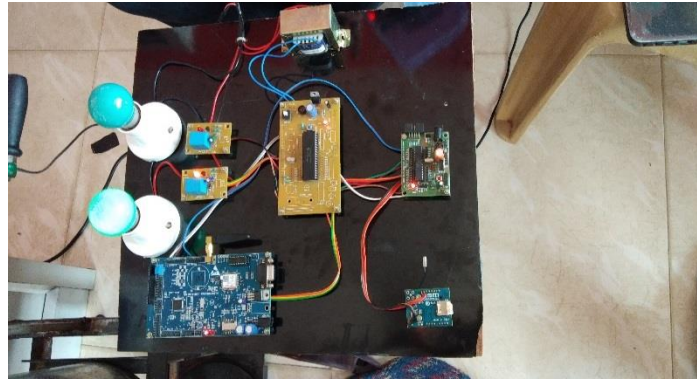


Fig. 6 Diagram of Receiver unit

This is the transmitter unit of the proposed system. It consists of Power supply unit, Braille button, PIC microcontroller, and GSM. Braille is represented in a block called Braille patterns. The block contains 256 possible patterns of 8 – dot Braille cell, including the complete 6 – dot cell range where the corresponding representation is given as follows. Braille is read on by touch. Here the project consists of 6 braille buttons each button is used to perform each individual operation. For example while pressing button A then any one of the home appliances will run and pressing the same button again the appliances will turn Off. Similarly the process will be continuing for each appliance.

4. CONCLUSION

The conclusion of our paper, a prototype of home automation for visually challenged using IoT is presented. With aid of the smart device, the visually challenged can easily have everything they need at their reach. This paper demonstrates an automation concept that would aid the visually challenged people to automate every appliances around them using the Braille controller by the Braille button. The visually challenged people could not utilize the whole of technologies and yet this makes them feel more distressed about them. So the main idea behind our project is to help the visually challenged people to make use of the current technologies in efficient way. Iot is used in our project by using IoT the information of what are the appliances used by the visually challenged people will be updated by using IoT. So every minute we can have the direct access to the concerned appliances and grab the information about the performance. The normal person whom are relatives to the visually challenged persons can automate the appliances via IoT for helping them when they supposed to alone.

ACKNOWLEDGEMENT

This work was supported in part by Department of Science & Technology (DST), FIST Program at Francis Xavier Engineering College, Tirunelveli, Tamilnadu, India.

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