

Smart Notice Board System using Android App

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Abstract— In day today life everyone needs a comfort living life. People has researched different technology for their sake of life. In today's world people are becoming accustomed to easy access to information. Whether it's through the internet or television channels, peoples want to be informed and up-to-date with the latest events happening all around the world. The inclination of making the manually controlled things automatic has become a common practice these days.so in order to prevent human efforts we are going to propose smart notice board system.

Key words: LPC2138, LCD, Android App, Bluetooth protocol.

I. INTRODUCTION

The process of making things automatic is being exploited in almost all the major fields. Making things automatic reduces burden on the human being. The time utilized and the effort used in manually controlled processes is much higher as compared to the automatic systems. Considering the commonly used notice board system in our schools, colleges and universities. In these institutes, we still use manual way of putting the important notices, class and examination schedules, results and all other useful information etc in the notice boards. This manual system needs more effort and time to get the written notice from the faculty member or peon and then put it on the notice board. In this paper, we have developed a smart notice board system using android application which is automatic in nature and provides update of notices, changed schedules, useful information, display results quickly on the display. The advancements in technology has been put together to make automate the process of manually publishing notice board. Notice Board is primary thing which is found in any institution or public places like bus stations, railway stations, college campuses, malls, etc. But sticking various notices day to day is somewhat a difficult process. A separate person is required to take care of this notices display. This project describe about advanced wireless notice board system using android application. The project is built around ARM controller.

II. BLOCK DIAGRAM

An overall view of Smart Notice Board System is shown in Fig. 1. And Fig.2. The main goal of Smart Notice Board System project is to send voice input data to LCD display by converting it into textual form. The system uses Bluetooth protocol for transmission of data from transmitter to receiver via Bluetooth. Received data is recognized by using google database which is present in smartphones. The voice input is given through mic. The mic then gives this data to google database present in smartphone. Then using this data the voice to text conversion takes place. The text form is shown on display of smart phone. Now in order to display it on notice board the smartphone and notice board are connected with each other using Bluetooth protocol. Then the textual

data is send to notice board via Bluetooth and it is displayed on LCD display at notice board.

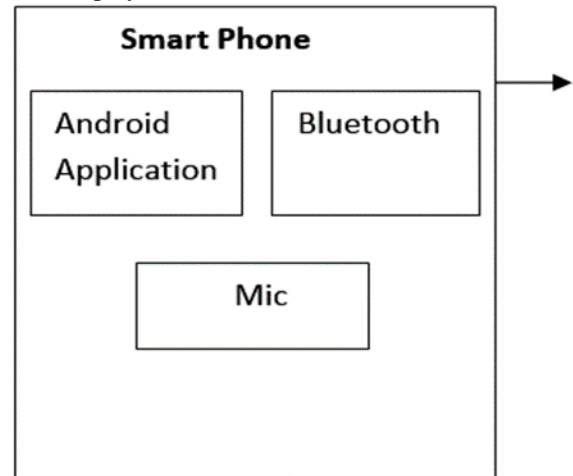


Fig. 1: Transmitter

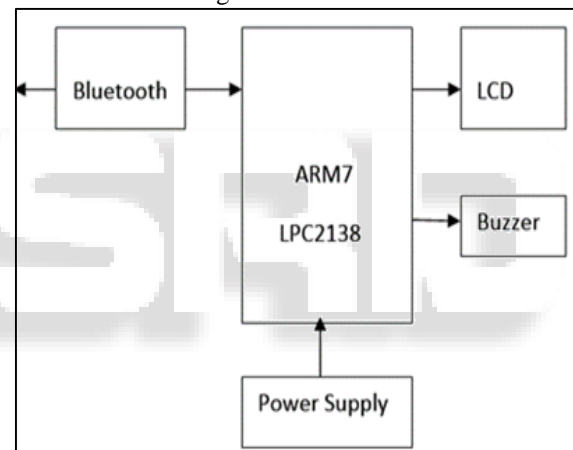


Fig. 2: Notice Board Unit

A. The Transmitter:

The main objective of the microcontroller is to control the communication between the transmitter and the receiver. In ARM core we are using ARM7 processor and LPC 2138 controller. Because it has 60MHz clock operation so that it's operation is fast. Also it is easily available and it is cheaper than LPC2138. Mic is used for recording voice data and that is require to convert it in textual form. For this purpose we have used microphone for recording voice. This recorded voice data is matched with google data base usually present in almost all smart phones. After comparing this data the voice data is displayed on LCD display at receiver side. The nub of data communication about this system lies in wireless communication control terminals that uses Bluetooth Modules to transmit short distance data extensively and reliably. It Support Bluetooth protocols .Also it is based on IEEE 802.11 Standard. The range of Bluetooth is 100m.

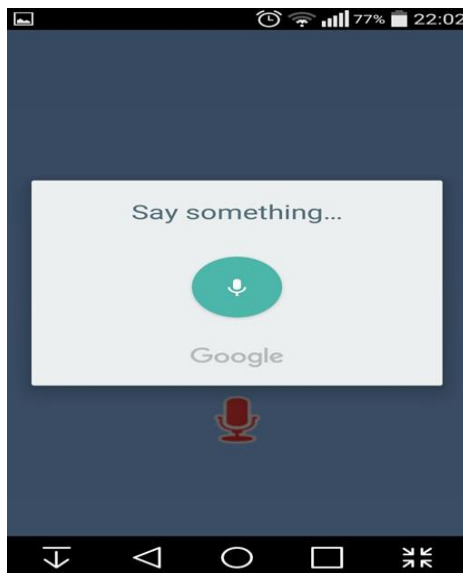


Fig. 3: Voice Recognition System

B. The Notice Board:

The notice board unit consists of LCD display, LPC2138, Bluetooth module. Bluetooth is a wireless technology standard for exchanging data over short distance between two devices. It is Invented by telecom vendor Ericsson in 1994, it was originally used as a wireless alternative to RS-232 data cables. It can connect several devices like mobiles, computers etc. Bluetooth is managed by the Bluetooth Special Interest Group (SIG), which has huge member companies in the areas of telecommunication, networking, and consumer electronics. ARM processor is one of the family of RISC architecture developed by Advanced RISC Machines . ARM has made by 32-bit and 64-bit RISC multi-core processors. RISC processors is design to perform a smaller number of instructions so they can operate at a higher speed, performing more than millions of instructions per second . ARM processors are used in electronic devices such as smartphones, tablets and multimedia players..

ARM 7 processor features include:

- 16/32-bit ARM7TDMI-S microcontroller in a tiny LQFP64 package multi-core processors
- Memory ranging from 32 kb to 512 kb.
- 8 channel 10-bit A/D converters provide(s) a total of up to 16 analog inputs
- Single 10-bit D/A converter provides
- It is a clock frequency is from 100 to 133 Mhz
- Multiple serial interfaces including two uarts (16C550), two Fast I2C (400 kbit/s), SPI™ and ssp
- Watchdog timer

III. ALGORITHM

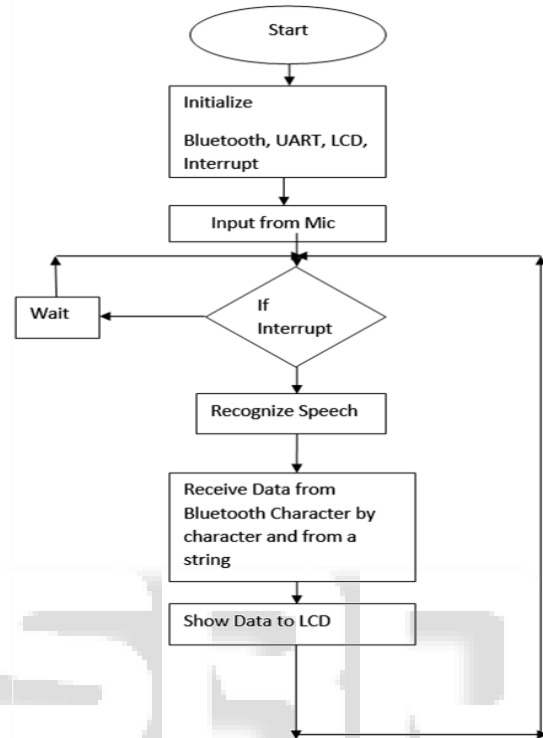
A. ARM Program Algorithm:

- 1) Initialize the Bluetooth module
- 2) Initialize UART module
- 3) Initialize LCD
- 4) Initialize Receive interrupt
- 5) When Data received from Bluetooth through UART, Store Data to ARM Memory
- 6) Convert character by character data to strings
- 7) Send data to LCD to show
- 8) Repeat steps from step 5

B. Android Application Algorithm

- 1) Import Bluetooth permission
- 2) Initialize database
- 3) Record speech input
- 4) Using google word database, recognize word inputs
- 5) Send word input to ARM using Bluetooth Stack
- 6) Repeat from step 3

IV. FLOWCHART



V. FUTURE SCOPE

- A practical model can be able to display more than one message at a time on display screen.
- we can send messages via GSM network and displaying on a LED.. The same principle can be applied to control electrical appliances .
- By sending the commands to the robots, Robots can be controlled in a similar fashion. This can be used in spy robots..

VI. RESULTS DISCUSSION

A smart notice board works well as per requirement and it is able to transmit data wirelessly using Bluetooth protocol through smart phone. It is possible to get voice data converted to text data by using this system as well as displaying this on LCD display which is far away but in Bluetooth range i.e. less than 100m.

VII. CONCLUSION

In this paper, we have recommended a Smart Notice Board which takes advantage of the Bluetooth protocol. In this system, the voice data is converted to text form. And transmitted to the display board. The recommended system is highly helpful to display the information on Railway stations, Educational Institutes, Air Ports etc.

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