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Automatic Controlled Digital Notice Board by Using Wireless Direction Detector

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ABSTRACT: The paper proposes an inventive approach of Automatic Controlled notice Board display which is used to display various notices without the message being typed manually. We can rotate the news or notice or time table or related to any data which will be display on notice board from left to right, right to left, up to down and down to up. In today's life most of the colleges, offices use a simple notice board in which we cannot manage the whole data on single page for long time and it need more maintenance as compare to digital notice board. Some of the places need quick notices display on notice board like in college, railway stations share-market and this notice should be in real-time, so we need a real-time notice board. The inventive system can be used in different places comprising government bodies, educative institutions, travel agencies etc. for displaying pass messages on the display instantaneously by dictating the message rather than being typed each time. Hence, voice based notice board has many advantages in major number of organizations. We have implemented this project by giving a delay to avoid the workload of giving inputs at each and every time. Using this, the user will control the display by using the sensor. Here the Gesture hand is use for dictate the message via an android phone which then the voice message is converted into a text message via an application i.e. "voice command". The text message is then transmitted via Bluetooth to the Arduino Board and is displayed on the LCD screen.

KEYWORDS: Accelerometer, Bluetooth, Smartphone, Wireless Mouse & Keyboard, Wireless Controlled PC.

I. INTRODUCTION

Notice board is very primitive method used in institutions or public business places like bus travel stations, colleges, malls etc. A specific person is required to take care of the notice displays in the conventional method. Bundle's of paper is being used and this is followed by wastage of paper by the management. To meet the demands of the huge amount of paper causes immense deforestation hence, providing a pathway to global warming. The primary goal of this work is to create a smart notice board which can operates in a well organized manner with respect to date and time which will help the user to constantly keep track of the notice board every time he uses the system and to convey the information more productivity. This type of digital board is based on touch less technology by which it is possible to Handel the display without touching the screen by using the movement of hand, and this action is accomplished by using sensor, in comparison of other notice board this system does not require any accessories like mouse, keypad, touchpad etc.

The navigation process uses three key pieces of information to analyse the user current position and deliver useful navigation information in this era, the leading-edge of world in connectivity, people demand a simple and time saving method to access information. Either by means of internet or television, people wants to be notified and be updated with the current matters occurring throughout the globe. It works on a low-cost embedded device such as Arduino Board, and for voice-recognition excellent solution used here is the developed Android App. We have used Bluetooth Module for communication. The host can speak out the message at any time within the Bluetooth Range. The text message can be displayed within fewer seconds. We have provided a delay to the message that displays the text

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message for the given Time period and vanishes after the fulfilment of the time limit. Speech Recognition is achieved by developing an App. The application is modified to input messages in English. Speech synthesizer employs a technique based on Hidden Markov Models. It is currently most reliable and flexible approach to speech recognition. The process entails the conversion an audible speech into a collection of words is accomplished by software components.

II. LITERATURE SURVEY

Most of the Notice Board are based on GSM Based, message based some are power line communication based. A Notice Board is a place where people can leave public messages, for example, to advertise things to buy or sell, announce events, or provide information. Notice boards are often made of a material such as cork to facilitate addition and removal of paper messages or it can be placed on digital devices such as computers, phones so people can leave and erase messages for other people to read and see. The main aim of this research work is to make information dissemination much easier in a paperless community as the world tends to graduate into that line of interaction.

Ramchandra K. Gurav et.al. [1]: In this paper it is focused on GSM (Global System For Mobile) technology to design a digital notice board, “Wireless Notice Board using GSM System” is wireless module which send message wirelessly with the help of GSM module. Means user or registered person can able to send the message from anywhere and this message is displayed on LCD display. In addition this message also sends to everyone whose user number store in memory. Everyone get the message personally. Whenever new message is received it is give indication by buzzer. As engineer’s main aim, this project can be said a step to make the life simple using the technology. This project is a remote notice board with a GSM modem at the receivers end. So if the user wants to display any message, he can send the information by SMS and thus update the LCD display accordingly

A.Meenachi et.al. [2]: In his paper focusing on Wireless E-Notice Board Using Wi-Fi and Bluetooth Technology. This project develops a photo type laboratory model wireless notice board system with WIFI MODULE and BLUETOOTH connected to it, which displays the desired message of the user through an SMS. In this project they are using various AT commands to display the message onto the display board. GSM technology is used to control the display board and for conveying the information through a message sent from authenticated user.

Abhishek Gupta et.al. [3]: The main objective of this paper is to develop a wireless e-notice board that displays message sent from the user and to design a simple, easy to install, user friendly system, which can receive and display notice in a particular manner with respect to date and time which will help the user to easily keep the track of notice board every day and each time he uses the system. GSM and Wi-Fi are the wireless technology used. In this paper they used Wi-Fi module for data transmission. In this project the main disadvantage of using Wi-Fi is the network failure.

III. METHADODOLOGY

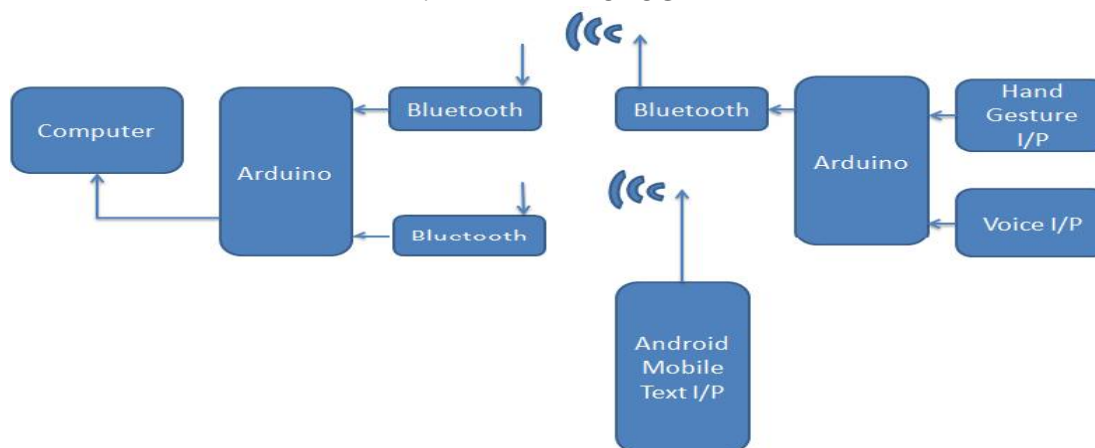


Fig.1.Block Diagram of System Module



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A digital notice board is a display which can detect the presence and location of a touch within the display area. They provide very initiative user interfaces that can be used not only in screens of computer system in industry but also in various places such as college, railway stations, share-market, etc. Here It is to be propose and demonstrate a transparent and flexible direction sensor which is designed for digital display application. In the last few years, research in multi touch systems has been steadily rising. A large fraction of this project is to be focused on developing sensor systems which enable the detection of multiple contact points on an interactive surface. In this project, the sensor is Constructed on the display on right, left, up and down side of the screen and is therefore cheap to manufacture. Additionally, it can be completely hidden behind the display without the need for any front-mounted components In view of the above it will be apparent that, there exists a need of electronic notice board that enables efficient Way to the user for displaying notice. By considering increasing compactness of electronic systems, there is a need of Embedding two or more systems together. This project is an implementation of the idea of wireless communication In this project work, we are supposed to design an embedded system which consists of display unit, Arduino, Bluetooth, Smartphone using wireless technology. The display unit consists of any type of display that can be interfaced with Arduino as shown in fig.

A. Transmitter Section:

Which consist of arduino board, Bluetooth, Accelerometer voice recognition module which are the main part of transmitter section. This section having two operations Gesture Mode & Voice Mode. Both are performing the same operation like Mouse Move, Mouse Function & Key Function. By using this three operation the notice board is completely Mouse & Keyboard less. In Gesture Mode the gesture hand will be move in the Appropriate direction then the screen will be move in Up, Down, Left & Right Direction.& The move will be Click Right & Left . For voice mode user has to speak into mice then the operations like gesture mode will be performing.

B. Receiver Section:

Which is use for voice typing & voice Commands? By completely Keyboard & Mouse less system which required the Arduino Module, Bluetooth, & Android Smartphone. Bluetooth is an open wireless protocol for exchanging data over short distances from fixed and mobile Devices; Bluetooth will receive the signal sent by the Android application device (mobile phone), and then send this signal to the Arduino Module. In order to implement this project, we need to create an Android application that is capable of performing the Following Functions:

- Convert voice data to text
- Send this text over to Arduino via
- Bluetooth for displaying on notice board
- Play the message from the audio device

All the transmission and reception will be done through serial communication. Further display unit will display the message.

IV. EXPERIMENTAL RESULTS

In this section we discussed about the working flow of entire system and screen shots of the navigational digital notice board .As mentioned below,

A. Gesture Mode & Voice Mode operation for Mouse Move:

There are two operations in Gesture hand & Voice Mode Mouse Move scroll up & Scroll down in Power Point First Fig. 2 shows Initial Position, we have to move the Gesture hand in Top to Bottom position then our screen also move in DOWN Direction which is shown in Fig.3 & on the other hand if we Move the gesture Hand in Bottom to Top Position then Screen Move in UP Direction as shown in fig. 4 The same Operation will be perform by Voice Mode operation simply user have to speak into mice.

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Table 1. Mouse Move for Gesture Move

Sr. No.	Movement of Gesture Hand	Output
1	Top to Bottom	Scroll Down
2	Bottom to Top	Scroll Up

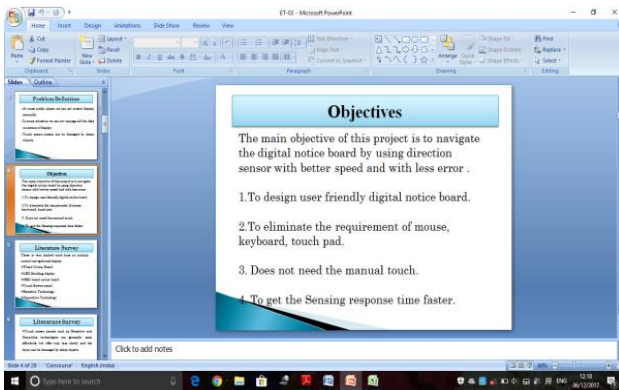


Fig.2. Initial Position of screen

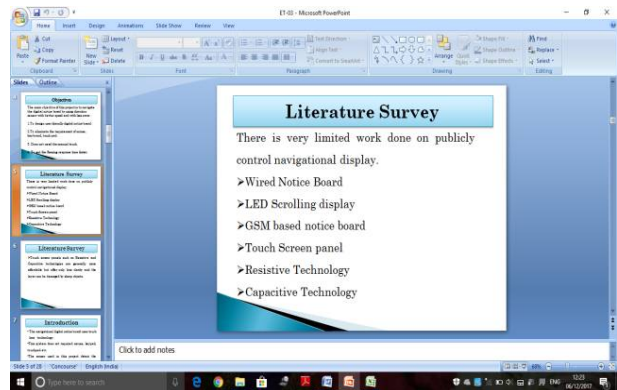


Fig.3. Scroll Down From initial Position

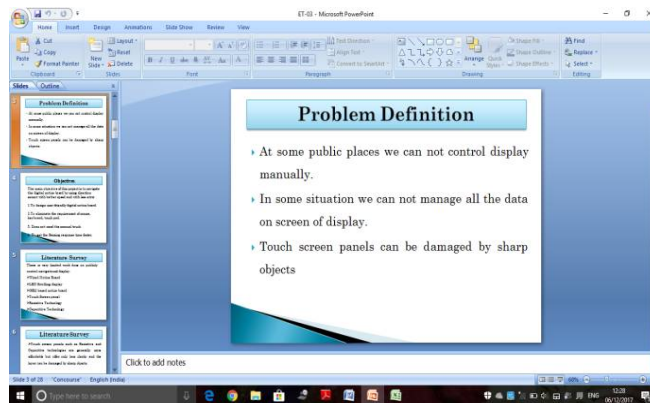


Fig.4. Scroll Up of Screen From initial Position

B. Android Voice Typing & Command:

Wireless communication technique used in this project is Bluetooth technology. Voice recognition is done in the Android application. User has to install this Android application in his/her smart phone or tablet. Then user has to speak into microphone give voice commands or Message to this android app. Android app then passes these commands to the Arduino using wireless communication. It means user doesn't have to go near the Electronic notice board to change the scrolling message. Then it passes these commands to the Notice Board

Bellow Fig. 5, 6, 7, & 8 are shown for perfect understanding of the voice typing. In fig.5 the voice Speaking Mice is shown from this the user can speak into mice like any Message or Command. In Fig. 6 the Voice speaking output is shown. & in Fig.7 the initial Position of voice typing is shown where we have to enter the next sentence which is given by the Fig.6. Then at last the Fig. 8 which gives the final output of the system.

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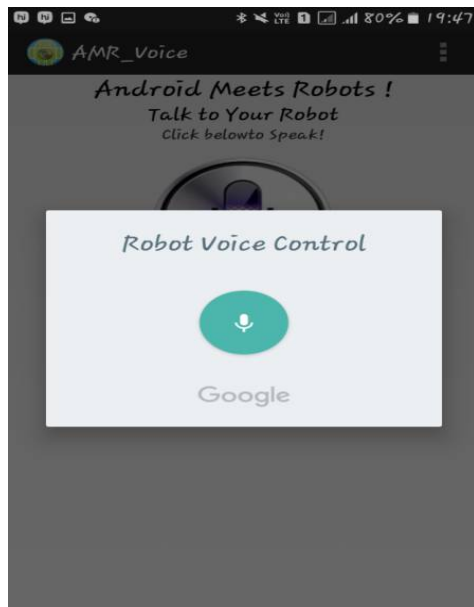


Fig.5. Voice Speaking Mice

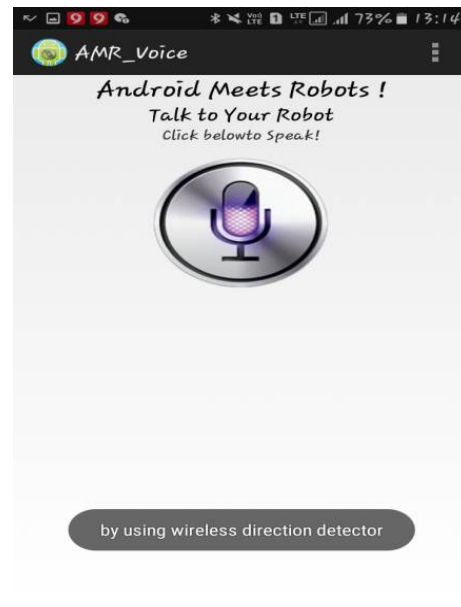


Fig.6. Voice Speaking Output

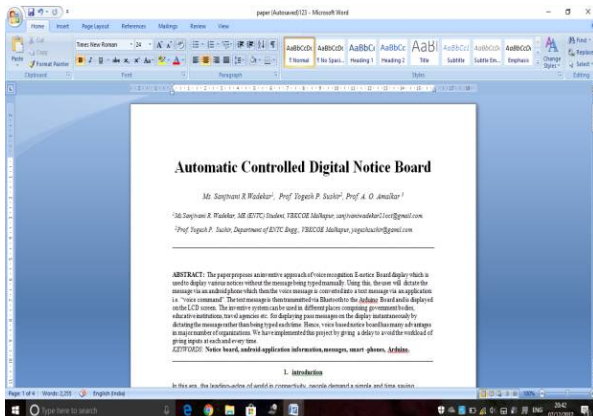


Fig.7. Initial Position for Voice typing

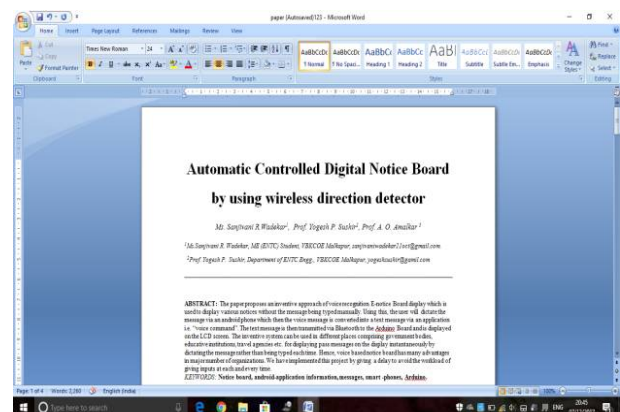


Fig.8. Final Output of Voice Typing

- Performance Analysis

The Performance analysis of Gesture Mode & Voice Mode is shown in bellow Table



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Table 2. Performance Analysis For Gesture Mode

Sr. No.	Gesture Mode Operation		No. of times Command Given by User	No. Of times Command Followed by Display	No. of times Command Not Followed by Display
1	Mouse move	Scroll Up	3	2	1
		Scroll Down	3	2	1
2	Mouse Function	Right Click	3	3	1
		Left Click	3	3	1
3	Key Function	Up	3	2	1
		Down	3	2	1
		Left	3	2	1
		Right	3	2	1

Table 3. Performance Analysis for Voice Mode

Sr. No.	Voice Mode Operation		No. of times Command Given by User	No. Of times Command Followed by Display	No. of times Command Not Followed by Display
1	Mouse move	Scroll Up	3	2	1
		Scroll Down	3	2	1
2	Mouse Function	Right Click	3	3	0
		Left Click	3	3	0
3	Key Function	Up	3	3	0
		Down	3	3	0
		Left	3	3	0
		Right	3	3	0

V. CONCLUSION

The above technical paper explains how we can develop as well as modify automatic control notice board By introducing the concept of wireless technology, it is possible to make our communication more efficient and faster. Because of this efficiency it is to handle display with less errors and maintenance. We can display the messages with less errors and maintenance. We will able to meet all the goals as per above proposed work. The Arduino, Bluetooth, Accelerometer Sensor, & android Smartphone is able to perform the functions of controlling the display. This system can be used in college, school, offices, railway station and commercial as well as personal used.

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