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Mobile Application for Displaying Voice Message on LCD Screen

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Abstract—

This paper talks about an innovative and rather an interesting manner of intimating the message to the people using the wireless electronic display on the screen. This will help us in passing any message almost immediately without any delay just by sending an SMS which is better and more reliable than the old traditional way of passing the message on a screen. Our aim is to reduce the amount of paper work and make use the possible technological resources. In this paper, we are trying to implement our system in such a way that it can display message send from the authorized user to the various receiving ends. So spreading of important message or screen will take place within the very short span of time to respective mobile application. Means user or registered person will be able to send the message from anywhere and this message will be displayed on a screen at the respective place.

Keywords— Android application; LCD screen; WI-FI; Arduino; Mobile phone.

I. INTRODUCTION

Smart phones are playing a vital role in human life. They are easy to use, promising and durable devices that help in performing day to day tasks[5]. Nowadays advertisement is going digital. The big shops and the shopping centers use digital displays now. Also, in trains and buses the information like platform number, ticket information is displayed on digital boards. People are now adapted to the idea of the world at its fingertips. The use mobile phones have increased drastically over years. Control and communication have become important in all the parts of the world. This gave us the idea to use mobile phones to receive a message and then display it on a screen[7].

Upgradation in networking technologies has encouraged the development and growth of very dense networks. A lot of paper is been used and which is later wasted by the organizations. This, in turn, leads to a lot of deforestation thus leading to global warming. The main aim of this the paper is to design an SMS driven automatic display screen which can replace the currently used programmable electronic display and conventional display screen[4]. Using the Wi-Fi based serial data communication technique, the corresponding transceiver module has been interfaced with microcontroller board at the receiver end. For this purpose, a low cost microcontroller board (Arduino) is programmed to receive text messages through voice message[5]. To demonstrate this concept we here use an LCD screen to display messages. The LCD is interfaced with an microcontroller. We use a wifi module to receive Android-transmitted messages, send them to the microcontroller for decode and further into the process. The microcontroller then displays the message on the LCD screen[6].The three devices are powered by the same power supply. The proposed system will help in reducing the human effort, paper, printer ink and cost for manual changing of the notices[5]. As engineer's main aim is to make life simple with help of technology, this is one step to simplify real time messages.

II. LITERATURE REVIEW

With the development of cellular networks in the 1970's for increasing the lack of frequencies in the radiotelephone services which in turn lead to the introduction of AMPS (Advanced Mobile Phone System) where the transmission was analog based. This was known to be the first generation in cellular networks [2]. The 2nd generation was based on digital transmission and was called with various abbreviations as GSM (Global System for Mobile communications), ERMES (European Radio Messaging System). Various Cordless telephone standards were also introduced during this time only. The 3rd generation has risen with the unification of different technologies; some of them which are popularly known are FPLMTS (Future Public Land Mobile Telecommunications System), UMTS (Universal Mobile Telecommunication System), and IMT-2000(Internationa Mobile el e-communication) this day, WIFI technology has become one of the most popular media for wireless data transfer. It has a wide range and is efficient in its work [3].

Android is a set of software for mobile devices including Operation System, Middleware and Core Application, and a new Mobile Platform of Google. It is a complete mobile platform based on LINUX 2.6 Kernel that provides a universal set of powerful Operation System, Comprehensive Library Set, abundant Multimedia User Interface and Phone Application. Android platform is produced to make new and innovative mobile application program for the developers to make full use of all functions connected to handset internet. The Android platform was developed by Google and later the Open Handset Alliance (OHA) [4].

Arduino is an open-source prototyping platform based on easy-to-use hardware and software. Arduino boards are able to read inputs - light on a sensor, a finger on a button, or a Twitter message - and turn it into an output - activating a motor, turning on an LED, publishing something online[1].

III. PROPOSED SYSTEM

In view of the above, it will be apparent that there exists a need for an electronic message on the screen that enables an efficient way to the user for displaying messages. By considering increasing compactness of electronic systems, there is a need of embedding two or more systems. This project is an implementation of the idea of wireless communication between a mobile phone and an Arduino. The display unit consists of LCD screen that is interfaced with Arduino. Wifi is an open wireless protocol for exchanging data over short distances from fixed and mobile devices, creating Personal Area Networks (PANs). It can connect several devices, overcoming problems of synchronization. The audio device is a speaker which is controlled by the microcontroller through Speech-To-Text (STT) converter.Wifi receives the signal sent by the Android application device (mobile phone), and then send this signal to the Arduino.

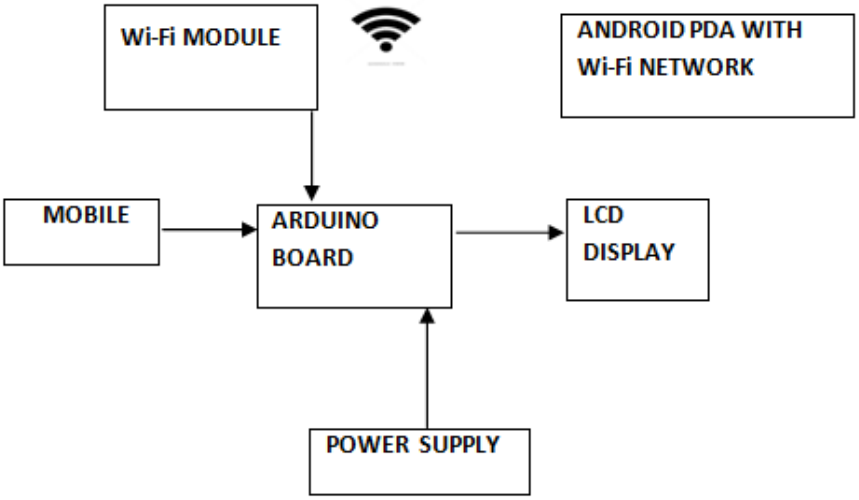

Fig: Wi-Fi Communication For Andriod Based Wireless Message on LCD Screen Wi-Fi Keyboard

Wi-Fi keyboard application program for Android the enables the Android based PDA's to send the string to the Wi-Fi device. At the receiver end of the developed system, the Wi-Fi transceiver module communicates with Wi-Fi keyboard application program installed on Android PDA via Wi-Fi network. This module is interfaced with a microcontroller that is programmed to store the received message and display that to the LCD screen.

In this proposed system android application is used to detect voice commands. Android application on smart phone or tablet will be used for speech recognition.

IV. REQUIREMENT ANALYSIS

HARDWARE

I. Arduino
II. Ethernet Shield
III. WI-FI
IV. Power supply

SOFTWARE

I. Embedded C
II. Phmysql
III. Html

V. CONCLUSION

As the technology is advancing every day the display message on LED systems are moving from Normal hand writing display to digital display. The system is simple, low cost and easy to use that interacts with the

intended users instantly. This system can be used in various applications like banking, schools, restaurants offices, hospitals, score boards for sports etc. The voice calling feature can be added with the proposed system as a further enhancement for using the system in railways, airport or bus.

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