EMBEDDED BASED BLOOD BANK HELP DESK SYSTEM WITH GSM TECHNOLOGY

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Abstract: The availability of up-to-date information to people is an important requirement in many scenarios such as companies and civil institutions. In this regard, most establishments either use websites, emails or notice boards. However, in developing countries internet access is not available to many people on their mobile devices because of high costs. Moreover, having an electronic notice board requires that people need to go to one place to get the required information thus resulting in long queues as well as inconvenience on the part of the person. In this paper, we propose a system that can be used to provide up-to-date information to students or employees of any institute using latest and most common technology. This is an automated system that utilizes GSM technology along with an embedded server. The system is designed to work independently without the need of any human operator and when an student or employee needs any information, they will need to send an SMS to this system which will respond with the information required by user. The system also has the facility to inform students or employees about any instant update via SMS and it can also be remotely updated with new information. Furthermore, the system has the capability to store previous notifications which have been sent and is designed to work 24/7.

Keywords: LPC2148, GSM, PC, Power Supply.

I. INTRODUCTION

Information dissemination among employees of a company is necessary for management and administration purposes. Consequently this has been of interest for system designers in a diverse set of applications ranging from development of generalized chat bots [1] or forming an online help assistant as in [2]. An information exchange tool for knowledge transfer can exist in two ways [3], the first is performed in the form of a question answer system [4] in which a person readily answers all the queries that one might have. Alternately, there could also be a social forum for information transfer [5]. In companies and educational establishments, information is usually disseminated by means of information counters and notice boards. However, with such organizations usually having personnel spread over a large area, it is not always possible for every employee to be able to get access to the most up-to-date information. Educational institutions also have a similar situation wherein students can be present in any part of the campus and might miss important updates such as rescheduling of classes etc. Furthermore, students and employees might not be able to know important information in-time for it to be useful to them as they might not be able to pass through those notice boards regularly. Paper based notice boards are especially cumbersome to maintain.
due to many people posting information with no mechanism for removing them [6]. It would therefore be beneficial as well as convenient for there to be some mechanism by which users could be updated immediately about a change in normal routine or be able to access the most current information at their will.

II. HARDWARE SYSTEM

Microcontroller: This section forms the control unit of the whole project. This section basically consists of a Microcontroller with its associated circuitry like Crystal with capacitors, Reset circuitry, Pull up resistors (if needed) and so on. The Microcontroller forms the heart of the project because it controls the devices being interfaced and communicates with the devices according to the program being written.

ARM7TDMI: ARM is the abbreviation of Advanced RISC Machines, it is the name of a class of processors, and is the name of a kind technology too. The RISC instruction set, and related decode mechanism are much simpler than those of Complex Instruction Set Computer (CISC) designs.

Liquid-crystal display (LCD) is a flat panel display, electronic visual display that uses the light modulation properties of liquid crystals. Liquid crystals do not emit light directly. LCDs are available to display arbitrary images or fixed images which can be displayed or hidden, such as preset words, digits, and 7-segment displays as in a digital clock.

III. SYSTEM HARDWARE FEATURES

GSM/GPRS

An embedded system is a special-purpose system in which the computer is completely encapsulated by or dedicated to the device or system it controls. Unlike a general-purpose computer, such as a personal computer, an embedded system performs one or a few pre-defined tasks, usually with very specific requirements. Since the system is dedicated to specific tasks, design engineers can optimize it, reducing the size and cost of the product. Embedded systems are often mass-produced, benefiting from economies of scale.

Global System for Mobile Communication (GSM) is a set of ETSI standards specifying the infrastructure for a digital cellular service. The standard is used in...
approx. 85 countries in the world including such locations as Europe, Japan and Australia.

GPRS (general packet radio service) is a packet-based data bearer service for wireless communication services that is delivered as a network overlay for GSM, CDMA and TDMA (ANSI-I36) networks. GPRS applies a packet radio principle to transfer user data packets in an efficient way between GSM mobile stations and external packet data networks. Packet switching is where data is split into packets that are transmitted separately and then reassembled at the receiving end. GPRS supports the world’s leading packet-based Internet communication protocols, Internet protocol (IP) and X.25, a protocol that is used mainly in Europe. GPRS enables any existing IP or X.25 application to operate over a GSM cellular connection. Cellular networks with GPRS capabilities are wireless extensions of the Internet and X.25 networks.

![Fig 2: GSM module](image)

IV. CONCLUSION

In this paper, an automated information desk system for universities was proposed and implemented. The system consists of a small embedded system, a GSM module and PC. The system was shown to work well when requiring information remotely on a mobile device via SMS.

V. REFERENCES


