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An Automated Approach for Providing Advanced Data in Educational Institutions

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Abstract: ***Within this paper, we advise a method you can use to supply up-to-date information to students or employees associated with a institute using latest and many common technology. It is really a robotic voice that employs GSM technology with an embedded server. The machine is made to work individually with no need of any human operator so when students or worker needs any information, they will have to send an SMS for this system that will respond using the information needed by user. The machine includes a small embedded system, a GSM module as well as an Ethernet shield to do communication using the outdoors world as well as an Sdcard for storage of knowledge to become distributed. The machine was proven to be effective when needing information remotely on the mobile phone via SMS. Complete framework was described around the organization and storage from the information to become distributed. This technique has wide varying utility being add-onto notice boards for ease of information transmission and employ like a standalone help assistant in a variety of programs.***

Keywords: GSM technology, Embedded system, SD card, Ethernet, Mobile device, Automated system, Human operator

1. Introduction

Information distribution among employees of the clients is essential for management and administration reasons. Consequently it has been of great interest for system designers inside a diverse group of programs varying from growth and development of generalized chat bots or developing a web-based help assistant. Students and employees may not have the ability to know information in-a chance to be helpful for them as they may not have the ability to go through individuals notice boards regularly. Paper based notice boards are specifically cumbersome to keep because of lots of people posting information without any mechanism for getting rid of them. In each and every institute and/or industry there's always an info desk that gives details about employees, institute, and it is departments contributing to everything associated with that institute. However, it takes some staff that is devoted to that particular purpose which should have current details about the institute and also the recent happenings within the institute. The 2nd concern is a thief needs to get in the institute in the information desk to get information from their store. The reply to this is by using technology making technology responsible to reply to all of the queries requested by individuals. Similar work was already done by a lot of all over the world. The work aims in creating a notification system, which is capable of doing instantly delivering details about results, circulars, schedules and time tables towards the customers on request. Within this paper we've suggested and implemented a mechanism for promoting information to students/employees inside a college. The fundamental concept of the machine would be to employ an automatic notification and knowledge counter. The machine works utilizing a GSM module to supply remote connectivity, customers can communicate with system using SMS messages. Once the system receives an SMS, it determines the sender and also the information needed and replies the sender using the asked for information. The main benefit of this technique is using GSM for communication, and so the user need not trouble institute, he/she will get information everywhere and anytime not always during campus timings & even there's there is no need of internet to provide information towards the customers. Another feature within this product is quick information broadcast to any or all employees, just in case when the Mind of Department or any worker really wants to convey any information to any or all employees on urgent basis, he/she needs to send a note to that particular system with specified format to broadcast that information to any or all employees instantly.

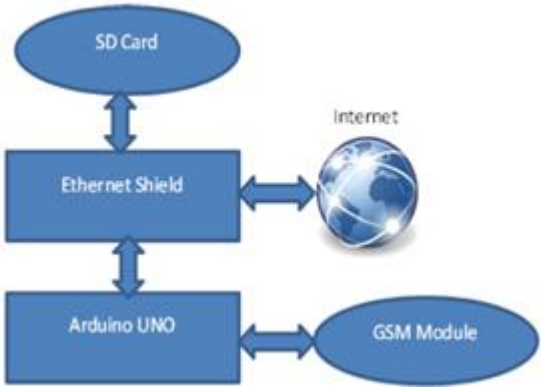

Figure: An overview of system block diagram

2. Methodology

An info exchange tool for understanding transfer can appear in two ways, the very first is carried out by means of an issue answer system where a person readily solutions all of the queries that certain may have. Alternately, there may be a social forum for information transfer. In companies and academic institutions, details are usually disseminated by way of information counters and see boards. However, with your organizations usually getting personnel spread on the large area, it's not always feasible for every worker to have the ability to obtain access to probably the most up-to-date information. Using GSM for electronic notice boards continues to be of great interest before each utilizing a

different technology for exhibiting messages. In most scalping strategies, the notice boards are up-to-date remotely via SMS once it has been validated through the system. This really is accomplished using a password within the SMS which validates it. The supply of up-to-date information to individuals is a vital requirement in lots of situations for example companies and civil institutions. In connection with this, most institutions either use websites, emails or notice boards. However, in developing nations access to the internet isn't open to lots of people on their own mobile products due to expense. Furthermore, getting a digital notice board mandates that people will need to go to 1 place to obtain the needed information thus leading to lengthy queues in addition to inconvenience for the individual. The authors make use of a buzzer to point that the new message continues to be displayed. The machine is implemented within the department of Electronic Engineering, Mehran College of Engineering and Technology, Jamshoro, Pakistan and programs of the system have been in every department or industry to supply quickest reaction to clients/students. When same questions are repeated by multiple clients/students in same or different timings and it is also helpful in situations where staff is not present inside the vicinity of the organization or institution which is extremely the situation for social services institutions.

3. An Overview of Proposed System

The work aims in creating a notification system, which is capable of doing instantly delivering details about results, circulars, schedules and time tables towards the customers on request. Within this paper we've suggested and implemented a mechanism for promoting information to students/employees inside a college. The fundamental concept of the machine would be to employ an automatic notification and knowledge counter. The machine works utilizing a GSM module to supply remote connectivity, customers can communicate with system using SMS messages. Once the system receives an SMS, it determines the sender and also the information needed and replies the sender using the asked for information. The designed system includes Arduino 1, GSM Module SIM900D, Ethernet Shield and Sdcard. All the details is put into Sdcard as text files (.txt). Every file is going to be named based on kind of document, answers are named as “res_10es.txt”, notices are named as “noti_123.txt” etc. There's additionally a general file “updates.txt” which will inform employees and students about other available documents like results and notices etc. When many students or worker will be sending SMS for this system, the machine will process message text and needed information is going to be sent via SMS to sender's number. To look for the kind of knowledge needed, some SMS formats happen to be defined. Whenever an SMS asking for updates is received through the system, an SMS notifying about up-to-date information is going to be delivered back. The updates can have their email list of latest results and notification with their asked for information like batch for results and notification number for notices. If he/she'll want to consider any one of updates, he/she'll send request again for studying that exact result or notification. The machine communicates with customers via a GSM Module any messages received through the GSM module are decoded by Arduino which functions because the central controlling unit. The Arduino decodes the received message and stores sender’s information in memory. The cell figures of Workers are kept in the EEPROM from the Arduino, when an worker will be sending an SMS with beginning text of “broadcast:”, the machine will forward same message without text “broadcast:” to any or all worker mobile phone figures. This selection is helpful to speak or rapidly deliver information to any or all employees. Exactly the same message is going to be received through the information broadcaster too. If message is decoded then system reads Sdcard via Ethernet Shield and reads the needed information from Sdcard and this post is delivered back to sender's number. If message isn't decoded correctly, it'll send back the correct format of messages towards the sender. To ensure that the machine to become up-to-date online, an Ethernet Shield can also be incorporated within the system and thru internet all of the files to Sdcard are up-to-date. Hence there's you don't need to remove the Sdcard for control over information files. Following the system was deployed within the Department of Electronic Engineering, MUET; it's been examined for correct and ongoing operation. Two instalments of asking for information happen to be talked about within this paper, the very first is the asking for from the updates in order to see whether there's been any up-to-date information and also the second test was the request of the specific information in the system, within this situation caused by a test. Looking here we are at the asked for record and formation from the SMS to become sent are minimal when in comparison towards the SMS delivery and reception occasions.

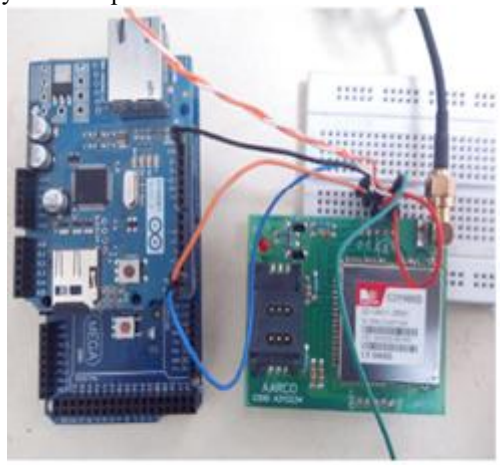

Fig.3..Real Hardware system

Figure: An overview of hardware system

4. Conclusion

Within this paper we've suggested and implemented a mechanism for promoting information to students/employees inside a college. The main benefit of this technique is using GSM for communication, and so the user need not trouble institute, he/she will get information everywhere and anytime not always during campus timings & even there's there is no need of internet to provide information towards the customers. Another feature within this product is quick information broadcast to any or all employees, just in case when the Mind of Department or any worker really wants to convey any information to any or all employees on urgent basis, he/she needs to send a note to

that particular system with specified format to broadcast that information to any or all employees instantly. The machine also offers the ability to tell students or employees about any instant update via SMS and it is also remotely up-to-date with new information. The machine includes a small embedded system, a GSM module as well as an Ethernet shield to do communication using the outdoors world as well as an Sdcard for storage of knowledge to become distributed. The machine was proven to be effective when needing information remotely on the mobile phone via SMS.

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