Design of SMS based automated blood bank using embedded system

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Abstract- - *Now a days demand for the healthy blood is increasing very rapidly as the hospitals are increasing and the peoples are getting affected to the deceases frequently, fortunately the mood of the people are also changing, compared to the older days we are able to many number of donors, Many peoples are coming forward to donate the blood and we are able to see the lot of blood donation camps are conducting across the globe, many number of blood banks are opened, few of them are associated with the hospitals, few of them are charity based also many multi-national companies are entered in to the blood bank business.* In this project we are presenting on SMS based automated blood bank, which connects donors and patients through SMS, Donors need to register with the bank via SMS and his/her blood will be check by nearest hospital, all the verified donors details are shared the people who requesting the particular group of blood, we are using ARM7 HDMI LPC2148 controller along with SIM 800 GSM network, EEPROM is working as a Database and system yields all the expected results with 99% Accuracy.

Keywords-GSM,LCD, Microcontroller

1. INTRODUCTION

Platelet of thirty millions blood quantities zone units transfused yearly. One million fresh recruits gift focus is a center where blood collected therefore of blood blessing is secured and ensured blood transferred for later use . The expression "blood gift focus" usually insinuates a division of a recuperating office where the limit of blood thing happens and where true blue testing is done (to lessen the transfusion related negative occasions).Notwithstanding, it now and again suggests an aggregation center, and without a doubt a couple mending focuses moreover perform gathering.

Entire blood or blood with RBC is transfused to understanding with pallor/press inadequacy.it additionally enhances the oxygen immersion in blood. It can be put away at 1.0°c-6.0°c for 35-45 days [platelet transfusion] it is transfused to the persons who experience the ill effects of low platelet .this can be place away at room hotness for 5-7 days .[plasma transfusion] This is

shown to the patients with liver disappointment, extreme diseases or genuine consumes a new solidified plasma can be put away at a low temperature of -25°C for a 12 months. Regularly the country needs around the 4 crore units of blood, out of which just a lesser 40 lakh units of blood are available. There are some altered blood donation centers the creation over, however some of them offer the ability for an direct contact between the contributor and beneficiary. This is regularly a genuine inconvenience quite in cases wherever there is relate degree squeezing might want of blood . This venture intends to beat this correspondence obstruction by giving a quick connection between the benefactors and hence the beneficiary by exploitation low cost and low power Raspberry Pi B+ unit. It requires Micro USB of 5V and 2A control supply as it existed. All correspondence happens by means of SMS which is perfect with every particular portable sort. "Automated Blood Bank" proposes to bring considered blood benefactors and those needing blood on to a typical stage.

Objectives

This is the SMS based highly proceeded automated blood donation center framework, Here we are outlining on inserted framework to help some patients who are in the need of blood to the volunteer benefactors over the globe, our aim is not limited to creating on automated blood donation center but rather likewise to enable them to use effectively compared with existed blood bank frameworks.

II. LITERATURE SURVEY

1]In this paper Data Mining to enhance wellbeing of blood donation prepare gives the accumulation and investigation of data identified with responses related with the procedure of blood gift. It utilizes Donor Hart instrument and Data Mining strategies to enhance contributor's wellbeing. The confinements of this framework are it neglects to apply early prevention methods to the benefactor.

2]In this paper presented by Blood Bank Management System using Cloud Computing for Rural Area gives a

blood to at whatever point and any condition to searcher isolated from that searcher is furthermore prepared to call the suppliers in emergency. The limitations of this system are it just maintains Blood Bank data and does not focus on donor reactions while donating blood.

3]This paper presented by focuses on the reaction types and various parameters of blood using different techniques like Donor Hart using Donor Hem vigilance Method and Data Mining methods.

4]In this paper presented by the Android Blood Donor is saving application in cloud computing with a purpose of develop a computer system that will link all donors to help them and control a blood transfusion service and create a database to hold data for blood in each area of city as data on donors using supply the chain networks and RVD Algorithms but meets to one of its limitations as supply chain networks are more complex than other systems.

5]In this paper presented by the A framework for a smart social Blood donation system based on mobile cloud computing , which helps to communication between blood donors and blood donation centres so that the appropriate donor can be reached just on time using Mobile Cloud Computing but a wide range of applications are difficult to run in the mobile devices.

III. METHODOLOGY

ARM7 based LPC2148 microcontroller will be externally connected with the GSM 900A,16*2 LCD display and 4*4 matrix keypad. GSM 900A pin no GND is connected to the microcontroller. Rx pin is connected to pin no p0.0Tx,Tx pin is connected to the pin no p0.1 Rx ,2 ground pins is connected to the ground pin of microcontroller. Power supply is connected for 12v.LCD display is connected to the microcontroller, GND pin is connected to the GND pin of controller, VCC is connected to 5V,Rs pin is connected to pin no p0.15,R/w pin is connected to p0.16, D4,D5,D6,D7 is connected to the pin no p1.16 to the p1.19 respectively. 4*4 keypad is connected to the microcontroller C1 to C4 pin is connected p1.24 to p1.27, R1 and R2 is connected to p1.20 ,p1.21, R3,R4 is connected to the p1.22 to p1.23.
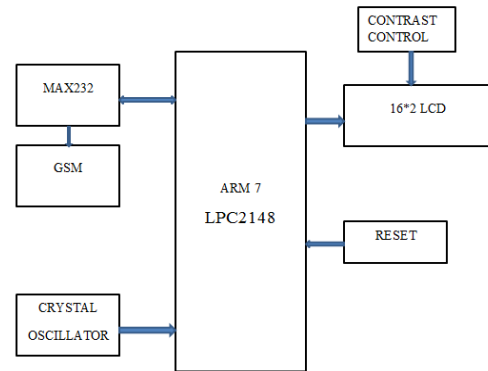

Figure1. Proposed block diagram

This System will be similar to the architecture, which is made up of Microcontroller, GSM, Display and Memory, but with the several capacities, in the overview one mobile is interactive with the lot of other mobiles over the SMS, this master mobile is usually referred as the automated blood bank as shown in the figure.

1Registration UNIT
2 Service Desk

1. Registration Unit: Whenever a person want to become the donor, then he need a send a SMS to the ABB master number as NAME <Blood Group>, Upon accepting the Messages, system automatically replies with a welcome message with the contact details of the hospital to undergo for blood check up to identify the quality of the blood, also one notification message will go to hospital to conduct the test, once test is done positively then hospital need to send the message to ABB, upon receiving the message ABB will confirm the Donor as Healthy person to donate the blood, all these activities will be handled by the Registration Unit

2. Service Desk: When Somebody need the blood of particular kind of blood group, the person need to send a SMS like <Blood Group>, Immediately ABB will send the list of Donors with contact numbers to the requested Person.

RESULT

RS232 Cable connected to the system . power is on go to flash magic, select lpc2148,then go to my computer to click the right click select manage then go to ports com18 is selected ,next select tools go to terminal again select

com18 click ok flash magic window is open hellow from uart in this window display ok, then GSM is sink with controller. GSM is working is on.
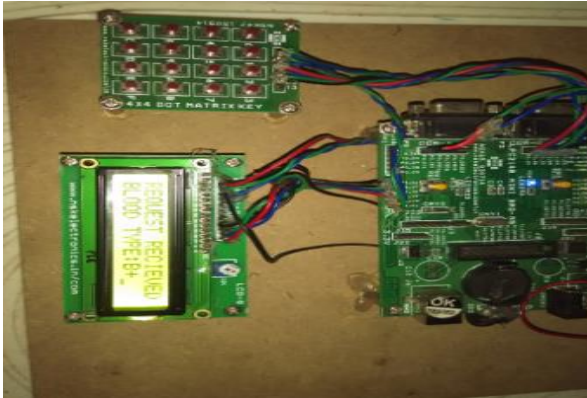

Figure 2 : Donor send the message to the hospital and request received by the hospital

Once the donor will send message is IAB+ blood group to nearby hospital. Once receive the message. request for received blood type AB+ it will send near hospital address to the donor, because check for the donor blood .donor give the blood in hospital it will be check, again message is go to doctor please verify the donor. if it is ok send the message to the donor for YES+.so donor will be eligible to donate the blood. the message is your successfully registered.

In this proto to send some messages to the donors and doctors. for good morning, blood bank closed for today, blood donation at vijaynagar today. some message send the donors and doctors

VI. CONCLUSION

Blood is the primary necessity of life and demand for the healthy blood increasing day by day but finding donators at right time is not a easy job, There are different methods available for searching blood donors but many of them are not user friendly, hectic and yields less or no results many times, This proposed framework will be one stage forward from the other blood favoring structures. Blood beneficiary can contact the blood supporter especially by utilizing this structure .When there is crushing essential for blood, it may not be feasible for individuals to interface with the web to inspect the online blood database frameworks that are beginning at now in closeness. In the event that individuals get a handle on this model, the guest is in a brief moment associated with the support. Consider a SMS based database structure is in

which at whatever point a SMS is send to expected senders, in context of the request. The rule horrible check with the structure is there will be a huge suspension in the beneficiary side in review the SMS and after that reacting to it.

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