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Computerised Blood Bank Application Using Embedded System

Minal Barhate[1] , Shubhangi Garde[2] , Charushila Waghmare[3], Kirti Yadav[4].

1:Student,Department of E&TC,SKN-SITS,Lonavala,Maharashtra, India,barhateminal94@gmail.com

2:Student,Department of E&TC,SKN-SITS,Lonavala,Maharashtra, India,gardeshubhangi00@gmail.com

3:Student,Department of E&TC,SKN-SITS,Lonavala,Maharashtra, India,charu11waghmare@gmail.com

4:Asistant professor,Department of E&TC,SKN-SITS,Lonavala,Maharashtra, India,yadav10kirti@gmail.com

ABSRACT

The paper "Computerised Blood Bank Application Using Embedded System" achieve every blood request by using an application "blood bank". There are various blood bank in the world , for all that none of them offer ability for a direct contact between the donor. this is serious drawback. To overcome this drawback our paper is fulfil. Our ambition of this paper is to decrease the time duration between the donor and recipient. By using ARM7 and GSM modem SIM900A, we gathered all information of donor and fetch the given information as per the meesage requiest recipient. The gathered blood donor information is sent to the recipient and which allow the recipient to download an application and bring all the information of the donor bring all the donor . the data gathered will be maintained in the central server. The mission of the paper "To provide a better service of every person who is in the service of blood ."

KEYWORDS: ARM7, GSM modem, Blood Bank Application, EEPROM, Donor.

1. INTRODUCTION:

Whole year the community required about 8 crore of blood , out of which only 95 lakhs entity of blood is available. Every two second we required blood, and more than fifty thousand blood donation are needed every day. There are many blood bank, android application, social media, many blood camp to help blood receiver. In urgency situation,t he time duration between the donor and recipient became a difficulty to communicate which is leading to death of the victim. Our whole design required micro USB of 5V and 2A Power supply. Using android mobile devices via SMS all communications takes place. The list of donor is sent via SMS as per the recipient request . firstly blood receiver download these "blood bank" application using android mobile and request for blood. Blood donor register their blood group using opening the IP link. The collected data will be stored in server.Every day and month sixty thousand blood donation unit is required. In a year, million blood part transfused. One single injured person, need several hundred unit of blood . Computerised blood donating application tries to help victim who are search of blood . In a very short time our propose design gives better service, who are serch of blood donor to provide immediate help.

2. RELATED WORK :

A) Emergency blood bank directories using www.bloodbanker.com: This website save the data of blood bank and hospital in each state in the USA. Using website can be locate the nearest blood bank or hospital.

B) Virtual blood bank project : This project is usually design using web application and java. This system allows finding donors using there particular address from hospitals.

C) Location based blood bank using cloud storage: This paper based on a mobile application linked to a cloud server. Donors can register their name and blood group using app and their details are stored /saved in the cloud server. This information can be utilised by anyone in the case of emergency with the help of app on their phone to locate the donors.

3.BLOCK DIAGRAM:
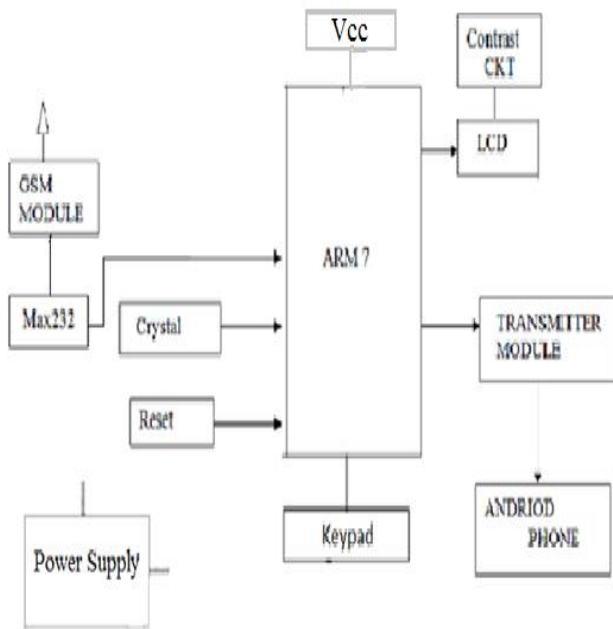
Fig 1. Block diagram of proposed system

4. PROPOSED SYSTEM:

a) METHODOLOGY:

This implementation based on the GSM modem, ARM7, MAX 232,

LCD, Android phone and some other required interfaces. GSM modem used for interfacing to the controller i.e LPC2148. This interfacing done through MAX232 to controller. For display message and other instruction LCD is useful. We can download blood donating application using android phone. All communication takes place via SMS (Short Messaging Service) which is compatible with almost all mobile types.Blood donor will participate in blood donor list using application. If there is emergency of blood to anyone, one can get blood donor list in this app. In data base all information will be saved . recipient has send the donor number as per the request so that donor and receiver contact within a short duration of time. ARM7 processor and EEPROM is used for storing a data. GSM module is specialised type of modem which is accept SIM card and operate over a subscription to a mobile operator, like a mobile phone.

b) GSM module SIM 900A:

GSM (Global System For Mobile Communication) is a standard developed by the European Telecommunication Standards Institute (ETSI). GSM is a brand owned by the GSM association. It is highly flexible and esily integrate with MAX232. There are various features of GSM module. GSM is used in our proposed design for accept a SIM card and operate over a subscription to a mobile operator, just like mobile phone. It allow to computer to communicate over the mobile network when GSM is connected to a computer.
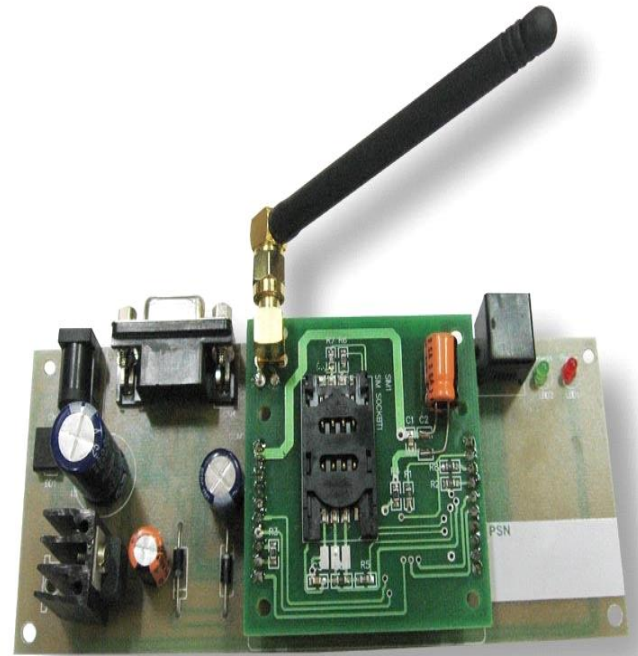
Fig 2.GSM MODULE

Support features like SMS, GPRS, Data/Fax, Voice and integrated TCP/IP stack. GSM provides mobile internet connectivity used for sending and receiving SMS and MMS message. SIM900A is a fully dual-band GSM/GPRS module.

c) MAX 232:

The MAX 232 is an Ic which is first created by Maxim Integrated Product in 1987. MAX 232 IC convers signals from an RS232 serial port to TTL. It is a dual driver IC also converts the RX, TX, CTS, and RTS signals. The single 5V power supply applied to input of MAX232 and it provide output approximate 7.5V using on chip charge pumps and external capacitors. This voltage is used for implementing RS232 in devices otherwise there is no need of greater than 5V power supply. When we need to make a connection and transfer data between devices MAX232 IC is very useful. MAX232 is an integrated circuit that convert TTL (Transistor Transistor Logic) logic signal. Via MAX232 the microcontroller is interfaced with GSM. It is 16 pins IC and requires four external

capacitors for proper configuration. We can make connections between four UARTS at a time.

d) ARM PROCESSOR:

The LPC2148 microcontroller is based on a 16/32 bit ARM7 that combines microcontroller with embedded high speed flash memory ranging from 32 Kb to 512 Kb . This memory is more than enough for almost all application. The ARM7TDMI-S is a general purpose 32-bit microprocessor which offer high performance and very low power consumption. It is based on a (RISC) Reduced Instruction Set Computer . LPC2148 has two UART which is required for serial communication.

e) POWER SUPPLY:

A power supply is an electronic device that supplies electric energy to an electrical load.it is convert one form of electrical energy to another . In our proposed design 12V AC power supply provided to system . but 12V power supply is very high for LPC2148, MAX232 that's why 7805 regulated Ic is used for covert the 12V power supply into 5V regulated supply.it is a 3pin IC which is receives the signal from filter and deliver a constant voltage.
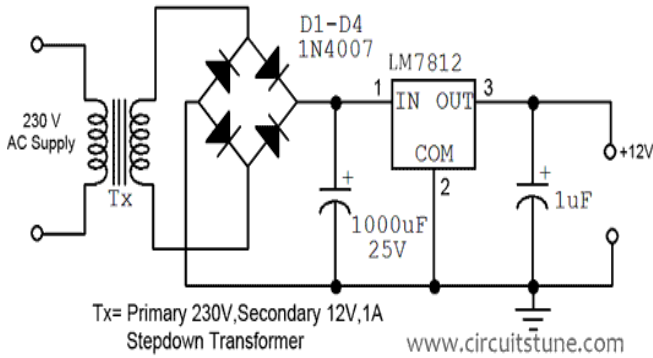

Fig 3.CIRCUIT DIAGRAM OF POWER SUPPLY

f) ALGORITHM:

1. Start.
2. Turn on the power supply for kit.
3. Fill in the data base (with blood donors) for the required blood group and their location.
4. Send the message from user mobile using GSM modem.
5. If donor not present then it display that donor not available.
6. Using LCD display the name and number and other information.
7. Then data will be saving on data base.a
8. The required app will be downloaded by required user or blood accepter.
9. This data can be access from android phone.
10. Stop.

g) FLOWCHART:

Below fig shows the flowchart of our proposal system.first turn on the power supply on the kit then insert a sim in GSM modem. donor will be register their blood group for donate blood. Send the message from your mobile then number of donor will get display on LCD and data will be saved on application data base.if there is no data display on LCD then repeate the send message from your mobile. Also number of donor will be send via message to recipient. Donor and Recipient can easily contact each other using this contact number.
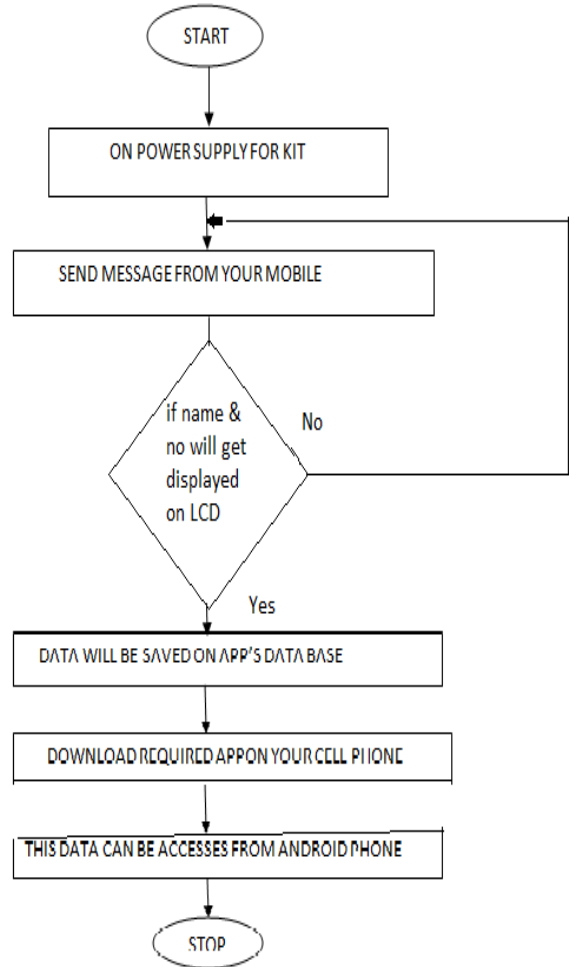
Fig 4. Flowchart

5. RESULTS:

Figures 5 shows the Imges of application. Fig 5(a) shows the first page of application where enter the server number and click on the donor who register for blood donate. Also who search in blood can request for blood using clicking on recipitent.

Fig 5(b) shows the types of blood groups . the needy people or donor people select the blood group by click on blood group options.
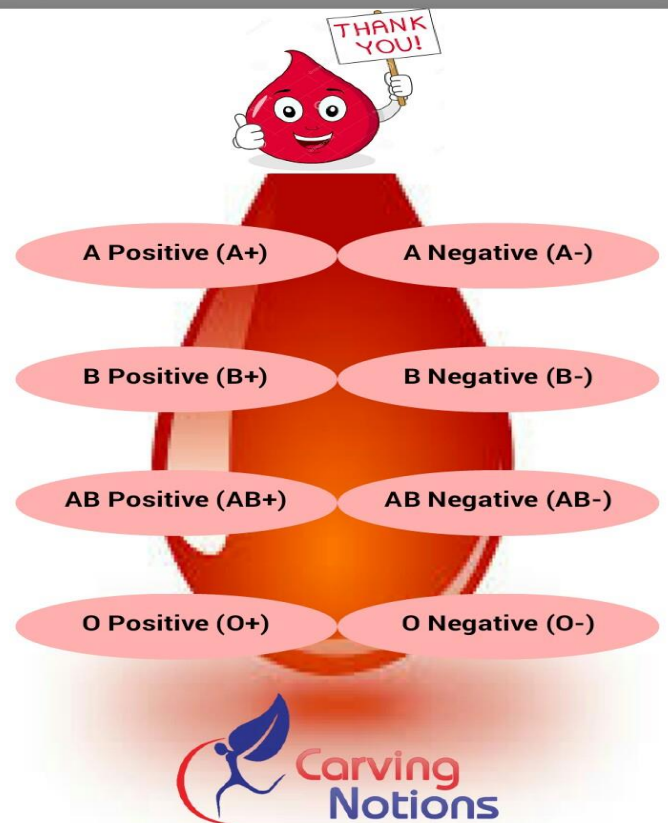
Fig 5(a). Image of Application

Fig 5(b). Image of application

5. CONCLUSION:

The project we are designing is the blood bank advanced system made for easily availability of blood also we reduced time duration between donor and recipient.so we can save a life which may lost just because of lack of blood due to lack of database. We can develop this system inevery blood bank in each city so that required data base for blood group will get easily available.

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