AUTOMATED BLOOD BANK SYSTEM

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Abstract -*Automated bank System is planned to bring direct communication between blood donors and co jointly the recipient. The aim of this method is to satisfy every blood request by exploitation Arduino UNO, GSM, inside the planned system, information about the donors are collected in nearby hospitals and different blood banks. These data are stored within the information. Persons who are in need of blood have to send their needs and the Arduino reads the necessities. It fetches data of the respected donors from the database and sends SMS to the recipients through GSM module. The main information of the donors will be displayed in digital display.*

Key Words: Message, Donor, Recipient, MicroSD card

1. INTRODUCTION

Need of blood is drastically increasing. Per year we have a requirement of five million blood units. Even though the technology is developed still we have a tendency to fail to bring blood donors and recipients on the common platform. Accidents cannot t be expected. Now a days, entirely golem app is recruited for blood banks and it takes longer to fill details. It will be accessed only by people who have internet facility, the majority around village areas who don't use smartphones cannot access this and that we cannot fulfill their blood necessities. So, the projected system is designed in such a way to provide higher service to satisfy each request. Arduino UNO is employed to store the donor details like name and mobile number. GSM module is employed to send and receive messages to fulfill the blood needs. In the initial stage, Simulation is performed . Followed by the simulation , hardware is implemented .

2. METHODOLOGY

The proposed blood bank system is relies on the GSM module and an Arduino micro controller. This system includes an Arduino UNO, GSM module, MicroSD card module, Power supply. Blood requirement is increasing drastically now a days and to meet higher demand service this system is designed and enforced. This system is created to meet each and every blood request to save many lives. By using this system ,donor and recipient gets direct communication through GSM. Arduino contains details of the donor's name, mobile number and the blood groups. A 5V power supply is given to the proposed system.

2.1 System Architecture

The basic block diagram indicates that power supply is given to the system to initialize. Arduino UNO contains the data of donors and it gives the donor details for the desired blood request. These details are sent and received by the GSM module.
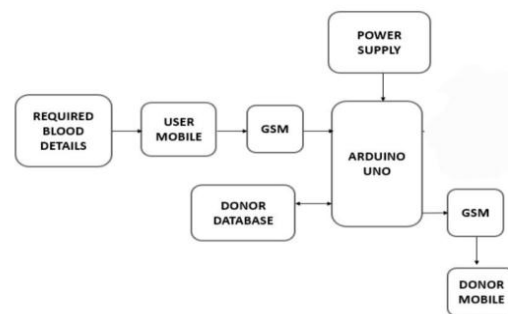

Fig -1: Block Diagram

2.2 Working

Initially , Simulation is performed . Simulation makes way to evaluate , compare and optimize alternative plans. Simulation plays a significant role when the consequences of the proposed plan cannot be directly and immediately discovered. Through this simulation the conditions can be varied and outcomes are investigated. The simulation for the automated blood bank system was done using Proteus Professional software. Figure 2 shows the simulation of the automated blood bank system.
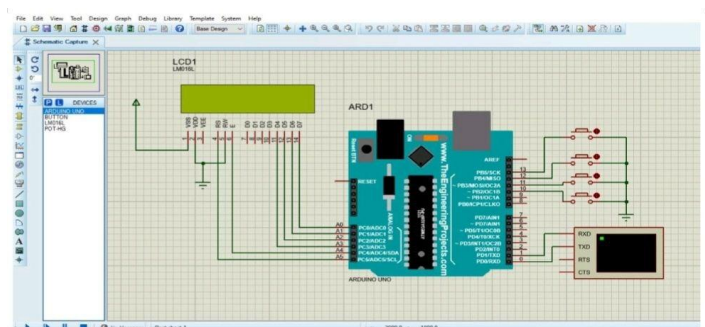

Fig -2: Simulation of Automated blood bank system

Figure 3 shows the simulation output results that displays the donor details. The above Figure 2 is the screen capture of the simulation of automated blood bank system. This figure shows how the connections are implemented in this system.
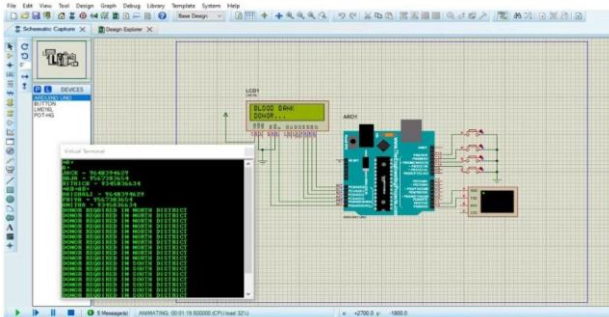

Fig -3: Simulation of Automated blood bank system

Figure 3 illustrates the simulation output of the Automated blood bank system when the blood request is given. The virtual terminal displays the blood groups, name, contact number of the donor details for the required blood groups. By this we can find the perfect donors in nearby areas to fulfill the blood requirements.This blood bank system is implemented using GSM module and Arduino to provide higher service. Foremost person who is in need of blood should send his or her mobile number and the blood group required to the GSM module. As the SIM is inserted in GSM module they can send their request as a text message to that number. The GSM receives the message and it sends to the microcontroller. Arduino UNO receives the message and checks the donor details for the desired blood request within the database that is stored earlier. Arduino UNO sends the donor details to the GSM and the same is sent to the recipient.

2.3 Hardware Description

1)Arduino uno

The Arduino Uno is a microcontroller board that is based on ATmega328P. It has 14 digital input/output pins (of that six are often used as PWM outputs), six analog inputs, a 16

MHz quartz, a USB port, an influence jack, Associate in Nursing ICSP header and a push. It contains everything needed to support the microcontroller; It can power with a AC-to-DC adapter to urge started. The Uno board is that the initial during a series of USB ARDUINO boards, and also the reference model for the ARDUINO platform

2)Power Supply

Arduino board are typically power-driven by using AC-to-DC adapter to urge started. All that need to be done is connecting the ac adapter to the power socket on the board.Arduino boards are often powered directly from the AC mains power provide by connecting it to the Barrel Jack.

3)GSM Module

The GSM module used here is SIM 800C GSM Module. SIM800C is a complete Quad-band GSM solution in a very SMT kind. It supports Quad-band 850/900/1800/1900MHz, it can transmit Voice, SMS and data with low power consumption. The mensuration is 17.6*15.7*2.3mm, it will smoothly match into slim and compact the demands. The module provides a lot of flexibility and simple integration

4)Micro SD Card Module

The MicroSD card Module is a effortless solution for transferring data to and from a standard SD card. The pinout is directly compatible with Arduino, however may be used with alternative micro controllers. This module has SPI interface that is compatible with any MicroSD card and it use 5V or 3.3V power supply that is compatible with Arduino UNO.
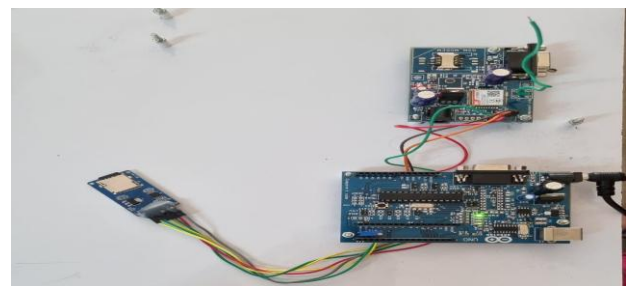
3. RESULTS AND DISCUSSION

Fig -4: Hardware module

The Figure 2 shows the hardware module of the proposed system in which the results are taken by these Hardware components.
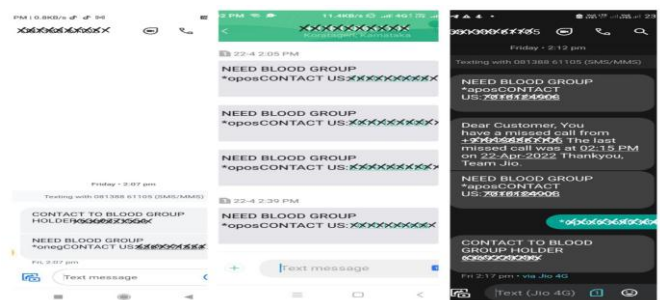

Fig -5: Communication process

The message initiation to donor and the recipient is made experimentally. The required blood request is sent to the GSM by the recipient and the donor details is collected from the database and sent to the donor and recipient.

4. CONCLUSION

The Automated Blood Bank System plays an important role in saving many lives. The proposed system can be used to reduce time span between donor and recipient. Finding donors is made easy by this system. People from village areas could also access this easily as the proposed system is not based on internet. By this proposed system we could search donors from our nearby areas easily. By this way there will be a direct communication between donor and recipient. Hence, by using limited sources we could fulfill every blood requirements without any delay.

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