

Blood Bank Management Using Rfid Tags

Priya C¹, Ramya C², Amrith Shneka S³, Ashna Vahedha S³, Narmadha R³, Sobikaa R³

^{1,2}Associate Professor, ³Student

priya_karthikayeni@kce.ac.in¹, crm.ece@psgtech.ac.in², sobikaar2808@gmail.com³

^{1,3}Department of Electronics and Communication Engineering

Karpagam College of Engineering, Coimbatore.

²Department of Electronics and Communication Engineering

PSG College of Technology, Coimbatore

Abstract-Patient safety has received right recognition now a days because of the natural tendency of transfusion fault to cause fatal disease. Human blunder bringing about potential or genuine slip-ups in blood organization will happen at any progression inside the technique. Almost numerous patients in India require blood every year, there's a huge need for blood to meet this crucial situation. Blood donor centers and assortment centers need transportable knowledge assortment ends to constantly track blood from the contributor to a definitive beneficiary. The convention matches operational conditions in blood chain and is particularly custom-made to some significant cycles, which may enjoy RFID selection. The paper hence endeavors at benchmarking exhibitions of trims, mounted and hand-held RFID pursuers, once sent inside the blood give chain measures.

I. INTRODUCTION

The way toward dealing with the blood pack that is got from the blood donation occasions needs a correct and organized management that is done by the blood banks, because the blood is essential for someone's life that the baggage should be treated carefully. The blood consists of various blood constituents and each constituent of blood its own specific performance. Statistics say that in India each 2 seconds somebody wants a blood transfer. The Blood transfer are used for injury casualties, accidents, heart surgery, organ transplants, women with difficulties all through childbearing. These days people in India faces a blood shortage of 10% relative to its blood needs. It means it need covering a shortage of over 12 lakhs of blood units. as long as the eligible donor population in our India is quite 512 million, this deficit is stunning. In a day nearly 1200 road crashes are occurring, sixty million trauma evoked surgeries are performed within the country per annum.

Healthcare business is facing several difficulties from the more and more competitive business atmosphere. Huge number of new advances for patients, faculty and materials the executives are incorporated in care offices, to help the proficiency and furthermore the viability of business capacities.

Radio Frequency Identification (RFID) could be a remote innovation which is conveyed for labeling stock all through the accessibility chain, given the varied edges that this innovation will weaken the availability chain player. RFID frameworks is a blend of regular incorporation and advancement of scanner tags[1-8]. They're made out of 2 components: reader and tag. The reader is in a position to broadcast magnetic attraction field and a radio emission to interrogate and store information on the tag reckoning on the tag. The electromagnetic-operated tag picks up the radio

emission and transmits its identification and additional data, if possible. A tag includes a minimum of computer circuit and an antenna in operation on a selected frequency. Tag is also equipped with a restricted information storage capability. This paper contains the following sections as: describes the Existing systems, proposed method, discussed about the results and discussion and conclusion of the work.

II. EXISTING SYSTEM

Blood bonding is required each second and around thirty million blood fragments region unit bonded once per year. Around sixty fatalities for every year occur attributable to wrong transfusion, that points out for distinctive reducing transfusion blunders. Wrong recognizable proof of the blood or probably the patient for transfusion may be a real-life danger that's at the present overseen by standardized tag labeling of blood packs. Every sack is labelled with completely different scanner tags transfer specific knowledge concerning the blood as for example, the blood grouping, aggregation date, end date, individual that took care of it in each movement, etc.

III. PROPOSED SYSTEM

This automatic blood bag trailing and management resolution focuses on machine identification, knowledge management and movement trailing of blood sack. RFID guarantee speed and successful conveyance of blood from donor to recipient. Through constant observing utilizing RFID innovation. This Technique furnishes blood specialist with improved understandable to the stock of different blood classifications at clinics and can undoubtedly empower the inventory of blood prerequisite.

This proposed system describes the improvement of a RFID based blood donation center administration framework that highlights on the lab forms that take after blood accumulation, observing each labile blood item.

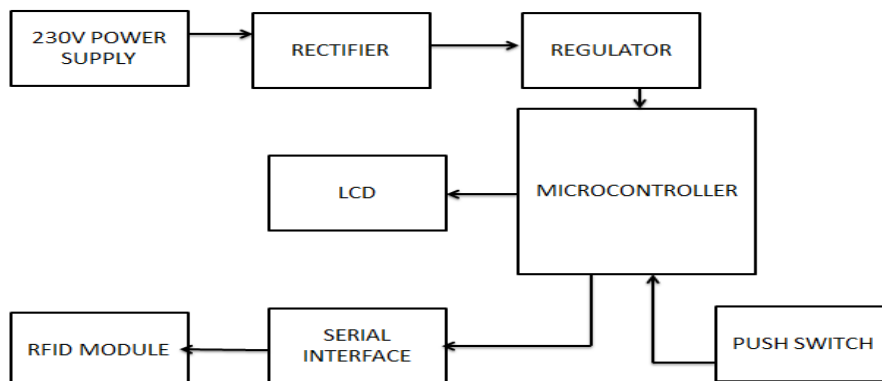


FIG.1 BLOCKDIAGRAM OF THE PROPOSED METHOD

BLOCKDIAGRAM WORKING:

- The 230 V power supply is used to power the microcontroller. To convert 230 V to 5 V regulator is used.
- When the microcontroller is powered, the LCD displays Blood Bank Management System.

RECEPIENT:

- The recipient should press the push button “B” and scan the RFID tag. When the tag is detected, system searches the donor with same blood group.
- After finding the donor, the LCD displays the details of the donor through which the recipient can contact the donor.

DONOR:

- The donor should press the push button “A” and scan the RFID tag. When the tag is detected, system asks whether the donor is ready to donate the blood.
- If the donor is ready, then the system will update it into the database of the donor.

This working is diagrammatically shown in FIG.1.

The client can look for blood donation centers or blood camps. They can see others who have effectively enlisted and can look through donors by address. They can arrange blood camps by indicating the setting and date of the action using RFID. The data is included in blood camps. The client can likewise look for required blood by given information. This solicitation is submitted to administrator who may either acknowledge or dismiss it. Acknowledged solicitation is distributed by administrator. The enlisted client gets notice of the distributed solicitation. This data about requirement of blood choice. The client can likewise check different subtleties. They can refresh their own profile.

1. Clients can discover blood donation centers and benefactors when they required Blood.
2. Client can find blood donation centers effectively in the event that they need to give blood.
3. Informs clients to give blood following 3 months consummation of Blood donate.
4. Shows details blood donor.

It is a simple method to get clear data, similar to blood classification, assortment date, blood test result, and then some. Contactless perusing decreased the opportunity for the blood to be debased. RFID innovation permits enormous volumes of labeled blood packs to be rapidly recognized and is particularly intended for circumstances where blood sacks are stacked or put away in any direction. It killed manual records and transcripts and decreased dependence on human information passage.

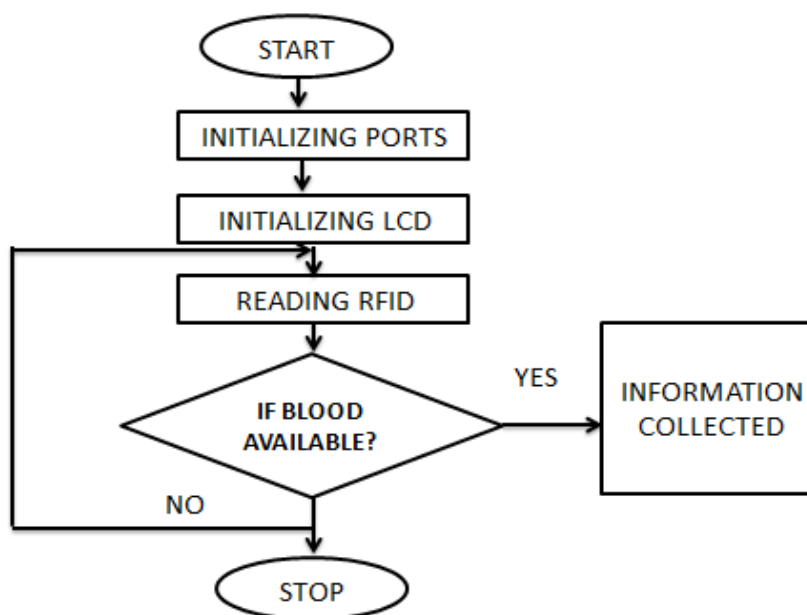


FIG.2 FLOWCHART OF THE PROPOSED METHOD

At First initialize the ports and LCD. The RFID Reader will get data from the RFID tag. Which will be feedinto the microcontroller. If the data from the RFID Tag is recognized then it will show the corresponding information or else the RFID reader will again try to read the data. The flow of this process is shown in the above FIG 2.

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RESULTSAND DISCUSSION:-

The project “BLOOD BANK MANAGEMENT USING RFID” has been designed and tested successfully. In this project, the implementation of the RFID, power supply, push button, LCD display in the smart card has been made and the connections have been done with the help of connecting wires. The program for detecting the availability of donors and donating blood was written in the Arduino IDE software. It was successfully implemented. The RFID tag values have been keenly observed and the values were implemented in the program. Thelcd displays card detected when the push button 'B' is pressed and the RFID module scanned the tag. Then the system search for the donor with same blood group as the recipient and the lcd displays “Searching” as shown in FIG.3. After the donor has detected, the lcd shows the details of the donor as shown in the FIG.4 and FIG.5. Thelcd displays card detected when the push button 'A' is pressed and the RFID module scanned the tag. Then if the donor is ready to donate the blood, it displays “Donate the Blood” as shown in FIG.6.



FIG.3 SEARCHING DONOR FIG.4 DONOR DETAILS

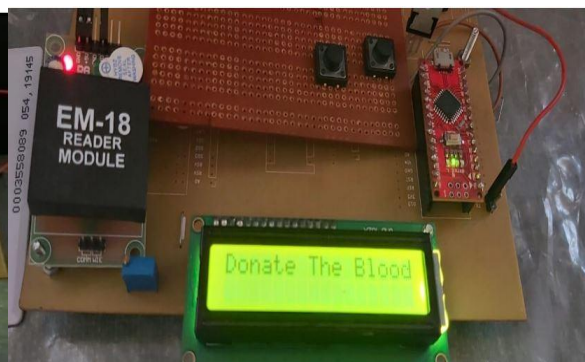


FIG.5 DONOR CONTACT

FIG.6 DONATE THE BLOOD

IV. CONCLUSION

Developing population has expanded the requirement for the blood supply for different infections. In every couple of second, some individual requires blood bonding and right now India deals with the issue of blood deficiency. To address the issue a successful framework is planned utilizing the Internet of things. The framework gives a philosophy to satisfy the necessity of blood to the patients/casualties without racing to the blood donation center to know the accessibility of the blood. Through continuous following utilizing standardized tag and RFID innovation, the productivity and speed of blood executives is improved. Besides, the arrangement furnishes blood specialist with improved understandable to the stock of various blood classifications at medical clinics and without a stretch empower the inventory of blood required.

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