**AUTOMATED BLOOD BANK SYSTEM USING**

**RASPBERRY PI**

**ABSTRACT**

Raspberry pi based blood bank system” proposed to bring blood donors to the one place. The aim of this system is to fulfill every blood request by using android application and raspberry pi. In the proposed system, data about the donors will be collected by using android application and raspberry pi by installing systems at places such as hospitals, blood banks etc. These data will be stored in the database. User/Patients needs to access application and needs to enter his requirements about the blood in the application the requirements are matched with the database and message will be to that particular blood donor through GSM modem.

**INTRODUCTION**

Need of blood is drastically increasing. Per annum we require 5 million blood units and only 5 million blood units are available. This is the major drawback in case of emergency blood required some patients have daily need of blood those suffering from cancer. Even though the technology is developed still we fail to bring blood donors and recipients on the common platform. Accidents cannot be predicted. There may be blood requirement at any moment so direct communication between donor and user becomes necessary to avoid longer time span in the availability of blood [1]. Basically user/patient needs to send the request with required blood details from database data will be fetched and notification will be send to the respective blood donor.

**EXISTING SYSTEM**

In A blood bank is a center where [blood](https://en.wikipedia.org/wiki/Blood) gathered as a result of [blood donation](https://en.wikipedia.org/wiki/Blood_donation) is stored and preserved for later use in [blood transfusion](https://en.wikipedia.org/wiki/Blood_transfusion). The term "blood bank" typically refers to a division of a hospital where the storage of blood product occurs and where proper testing is performed (to reduce the risk of transfusion related adverse events). However, it sometimes refers to a collection center, and indeed some hospitals also perform collection. Blood centers in the United States begin implementation of Nucleic Acid Testing (NAT) for all blood donations. It narrows the so-called window period - after - a donor is infected by HIV, Hepatitis-B and Hepatitis-C but - before - the condition is detectable by routine methods. In the blood bank the data will be check manually and call the blood donors if they match the blood and certain criteria then the blood donor will give to the person. Manual checking is hard and we may miss some donors.

**EXISTING SYSTEM DISADVANTAGE**

* Manual Checking takes more time.
* Call each match may not be possible.
* Human error may be occurs.
* It is not more efficient.

**Proposed System**

The proposed work explores to find blood donors by using GSM modem and raspberry pi based system. In this system, it consists of android application, GSM Modem, raspberry pi kit. In android application, the person who wants to donate blood needs to register so that his information will be stored in the database. Application display three different screens such as Register, Query and about us screen. Donor needs to register his/her details such as Name, Gender, Address, Blood group and Mobile number. In query section patient needs to select required blood group and current address. Whole system is implemented using raspberry pi kit. Whenever there is requirement for blood then patient will enter required blood group details. Then that information will be fetched from database and SMS will be sending to the donor directly on his number which is stored at the time of registration. Hence there will be direct communication between donor and patient. Person/donor who wants to donate blood needs to register his details. These details will be stored in raspberry pi system database. User in need of blood will have to select required blood group and current address. Corresponding blood donors information will be fetched and displayed on screen. Patient needs to select donor and send SMS option on the screen. SMS will be send to blood donor directly through GSM Modem.

**PROPOSED SYSTEM ADVANTGE**

* system can be used to reduce time span between donor and patient
* The system consists of android application, raspberry pi and GSM modem.
* There is direct communication between donor and recipient through SMS so in case of emergency this system plays important role.
* Results shows different screens of the android applications where user needs to enter blood requirements.

**BLOCK DIAGRAM**

GSM/GPRS

POWER SUPPLY

RASPBERRY PI

**HARDWARE REQUIREMENT**

* Raspberry Pi
* GSM/GPRS

**SOFTWARE REQUIREMENT**

* Android
* Raspbian