

Chandigarh University Apex Institute of Engineering

Project Title- Blood Banking Via Cloud Computing

Research Problem: We aimed to develop and implement an online blood bank management system. This web-based application allows hospitals to make inventories of their blood bags online, thus, allowing each hospital to check the availability of blood bags anytime. Likewise, proper accounting of blood donors ensures that the expected blood transfusion services will be safe and secured.

Project Team

Team Designation	Name	UID	Section
Leader	Ranjeet Singh	20BCS4012	20BCC1-A
Member	V Swaroopa	20BCS4030	20BCC1-A
Member	Ayush Beniwal	20BCS4010	20BCC1-A
Member	Kunal	20BCS4038	20BCC1-A

Paper Objective

The main objective of this cloud computing-based web application is to help satisfy a blood request made from anywhere and anytime, by maintaining all information about the blood donors and different blood groups available in each blood bank.

Project Outcome

The main aim of creating a cloud-based blood bank system is to make blood available on time to people, even in emergencies. With the help of this project, the user can be able to view information about every entity related to the blood bank i.e., hospitals, donors, the location of another blood bank, etc.

Skills

Knowledge of working on Windows
SQL 2008
Visual Studio 2010
Cloud server

Name Of Supervisor

Geetinder Saini

Signature

Literature Review

K.G.Prasanna.et.al(2020) projected an online blood bank management system that gives access to the user to request an organization to give them blood. Donors' and seekers' information can be stored in the centralized database that can be maintained by the system. Only registered users can access it. SQLite is used in this project. The outcomes revealed that the introduced project was applicable to enhance clients to enter the desired information through so much simplicity.

D.S. Kim. et.al (2007) describes the system based on the RFID and ubiquitous sensor network. The system helps to ensure an error-free blood transfusion process. This system is developed and demonstrated for the continuous report of blood packet temperature and tracking the location of blood bags. The LTS unit of the system was a useful way to track the location of moving blood banks and the time required of the medical staff was reduced. This system makes managing blood bags simple and reliable.

S. Sarath. et. al (2019) projected an online blood management System that helps people who need blood by giving them overall details regarding the donors with the same blood and within their city. This project saves people the time of searching for blood. The outcome revealed that the introduced project was able to find people like donors and receivers from the same city.

Albert Mayan J .et .al (2016) an application developed for finding blood and donations for requesting blood. Any blood seeker would log in to the given application then using GIS the patient will get detail about the nearest blood donor. Also, any blood donor can add themselves for donating the blood then he will receive the notification related to the blood camp.

WijaiBoonyanusith.et.al (2010) developed a website that consists of information related to the bloodstock of a given specific area. It uses. PHP for designing a website and also uses my SQL for storage of the database. When any hospital requires blood then that hospital is required to fill in the data on the blood bank website then according to the required blood group the website will display the amount of bloodstock available at the different blood banks within a specific Geographic area. Then the hospital has to send a request to the blood bank for the blood, the blood bank will give them replies for providing the blood. The main objective of the system is to improve the efficiency of data communication within the supply chain to reduce response time for each demand request.

Adarsh N.et, al (2014) developed a system used for the effective management of blood banks based on RFID. The system reduces the number of transfusion errors the system by continuous track the inventory status of the blood bank in real-time and has crossed checks at various locations to ensure the correct blood transfusion process. The system becomes more efficient because the read time of RFID (0.001s) is far greater compared with barcodes (1s).

C.A Shankar. et, al (2014) defined Blood Bank Information System as an information management system that contributes to the management of donor records and blood bank. This application contains a User Login Screen, Blood Management, Menu Form, Blood Stock, Donor Management, Donor Registration, Blood Reservation, Donor Blood Test, Recipient Management, and Blood Reservation. Similarly, the researchers planned for the application to have hospital administrators, doctors, and blood bank receptionists as users. This system was designed to suit all types of blood banks. Once successful in the implementation of the application, it can be applied and rolled out in several blood banks.

R. Singh. et, al (2017) these researchers mentioned that a manual-based system can be waste of time, lead to error-prone results, consumes a lot of manpower, lacks data security, data retrieval requires a lot of time, reports consume a long time to produce, and there is less precise accuracy on the results. As such, by developing and implementing a web-based blood management information system, there was quick and timely access to donor records, and the system provided management with timely, confidential, and secured medical reports. There were three (3) users in the system, namely: Administrator, Donor, and Acceptor. Each user has been given a user ID and password to identify their identity. The said application was developed using ASP.NET, C#.NET, and using SQL Server 2000/2005 for the database. The research paper failed to mention the methods of research used.

G. Muddu Krishna .et, al (2016) proposed a short message services-based blood bank system, it consists of two modules a data processing module and a packet account module. The data processing module responds to the user request and the packet count module checks the availability of the blood

samples. The user can communicate with the system via SMS whenever in person required blood then that person has to send a request to the system via SMS. Then the system will respond to these requests and send an SMS consisting of the address of the blood bank which has the availability of the bloodstock. If the bloodstock is not available in such case the donor's contact number will be sent to the patient. All the working of the system is conducted using a Raspberry Pi board.

Muhammad Arif .et, al (2012) the system provides a direct call routing technique using the asterisk hardware. The Asterisk software covers normal computers into the communication server. The blood bank consist database which will maintain on the Centre server, whenever any blood seeker made a call to the toll-free number the blood seeker will get connected to the blood donor call then the detail about the blood seeker will send to the donor on his mobile. If the call is not connected to 1st donor, then the call has been connected to another donor. After accepting the request for blood donation, the donor's name gets removed from the donor list for the next 56 days.

Liyana.F. et, al (2017) This blood bank system develops based on an incremental model. She had chosen this model because the system can be developed through a cycle of phases and also because of the advantages of this model such as Ease to understand to flow of the phases. Changes are possible in the middle of any phase. The system can be developed even if there is an error in the middle and it can be corrected in the testing phase. In this study, the researchers observed that the developer failed to include in the system the function to check the availability of blood bags, and to check the shelf life or expiration of blood bags or products. As such, the researchers will include these in their developed system to enhance safety for blood transfusion.



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