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[ijirset@gmail.com](mailto:ijirset@gmail.com)

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# Blood Management System using Blockchain Technology

Attar Asfiyan Nazim, Dhadave Pragati Uddesh, Sonawane Shivam Laxman, Kanade Chetan Datta,  
Prof P.M.Marne

Department of Computer Science, Shri Chhatrapati Shivajiraje College of Engineering, Pune, India

**ABSTRACT:** Every day, there are a growing number of people who require blood transfusions. Our online blood bank may be used successfully to find the information of blood banks with the same blood type and located in the same city, helping those who are in need of blood. Those who are considering blood donation can register in our online blood bank with the help of our online blood bank by providing all of their information. The Our online blood bank website is easily accessible to everyone. Anybody interested in donating blood fills out the registration form with all of their information, and if anything changes after they submit it, they can alter it by creating a username and password. Our website also assists those who require blood by providing information about blood banks through a search function. If no blood banks belonging to the same group are located in the user's city, they are given addresses and phone numbers of contacts in larger cities who are paid representatives of clubs or organisations. Such that the person gets help from us which saves his life. Our contribution work is providing security using block chain Technology and encryption.

**KEYWORDS:** Block Chain, bit coin, blood bank, online system, Security.

## I. INTRODUCTION

A blockchain is a ledger of transactions that is digital. The name is derived from the structure of the data, which consists of a chain of individual records known as blocks. A blockchain's transactions are verified by a number of online computers. Together, they make sure that before a transaction is put to the blockchain, it is genuine. This distributed computer network makes sure that one system cannot add dubious blocks to the chain. Also, as all succeeding blocks must be changed before earlier transactions can be changed in blockchain, this is done on purpose. Every day, there are a growing number of people who require blood transfusions. Our online blood bank may be used successfully to find the information of blood banks with the same blood type and located in the same city, helping those who are in need of blood. Those who are considering blood donation can register in our online blood bank with the help of our online blood bank by providing all of their information. The Our online blood bank website is easily accessible to everyone. A person who likes to donate blood gives his entire details i.e., fill in the registration form and can create a username with a password by which he can modify his details if at all there are any changes in his information given before.

Our website also assists those who require blood by providing information about blood banks through a search function. If no blood banks belonging to the same group are located in the user's city, they are given addresses and phone numbers of contacts in larger cities who are paid representatives of clubs or organisations. The suggested method, Online Blood Bank site, uses block chain technology to fix the problems with the current system. The Blood Bank assists those in need of blood by providing them with general information on blood banks that have the same blood group and are located in their city. Provide these data security utilising block chain technology. The benefits of the suggested system are enumerated below. By entering their blood type and city, those in need of blood can find blood banks nearby. It is incredibly user-friendly and adaptable. With the current system, a person's time and labour are greatly diminished. Simple and beneficial.

## II. RELATED WORK

**Seungeun Kim et. al.**-In order to shorten blood supply time and ensure information visibility, we created and implemented a blood cold chain system based on private blockchain technology. The first step in effective blood management is the real-time recording and sharing of data as blood is moved, eaten, and disposed on distributed ledgers.



**Timothy Hannon:-**An article on interventions to lessen blood component waste, a crucial stewardship concern for the blood supply, can be found in this journal issue. While the College of American Pathologists and AABB evaluate blood product wastage as a part of excellent laboratory practise.

**Albert Farrugia:-**Hemophilia pathogen safety issues entering history symbolises a significant victory for the community's efforts, which included support from industry, healthcare professionals, patients, and authorities. Caution should be used to temper any enjoyment, and complacency should be despised.

**AHMAD MUSAMIH et al:-**The difficulty of drug traceability within pharmaceutical supply chains has been examined in this article, with a focus on its significance in preventing the sale of fake medicines. We created and tested a blockchain-based system.

**Tien Tuan Anh Dinh et al.-**In this paper, we first describe BLOCKBENCH, the first evaluation framework for analyzing private blockchains. It serves as a fair means of comparison for different platforms and enables deeper understanding of different system design choices. Any private blockchain can be integrated to BLOCKBENCH via simple APIs and benchmarked against workloads that are based on real and synthetic smart contracts.

**Zhetao Li et al.-**In this paper, we have presented a unified energy blockchain based on consortium blockchain for secure energy trading in various typical scenarios of IIoT, such as microgrids, energy harvesting networks, and vehicle-to-grids. We also designed a credit-based payment scheme to overcome the transaction limitation caused by transaction confirmation delays, which supports fast and frequent energy trading by credit-based payment among energy nodes.

**Keneth et al.-**The design of information system for decentralized control of organizations has been criticized as being less effective than the information system design for centralized control. This paper describes decentralized information system for regional blood organization.

**Xiaowei Zhu et al.-**In this paper, we provide an overview of the current state of RFID applications in different industries and its impact on business operations. We provide extensive literature survey and develop a framework for future research areas in this field.

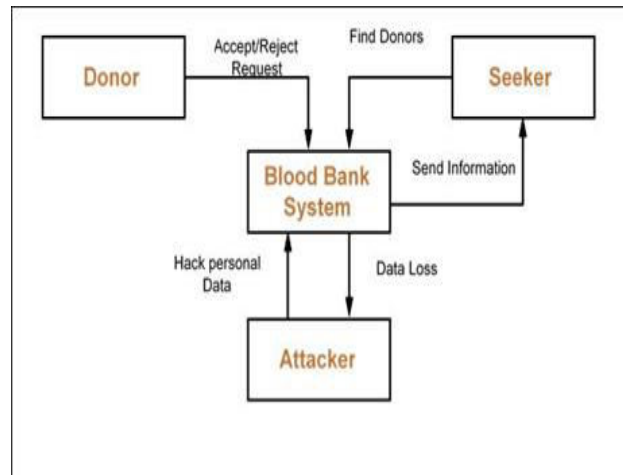
**Rodeina Davis et al.-**Radio frequency identification application has significant processor-oriented and technological implications. It is feasible and economically justifiable to incorporate RFID into blood centre processes.

**Dimitri da Silva et al.-**This article presents a microservices oriented software architecture implementation for a middleware that allows the logically centralized collection and processing of traceability data to provide transparency to the consumers and provide data analysts with a source of data to gain new insights on the whole supply chain. Another goal of the middleware is to store and provide other descriptive information about the business, people and processes that comprise the supply chain to enable the creation of stories about the lifecycle of the food from the start of its life to just before it reaches the end consumer's shopping basket.

### III. EXISTING SYSTEM/OPEN ISSUES

In the proposed systemic approach, we formulate the task as a classification problem to Negative comments. Nonetheless, counterfeiting and forgery of medicinal products are considered as another concern in the supply chain, where a falsified illegal copy of an original product can be replaced with the original product itself.

#### IV. SYSTEM ARCHITECTURE



#### V. CONCLUSION

We have presented a blockchain-based blood donation management system in this work that tracks the source of the blood in a transparent, private, secure, reliable, auditable, and distributed fashion. To address the issue of limited storage, we combined the IPFS with the private Ethereum blockchain. We carried out the security research to demonstrate that the suggested blood donation management solution is strong and safe enough to withstand significant security flaws and assaults.

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