

**BY USING K-MEANS ALGORITHM DESIGNING HEALTH-CARE
APPLICATION OF E-BLOOD BANK BASED ON LOCATION (GPS).**

¹Pravinsingh Rajpurohit, ²Akshita Trivedi, ³Yash Phatak,
⁴Jay Mistry, ⁵Prof. Abhijit Manepatil

^{1,2,3,4} Department of Computer Engineering, SKNSITS Lonavala, Pune, India.

⁵M.E. (Information Technology), Assistant Professor, Department of Computer Engineering,
SKNSITS Lonavala, Pune, India.

ABSTRACT :- Blood is an important constituent of human body. Availability is good but on time it's always best. Hence, Timely availability of quality blood is must to keep the chain of the healthcare services properly. In most of the Emergency cases, when blood is required, either the lack of services or the non-instant help cause unpleasant things. Though donor is available in the hospital, patient is unaware of it, and so is donor. To resolve this, a communication between hospital, blood bank, donor, and receptor is important. The proposed system provides solution to this problem. The system will make sure that in case of need, the blood will be made available to the patient. There will be web portal as well as android app to make this communication faster. It aims to create an e-Information about the donor and organization that are related to donating the blood. The Methodology used to build this system uses GPS. The Proposed system will be used in Blood banks, Hospitals, for Donors and Requesters whoever registers to the system.

Keywords: GPS, Google Cloud Messaging, Clustering.

I. INTRODUCTION

Blood bank System is to create an e-Information about the donor and organization that are related to donating the blood. Through this application any person who is interested in donating the blood can register himself in the same way if any organization wants to register itself with this site that can also register. Moreover if any general consumer wants to make request blood online he can also take the help of this system. Admin is the main authority who can do addition, deletion, and modification if required.

Blood bank System is a database system specially designed with the help of Android to create a collection of information based on different blood groups and to succour that information with respect to the administrative and inventory management within a blood bank. The Objective to define this project is to managing all the information of blood donors, different blood groups available in each blood bank across the region and makes it suitable to retrieve it on time in a better way. The motto is to provide the crystal clear transparency in this field and make the process of collecting blood from a blood bank trouble free, easy, suitably, corruption free and make the system of blood bank management effective.

II. LITERATURE SURVEY

In year 2015, an IEEE paper on A Health-IoT Platform introduced on the Integration of Intelligent Packaging, Unobtrusive Bio-Sensor and Intelligent Medicine Box was authored by Geng Yang, Li Xie, Matti M'antysalo, Xiaolin Zhou, Zhibo Pang, Li Da Xu, Sharon Kao-Walter, Qiang Chen, Lirong Zheng. This paper brought the idea of an intelligent home-based healthcare platform. It involves iMedBox with connectivity, iMedPack with communication capability enabled by RFID, Bio-Patch and SOC. It fuses with IoT. The body-worn Bio-Patch can detect and transmit the user's bio-signals to the iMedBox in real time. The only limitations are, comprehensive platform missing And the Physical size, rigid nature and short battery become limitation for long term use.

In 2016, an IEEE paper was authored on Data Mining for Better Healthcare: A Path towards Automated Data Analysis? By Tania Cerquitelli, Elena Baralis, Lia Morra and Silvia Chiusano. This paper addresses the mining activity from the medical database perspective. The mining system should be able to devise which knowledge could be most interesting to the user & extract actionable knowledge from large medical dataset with minimal user intervention. System should be capable of yielding actionable knowledge & extracting manageable sets. Large parameter spaces need to be explored at abstraction level to envision a system capable of evaluating and comparing many data-mining technique configurations at a time.

In 2015, an IEEE paper on Mobile Based Healthcare Management using Artificial Intelligence was authored by Amiya Kumar Tripathy, Rebeck Carvalho, Keshav Pawaskar, Suraj Yadav, Vijay Yadav. This brought the idea of the health-care management system rely on mobile based heart rate measurement so that the information can be transferred and diagnosed on time. On the other hand the whole process can be done quickly with a click of button. The system will

consist of video conferencing to connect remotely with doctor. The system will also consist of Doc-Bot and an online Blood Bank. In this implemented project, heart rate calculation differs from actual one due to noise present in input signal. So the performance is not efficient in practical. Methodology used Clustering, Text Mining, Pattern Matching, Support Vector Machine, Partitioning Algorithm and Donor HART tool used in collecting donor reaction information. Limitations are Difficulty in handling emergency situation and No proper security for personal details misuse.

III. TECHNOLOGIES TO BE USED

Language: Java J2SE and JDK: J2SE (Java 2 Standard Edition). Java would be the required as language for development of the project. JDK is the development kit used to compile java programs.

GCM: Service provide by Google for sending notifications between android device and server.

Database/Data Library: Serialized Objects/Serialization - Database in Java, In case the project needs database this is how it is handled in java.

GPS: This system provides location and time information in all weather conditions, anywhere across the region.

IV. PRODUCT FUNCTION

Register user -Blood bank portal and Android application for Donors to register for donating blood.

Blood Login - Donor, Blood bank admin and Hospital admin can login.

Donor functionality - If donor once donated blood he/ she will not allowed donating blood for at least three month of last donation date. Donors will get notification about new blood donation camp whenever and wherever it takes place. Donors also request for blood of nearest blood bank with priority and also get appointments.

New Donors can also make request for blood donation to nearest blood bank and also get appointment after request.

Admin functionality - Admin of all respective departments can generate reports of blood bank, blood stock and check expiry date of blood.

V. OVERALL DESCRIPTION

A. REQUIREMENT SPECIFICATION

SOFTWARE REQUIREMENTS

- Operating system: Windows VERSION: 7
- Languages: Java
- Jdk 1.7, tomcat-7
- MySQL 6.0
- Netbean, Android sdk, Android Studio

HARDWARE REQUIREMENTS

- Android Phone

B. USER CHARACTERISTICS

- Registration form for blood bank, donor and Hospitals
- Login form for blood bank, donor and Hospital
- Dash board form for Blood bank, Donor and hospital where blood bank and hospital can see all data about their firm.

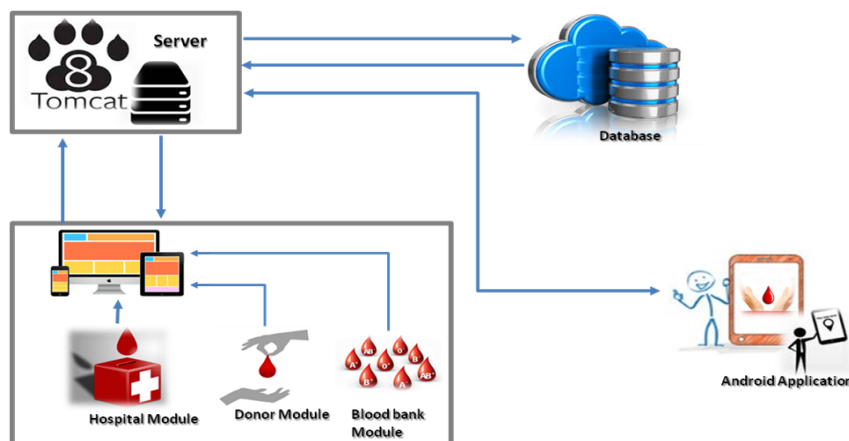


Fig.1 Architecture Diagram

We have created system in java programing. Data is stored in mysql database. We have created an android application with local server. Web application that communicates with local server and Trustee Server using REST API. User search nearest blood bank on cloud, and after search successfully result shown in Google map.

VI. SYSTEM ANALYSIS

We have created system in android application. Data is stored in MySQL database. We have created a web application with local server for connecting to the android application. Web Application that communicates with local server and Trustee Server using REST API. We have uploaded blood bank details on cloud. We have evaluated the Google map for showing the blood bank.

VII. RESULT

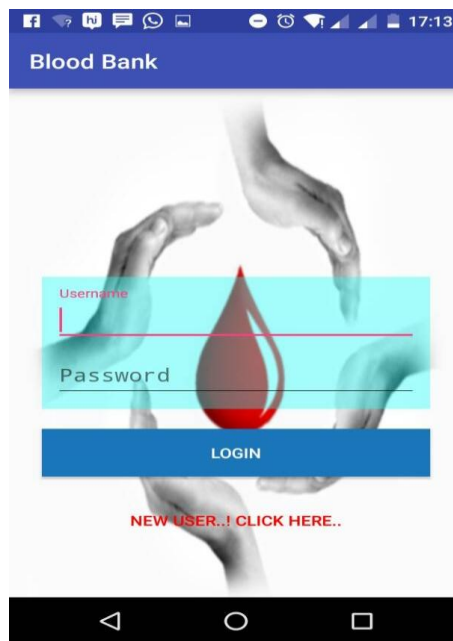


Fig 2. User login page

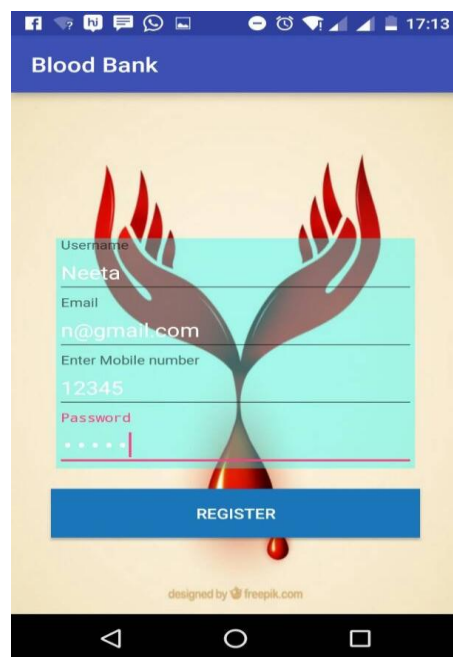


Fig 3. User registration page

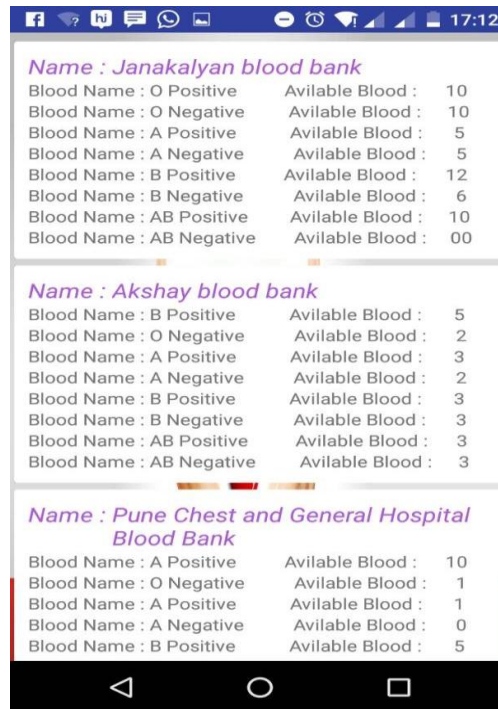


Fig 4. Blood bank details

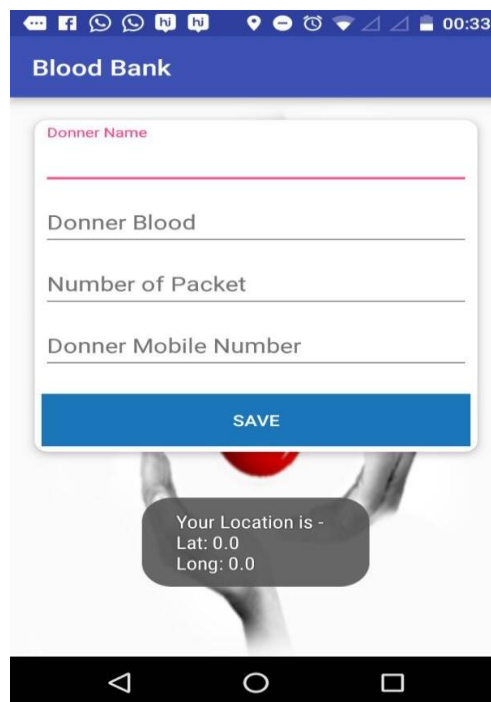


Fig 5. Blood bank detail update

VIII. CONCLUSION

A Proposed system provides Android based application which is very useful for Blood Bank users. System provides better way to communicate with blood banks. It is also able to maintain reports like stock, etc.

ACKNOWLEDGEMENT

I wish to express my profound thanks to all who helped us directly or indirectly in making this paper. Finally I wish to thank to all our friends and well-wishers who supported us in completing this paper successfully I am especially grateful to our guide for time to time, very much needed, valuable guidance. Without the full support and cheerful encouragement of my guide, the paper would not have been completed on time.

REFERENCES

- [1] G.Muddu Krishna,S.Nagaraju Design and Implimentation of short Message Service (SMS) based blood bank. 19 January 2017 10.1109 /INVENTIVE. 2016.7824901.
- [2] Geng Yang, Li Xie, Matti Mäntysalo, Xiaolin Zhou, Member, IEEE, Zhibo Pang, Li Da Xu, Sharon Kao-Walter, Qiang Chen, Lirong Zheng, Senior Member, IEEE “A Health-IoT Platform Based on the Integration of Intelligent Packaging, Unobtrusive BioSensor and Intelligent Medicine Box” 10.1109/TII.2014.2307795, 2015.
- [3] Tania Cerquitelli, Elena Baralis, Lia Morra† and Silvia Chiusano Data mining for better healthcare: A path towards automated data analysis?, 10.1109/ICDEW.2016.7495617,2016.
- [4] Amiya Kumar Tripathy¹, Rebeck Carvalho², Keshav Pawaskar³, Suraj Yadav⁴, Vijay Yadav⁵ .Mobile Based Healthcare Management using Artificial Intelligence. 10.1109/ICTSD.2015.7095895, 2015.
- [5] Jamalpur Mohanlal, Mudarakolla Krishna, Design and Implementation of Automated Blood Bank Using Embedded Systems. August 2016.
- [6] M. Kay, J. Santos, M. Takane. "mHealth: New horizons for health through mobile technologies." World Health Organization, pp. 66-71, 2011.
- [7] K. Karagiannaki, S. Chonianakis, E. Patelarou, A. Panousopoulou. and M. Papadopouli. "mMamee: A mHealth Platform for Monitoring and Assessing Maternal Environmental Exposure." In 28th IEEE International Symposium on Computer-Based Medical Systems (CBMS), pp. 163-168,2015.
- [8] <https://en.wikipedia.org>.