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CLOUD BASED BIOMETRIC MEDICAL DATABASE SYSTEM IN AMBULANCE USING IoT

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Abstract: According to the present scenario the time duration that is utilized for the availability of ambulance and the availability of resources in the hospital after arriving of the patient is increasing day by day due to increase in the number of accidents and health issues. So, to tackle the problem of time wastage when the patient arrives at the hospital, we present this paper. Firstly, in this paper we will be getting the medical history of the patient using database. This information will be updated in the central server using the concept of cloud. The moment patient is admitted in the ambulance in order to retrieve his medical history, fingerprint recognition is done. This biometric information that already exists in the central server is transferred to the hospital so that the time wastage for the prerequisites of the patient will be minimized. Finally, this paper present the design of a small, robust, low-cost and easily accessible biometric medical database system in ambulance using IOT. IOT enables the communication of diverse suite of devices and objects.

Keywords—Biometric, Fingerprint, Recognition, Robust, IOT(Internet of Things)

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I INTRODUCTION

"CLOUD BASED MEDICAL BIOMETRIC SYSTEM" is a system that is used to save the patient's treatment time. Initially, users will enroll when they go to hospital and provide their medical details which will be stored on cloud. Then, in case of emergency biometric system is placed in ambulance which will take input of patient's fingerprint impression through fingerprint recognition technique, fingerprint will be identified and patients details will be provided to hospital. This will be useful because a lot of time will be saved to start patient's treatment as patient's details will be available to hospitals even before patient reaches hospital and doctors will be knowing all the pre requisites of the patients and all his medical history.

II MOTIVATION

This motivates our system to provide a working and efficient system so that all the operations work well mannered. As soon as the patient books his appointment the data is being stored in that application under that respective doctor's name. It's a complete doctor-patient interaction application which is being automated for the ease of use.

III OBJECTIVES:

The objective is to provide:-
1. Appointments on android phone
2. Reduce queues in the hospital
3. Provide good service to patient
4. Send them reports
5. Direct conversation with doctor.

IV LITERATURE SURVEY

In the paper [1], the authors described the first generic construction for biometric identity based encryption.(IBE) system. In the paper[2], the authors proposed a novel privacy preserving biometric identification scheme which achieves efficiency by using power of cloud computing .In the paper[3] the biometric database in encrypted and outsourced to cloud server is presented. In the paper[4] authors tries to offer a simple high performance

approach to perform fingerprint recognition. In the paper [5] the authors presented the design and realization of a small, robust, low-cost and easily accessible data transfer unit.
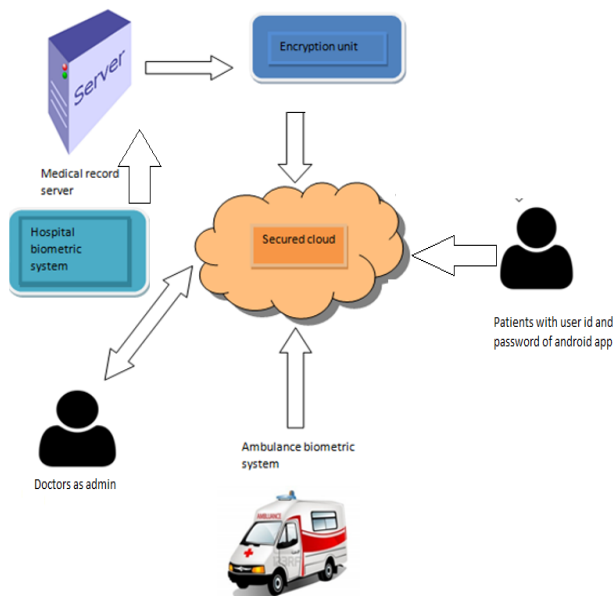
V SYSTEM OVERVIEW

Figure 1: System Overview

VI EXPERIMENTAL EVALUATION

The basic setup for experiment included a cloud server, an IOT module, and an android application for user. The details of these are as follows:

1) Cloud Server: A central server is used, which acts as a storage service for a large amount of data. The sever is implemented using Java. APIs have been created for posting and getting required data. Cloud server provides the data anytime, anywhere. The data is secured in the cloud in an encrypted format.

2) IOT Module: The IOT module is used to transfer the biometric fingerprints from ambulance to the cloud server and the data that is present on the cloud server to the hospital.

3) Android Application: Two Android applications are created. One for the patient and one for hospital staff. The application with the user provides the service to check his medical details and also the appointments that are given by the doctors. The hospital staff app updates the medical details of patient if needed.

VII RESULT ANALYSIS

- In this system the record of all patients is kept in a single database i.e. on cloud in an encrypted form.
- This data will be accessible to the doctors and patients through android app.

- Whenever patient visits the hospital he enrolls using biometric fingerprint recognition technique. The patient doesn't need to provide his/her details to different doctors.
- As the details that are provided once will be used by all the doctors. Every doctor having the system has that patient's details.
- The patient can also check his medical details time to time by logging into the android app using his username and password provided by the doctors.
- Doctors can also inform the patients for the appointments by giving notification on the app.
- Doctors can also update the patient's details whenever he feels the need to do so.
- This system keeps record of entire medical details of the patient and makes them available to the hospital before he reaches the hospital.

VIII ADVANTAGES

- Minimize the wastage of time taken in hospitals to identify the user's blood details by doing blood tests and other tests.
- Provide early treatment to the user and save his life in emergency. As the medical details of the patient will be provided to hospital before he reaches there.
- Saves money for various tests as some of the tests that are already taken doesn't need to be repeated. Hence, the money is saved.
- Easy to operate. The system involves taking fingerprint of the patient that is not a difficult task and operating an android app that is also user friendly and known to everybody. Hence, its operation is simple and easy.
- Cost Effective. This system is cost effective as there is minimum used of hardwares and too are not expensive.
- The patient doesn't need to provide his/her details to different doctors.
- As the details that are provided once will be used by all the doctors. Every doctor having the system has that patient's details.

IX CONCLUSION AND FUTURE WORK

Hereby , we conclude that this methodology would be able to save someone's life. It makes available the patient's details to hospital before he arrives.This system will reduce the number of deaths occurred due to the late treatment given or wrong treatment. This will prove to be a boon for human beings.

However, beyond the current system large amount of future work can be done. We would like to evaluate our system on large field experiments. Secondly, in our system we may provide the facility of GPS tracking in the ambulance to track the nearby hospitals so that the precious time of the patient will be saved.

REFERENCES

[1] Y.Huang,L.Malka, D.Evans, and J. Katz,   "Efficient Privacy preserving Biometric   Identification," NDSS, 2011

[2] J. Yuan and S. Yu, "Efficient Privacy-Preserving Biometric Identification in Cloud Computing" Proc. of IEEE INFOCOM, 2013

[3] Q. Wang, S. Hu, K. Ren, M. He, M. Du, and Z. Wang, "CloudBI: Practical Privacy-Preserving Outsourcing of Biometric Identification in The Cloud," Computer Security-ESORICS, 2015.

[4] Muzhir Shaban Al-Ani, Tishko N. Muhamad Hersh A. Muhamad 2017 Effective Fingerprint Recognition Approach Based on Double Fingerprint Thumb.

[5]Ivan Ganchev, Zhanlin Ji1, M´airt´ın O'Droma 2016 Designing a Low-Cost Data Transfer Unit for Use in IoT Applications.

[6] y. zhang, j. katz, and c. papamanthou, "all your queries are belong to us: the power of file injection attacks on searchable encryption," usenix security, 2016.

[7] C. ding, j. choi, d. tao, and l. s. davis, "multi-directional multi-level dual-cross patterns for robust face recognition," ieee transactions on pattern analysis and machine intelligence,2016.