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USING REAL TIME COMMUNICATION PROVIDE EMERGENCY TREATMENT AND HOSPITAL SEARCHING VIA IOT BASED SYSTEM

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Abstract — *Today Internet of Things (IoT) is very rapidly growing and use in various fields. IoT also use in medical field to interconnect the medical resources and offer smart, reliable and effective healthcare service to the patients. Hospital management system use for active and assisted living is one of the standard that can utilize the IoT advantages to improve the elderly way of lifestyle. In this application we use IoT architecture to improve healthcare system. The system collects the data and outsources it on cloud server to where it analysed and processed in future. The reposed base on analysed data can be sent back to the user. This proposed system is able to send required information for emergency service from ambulance system to nearby hospital. After checking requirement availability hospital admin accepts request. Most important feature of system is when an ambulance meets a victim the system takes some of its initial details using thumb scan device*.

Keywords- *Wireless Communication, Mobile applications, Hospital system, Print Data Access, Blood Management, Nearest Search*

INTRODUCTION

Now a day's human life become very fast and no one have time to take care about him. Every on focusing on his daily works and ignore his small health issue. Because of this they face some major health problem in future and there is no any real time and emergency level facility available for human being. Because of this hospital doesn't providing immediate care to victims of accidents before trained medical workers arrive. As per the Victims Current situation, there is no any facility available in ambulance which suggests the nearest hospital. This application provides the facility of real time communication to hospital and ambulance admin and finding the location of selected destination point.

ARCHITECTURE ALGORITHAM

1] Haversine algorithm:
Here first we calculate longitude (East-West) and latitude (North-South). By using the longitude and latitude value calculate the distance between two points on earth surface.
Formula for calculating distance between two points on spherical surface:-
For any two points on a sphere, the haversine of the central angle between them is given by
$\text{Hav}(d/r) = \text{hav}(\varphi_2 - \varphi_1) + \cos(\varphi_1)\cos(\varphi_1)\,\text{Hav}(\lambda_2 - \lambda_1)$

Notations:
1] hav is haversine function
2] d is distance between two points
3] r is the radius of the sphere
4] φ_1, φ_2: latitude of point 1 and latitude of point 2, in radians
5] λ_1, λ_2: longitude of point 1 and longitude of point 2, in radians

2] K- Nearest Neighbor algorithm:
The k-nearest neighbour classifier can be viewed as assigning the k nearest neighbours a weight 1/k and all other 0 weight. This can be generalised to weight nearest neighbour classifiers.
Steps of algorithm:
i] Choose the number k of neighbors
ii] Take the k nearest neighbors of the new data point.
iii] Among these k neighbors, count the number of data points in each category.
iv] Assign the new data point to the category where you counted the most neighbors.

SYSTEM ARCHITECTURE

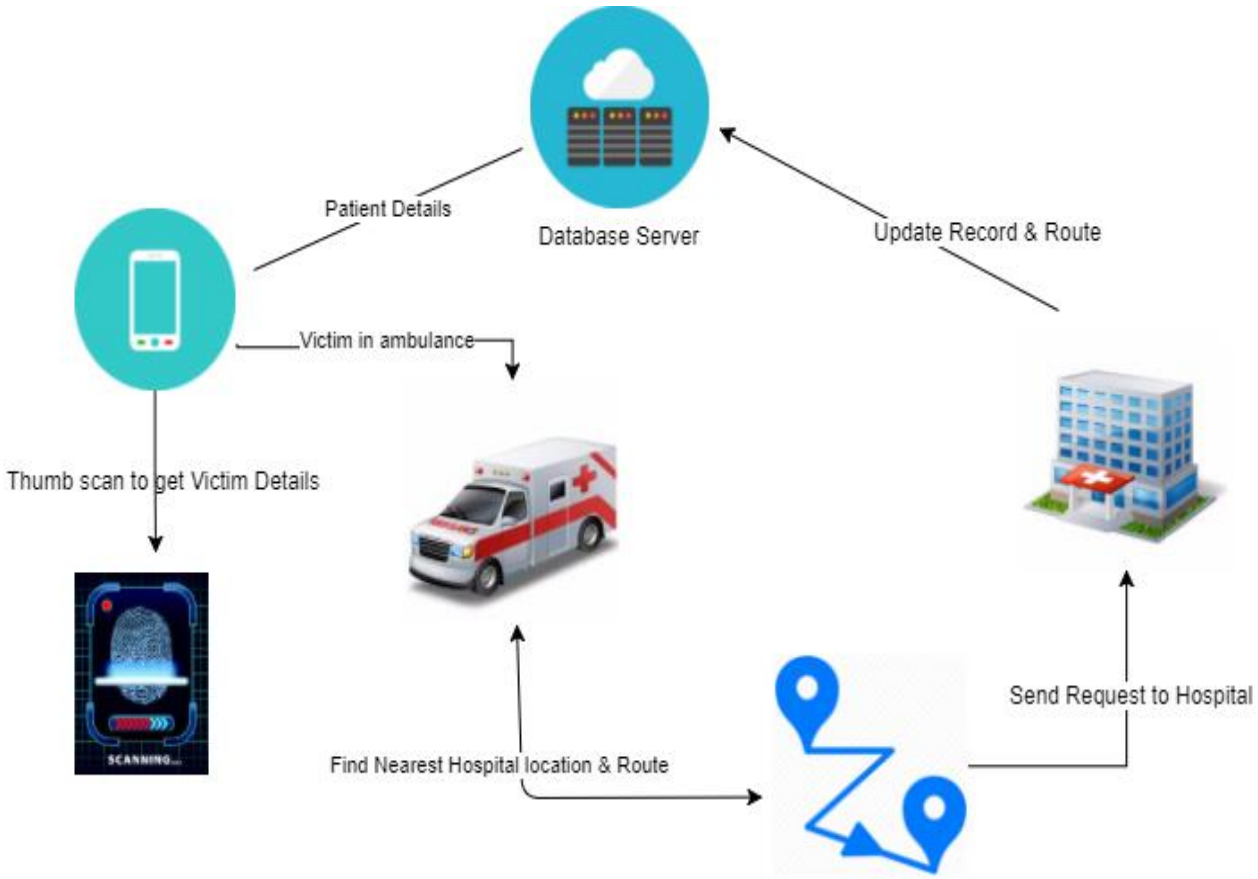

Fig.1

EXISTING SYSTEM AND PROPOSED SYSTEM

Existing System	Proposed System
At the emergency level, with in ambulance facility doesn't having immediate care given to victims of accidents before trained medical workers Arrive.	We proposed Effective real-time communication and location finding system using android application. Which gives real time communication in between ambulance and Hospital and it give a almost paperless work. Improve the hospital management.
As per the Victims Current situation, there is nothing facility available in ambulance which suggest the care taker nearest hospital searching & Doctor availability.	As per the Victims Current situation, there is nothing facility available in ambulance which suggest the care taker nearest hospital searching and Doctor availability.
Doesn't having victim personal details which gives the victim blood group.	Victim personal details which gives the victim blood group and Other things which give information to hospital management for blood if required.

Table.1

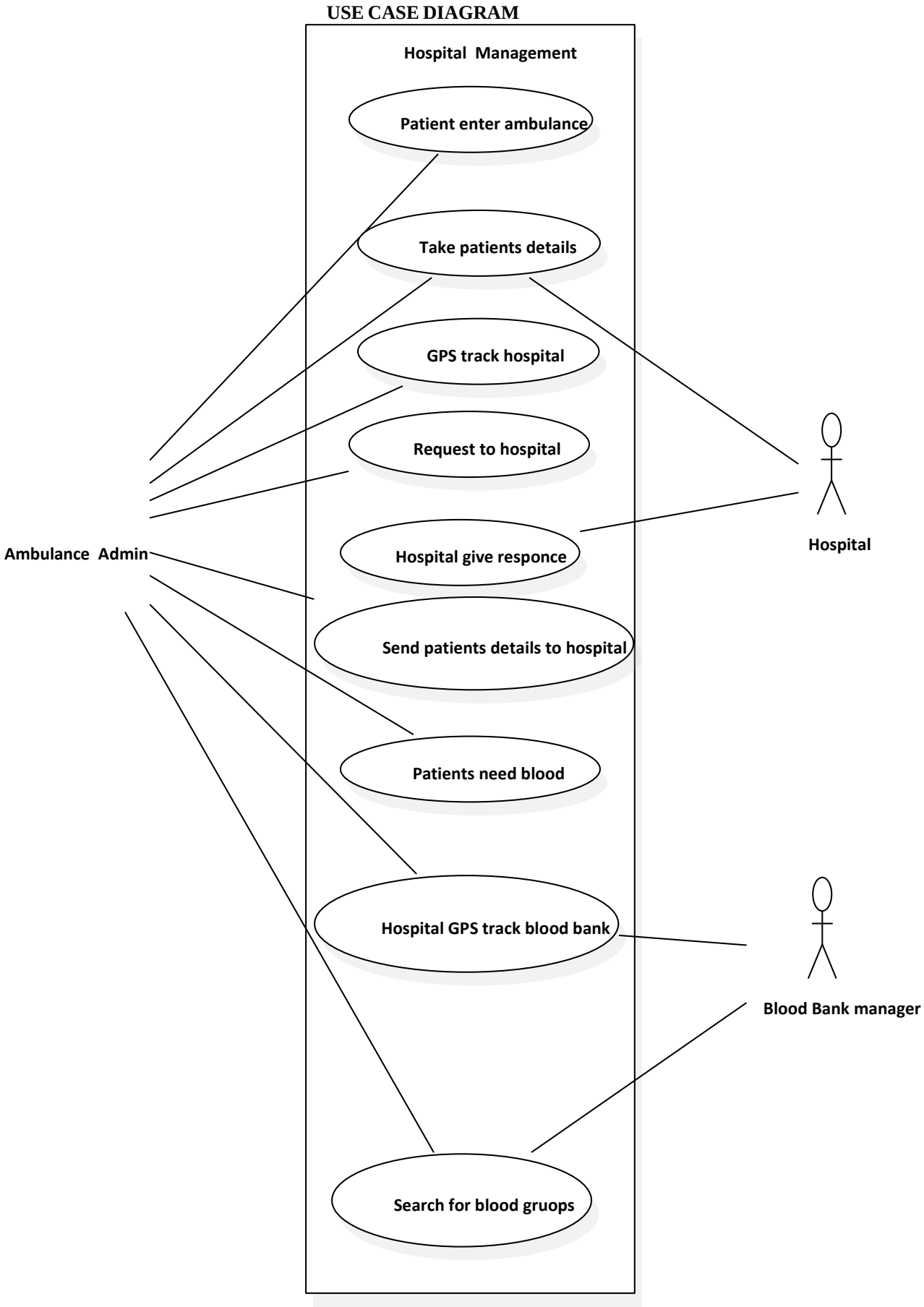

Fig.2

CLASS DIAGRAM

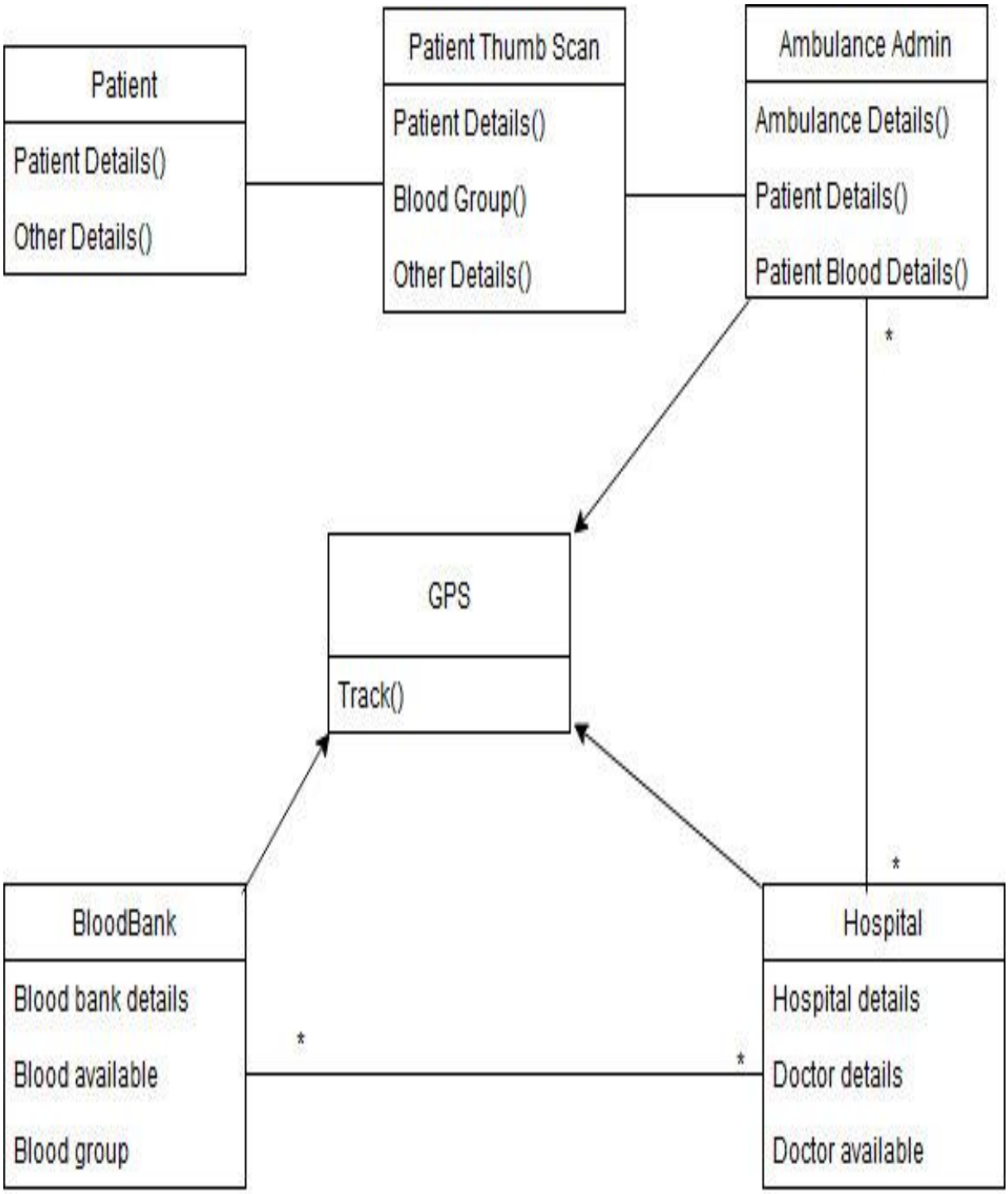

Fig.3

Class diagram represent the class and its parameter. In above diagram it shows 5 classes

1] Patient:- After thumb scanning ambulance admin get some information about accidental person.
2] Patient thumb scan: By using thumb scanning device ambulance admin gets patient details like his name, number,address, Aadhar number, blood group.
3] Ambulance admin: He maintain patient details and inform current situation about patient.
4] GPS: In application GPS system use to find way of required hospital.
5] Hospital: This class maintain the hospital details, doctor's details and it availability.

SEQUENCE DIAGRAM

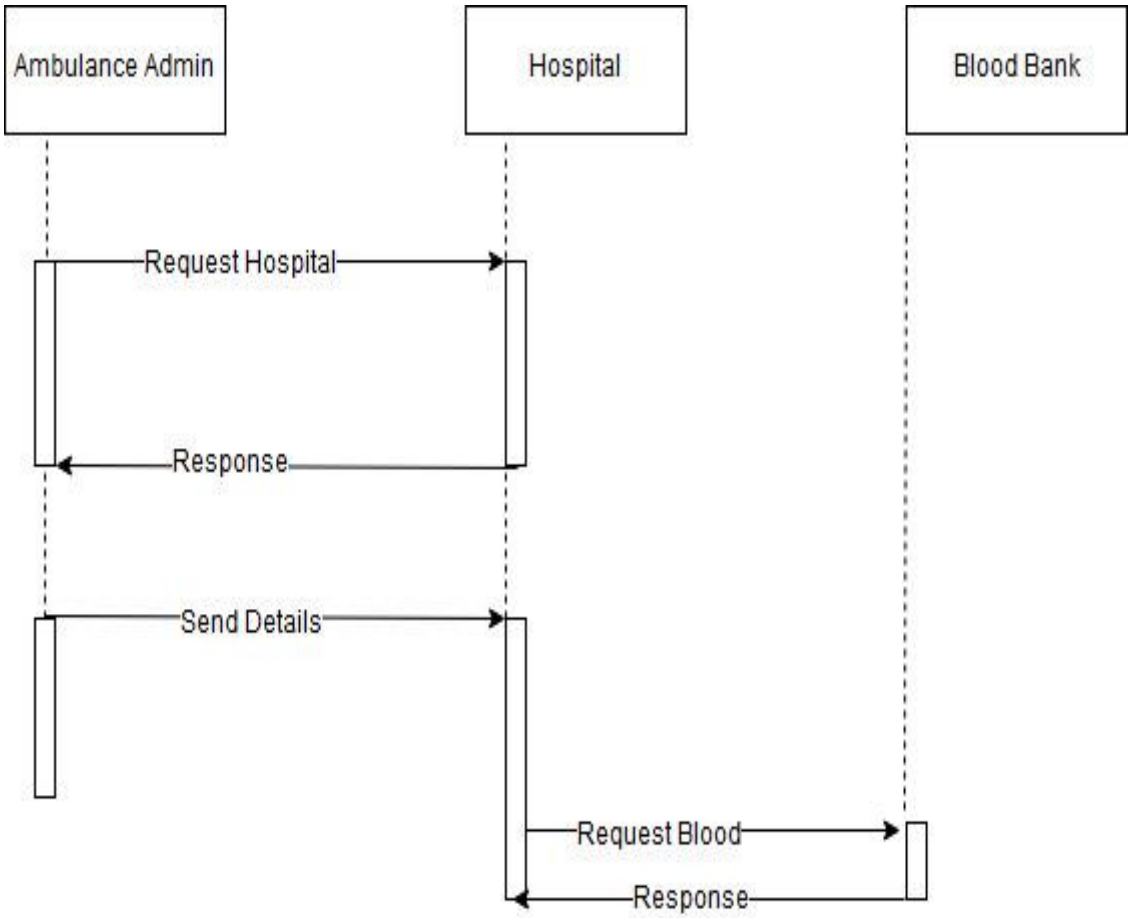

Fig.4

In above diagram show the sequential flow user's activity when they are using application. Here ambulance admin take the details of patient and send it to nearest hospital after accepting the request of ambulance admin. He sends the details of victim to the particular hospital. If victim loss the blood and he need blood then hospital admin send request to blood bank. After checking the availability blood bank admin give response bank to the hospital admin request.

ADVANTAGES

1] Almost paperless work.
2] Less time requires compare to manual process.
3] Line access to hospital.
4] Less time in Queue, less time in hospital.
5] Improve hospital management.
6] Increased percentage to save victim life.

CONCLUSION

This propose system are able to send emergency information which is fetch from database by using thumb scanning device and collected from patient current situation. Most of the important feature provide by proposed system is by using thumb scanning device ambulance admin get basic information about accidental person like name, address, contact number etc. This process reduces the time which is required for patient identification and provide fast service to accidental person. It increases the lifesaving rate of accidental persons.

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