Users Global Security Through Cloud

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Abstract— Research and development in the field of IOT are really boomed up in the modern days. Taking the advantage of this, we are trying to extend the concept of IOT for improving users' security at any place at any instant. This idea basically works under SMAC (social mobile analytics cloud) to provide security and reliability to users. The fingerprint scanner is placed in a car. Any user who want to use the car need to register their fingerprint with basic information like name, blood group, age, etc. only at first time on the cloud. We placed a number of sensors in the car which get activated when an accident is happens and gives information to the system. The system in the car sends the information to users mobile as well as a number of emergency services like hospital and police through a cloud. If a user didn't require any kind of help he can notify to a system. As user identification is done through fingerprint scanner specific user information is shared with emergency services which are the main goal of our research.

Key words: Cloud, Internet of Things, SMAC

I. INTRODUCTION

Providing various wireless connectivity enables the communication between vehicles and its internal and external environment. Such a connected vehicle solution is expected to be the next frontier for automotive revolution and the key to the evolution of next generation transportation systems, Extensive research activities and numerous industrial initiatives have paved the way for the coming era of connected vehicles. Such an emerging technology and enhancement in the communication of connected vehicles must be used for improving users' global security. As per our proposed technique we wanted server should inform to emergency contacts when an accident occurs. If the accident occurs with car user then the system should inform to relatives, nearest hospital and police station. In our system, we are going to focus on the user security. Our idea is basically works under SMAC (social mobile analytics cloud) to provide security and reliability to users.

II. MOTIVATION

When we were attending seminar of Vint Cerf (father of Internet) which related to IoT, We realize that we can use this concept and make a user more secure at any place. Actually we worked on similar project i.e. connected car in Volkswagen smart car competition.

III. LITERATURE SERVEY

The review was conducted to survey past work on connected cars. Early computerization helped to improve safety, although vehicles can collect much more detailed information than before. A recent initiative to allow wireless communication between vehicles and the transportation infrastructure, referred to as connected vehicles, combines several emerging techno-logical advances, such as advanced wireless communications, onboard computer processing, advanced vehicle sensors, GPS navigation, and smart infrastructure to provide a networked environment.

IV. SYSTEM REQUIREMENTS

A. Major Constraint

We required public cloud as a server. It mainly contains personal information of registered user, so that specific information of a particular person can be accessed in the emergency situation by services. We use the servlet package to establish a connection between the server and web GUI. This connection is settled by implementing two functions i.e. doget() and dopost(). Another important constraint is mobile phone for sending and receiving the emergency messages

B. Database Requirements

MySQL database is used for storing and retrieving of user personal information. The minimum size of a database is 2GB. Concurrency is also achieved by storing and retrieving of data.

C. Software Requirements

The minimum specification of operating system is Window XP and it can work with all the versions. The integrated development environment required is an eclipse. Programming languages are used as follows: HTML ,JAVA, SQL, Java server pages etc.

D. Hardware Requirements

Fingerprint scanner: - Everyone has marks on their fingers. They cannot be removed or changed. These marks have a pattern and this pattern is called the fingerprint. Every fingerprints special, and different from any other in the world. Because there are countless combinations, fingerprints have become an ideal means of identification. Everyone has a unique, unchanging fingerprint. A fingerprint is made of a series of ridges and furrow son the surface of the finger and these are used to determine the uniqueness of the fingerprint. Once registered on the fingerprint scanner, the image of these patterns is converted into a code through a mathematical sequence called an algorithm which effectively becomes a digital form of you. This is stored in a database for comparison which grants authentication and access through the secured door.

Sr No.	Parameter	Minimum Requirement
1	Processor	Intel Pentium[P-4]s
2	RAM	512Mb
3	Android phone	V2.3(min)

Table 1. Hardware requirements

V. ARCHITECTURAL DESIGN

A. Server

Cloud contains generalized info about that user profile such that name, age, blood group, contact details of friends and family members. As specification is known to emergency services they are fully prepared for first aid of a user. The server also contains the information about nearest police stations. When accident will occur the server will inform to nearest police station and also the nearest hospital for emergency help.

B. Car/Vehicle

The car contains fingerprint scanner which is placed on the steering of the car. It can easily understand which user is driving the car at that time so, in case if user faced any critical problem like an accident, sensors in the car give instant response to a device which is placed in the car. Then that device gives information to no. of emergency services like hospital blood bank through the cloud. The car contains two or more sensors namely GPS sensor and XYZ sensor. It will detect latitude and longitude.
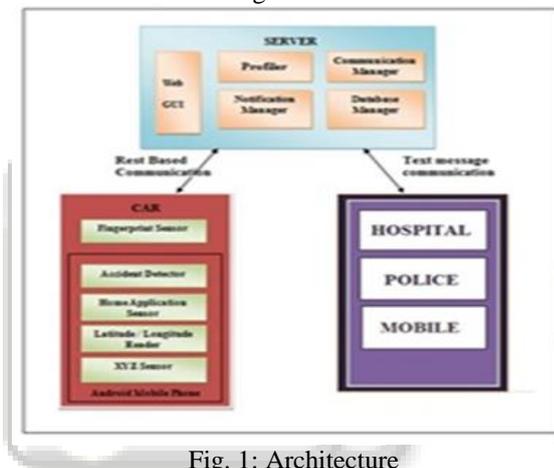

Fig. 1: Architecture

VI. IMPLEMENTATION

A car is a vehicle from which user can move from one place to another. Due to mobility, providing security to the particular user at any place is a challenging task. For identifying the particular user, we are placing fingerprint scanner in the car. While accessing this system first time, the user needs to register his/her basic information like name, blood group, age etc. along with his fingerprint. When a system gets information through scanner it will identify which users are present in the car. After that system will provide the services to the users accordingly.

Sr No.	Use Case	Description
1.	Do Login	User need to login before doing registration.
2.	Update Number	Admin can update contact
3.	View Profile	User can view profile.
4.	Give Command	User can give command to controller.

Table 2. Use Case

We are the placing number of sensors in the car (maximum sensor maximum efficiency). When an emergency condition like an accident occurs, sensors in the car cross their threshold. The system immediately activates and sends notification to users mobile and emergency services through the cloud. Cloud shares only particular user's information, as the user is known to the system so that particular user gets help accordingly. If in any case, sensors send notification and user is not in that much emergent condition so the user can control it and avoid help.

VII. CONCLUSION

Number of emergency services like hospital, police station are connected to the use and security of user at any place can be achieved.

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