

Cab Tracking And Personal Security System

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Abstract: In today's world, safety and security are the major aspects that are confronted by any individual. The existing systems in the present scenario are not efficient enough to provide necessary security. We implement a system "cab tracking and personal security system" is an android application. Android is a new generation of smart mobile phone platform launched by google. Cab tracking and personal security system enables the server (company) to track the employees who opt for cab services as well as helps the employee to retrieve the information about their current location and offers possible services according to the need. With the help of GPS in phones and through web services using GPRS, Location based Services are implemented on android smart phones to provide services like advising clients with routing information, help them finding nearby Emergency Services.

Keywords: GPS, GPRS, LBS, Android mobile OS, Real time Tracking.

effectively. This feature helps to take required actions in case of security threat or emergency occurred to any employee or the cab.

1. INTRODUCTION

Android is an encompassing mobile operating system which is a layered system based on Linux Kernel and is launched by Google. Linux kernel provides various services such as security, memory management, process management, etc. Presently Android is a widely used operating system in smart phone devices. Because of the user-friendly nature, large number of API's and wide services provided by Android it is a commonly used operating system in smartphones. With the help of Android one may change the feel, look, functioning of a smart phone. In today's world where safety and security of a person are the important aspects to consider while travelling and this is where "cab tracking and personal security system" comes up as a solution. Cab tracking and personal security system is an Android application which can be used in big companies and MNC's for tracking and monitoring locations of their employees who opt for company transport services. This application focuses on major issues of safety and security. This application comprises of various features such as Real time tracking and Location Based services (LBS). Real time tracking is a feature that distinguishes itself from other existing applications. Real time tracking system enables us to track an employee as well as cab more efficiently and

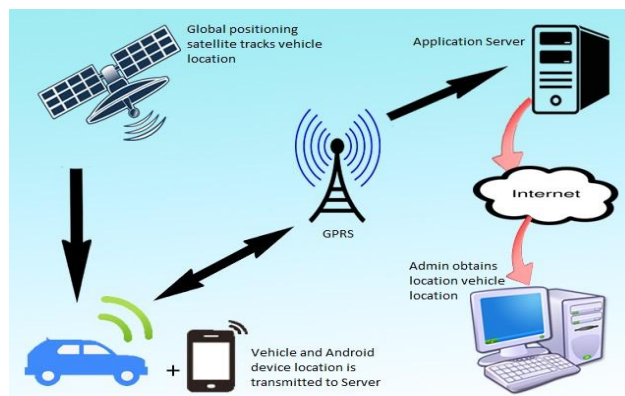


Figure 1: Communication diagram

1.1 Location Based services (LBS)

Location based services are the services that provides information of the location of a particular person or an object that may be further used to provide various day-to-day services. LBS provide us the services which helps us to find nearby locations as and when needed. Discovering nearby locations such as Banks, ATM's, Police station, Hospitals, etc. is very much possible as well as convenient with the help of LBS. LBS are broadly divided into

1.1.1 Triggered LBS

These services are also known as Push services are the services which generate an automatic location update. Such push services are enabled by an event, which may be triggered if a specific area is entered or triggered by a timer. For example in our day-to-day life whenever a person enters a particular area an automatic area update is received on phone stating area name.

1.1.2 User-requested LBS

These services are also known as Pull services. In User-requested LBS services, user can receive the location information on a request.

Emergency Services:

An individual in a cab is able to find required nearby locations as well as retrieve information associated with it.

Maps Navigation:

The users (driver) may use the Google Maps to get to the particular location or to trace the route between any two locations.

2. PROPOSED SYSTEM

Cab Tracking & Personal Security System proposes an Android-based application for smart phones with integrated and more efficient functioning for company admin as well as its employees. This application provides vital functionalities such as cab tracking and management, authenticated electronic check-in check-out, emergency services whenever needed, alert alarm for employee in insecure conditions

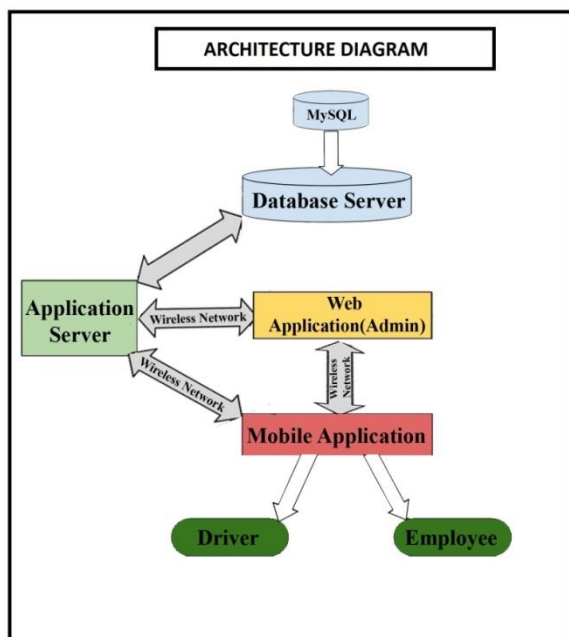


Figure 2: Architecture overview

The system database consists of information related to cab allocation, driver and employee etc. which stores various attributes like cab ID, chassis number, cab number, employee and driver ID, name etc. The system attempts to provide efficient cab tracking, cab management as well as personal security. As referred in the above architecture diagram, the system comprises of client side and server side.

2.1 Client-side

2.1.1 Employee:

This application provides various functionalities to the Employees such as Security, Electronic check-in check-out and Emergency services. Employees can punch check-In and check-Out time with the help of this application which will make check-in check-out procedure simpler. Entire paperwork required for the process will be eradicated with this application thus providing less manual work and fewer errors. Just with one click through his device, an employee can register his check-in check-out time at database server. In terms of security an alarm button is provided on Employees GUI which can be used in case of insecurity or any emergency. As soon as Employee hits this button a notification with his current location Co-ordinates are sent to the server side as well as to the guardian number registered by the employee. As stated above, with the use of LBS, an Employee can find nearby services like ATMs, Hospitals, Police stations, etc. in case of emergency.

2.1.2 Driver

This application provides various functionalities to driver such as Navigation of routes, Authentication of Employee check-in check-out and Emergency services. As Driver receives Daily schedule from the admin, he can easily navigate addresses of the employees through this application. Once Employee registers his check-in check-out time, it is being authenticated by the cab driver through his device. Driver can also find nearby services like ATMs, Hospitals, Police stations, etc. in case of emergency.

2.2 Server side

Admin handling the Server side plays a crucial role in this application by monitoring and real time tracking company cab as well as the employees. An Admin can add the Employee, Driver, Cab data in order to perform operations on that data. Admin can also add some reviews of a particular driver and give him some suggestions or remarks. The Admin can do the analysis on the existing data. Admin provides daily schedule of cab and the employee details within it to the driver. Once the Admin receives an alert notification from the employee, he immediately starts tracking the cab's location and takes necessary actions.

3. WORK SEQUENCE OF APPLICATION

Sequence diagram of the application shows tracking function

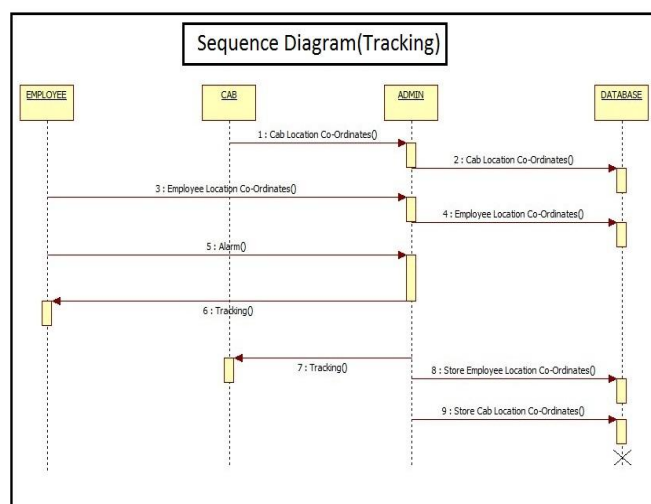


Figure 3: Sequence diagram

4. APPLICATION

Available applications in market either provide only personal security or only emergency services. Cab tracking & personal security system comes up as an integrated solution for all the above issues. As the name suggests cab tracking and personal security system focuses on tracking of employee as well as cab outside company premises. The differentiating feature of the application is the alert button that alerts the company admin as well as the guardian number registered by the employee. Real-time tracking at the server side is monitored by the company admin. In case of emergency either employee or driver can use nearby emergency services. In today's technical world where everyone is focusing on reducing paper work and secured authentication, this application provides facility of allowing employee and driver to check-in check-out electronically through their android device. Proper cab management can be done through this application by providing secured daily schedule by company admin.

5. CONCLUSION

As safety and security are the major issues of the employee who opt for company transport services, it is company's whole and sole responsibility to provide the safety measures. This application brings a best solution for companies to achieve employee security. Using this application server will be able to monitor and manage company's cab and the user can use features of this application as per their requirement. Android services allow the application to obtain periodic updates of location co-ordinates that makes tracking efficient. Using this application, driver can easily navigate optimal routes of employee's addresses. Application provides a secure environment for employees to travel.

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7. REFERENCES

1. Jianye Liu, "Research on development of Android Applications," Fourth International Conference on Intelligent Networks and Intelligent systems, (1-3 Nov. 2011), p.p 69 - 72.
2. Xianhua Shu, Zhenjun Du, RongChen, "Research on Mobile Location Service Design Based on Android" Wireless Communications, Networking and Mobile Computing, 2009. WiCom '09. 5th International Conference, (24-26 Sept. 2009), p.p 1-4
3. Nazir Ahmad Dar, Afaq Alam Khan, "A system to track Android devices: An implementation of LBS, Location manager services and web-services in android," in ISST journal of

mathematics and computing system, vol.4, No.1, (January-June 2013), p.p.49-54.

4. Manavsinghal, Anupamshukla, "Implementation of location based services in Android using GPS and Web Services," IJCSI international journal of computer science issues, Vol 9, Issue 1, No.2, January 2012.
5. Ramesh Chandra Gadri, Bhagyshree Alhat, Ankita Chavan, Sujata Kamble, Reema Sonawane, "Land Vehicle Tracking Application on Android Platform", Computer Engineering and Intelligent Systems www.iiste.org, ISSN 2222-1719 (Paper), ISSN 2222-2863 Vol 3, No.5, 2012
6. Lei zang, "SensTrack: Energy-Efficient Location Tracking with Smartphone Sensors," in IEEE Sensors Journal, Vol.13, No.10, October 2013.
7. C.V. Sonia, Aswatha A.R (2013), "AALTM: An Android application to locate and track mobile phones.", International Journal of Engineering Trends and Technology (IJETT)- Volume 4 Issues 5-May 2013: 1864-1868.
8. Vimlesh Bhat, Ashu Vashistha, Naina Goel, Laxmi R. Sisode (2013), "Real time GPS Tracking System for Transport Operation", International Journal of soft computing and Engineering (IJSCE), Volume-3, Issue-2: 48-50
9. J.F. DiMarzio, "Android A Programmer's Guide", Chicago: McGraw-Hill, Jul. 2008.
10. Android Developers, <http://www.androidin.com>.