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LOCATION TRACKING, CUSTOMER INFORMATION CAPTURE AND DATA RETRIEVAL SYSTEM

RAJESHWARI K. LOYA¹, NIKHIL O. AGRAWAL²

1. Software Developer, AARKAY TECHNO CONSULTANTS, PVT. LTD, Nagpur.
2. Lecturer in CO Dept Government Polytechnic, Murtizapur.

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Abstract: Tracking living beings and devices using the Global Positioning System (GPS) has become prevalent and indispensable over the last few years. This paper reviews some of the recent application areas and discusses the benefits and issues of GPS tracking. It then presents a software architecture of a general tracking system to locate lost and misplaced devices. There is an option for sync to transfer the Data from Server to Device in which the app is installed when developing a location-aware application for Android, one can utilize GPS and Android's Network Location Provider to detect the user location. Android's Network Location Provider calculate user location using cell tower and Wi-Fi signals, providing location information in a way that works indoors and outdoors, responds faster, and uses less battery power. To obtain the user location in your application, one can use both GPS and the Network Location Provider, or just one. Here one could track the positions of the Android Device constantly for 15 min to 30 min and save them on a well secured webpage. Executive needs to sync the data to the server. If device is in online mode (i.e. internet connection is on) data will be transfer to Server, Otherwise data will be store on the local device. In Background, current location of the user will be capture and transfer to the server after the specified interval of time. Administrator will be able to see the location of the respective executives on web portal. So that if a device is found to be in a prohibited area it can be easily traced out. Hence it is very useful for the commercial purposes. No unauthorized devices can enter or leave the area without notification to the server. It can also help to create a daily log of device i.e each and every location visited by the device in a day.

Keywords: Global Positioning System (GPS), Location Based Service (LBS), Androids smart phone, Wifi etc.



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INTRODUCTION

Today, GPS has a [1] [2] wide range of other applications including tracking package delivery, mobile commerce, emergency response, exploration, surveying, law enforcement, recreation, wildlife tracking, search and rescue, roadside assistance, stolen vehicle recovery, satellite data processing, and resource management. CELL PHONES become [9] more ubiquitous in our daily lives, the need for context-aware applications increases. Most promising type of contextual information is the proximity selection known as Location Based Service (LBS). Tracking location of a mobile device accurately has been a challenging research topic for decades. Global Positioning Systems (GPS) is a top priority technology used for locating a device position accurately. Methodology for tracking can be done using a GPS receiver which is an additional hardware integrated in most of mobile equipment. We have used GPS as the approach idea for location tracking. The platform used for development is Android Operating System, as described [3] is been proven as the best operating system for a context-aware location based services.

In this paper we try to develop Android Application installed in all Mobile Device of Executive (Users), there is an option for sync to transfer the Data from Server to Device in which the app is installed.

User has to enter Username & Password to enter into the app. After login, User will select the details of dealer if data for particular dealer is available. Otherwise user has to enter the details for this dealer.

Executive needs to sync the data to the server. If device is in online mode (i.e. internet connection is on) data will be transfer to Server, Otherwise data will be store on the local device.

In Background, current location of the user will be capture and transfer to the server after the specified interval of time. Administrator will be able to see the location of the respective executives on web portal.

LITERATURE REVIEW

A literature review is a text of a scholarly paper, which includes the current knowledge including substantive findings, as well as theoretical and methodological contributions to a particular topic.

This topic include following things.

In 2008 Zohaib et al [3] has put forth the major challenges faced in designing a ubiquitous application. Android operating system had suggested as a best tool for designing context aware applications. Towards the end, author had featured an analysis report on performance of various mobile devices for a location aware computing.

In 2008 Son lie et urban traffic problems [4] and city planning problems combines the General Packet Radio Service (GPRS) and Bluetooth technology, realizing the intelligence in some aspects just like the management of bus passengers in modern city, the data collection of passengers in the bus, the management of the driver, the GPS location of the buses, the formulating plans, the real-time monitoring of bus, the inquiring information and the statistical analysis about the passengers, the services of electronic [5] platform.

In 2009 Ali Mousavi, et proposed system [6] which takes the advantages of new advancement in both wireless communications as well as mobile computations. System uses Global Positioning Systems (GPS) and Geospatial Information System (GIS) data to locate vehicles and get additional information about the location and features of the vehicle location [4]. It composed of there main features: 1) positioning, 2) data transfer and 3) data visualization. Prototype of AVL is based on widely accessible technologies. An AVL uses GPS for localization of users and Pocket PC for communication with data servers. Since other wireless technologies like GPRS has not been established very well in Iran, therefore, it is decided to design a GSM based system. It integrates GPS installation [6] in vehicles, data transmission through wireless network services (e.g. SMS, GPRS); direction promotions supported by the GIS based way-finding algorithms; and Web real-time video capture systems. This methodology gives us the possibility to solve total Location Based Service (LBS), Intelligent and Navigation Transportation questions.

In 2012 Xianyong Feng et [10] architecture implementation used to solve these two important problems in the Web integration of the GPS+GIS+GPRS Tracking System and Real-time Monitoring System. The transit information on an Open Street Map (OSM) web interface and sends this information on the Google Android mobile device. The content is in the form of predicted arrival and departure times for buses at user selectable geographic locations within a transit region. This application uses the real-time information such as current location and timestamp of both bus and users to provide bus route information. The public interface of system provides graphical views which used to updates and display the vehicle locations and to allow users to see routes, stops and moving buses. This system helps in case of traffic speed violation, a GPRS message containing information about the vehicle such as location and maximum speed is sent to a hosting server located in an authorized office so that the violated vehicle is ticketed.

It can also track the vehicle's current location on a Google Map, which is mostly beneficial when vehicles should follow a specific road and in case of robbery. Some sensors attached to the air-bags in vehicles, are attached to the system that in case of accident, it will send notifications to the civil defense, nearest hospital and police station.

In 2012 Montaser N. Ramadan, et proposed An efficient automotive [11] security system is implemented for anti-theft using an embedded system occupied with a GPS and a GSM. The client interacts through this system with vehicles and determines their current locations and status using Google Earth. The user can track the position of targeted vehicles on Google Earth. Coordinates of GPS are corrected using a discrete Kalman filter. An integrated GPS-GSM system also use Kalman filter to enhance the accuracy of measured position. After data processing, Google Earth application is used to view the current location and status of each vehicle. This objective of this system is to manage fleet, police automobiles distribution and car theft cautions. Due to some criminal activities Parents always worry about the possibility of kidnapping of their children.

In 2013 A. Al-Mazloum, et worked on Android based solution [12] to aid parents to track their children in real time. It takes the advantage of the location services provided by mobile phone since most of kids carry mobile phones. The mobile application use the GPS and SMS services found in Android mobile phones. Some other several authors [7] [8] also have described GPS and GSM based vehicle tracking system.

In 2014 Dalip et [14] developed to aid locating passengers. Proposed passenger tracking system is efficient in term of system cost. This system tracks the passengers on the basis of vehicle history and ticket number. It provides the history [13]of passenger movement and displays location on Google map.

In 2014 Rasool.R et[15] Future battle in the telecom industry is least expected to be based on the hardware or the features like SMS and call cost, but the battle would be based on the enhanced user friendly applications provided by the service provider and adaptability for such applications provided by device manufacturers. Setting up of infrastructure for a location based service using the GPS facility, to alert a user on reaching a desired location is emulated using the Android 2.2 platform and the desired output is obtained successfully. Thus this Location based intelligent observer application using GPS tracking is developed so as to add value and organize users' task intelligently.

In 2015 Shermin Sultana et [16] introduce a smart, location based time and attendance tracking system using android application which use location as the core component of attendance tracking using smartphone. The area is set for tracking using GPS and employee coordinate inside the area border depicts that employee is present in the organization.

PROPOSE WORK

We are trying to providing continuous and uninterrupted service is essential for tracking mobile location without affecting the regular routines of any user. The proposed system provides a solution to tracking system and synchronization taking problem. This system is a location based smart time and tracking system based on the concept of web services which is implemented as an android mobile application. This organizer application would ease user to track current location, compare it with the task and displays information and also synchronized with server database when it is online mode save that database when it is offline mode on local device, thus acting as an intelligent observer of the surrounding.

IMPLEMENTATION THROUGH VARIOUS FACTOR

System Design:

The smartphone device, location based time and tracking system is a client-server approach and follows specific hardware and software architecture. Integrating the hardware and software is the main challenge here and the hardware and software works together.

The whole system has been divided into two major categories

Android Application For Location Tracking

Web Portal For Data Retrieval

Software Architecture: The software architecture consists of: the database, the application program and the server.

- Database: The database consists of a number of tables, which stores records. We used apache derby database which is easy, fast and efficient and can store a large number of records and requires a little configuration.
- Application Program: The application program is developed with Android programming language using Eclipse framework. The application program provides user interface to both the

employees and office server. Programming in Android is simple, user friendly and android offers an excellent data connectivity.

- Server: The server is deployed on the personal computer using apache-Tomcat7. Tomcat7 is free, robust and easy to deploy.

2. Hardware Architecture: The basic requirement of the location base time and tracking system is an android device, which will run the application, This system is a location based smart time and tracking system based on the concept of web services which is implemented as an android mobile application. This organizer application would ease user to track current location, compare it with the task and displays information and also synchronized with server database when it is online mode save that database when it is offline mode on local device, thus acting as an intelligent observer of the surrounding.

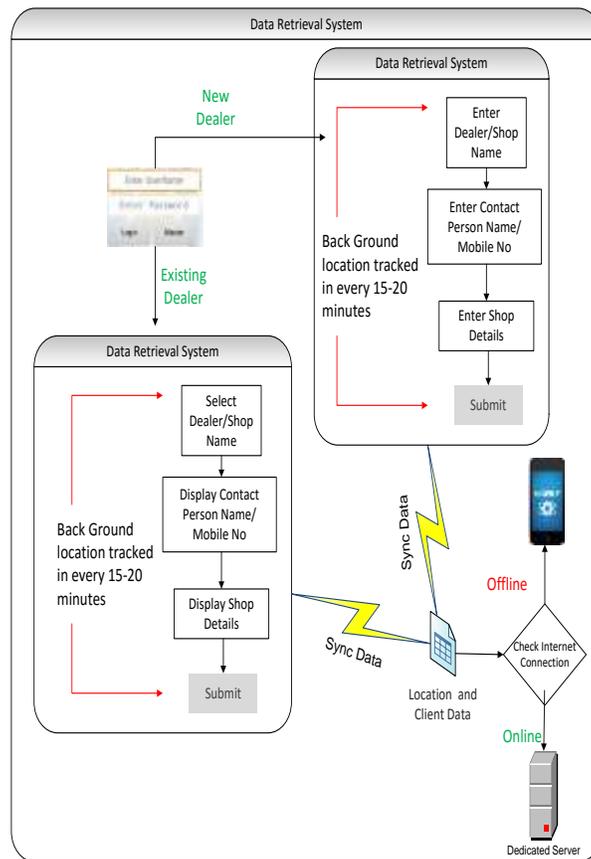


Fig: Process Flow chart

CONCLUSION

In this way track the positions of the Android Device constantly for 15 min to 30 min and save them on a well secured webpage. Executive needs to sync the data to the server. If device is in online mode (i.e. internet connection is on) data will be transfer to Server, Otherwise data will be store on the local device current location of the user will be capture and transfer to the server after the specified interval of time. Administrator will be able to see the location of the respective executives on web portal.

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