Optimal Facility for Location Tracking of Volunteers for Social Cause

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ARTICLE DETAILS

ABSTRACT

In critical or emergency situations where accident occurs or during on-going treatments and surgeries there is urgent need for specific blood group and volunteer requirements for green house for farming. It requires lot of time to make the blood available and it is inconvenient during emergency situation, some rare blood groups are time consuming and difficult to arrange which are O-, AB- etc. In our country there is less awareness of blood donation, near about 20% of Indian population donates blood. Greenhouses are framed like transparent structure for growing crops under suitable and controlled environmental conditions for proper growth and productivity. It is known that, open field cultivation of crops suffer from adverse climatic conditions resulting poor growth of crops. Hence greenhouses are particularly needed to grow plants under natural environmental conditions. In this project, I have proposed an efficient way to overcome problems in existing system. We are using Global Positioning System (GPS) for tracking of nearest blood banks, donors and Green house volunteers. It requires GPS supported android device with application installed on it for the user. Volunteers will be prompted to enter an individual's details, like name, phone number, blood type and green house area. During the urgency of blood, you can quickly check for contacts matching a particular or related blood group and reach out to them via Phone Call/SMS through the app. Our app provides address of nearest blood banks and donors in your city/area by GPS tracking. You can also find green house volunteers based on your requirements. A large number of people carry an android mobile phone, so we are developing an Android application which is low in cost, requires less time to find out volunteer.

INTRODUCTION

Over the last five years Global Positioning Systems (GPS) have changed the way fieldwork is conducted. There are two principal reasons for using GPS in the field; these are navigation and determining co-ordinates for points in the GIS. It is good to do service to mankind. So, I have created an application to simplify the Volunteer process. The Volunteer can easily locate where his/her blood group or green house area is needed. Those locations can either be entities or individuals who are in urgent need. When there is an urgent need for a service you can use the app to message only the people who had fulfilled your requirements. This system contains different modules to maintain blood and blood donors and green house volunteers.

Agriculture is the backbone of India’s economic activity and our experience during the last 50 years has demonstrated the strong correlation between agricultural growth and economic prosperity. The present agricultural scenario is a mix of outstanding achievements and missed opportunities. If India has to emerge as an economic power in the world, our agricultural productivity should equal those countries, which are currently rated as economic power of the world. We need a new and effective technology which can improve continuously the productivity, profitability, sustainability of our major farming systems. One such technology is the green house technology. Although it is centuries old, it is new to India. Greenhouses can provide yields 10-12 times higher than that of outdoor cultivation depending upon the type of greenhouse, type of crop. Greenhouses are also suitable for vegetables and flower crops production.

Despite increasing necessity of blood, only about 5% of the Indian population donates blood. In my paper I propose a new and efficient way to overcome such scenarios. A large number of volunteers are attracted using an Android application. Cloud based services can prove important in emergency since they can enable central and immediate access to volunteers data and location from anywhere and almost any device. Since almost everyone carries a mobile phone with him, it ensures instant location tracking and communication. Using GPS and we find volunteer nearer to the location from where the request is generated. Thus the ‘Social Cause App’ can prove to be a boon for Volunteer requesters.

LITERATURE REVIEW

In earlier days, there were no systems or application that locates places which are nearby the user. But now a-days there are a few systems which can locate different places using GPS in android. GPS tracking can be used as any equipment tracking and as spy equipment and the location can be displayed on Google maps using free versions of Google Maps API (Application Platform Interface) [1]. For locating ATMs which are nearby are tracked and for that it is necessary to have an android device which supports GPS. By making use of Dijkstra’s algorithm to find possible shortest path between user and the ATM booth and Haversine formula is also used to calculate the perpendicular distance. This makes use of Open Source Maps (OSM) [2]. Similarly, we can develop an
application which can find volunteers nearby. And also it is possible to develop an application to track volunteers. To track a volunteer, one should know the location of the volunteer; the volunteer will be none other than the registered user of our application. As he will be using our application on an Android phone, the application has to track the location of his phone to locate him on the map as a volunteer. Thus, how to track a volunteer that is to track the Android phone and to plot that location in another Android phone is also possible. It is discussed how to locate the position of an android phone and plot it [5]. There exist extended web applications to timely update the information regarding the donors, acceptor and patients where the administrator accesses the whole information about blood bank management system. Also it can have a Push technology with security, to protect the contact details of the donors in web application where it can be misused by third parties. The location-based app, the Mobile devices/smart phones are equipped with GPS receivers, which help in getting accurate location of the device [6]. The location-based app, operational on android platform, will help users easily find donors of matching blood groups in their location and access their mobile numbers for instant help [7]. Mobile devices/smart phones are equipped with GPS receivers, which help in getting accurate location of the device. The GPS satellite situated in the space continuously transmits data containing the location and time details. When the mobile device requests for the location then its GPS receiver receives the data sent from GPS Satellite and displays the current location [8]. The benefits and issues of GPS tracking and proposed a mobile framework that implements a general tracking system. The tracking system locates mobile devices with or without GPS. This finds applicability in locating lost, stolen, or misplaced devices. This is equally applicable to locating stolen valuables when equipped with such a device. It can also help locate patients suffering from dementia or mental disorders, if they carry a locatable device [9].

1 Problems with Existing Systems

Limitations of Traditional System are –

a) Lack of information
b) Less surety of information
c) Time consuming.

So to overcome these problems I am proposing a system which overcomes these drawbacks because we are developing an application for the users which provide accurate information and more quickly.

2 Objective of Problem

Main objectives of proposed system are as follows: -

a) Users can find volunteers if they want their service.
b) Users can locate blood banks easily if they are willing to donate blood.
c) Notifies users on the available green house in a particular locality.

PROPOSED SYSTEM

The user has to first download the application. He/She will be provided with two options: Login and sign in. If the person has already registered, then he/she has to login. If not, he/she has to create an account providing basic details like name, address, contact, date of birth, blood group, green house details email id etc. The user is allowed to update his/her information. Once the user registers, he/she can check various volunteers that are located. The user will get various options on screen.

The control server records the last geographic location of the volunteer, receives distress calls, searches nearest volunteers and forwards help handling confirmation. The architecture of the system is depicted in figure 1.

![System Architecture Diagram](image)

**Figure 1: System Architecture Diagram**

**METHODOLOGIES**

1. PHP

PHP is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP is now installed on more than 244 million websites and 2.1 million web servers. Originally created by Rasmus Lerdorf in 1995, the reference implementation of PHP is now produced by The PHP Group. While PHP originally stood for Personal Home Page, it now stands for PHP: Hypertext Preprocessor, a recursive acronym. PHP code is interpreted by a web server with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evolved to include a commandline interface capability and can be used in standalone graphical applications. PHP is free software released under the PHP License, which is incompatible with the GNU General Public License (GPL) due to restrictions on the usage of the term PHP. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge.

2. MY SQL

MySQL, officially, but also called "My Sequel" is the world's most widely used open-source relational database management system (RDBMS) that runs as a server providing multi-user access to a number of databases, though SQLite probably has more total embedded deployments. The SQL phrase stands for Structured Query Language. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and
sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation.

MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack (and other 'AMP' stacks). LAMP is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python." Freesoftware-open source projects that require a full-featured database management system often use MySQL.

For commercial use, several paid editions are available, and offer additional functionality. Applications which use MySQL databases include: TYPO3, MODx, Joomla, Wordpress, phpBB, MyBB, Drupal and other software. MySQL is also used in many high-profile, large-scale websites, including Wikipedia, Google (though not for searches), Facebook, Twitter, Flicker and YouTube.

3. Android

Android is a mobile operating system (OS) based on the Linux kernel and currently developed by Google. With a user interface based on direct manipulation, Android is designed primarily for touch screen mobile devices such as smart phones and tablet computers, with specialized user interfaces for televisions (Android TV), cars (Android Auto), and wrist watches (Android Wear). The OS uses touch inputs that loosely correspond to real-world actions, like swiping, tapping, pinching, and reverse pinching to manipulate on-screen objects, and a virtual keyboard. Despite being primarily designed for touch screen input, it has also been used in game consoles, digital cameras, regular PCs, and other electronics. As of 2015, Android has the largest installed base of all operating systems. As of July 2013, the Google Play store has had over one million Android applications ("apps") published, and over 50 billion applications downloaded. An April–May 2013 survey of mobile application developers found that 71% of them create applications for Android; another 2015 survey found that 40% of full-time professional developers see Android as the "priority" target platform, which is more than iOS (37%) or other platforms. At Google I/O 2014, the company revealed that there were over one billion active monthly Android users, up from 538 million in June 2013.

Android's source code is released by Google under open source licenses, although most Android devices ultimately ship with a combination of open source and proprietary software, including proprietary software developed and licensed by Google. Initially developed by Android, Inc., which Google bought in 2005, Android was unveiled in 2007, along with the founding of the Open Handset Alliance – a consortium of hardware, software, and telecommunication companies devoted to advancing open standards for mobile devices.

Android is popular with technology companies which require a ready-made, low-cost and customizable operating system for high-tech devices. Android's open nature has encouraged a large community of developers and enthusiasts to use the open-source code as a foundation for community-driven projects, which add new features for advanced users or bring Android to devices which were officially, released running other operating systems. The operating system's success has made it a target for patent litigation as part of the so-called "smartphone wars" between technology companies.

**IMPLEMENTATION**

1. **Admin Panel**

After successful authentication, the admin can add, update, delete and view blood banks and volunteers. He can check profiles of registered users. He has the option to change his own password. He has the right to accept/reject users’ request and if accepted he will publish the requests. He may log out from the system whenever required.

**Login Module:**

The first page is login page as shown in Figure, where admin enters his login details correctly to proceed further.

**Add blood bank:**

After authentication of admin, he can add blood bank by entering blood bank details like name, address, contact no, email and available blood group. When this information is submitted, validation is performed and then the blood bank details will be added successfully in the database.
2. User Panel

Form Validation:

The form is validated and if there is any error, a prompt message is given. If all the details are correct, a person is registered successfully.

The user can see the location of searched place or hospital on map

Register Green House:

After authentication of user, he can add green house by entering details like name, address, and contact no, email and available area. When this information is submitted, validation is performed and then the details will be added successfully in the database.

RESULTS AND DISCUSSION

Blood bank details added successfully.

Green house added successfully

View volunteers by blood group
CONCLUSION

The system provides a better, faster and effective way for the citizens to communicate with the blood donor for blood requirement in times of medical emergency and green house volunteers for green house requirements. Finding the nearest volunteers helps in increasing the chance of saving the patient’s life especially in rural areas, where hospitals and blood banks are at a far distance. People living in places where blood banks are not available; can use this System in medical emergency situations. It is even helpful in different type of geographical terrains to provide aid in saving life.

The future work of the system is to develop this application in iOS platform.

REFERENCES