Automatic Redeployment Rescue System

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Abstract: *That Smartphone-enabled dead reckoning supports accurate but local coordinates of users' trajectories, while GPS provides global but inconsistent coordinates. Considering them simultaneously, the project device techniques to refine the global positioning results by fitting the global positions to the structure of locally measured ones, so the refined positioning results are more likely to elicit the ground truth. The project develops a prototype system, named Global conduct comprehensive experiments in both crowded urban and spacious suburban areas. Our aim is to develop an efficient and improved geographical asset tracking Solution and conserve valuable mobile resources by dynamically adapting the tracking scheme by means of context-aware personalized route learning techniques. In this application, there will be a fixed set of hospital list with associated drivers. If the user request for an ambulance service immediately request will be sent to all the ambulance drivers. If any driver accepts the request, automatically the other driver requests would be denied. Through this application, the user can also track the ambulance location and details. This application works with GPS (save it to the database, and ambulance driver will get the notification global positioning system) it fetches the doctor's exact location and also hospitals. Just give the time intervals to record the location and. This application won't upload any personal data/locations. It will store the locations on the phone only. This will help to view the complete locator points on map from source to destination.*

Keywords: Smartphone, GPS

1. Introduction

With current technology era where mostly, everything runs on Smartphone's and applications, the need of quick and efficient services is almost important in every aspect especially when it comes to medical services. Patients are mostly having issues on handling the locations and searching of ambulance their availability due to limited service in the time of emergency. The lack of such attention and information may lead to several casualties. The question arises where the user has to find ways to check the availability for the ambulance to find the user's precise location in the quickest time. Thus, the ambulance driver has to provide proper information and location. So, both the user and ambulance driver won't get lost or by searching each other. The main aim is to reduce the time of calling the fraud calls and to allow ambulance driver to locate the victim easily by using GPS signal. Traffic congestion and tidal flow management were recognized as major problems in modern City areas, which have caused much uncomfortable for the ambulance. Moreover, accidents in the city have been nonstop and to bar the loss of life due to the accidents is even more Complexity. To implement this scheme called AARS (Automatic ambulance rescue system). The main Function behind this scheme is to provide a smooth flow for the ambulance to enter the hospitals in time and thus minifying the Practical Implementation. The idea behind this scheme is to implement an IT'S which would control mechanically the traffic lights in the path of the ambulance. The ambulance is controlled by the MCU which furnishes the most scant route to the ambulance and also controls the traffic light according to the ambulance location and thus reaching the hospital. The server also determines

2. Literature Survey

In previous research. the study of global refinement has pursued mobile phones via local trajectories. Using these trajectory patterns, the movements of object are forecasted with their location and T-pattern trees are computed. The locations are presented with spatial terms as longitude and latitude values. The Geocode which deliver the values of the location with the help of API along with Google Maps. The related body of work concentrated on Location Based Services for obtaining the location and utilizing it for providing a set of services, where location manager acts as a hook. It offers a wide environment to predict the footprint of the location with proximity alerts. Moreover, it affords a clear-cut location with the help of the system termed as GIS. Pioneering work is made towards GIS that furnish the geospatial functionality for many Locations Based Services to extract the map information, map visualization and directory-based services. There are several studies made towards Location Based Services which are useful to handle public safety, emergency services, consumer services and enterprise services. The main finding is that, they are probably used in Health care center for emergency services. At first the footprint of the people are made by the mobile sensor which has to be carried by them wherever the moves. It is made by the wireless sensing device which tracks the location of the people by their movement.

These sensors cannot predict the location accurately when the user forgets it and leads to various issues. After that a infrared based spectrum is made in which the footstep of the patient are traced in a home-like environment as well as real home, where the art of localization is made with

environmental sensors. This sensing is performed for indoor localization with the application, which controls the remote monitoring of patient with pervasive networks.

Now the locations marked for tracking the origin and terminal of the user which is based on path taken by them. The location may arise in any environment where gap between the places must be the shortest path in emergency situation. It can be gained by the shortest path algorithm, where the closest facility analysis hands over the route across source and destination for single or multiple landing-places. It can be processed with various algorithms includes Dijkstra's algorithm and Bidirectional ST Algorithm. The Dijkstra's algorithm finds the shortest path between the nodes in the graph with different variants. It has a powerful functionality with set of stops

Network Analyst's route solver attempts to find a way at Minimum cost. On the other hand, the Bidirectional ST algorithm finds the shortest path from initial to a goal vertex by simultaneously running two searches. The initial vertex is enforced by forward search and the goal vertex is compiled by backward search.

Location is depend on users behavior and the concept Next Place, a location prediction technique which forecast the next location with arrival and residence time based on nonlinear time series analysis. It is a pervasive application that has the capacity to predict the future location of the people and presents different location in spatio-temporal point of view. They will extract place via GPS data or Wi-Fi logs. The order-k running average predictor is used to estimate the future values with duration time of last k visit and interval between k visits to be averaged. The average value is used to obtain a prediction result of future visits. The Where Next is similar process that aimed to locate the next location of the moving object with certain accuracy level.

In [7th reference]. As the population increases day by day, the world is facing many problems that make life harder, some of these problems can even cause peril to humans.

Ambulance services try to preserve the life of such suffering souls. Though this sounds good, a major problem in the ambulance service is its delay due to traffic jams. Many people die due to such delay in reaching hospitals, being unable to access medical aid in time. Our project is going to be a solution for this issue: indicating vehicle drivers about emergencies using a transmitter and receiver. This can allow them to align their vehicles in a straight order, leaving space for ambulance vehicles so that they can reach their destination on time. This offers the needed medical attention to unwell civilians in time.

In [8th reference] Vehicular Ad hoc Networks (VANETs) is a developing technology now a days. It is being developed in order to provide a safer and smoother experience of travelling. It is classified into two categories one being Vehicle to Vehicle (V2V) Communication and the other is Vehicle to Infrastructure (V2I) Communication. In this project, we have developed a system that is based on V2V and V2I technologies, which creates communication architecture to automatic management of traffic by helping emergency vehicles such as ambulance and fire brigade to select the route with less congestion based on the data sent by the sensors. During any type of difficulty, traffic jam or complication, the developed system will respond and forward the necessary information about traffic congestion, sending the route status updates to the vehicle display for driver. Moreover, the system also responds and generates an emergency message at the central node if the emergency vehicle meets an accident.

In [9th reference] Ambulance, a prime life saver vehicle plays a vital role in saving the patients precious life. It is in need of prominent time constraint to direct the needful patients in the appropriate time and destination. This novel project highlights the solution which determines the occurrence of accidents in the road with the help of vibration sensing implanted over the vehicle with Micro Controller Unit (MCU) and intimating the occurrence of accidental location to the nearby ambulance service to the hospital service using Global System for Mobile communication (GSM) and Global Positioning System (GPS) enabled module. Life saver ambulance is also furnished with portable Electrocardiogram-ECG and Body Temperature estimation along with the aid kit, for the ease of patient monitoring. There are basically two modules in this Smart Ambulance System, i. e. Vehicle Module (VM) and Receiver Module (RM). VM is placed in the victim's automobile with GPS and GSM enabled devices i. e. a mobile phone to transmit Short Message Service (SMS) of the accident location to hospital for smart ambulance service. RM is in the hospital ambulance service enabled with GSM receiver.

Vibration Sensing technology is utilized in VM for accident detection, Microcontroller-RENESAS-R8C13 is utilized as a smart processing unit, Recommended Standard (RS) -232 Interface for PC interfacing with GSM receiver module, Personal Computer (PC) in the admin hospital as a database for ambulance service and Portable ECG and Body Temperature estimation module furnished in the Smart Life Saver Ambulance System with IoT Technology. harvested details are pushed to the IOT to the doctor's admin page to the appropriate hospital and thus the maximum time is saved in saving the patient's life even before the ambulance reaches the hospital. This novel Smart Life Saver Ambulance System (SLSAS) will save the patient's life by making a conclusion for the way of treatment needed for the patient during the patients boarding towards the hospital. Hence much time will be saved in taking the needed test and even before patients reach the hospital. The advent of IOT technology is utilized to send the harvested documents to the doctor's admin page immediately and this overcomes the time constraints and distance constraints of saving the patient's life. The entire monitored health detail is updated regularly in doctor's admin page, to have the track on the patient's severity condition. This novel research project will be a boon to medical patient assistance domain to save precious life.

In [10th reference] It is difficult to handle traffic congestion and maintain roads during traffic mainly in India. As the people migrate from rural to urban and sub-urban areas, it

becomes still more critical. Presently Roadways is a standout amongst the most vital transportation. At the point when a car crash happens, crisis vehicles, for example, ambulances and fire trucks must rush to the mischance scene. There emerges a situation where a portion of the crisis vehicles may cause another car crash. Therefore it becomes still more difficult for emergency vehicle to reach the destination within a predicted time. To avoid that kind of problem we have come out with an effective idea which can reduce the potential in the traffic system. The traffic system is been modified using a wireless technology and high speed micro controller to provide smooth and clear flow of traffic for ambulance to reach the destination on time. This is achieved by using RFID Tag at the ambulance and RFID Reader at the traffic system i. e., traffic signal. This mainly deals with identifying the emergency vehicle and providing a green signal to traffic signal at time of traffic jam.

By assigning priorities to various traffic movements, we can control the traffic jam. In some moments like ambulance emergency, high delegates arrive people facing lot of trouble. To overcome this problem in this paper we propose a time priority based traffic system achieved by using RFID transmitter at the emergency vehicle and RFID receiver at the traffic system i. e., traffic signal. The signal from the emergency vehicle is sent to traffic system which after detecting it sends it to microcontroller which controls the traffic signal. If any emergency vehicle is detected the system goes to emergency system mode where signal switch to green and if it is not detected normal system mode strong security model, which prevents compiled Java programs from illicitly accessing resources on the system where they execute or on the network. Popular World-Wide Web browsers, as well as some World-Wide Web servers and other systems implement Java interpreters. These are used to display interactive user interfaces, and to script behavior on these systems.

Organization of Project

Although, both IDEs work in a different way to help you manage and organize your projects, but when you want to work on many projects in Eclipse you need to merge them into a workspace. In an attempt to switch to a different workspace, you have to choose the path, after that Eclipse restarts and this always looked awkward. Additionally, On the other side, Android Studio uses modules to manage and organize your code modules have their own Gradle build files which mean it can state their own dependencies. In compare AS looks more natural, but if you have been using Eclipse for some time, then it takes a little bit time to get used to.

Existing System

In the existing system we have to intimate ambulance, need to give the details of the desired location. The exact location cannot be viewed by the driver; also, the user cannot view where the driver is.

- We cannot able to search the nearest hospitals as well as nearest Doctor's details.
- Though we have many webs sites portal, and the user can

get information about the searched location in web sites.
- Whenever the user wants to search the places, the user needs to specify the location of that particular area.
- The user can be able to access the information which is stored in the server.

Proposed System

- In an application in the user can request access to the hospitals given into the application.
- We have designed an application in such a way the user can get the ambulance with one-touch access. With the help of GPS (Global Positioning System), the user desired location will pass to the server; the server will intimate the ambulance drivers for service.
- If one driver accepts the service automatically the other requests would be denied.

Advantages of proposed system

- Easy way to access
- Immediate response from the driver
- User can access and track the exact location of the ambulance
- Effective way for accessing the services

System Design Specification Overall

Architecture

An architecture diagram is a graphical representation of a set of concepts that is part of the architecture, including their principles, elements, and components.
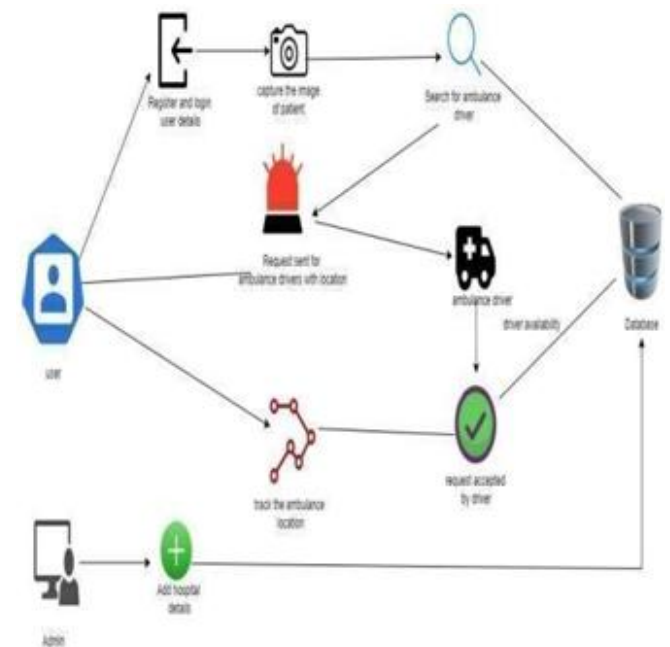

Description

The proposed work can be divided into a number of modules as shown below.
1) Login module
2) User module

3) Admin module
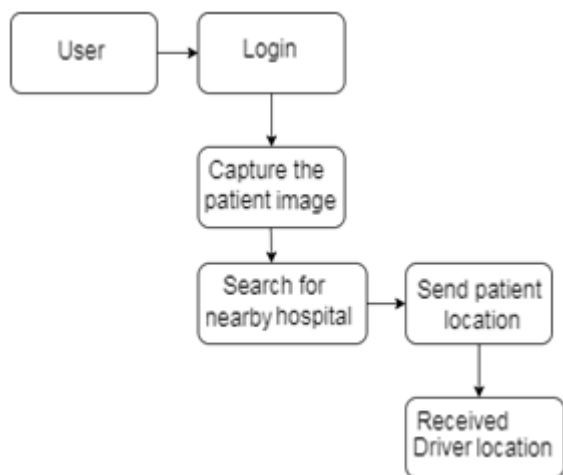4) Ambulance driver module
5) Location Module

Login Module

User authentication is a means of identifying the user and verifying that the user is allowed to access some restricted service. The main aim of this modules is to authenticate the user to application to view the motion detected image this module include username and password for authentication to.
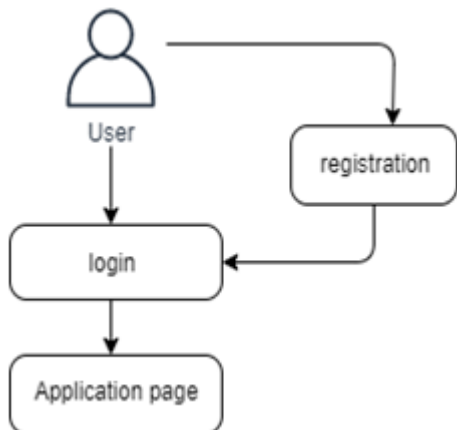

User Module:

User login by seeing the patient the user search for the hospital and take the picture of the patient to know the injury level and the user sent the patient location for the quick response of the ambulance driver.

Ambulance Driver Module:

The user requests for the service to the ambulance driver. If anyone accepts the request, then automatically the other requests would be cancelled. The driver can track the patient location and the user can also track.
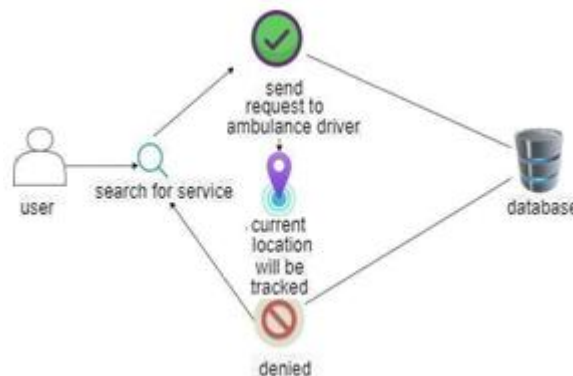
Admin Module

In this module, the admin member can add the hospital details and also can add the ambulance driver details into the database.

GPS Module

In this module, the user can track the current location of the ambulance driver and also the driver can view the exact location of the user through this application.

3. Conclusion

This project has presented an advanced approach of GPS, where the request and response communication between two users occurs by a technique called Global. Here the geographical information system, which is associated with the Global, helps the user to navigate the location accurately. Also, it enables us to identify the source and destination location while in present, only the current location identification is done. Moreover, GPS is supported by wide area augmentation which improves the accuracy of location prediction and navigation. This accuracy is improved by using the user trajectories and co-uniting the GPS with dead reckoning technique. Thus, this system is more useful in removing the difficulties of all other schemes of location prediction and provides accuracy to a standard level.

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