

Remote Sensing and Geographic Information System Based Route Planning: Review

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Abstract –Network analysis is a crucial thing of sorting route problem, shortest path and provide optimal route to daily transport vehicles. With help of proper route planning by network analysis gives quickest way and can sort out problem of longest facility of hospital, petrol center, police station, etc. Closest facility is the also main factor while performing a network analysis for congested routes. Network analysis can solve single route transportation and it is also capable of solving the multimodal route transportation. The single route transport means by roads and multimodal route transport means by railroads, roads and waterways. Solving route analysis can mean finding nearest shortest and even the most scenic route, depending on the impedance. If the impedance is the time then best route is the quickest route. The best route can be defined as the route that has the lowest impedance or least cost. Remote sensing and global information system (GIS) is the most useful technologies to take out data regarding to network analysis and transportation network datasets. Remote sensing and GIS is related to the satellites information to be collected. Optimization of quickest and optimal route based on satellites data collected through computer and mobile based app to simplify the critical and longest network facility. ArcGIS is a software used worldwide to manage the route network facilities within the city or country. In developing and designing the smart city project ArcGIS is mostly used for optimization of route planning process and location-routing problem (LRP). With the help of remote sensing and GIS technology we should look for reduction in travel time and consumption of fuel. Location based service help me

out to collect data regards to bus user. After gathered all these bus stops data, it would be easy to find out correct location of bus stops. Network analysis can be done to get shortest and optimal route for bus which will reduce travelling time and cost of transportation.

Keywords-Location Based Service, Global Positioning System (GPS), route planning

INTRODUCTION

With evolving times, the versatile innovation has changed a considerable measure and over the most recent couple of years we have seen the landing of different new type of devices as Smartphone, camera-telephone, Android and tablet telephones. Actually, the handset business has abandoned straight forward spending handsets to ultra-present day top of the line cell phones. The present gadget is nearly everything - it is in vogue, inventive, engaging, high-performing, solid, up-to-date and multi-trusting. Most recent contraptions can be utilized for different purposes like pursuing portable, web, playing amusements, messaging, and blogging, informing, GPS, YouTube, Google look, Gmail and then some. Along this, there has been a blasting business sector for the mixed media cell phones. Present day contraptions are accompanying worked in cameras with cell phone applications, supposed applications; today are all the more searching for data on the go. This is one region of cell phone innovation upgrade that enables designers and software engineers to offer clients just what they look for under their favored

zone of intrigue. Google's Android is one of the most recent and special developments, which in a split second has assumed control over the portable market. There are 17,000 area construct fly out applications with respect to the market, and 160 million application good gadgets are possessed around the world – iPhones, Androids, Blackberries and tablet gadgets, for example- the iPad and Motorola. There are applications that can make our voyaging somewhat less demanding, more fun and more important. They let you do anything you can do on the web or with a manual, yet more rapidly and effortlessly and keeping in mind that you're progressing – with maps and GPS to reveal to you where you are and catch awesome recollections. This examination depends on improvement of an easy to use Android-based application called Vehicle Tracker.

Vehicle Tracking Solutions or location tracking solution is a main supplier of GPS administration has presented a free downloadable "application" for the Android telephone that communicates with the director's Vehicle Tracking Solutions account Called Silent Traveler. This GPS following Android application offers adaptability and versatility operations administration empower them to alter settings, get reports all from their advanced mobile phone. We will utilize GPS for finding the position of vehicle.

RELATED WORK

Bus arrival and departure information is broadly handy specifically provided via the nearby public bus offerings. Using a sophisticated GPS technology, bus companies are capable of track their buses and permit customers realize the expected time of arrival Users. These days are relying more on the information, however the comfort is handiest available for public bus offerings within the town. Benjamin Y. O Low designed a bus arrival information gadget by took gain of the traits of the carrier routes in rural regions and trip bus provider in educational institutions. Instead of depending solely on GPS facts and complicated computational algorithms to calculate the expected time of arrival of the bus, this machine used RFID to replace the ultra-modern bus stop location that allowed customers to have a top level view of the real time bus vicinity. GPS become used to provide the actual-time place of the shifting bus, thanks to the Google Map. The evolved device supported participatory contributions in which the system depended on the customers to replace any unpredictable on-avenue troubles and percentage the statistics to others. A net application (Web App) was designed with

interactive interface as a platform to get right of entry to all the statistics. The advanced device became examined in UTHM campus- Parit Raja town go back and forth bus. This new facility is expected to noticeably encouraged college students to apply public transport and improve their journeying reports. Through this, an arrival records system that consisted of 3 principal additives turned into proposed. First, the proposed device became supported through state-of-the-art GPS generation. Hence, the gadget could be able to provide real time vicinity of the transferring bus thru Google Map. Secondly RFID become used to update the statistics on the modern bus prevent, to permit the users review the today's bus prevent area and finally turned into the participatory contributions element. Users were capable o read the news feed for unpredictable on-road issues contributed by different bus users who suggested and updated possible arising issues (injuries, breakdowns, etc.) which have been undetectable by using the gadget itself.

Rene Hense et.al described Smart CampusAAU - an open, extendable platform that helped the smooth creation of indoor area based structures. SmartCampusAAU given an app and backend that can be used to permit indoor positioning and navigation in any building. The SmartCampusAAU app available on all essential mobile systems (Android, iPhone and Windows Phone) and helps each tool- and infrastructure-primary based positioning. SmartCampusAAU additionally given a publicly to be had Data back end that lets in researchers to percentage radio map and vicinity monitoring records. In this paper provided the SmartCampusAAU software platform designed to facilitate indoor positioning and navigation. SmartCampusAAU overcomes the limitations of current offerings via providing help for ubiquitous positioning and navigation on all predominant mobile structures. SmartCampusAAU predicated on crowdsourcing to construct indoor radio maps and graphs and insurance therefore probably limitless. In addition to being on all foremost mobile platforms, the other most important characteristic that made SmartCampusAAU precise that it makes possible for researchers to share radio map- and area tracking facts. This opens up further studies opportunities, now not most effective within region fingerprinting and indoor information control, but indeed anywhere, where get admission to indoor vicinity information is needed. The steps worried in facilitating indoor positioning and navigation in a building are as follows:

- 1) Add a building and constructing floors
- 2) Build a radio map to permit indoor positioning
- 3) Supply symbolic facts for places.
- 4) Build a graph to permit indoor navigation

Li Li included the Android SDK a device emulator, a debugger, libraries exposing functionalities of the Android platform as nicely as numerous code examples and documentation. Maintenance of the Android SDK going hand in hand with the general Android platform improvement. Thus, the SDK library classes evolved to assist maximum latest gadgets however might also include older variations of the Android platform for testing apps on older gadgets. This paper worked on the evolution of inaccessible APIs of the Android framework base. At first, the importance of the phenomenon of inaccessible APIs checked out, wherein discovered that inaccessible APIs continuously applied inside the Android framework, and there honestly no assure of ahead compatibility while the usage of them. Besides, maximum inaccessible APIs may be eliminated in some model updates. Second, at the ability impact of the usage of inaccessible APIs discovered that comparing to available APIs, inaccessible APIs simplest get admission to a specific set of functions of sources and greater risky in addition to much more likely to be removed at the release of a brand new API stage, as opposed to be made publicly in the collect SDK development library. Finally, at the adoption of inaccessible APIs by using 1/3-celebration apps. Experimental outcomes show that there are many apps which can be certainly accessing inaccessible APIs and the utilization are quite specific between malicious and benign apps and additionally observed that some apps leverage a framework called Exposed to ease their works of getting access to inaccessible APIs. Besides, it appears that evidently builders were not seem to taken under consideration the dangers of gets rid of inaccessible APIs, however as a substitute, they might be inquisitive about harnessing immediately the potential of inaccessible APIs. Last but now not the least, not like Apple store, the Google play shop does not have a vetting machine for using inaccessible API strategies.

Manli and NajmeZehra Naqvi proposed a clever public delivery system based on GSM-GPS methodology to song the bus region based totally on which the Arrival times and postpone instances of buses approaching a bus stop are displayed on bus stops to tell passengers so that they could recognize approximately the reputation in

their buses and their mode of transport for that reason. In addition, the flaws on this device and improved the gadget in order that it turned out to be less complex, value powerful. The foremost intention depicted the time of arrival of buses at every bus forestall. There were 3 extraordinary modules: Transmitter module, receiver module and a clever phone. The transmitter module equipped with the bus and the receiver module on the bus terminus. GPS module in bus transmitted the latitude and longitude coordinates to the bus terminus via GSM, wherein the arrival and delay times calculated through using these coordinates. The timings supplied to customers via clever phones and displayed on bus terminus. Hence, this system will substantially lessen the tension of commuters. The ATDT algorithm used.

ATDT ALGORITHM WOKING: Two variables for preliminary coordinates and new coordinates are initialized. When the modern-day coordinates have received from the INSIDE BUS module, the brand new coordinates assigned with the modern coordinates. A circumstance used to check if the bus is shifting or now not. The previous coordinates are checked towards the new ones. Depending in this condition a selection may be taken if the bus is moving or no longer. If the condition i.e. new coordinates and the initial coordinates are special, then the bus is transferring. Accordingly the longitude and latitude values used to calculate the distance of the bus from the bus forestall and the envisioned time of arrival. This facts displayed on the screen at the bus prevented for the passengers looking forward to the bus. It is likewise sent to the server for the passengers who have the clever phones to get admission to this records from any region.

NurRokhman and LubabSaifuddin used hobby reminder machine based totally on vicinity and time has been proposed. The reminder system makes use of the venue on Foursquare and Google map. By the usage of this reminder system, a notification can be given to the consumer when the consumer's location detected either near the venue or when the time in closed to the time of the hobby. Based at the design, implementation, and testing of the machine, it that may be concluded that:

1. A reminder gadget which works primarily based on the venue region and interest time has been absolutely advanced. The system became built by way of the usage of the APIs of Foursquare and Google Maps. This machine extensively utilized spatial data from Google Maps to explain the place of the authentic venue in geographical coordinates.

2. Based on the checking out results, the device turned into able to notify the user whilst the person changed into in the radius parameters of each venue location. The devices applied notifications while observe changed into detected coming near the closing date.

3. A word of crucial activity is probably alarmed primarily based at the pastime area and the pastime time.

The reminder gadget stored the information which consist the pastime title, the interest contents, the venue name, the venue place, the category, the distance, the geographical coordinates, and the time restriction. Distance become used as a parameter to the reminder gadget. All facts become saved in the form of a string into the SQLite Database. SQLite Database is an Android database device. As a consumer saved an activity information, the utility checked whether or not it turned into an exchange from an old pastime facts or a new interest.

BhuvanaSekar and Jiang B. Liu described a TriTHEApp Android software, designed to function a vicinity based time saving and protection ensuring software. In other phrases TriTHEApp area primarily based carrier with three capabilities:

- 1) Tool to announce arrival.
- 2) Handset robbery monitoring and
- 3) Emergency call characteristic included in it.

Tool to announced arrival service designed to make client's uncertain ready time recognized, handset theft tracking designed to tune person's android device, and emergency name feature designed to ensure non-public safety of the android device user. Development of this application led us to pick out few usability issues and to suggest answers to solve those concerns. The tools used for growing this software Eclipse IDE with ADT (Android Developer Tools) plug-in and Android SDK (Software Development Kit). This application prototype is advanced at API degree 16(Android Jellybean 4.1). The cause in the back of choosing this API level is that Android Jellybean OS launch has installed itself because the dominant model of Android that accounting for 40% market-proportion on android devices and it gives a number of characteristic upgrades. To address this problem, the TriTHEApp utility we evolved includes a 'Tool to announce arrival' characteristic, which modified implementation of GPS tracing to useful resource the customers to realize their absolute wait time/wait time

closer to absolute, by using tracking the provider issuer (person with whom the appointment has been made) and calculating the time required for them to attain the meeting place based on their modern-day location

Xianhua Shu et.al introduced the structure and factor fashions of Android, and analyzed the anatomy of an Android application such as the functions of Activity, Intent Receiver, Service, Content Provider, and etc. Based on Android, the design method of a location-based cell carrier then supplied. The layout example suggested that it was so smooth to implement self-vicinity, to draw the using trace, to perform question and to flexibly manipulate the actual-time map on Android. The function area based totally on provider which emphasized on Android platform. One can combined a completely zoom and drag enabled map by using adding simply few traces in the java code and XML code of the Android-Default-Application. Through the research on Android architecture and application improvement, and from the layout approach and effects of an software example on this paper, the availability and overall performance of the platform is tested and the design end result also shows the easiness to put into effect self-place, to draw the using trace, to perform queries and to flexibly control the real-time map on Android. The real device also achieved high going for walks performance. The destiny paintings is to lay out a more effective cell place-primarily based device featured with more unique custom designed capabilities based on Android. . It takes some time to trade the records available on Google server.

CONCLUSION

From this paper, the work has been done which we can used to track the location of people to sort out problem of congestive traffic route by providing best shortest route to people. Location based service is a pivot contribution to network analysis. Apps can be used for companies, organization and institutional places to find optimal route for employees, workers and students. The actual aim to done this work is to reduce time of travelling, reduce the fuel consumption in travelling and find the best shortest route for people for ease. Now-a-days, people facing the congestion problem in wide range. With increasing population of a country, it is necessary to design the beat optimal route for people. By finding the best optimal route by network analysis will be useful to solve the problem of congestive traffic, consuming excessive time to reach destination point and traffic vehicular activity. Compilation of location based

service, Global Positioning System, Network analysis and route planning gives the modified solution over the existing work. Most of people are using smart technology systems for every query about day to day life. The standard of people tries to touch the tangent of smart technologies to get a comfortable life in such case this app for location tracking and network analysis is the biggest acceptable technology to make transportation facility without constraint of time. Due to enhance transportation system according to get a destination point in shortest time and to get a shortest route to reach systems for every query about day to day life. The standard of people tries to touch the tangent of smart technologies to get a comfortable life in such case this app for location tracking and network analysis is the biggest acceptable technology to make transportation facility without constraint of time. Due to enhance transportation system according to get a destination point in shortest time and to get a shortest route to reach.

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