Determination of Centered Meeting Location for Wireless Android Devices for Multiple Geo-Points

Miss. Nikhita Jambhule
(M.tech. Scholar)
Dept. of Computer Science &Engg., NIT,
Nagpur, India.
nikhitajambhule@gmail.com

Prof. Jagdish Pimple
(Asst. Prof.)
Dept. of Computer Science & Engg., NIT,
Nagpur, India.
pimplejagdish@gmail.com

Abstract: Now a day, cell phone become a most important for maintaining the daily activities and it also used by maximum population worldwide. For making the easiest way use of smart mapping technology is increase in large area like transportations, defense, sports, etc. Through this we can easily detect the location. Mapping applications are always depend upon current location detection or preferred location of individual user or the group of user. Many technologies or the application trying to get the location of the user location to serve better service. The individual user location is the easily calculated or finding the location in the known area or city is easily find and it is some time feasible also but in the group finding the location in the unknown city is not feasible at every time. So considering above condition, if any group want to meet even they are in the different areas or cities and they unknown from their location to make it easy find the centroid from all the geo-location which is suitable for the all members. It also has issue with finding better options of meeting while calculation. Proposed system aimed at finding the preferred and central location for user group using geo-point calculation and mapping technologies.

Keyword: *Mapping,GCM code,Polygon Algorithm,Google APIs.*

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I. INTRODUCTION

Location-based services (LBS) are a general class of computer program-level services that use location data to control features. Such LBS is an information service and has a number of uses in social networking today as an entertainment service, which is access with mobile phones through the mobile network and which uses information on the geographical position of the mobile device[3]. This has become more important with the expansion of the tablet and smartphone markets as well. LBS are used in a variety of contexts, such as health, works, personal life, entertainment, indoor object search etc.LBS include services to identify a location of a object or person such as finding the nearest banking cash machine or the whereabouts of a employee or friend. LBS include parcel and vehicle tracking services. Location-based service can include mobile commerce when taking coupons or the form of advertising directed at customers based on their current location[5]. They include personalized location-based games and even weather services. These are an example of telecommunication confluence. This concept of location based systems is not compliant with the systematized concept of real-time locating systems (RTLS) and related local services, as noted in ISO/IEC 24730-1 and in ISO/IEC 19762-5. While networked computing devices generally do very well to inform consumers of days old data, the computing devices themselves can also be tracked, even in real-time. The locating methods are: *Control plane locating, GSM localization, Self-reported positioning*.

II. RELATED WORK :

Igor Bilogrevic, MurtuzaJadliwala, VishakJoneja, kubra Kalka, Jean-Pierre Hubaux and ImadAad[1], proposed privacy-preserving algorithms for determining an optimal meeting location for a group of users. They perform a thorough privacy evaluation by formally quantifying privacy-loss of the proposed approaches.

Wei Xin, Cong Tang, TaoYang, Huiping Sun, Zhong Chen [2], proposed LocSafe method, a "missed-connections" service is used which grantees based on RFID technology, in order to prove meeting sharing among different users in the past. LocSafe is comprised in three parts: RFID Tags,social service provider and LE Collectors. We use RFID technology to detect encounters and use attribute-based encryption and broadcast encryption to establish trust and protect users privacy. We evaluate LocSafe by an study of "missed-connections "problems and analysis of system implementation.

Wei Li, Wei Jiao, Guangye Li[3],proposed Loc ation-Based Service(LBS) combined with mobile devices and internet become more and more popular and are widely used in intelligent logistics, the point of interest query and traffic navigation. However most users be concerned about their privacy when using the LBS because they should provide

their accurate location and query content to the untrustworthy server.

This system analyses the query association attack model for the continuous query in mobile LBS, formalized the attacker's background knowledge in both horizontal spatial dimension and vertical temporal dimension. In the temporal dimension, the relevance of anonymous space generated by a user in the valid query period and in the spatial dimension, the relevance of different anonymous spaces generated at the same period is compared.

Muhammad Ridhwan Ahmad Fuad and Micheal Drieberg[4],presents the development of the remote vehicle tracking system which integrates the Global System for Mobile Communications (GSM) Modem and Google Map. The GSM modem will receive the coordinates at the control center through Short Message Service (SMS) and updates the main database.

The system integrates a GSM Modem which will receive SMS containing the location information and displays it on the Google Map applications. The graphical location information is hosted on a website so that it can be accessed remotely through the internet. The capability of such a system is shown through three working functions that can display the latest vehicle location, route planner and route history. The remote vehicle tracking system corroboration the feasibility of real-time tracking of vehicles which can be used for many applications including vehicle security and fleet managements.

Sheng Zhong, Li (Erran) Li, Yanbin Grace Liu, Yang Richard Yang[5], proposed privacy-preserving location based services for the three components involved in providing location-based services is the location-based service component, the localization component and the communications component. The focus of our study is on the location-based service component, but we also take the other two components into consideration. This system designed for a novel protocol for a user to control which entities can have access to her location information stored at an untrusted location server. Novel protocols use to provide location-based services which do not require a user to trust a third party.

III. PROBLEM STATEMENT

Mapping applications are always depend upon current detection or preferred location of user or the group. Many application trying to get the user location to serve better service to location based services to user. Sharing location among group is better solution to know the individuals location.

Finding or locating the location at known area or the known cities are usable and also feasible but at unknown location using these service may be risky or not feasible.

IV. PROPOSED METHODOLOGY

In this section, we have presented an approach for finding the location of the multiple users from geo-points. Our project aim is to finding the location of multiple users and then calculate centroid from that geo-point. Proposed system aimed at finding the preferred and central location for user group using geo-point calculation and mapping technologies.

1. Geographic midpoint formula:

The geographic midpoint is calculated by finding the center of gravity for the locations in the 'Your Places' list. The latitude and longitude of each location is converted into Cartesian (x,y,z) coordinates. The x,y, and z coordinates are then multiplied by the weighting factor and that will be added together. A line can be drawn from the center of the earth to this newly calculated x, y, z coordinate and the point where the line intersects the surface of the earth is the geographic midpoint. This surface point or the geographic midpoint is converted into the latitude and longitude for the midpoint.

2. Orthodromic Distance Algorithm

orthodromic distance is the shortest distance between two points on the surface of a sphere. This is measured along with the surface of the sphere . The distance between two points in Euclidean space is the length of a straight line between these two points, but on the sphere there are no straight lines. Then we used the non-Euclidean geometry. In non-Euclidean, straight lines are replaced with geodesics line. Geodesics on the sphere are the great circles (circles on the sphere whose centers coincide with the center of the sphere).The Earth is nearly spherical so orthodromic distance formulas give the distance between points on the surface of the Earth correct to within 0.5%.

The proposed work is divided into following steps as shown in figure1.

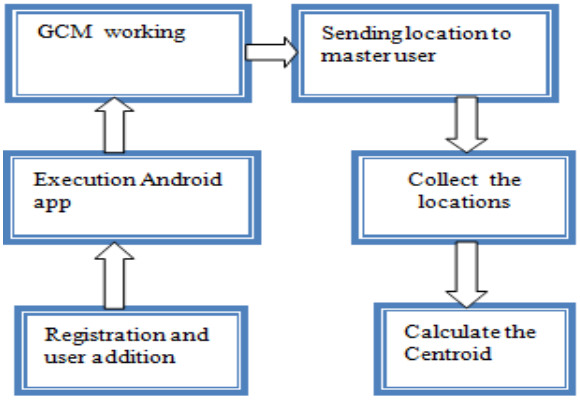

Fig 1 : steps of flow of project

(a) Registration and user addition
(b) Execution Android app
(c) GCM working

(d) Calculation Process

(a) Registration and user addition:

Firstly master user register our self which have to provide the personal panel to him. Then he choose the user which have to meet them for choosing the users we provide the option for choose the user.

(b) Execution Android app:

The android app is created for the user mobile phone. when they installed that app into their mobile phone then registration process is carried out.

(c) GCM working:

Master user send the notification by GCM on the users for meeting. When they click on the notification that they get, the Google map automatic open and the location of that user will be send on the master user panel by clicking on the Google map.

(d) Calculation Process:

When the master user received all the location then he calculate the centroid from that locations. For calculating the centroid use some algorithm and distance formulae.

V. EXPERIMENTAL SETUP

The proposed system have to finding the location of different places and then calculate the centroid.

Firstly login the master user and choose user for business meeting purpose or any other event. By GCM all the messaging is carried out.

Fig 2: Master user panel

After that, all the location of the user are shone on the master users panel and from that he calculate the centroid location.

Fig 3 :shows all the locations

Fig 4: calculating the centroid location

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