Android Based Map Location Tracking System without using Internet

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Abstract: A technique to track the location offline of a person or assets is proposed. These tracking greatly impact to find location and to record the position of the asset at regular intervals. Offline location tracking mechanism which can overcome the problems of online location tracking such as no network area or low signal strength. With the popularity of smart phones network traffic gets increased, it is increasingly becoming important to track the location offline. Typically the number of location tracking maps that people uses. This makes it difficult in no network area or weak signal strength to track the location. Offline location tracking is an emerging trend that locates users even if they are not connected to the internet. The work focused on android based technology by modifying GPS for offline location tracking.

Keywords: Map,Offline,Gson,Location

I. INTRODUCTION

Mobile has become a vital communication tool which everyone prefers to possess and carry along. This technology has laid a foundation to overcome the traditional desktop based approach of obtaining information. Mark Weiser, the father of Pervasive Computing in his paper entitled, 'The Computers of 21st Century,' envisioned that, "The technology would weave into the fabric of everyday life until they are indistinguishable from it." This is his vision and has come true in this current 21st . Following the vision of Mark Weiser, researchers at Carnegie Mellon University in a project "Aura", demonstrated that, human distractions could be minimized by ubiquitous systems which will have to be proactive in anticipating the demands, thus self-tunable so as to give a better response to the future hassles. The ability to sense and process a context forms as a fundamental requirement for a system to be proactive. Hence, designing a context aware application would pave way to satisfy the future growing requirements of user.

Location tracking is a process of determining the precise location. These tracking greatly impact to find location of a vehicle, person or other asset to which it is attached and to record the position of the asset at regular intervals. With the rapid growth of online resources, user can easily track anyone or anything. As a result the location tracking being done progressively. Current focuses in the field includes online maps with features like online location tracking using GPS, point plotting on graph based on user requirements, online tracking of stored path. By using the concept of Google Tiles and Open street maps (.mbtiles) with the use of MOBAC Tools, this creates mbtiles file for storing the location. Many approaches have been made using internet to track the location. However, online location tracking is the improvement of network problems. Online location tracking can be seen as a way for users to track their own location. To track the location online we require information regarding maps in the form of kml files provided by Google and using the concept of parsing, we proposed the android based technique which will navigate user from source to destination.

- **Need**

Now a day, Android Mobile map is very popular issue. But it becomes headache whenever we go to the new places. As we have to go to each and get every place information. So, we will be designing a system in which user will save destination location and the date. According to that system will send you notification including the place information details. This will reduce user's time and extra overhead. Proposed system will be most useful for location tracking application and will also provide the authentication. This system will track the location automatically according to user reminder task and will also overcome the traditional desktop based approach of obtaining information offline.

- **Basic Concepts**

For Location tracking, 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. GPS is used as the approach for location tracking. The project is based on Android Operating System [1].

- **LBS**

It stands for Location Based Services. LBSs are information services accessible with mobile devices through the mobile network and utilizing the ability to make use of the location of the mobile device. It is a wireless-IP service that uses geographic information to serve a mobile user [2][3]. Android based Map Location Tracking System Without Using Internet It answers:

> ➢ Where am I?
> ➢ What is nearby?
> ➢ How Can I go to?

- **GPS**

It stands for Global Positioning System. With location positioning system such as GPS becoming popular, there is a growing demand for location-based applications. It is easier, these days to utilize map information by connecting GPS receiver to PC [1]. Components of GPS are,

➢ Space (e.g. satellites)
➢ Control (i.e. a ground station at a known geographic location)
➢ User [4][3].

II. LITERATURE SURVEY

• **LBS**

LBS is mobile service that has the capability to provide real time information based on the user's location. GIS has been the heart of LBS in order to provide all the functionalities in LBS. First, we may send location information to remote parties. This set of services are commonly used today, e.g., in location tracking applications. Second, use location information to make communication decisions, e.g., a user agent may automatically disable instant messaging when driving. Third, location changes can trigger communication actions, e.g., when a person's user agent gets a location notification indicating the person enters a room, the user agent may automatically turn on the light of the room. Sending location information to remote parties for location tracking Locations are usually represented in geospatial coordinates or civil addresses for tracking. By enabling to upload real time location and to create the content "on the spot", we can expect more variety of location-based services. The working of LBS contains the following steps [1][5].

➢ **Step1**: User sends a service request using the application running on mobile device.
➢ **Step2**: The service request, with user's current location information obtained from the positioning component (GPS data), is sent to service server via the mobile Communication network.
➢ **Step3**: The service server requests geographic database and other related database to get required information.

   • **Location based Services can be classified in following categories [2].**

➢ **Public Safety/Emergency Services**:
The location of the client can be determined by the mobile carrier hence it finds great use during Emergency since it can be used during the emergency/health hazard to locate the mobile clients.

➢ **Consumer Services**:
Now days, smart phones like (Android, Blackberry and iPhone) provide a set of location based applications and services which helps the users to access the multiple services based on the user location. The location of the device can be retrieved by, Mobile Phone Service.

➢ **Provider Network:**
The current cell ID is used to locate the BTS that the mobile phone is interacting with and the location of that BTS. It is the most basic and cheapest method for this purpose as it uses the location of the radio base station that the cell phone is connected to. A GSM cell may be anywhere from 2 to 20 kilometers in diameter. Other approaches used along with cell ID can achieve location granularity within 150 meters. The granularity of location information is poor due to Wide Cell Range. The advantage is that no additional cost is attached to the handset or to the network to enable this service.

➢ **Satellites**:
The GPS uses a constellation of 24 satellites orbiting the earth. GPS finds the user position by calculating differences in the times the signals, from different satellites, take to reach the receiver. GPS signals are decoded, so the smart phone must have inbuilt GPS receiver

III. PROBLEM DEFINITION

Location tracking has been of great importance since World War II, when military planners realized its usefulness for targeting, fleet management, positioning, and navigation. In today's era,its significance has been increased. We can track the vehicle or location using GPS when connected to internet. But the drawback of the system is it cannot work without internet. So, to overcome the problems of online location tracking such as no network area or low signal strength, we are going to proposed a system which will track assets for particular area also we can track location from source to destination or we can get the nearby places information (e.g: Atm,Bank,Hospitals,Bus-stands etc) .

IV. PROPOSED SYSTEM

1. User will do registration on designed website.
2. Access location online.
3. Reminder will be entered by user and stored in SQLite database.
4. Location tracking will be performed using the GPS service.
5. Changes in location can be emulated with the help of KML file in Android.
6. The location change will be compared with the database entries to see if there are no tasks associated to the current location.
7. Corresponding task information will be displayed on the mobile screen.
8. Location server will constantly deliver the location information to mobile every 3 seconds.
9. Based on this communication with the backend server for displaying corresponding task will be established[1][7].
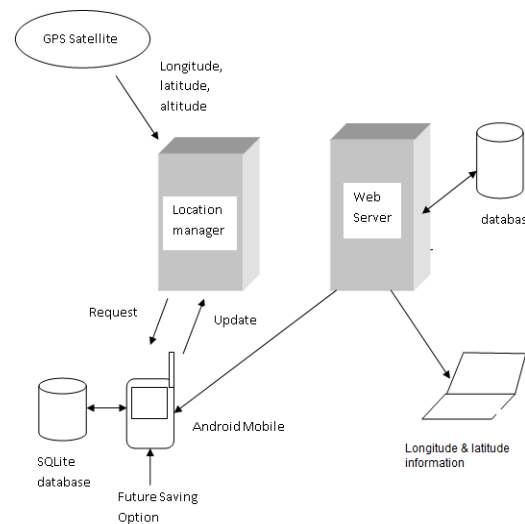
Fig: Proposed System

• **System Modules**
   1. User Registration Module

2. Search information Module
3. Set Reminder Module
4. Set Current Location Module

ALGORITHM
A) *Draw route*
B) *Gson Parsing*
C) *Find location*

V.   IMPLEMENTATION DETAILS

The proposed method can be implemented as follows:
1. Install the application and find user location .
2. Generate offline Map File
    *   MBTILE file
    *   GPS Enable

INPUT: Location Offline MBTILE File in Application asset.
PROCESSING:
1. Find Location Download MBTILE offline map file.
2. Track current location using GPS.
3. Assign confidence to each candidate.
4. Apply Algorithm MBTILE & KML file
5. Calculate Latitude and Longitude.

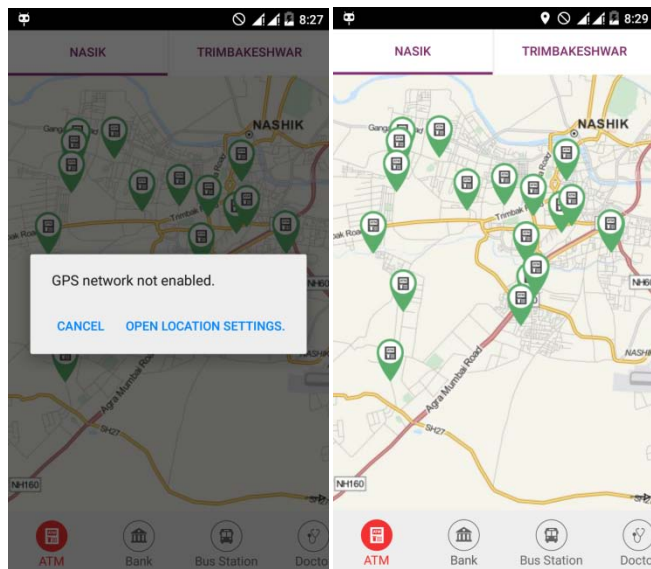**OUTPUT**: Find or track location using offline mapping.

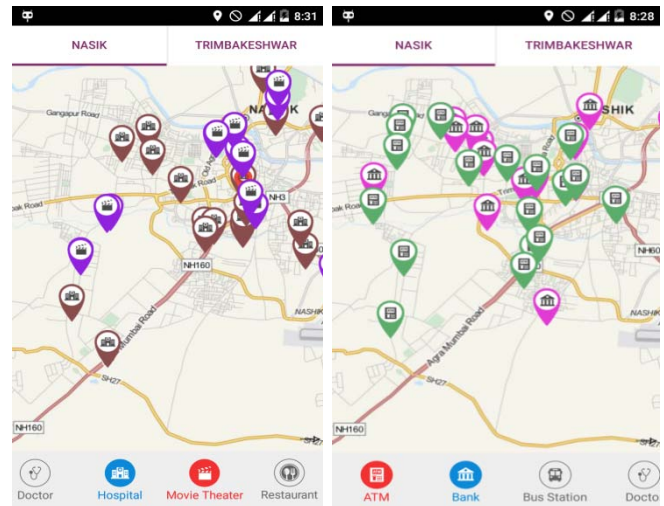Fig-2 :Gps Enable   Fig-3: Atm Location

Fig-4: Hospital Location   Fig-5: Bank + Atm Location

VI.   CONCLUSION

In this report, we have developed an offline location tracking system to track the position of the person. To make flexible system improvements on network problems, offline location tracking provides good results. GPS based tracking using network provider had been used for location tracking but without using internet. With proper selection of KML parsing it is used to navigate user from source to destination.

VII.   ACKNOWLEDGEMENTS

VIII.   REFERENCES

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