ACCESSING GOOGLE MAPS IN SMART PHONES WITHOUT THE AVAILABILITY OF GPS

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Abstract

The use of GPS is widely used in smart phones these days. It help us in navigation,for tracking position,for knowing the proper address.This paper deals with the ACCESSING GOOGLE MAPS WITHOUT THE AVAILABILITY OF GPS.Because GPS is having some limitations.First GPS may or may not be available in all smart phones.This application which we developed will work in the phones which are not having feature of GPS.

KEYWORDS:
GPS,LBS,GIS,MGIS,Android,Ecllipse, SQLITE3,PDA.

1. INTRODUCTION

Recent years have seen an increasing interest in the open source movement as a new paradigm for software development. The spectacular growth of the use of digital Geoinformation in parallel with the advances in Information Technology (IT), collecting in-situ data have been dramatically improved using handheld devices. This practice was being made by hand with paper and then manually entered into Geographic Information System (GIS) databases once in the office, which is time-consuming. Introducing Mobile GIS Technology in combination with Global Positioning System (GPS) technology, data n the field is stored digitally and it is ready for treatment back in the desk. The extension of a GIS from the office into the field is Mobile GIS. It allows to access, capture, store, and update, manipulate, analyze, and display geographic information directly in the field. More technologies, such as: mobile devices, GPS technology, wireless communications for Internet GIS access, GIS software for mobile platforms are evolved with Mobile GIS [1].

Mobile GIS emerged in the 1990s, with integration of GPS, mobile data connections and geographic information in a portable handheld device. Mobile technologies were initially developed for military use and the service offered to them was selective but laterally it was open for Economic driver,

which is regarded as a growing consumer demands for location-based services (LBS) and for commercial users: e.g. companies. Now a day the Recreational users: e.g. shoppers, trampers are also seen striving for this technology.

1.1 LOCATION BASED SERVICES

A Location Based Services can be defined as any service or application that extends spatial information processing or GIS capabilities to end users(based on their geographic location)(ESRI 2000 & 2001).Such services combine scalable GIS technology, mobile devices to provide information and services whenever and wherever they are required. LBS technology developed to meet demand of users.

- Personal Digital Assistants (PDAs): e.g. Palm (1996); iPAQ (2000) can store geographic information.
- Handheld GPS receivers provide accurate positioning and
- Networks: e.g. General Packet Radio Service / 3G.

The substantial growth of the Internet during the past few years has sparked the adaption of several fields of current technologies to its demanding and cutting-edge standards. Such technologies have been changed and enhanced to facilitate the incorporation of the Internet and related Internet protocols. One such technology is that of mobile cellular phones. With the subsequent rapid expansion and development of the internet

and the WWW, Geographical Information System(GIS) extended onto websites are becoming ever more popular and as a result numerous sites have added GIS capability on their websites(Zhuang 1997) .In other words "Anywhere ,anytime, any device-this is the short definition of the rapidly growing field of location services. It's where wireless and GIS technologies meet on the Web and it is changing the way businesses and individuals operate" (ESRI 2001). The technology of handheld devices has improved since 2000.The various improvements has resulted in developing a high promising technology by taking into account issues like:

- Portability,
- Ruggedness,
- All-day battery life,
- Capacity,
- RAM, flash memory and processing speed,
- Improved screen size, brightness and touch-sensitivity and
- Wireless networking e.g. Wi-Fi, Bluetooth.

2. MOBILE GIS

A Mobile Geographic Information System (M-GIS) can be defined as the subset of an LBS. Whereas an LBS extends spatial information processing or GIS capabilities to end users via the Internet, an M-GIS limits that extension to only mobile devices, as to create an abstract "portable GIS", therefore an application that delivers

geographic information to a non mobile device will be defined as an LBS. An application that delivers geographical information to a mobile device, will be classified as an M-GIS.A Mobile-GIS can also be define as an extension of Geographical Information System so as to deploy leverages map and data on the Mobile Devices.

Mobile Geographical Information System (Mobile GIS) is a Geographical Information System based on mobile computing and mobile Internet. It is not a conventional GIS modified to operate on a smaller computer, but an extension of Web GIS to mobile Internet including wireless Internet/Intranet and mobile communication network. But architectures of Web GIS are unsuitable for Mobile GIS, because of several bottlenecks such as the low-bandwidth of wireless network, the diversity of mobile devices, limited processing power and screen display limitation of mobile devices and the diversity of mobile system platform.

With the emergence of Mobile GIS, GIS application system will not be used only in professional area; but also it can be widely used by the public, in the meantime GIS system will become a new kind of service that the general consumers can apply and use this kind of service. Instead of the traditional software and spacious data, the deployment of Mobile GIS will change into a new kind of service which the general consumers can purchase by wireless internet, for example, Navigate service,

Moving object monitor Service etc. Mobile GIS application system will make the GIS technique be used and shared broadly into the everyday life the public, it will become popular. Moreover, Once GIS is conscious by the public, GIS industry will develop greatly and rapidly.
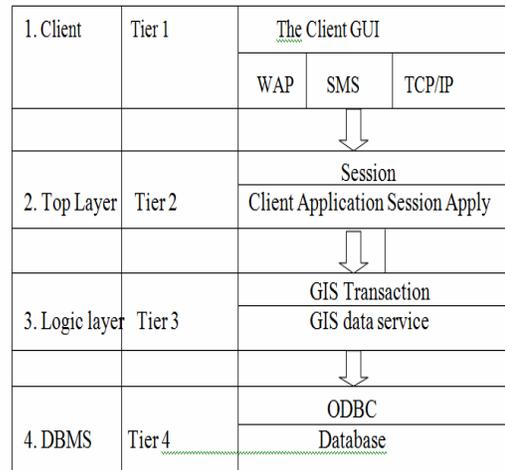

Figure 1: The Logic Diagram OF Mobile GIS

2.1 Role of MOBILE GIS

Mobile GIS is the expansion of GIS technology from the office into the field. A mobile GIS enables field-based personnel to capture, store, update, manipulate, analyze, and display geographic information. Mobile GIS integrates one or more of the following technologies:

- **Mobile Devices**,
- **Global Positioning Systems**, and
- **Wireless Communications for Internet GIS access**

Traditionally, the processes of field data collection and editing have been time consuming and error prone. Geographic data has traveled into the field in the form of paper maps. Field edits were performed using sketches and notes on paper maps and forms. Once back in the office, these field edits were deciphered and manually entered into the GIS database. The result has been that GIS data has often not been as up-to-date or accurate as it could have been. ESRI's developments in mobile GIS have enabled GIS to be taken into the field as digital maps on compact, mobile computers, providing field access to enterprise geographic information. This enables organizations to add real-time information to their database and applications, speeding up analysis, display, and decision making by using up-to-date, more accurate spatial data. Firefighters, police officers, engineering crews, surveyors, utility workers, soldiers, census workers, field biologists, and others, use mobile GIS to complete the following tasks:

- **Field Mapping**—Create, edit, and use GIS maps in the field.
- **Asset Inventories**—Create and maintain an inventory of asset locations and attribute information.
- **Asset Maintenance**—Update asset location and condition and schedule maintenance.
- **Inspections**—maintain digital records and locations of field assets for legal code compliance and ticketing.
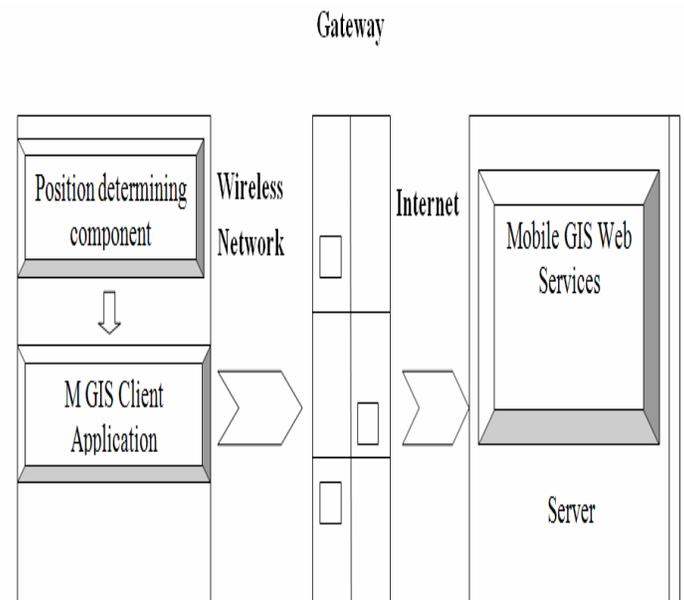

Figure 2: Overall Architecture of Mobile GIS

3. ACCESSING GOOGLE MAPS WITHOUT GPS

The main objective was to implement google maps in smart phones without availabilty of GPS. For that purpose firstly latitude and longitude of current location should be fetch.After fetching these lattitudes and longitudes these should be made available on google maps.As in previous google maps lattitudes and longitudes are not available while navigating the map.After making these lattitudes and longitudes available on map proper pin pointer is to be add on the map which points our current location.As we move on the lattitutde and longitude also varies and displayed on map.This work is done in ANDROID 4.0 using ECLLIPSE SIMULATOR. The previous work done in

this area was that not a single map in android base mobile phones was able to display map with latitude and longitude. Also the previous maps in android enabled smart phones runs only if GPS is on. I made my work that maps in smart phones can be available without the availability of GPS.This will show map as well as longitude and latitude of location.
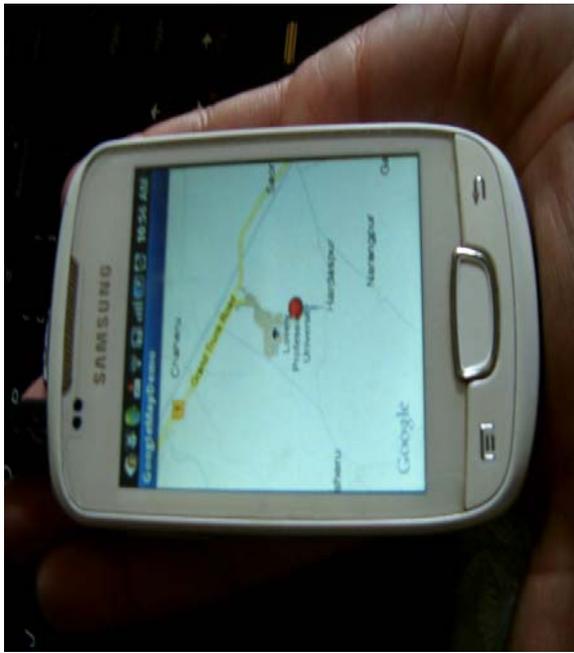

Fig 3 : Accessing google map without GPS showing current location

3.1 CONCLUSON DRAWN

Maps have a definite role to play in a Mobile GIS environment. In their interactive and dynamic appearance they will guide and assist the user in solving geospatial analysis problems. This can be proved with the help of this work that with the increased availability of mobile devices, proper software and abundant data, maps can play

these various roles anywhere and at any time.This can help the persons to access the maps in smartphones without GPS.

It uses wireless network and communication network and communication protocol by getting the mapping data from the server and displays shape file on the phone along with many functionality.

An application has been develpoed with the help of which lattitude and longitude of current position are displayed in toast.Then these lattitude and longitudes are displayed on map.

The geocoding of lattitude and longitude is done by which lattitude and longitude are converted to proper address in the form of string and is stored in database.

The final work has to display the pointer on particular current location displayed on map without GPS is achieved successfully.

3.2 FUTURE RECOMMENDATIONS

The future recommendation for this work can be in implementing:

- A dynamic Database Application for Mobile GIS.
- It may take a long time to establish a connection between a client and the server on a wireless network. So, the latency time should kept minimum.
- The maps displayed can also be made available on the home screen of smart phones when a person calls

to the smartphone holder having this application.

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