ISSN: 0975-766X
CODEN: IJPTFI
Available Online through *Research Article*
www.ijptonline.com

CHENNAI CITY EXPLORER AN ANDROID APPLICATION FOR LOCATING SERVICES FOR EVERYDAY ESSENTIALS

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Received on 25-04-2016 *Accepted on 27-05-2016*

Abstract

The main role of this application is to provide location information on Schools, Colleges, Banks, ATMs, Police Station, Taluk office, hospitals, Electronic shops, Railway station, Airport, Court in Chennai City using a Android smart phone. This application can be used in online as well offline and it uses GPS navigation system, Google maps to find location at given place. This app is loaded with the default location information. User can navigate in this application to get location information. There is a choise of user to enter destination. The disadvantage of earlier application was this can't be used while user is in offline. So every time the user has to be present in available network and this is serious drawback. In proposed system the city information is stored in built-in database. Here the originating place is considered to be the recently or last used originating place.

1. Introduction

In today's world of Ever-Present internet connectivity mobility and, an increasing number of people uses Location-Based services to request information relevant to their current location from variety of service providers. This can be used to search for nearby schools, restaurants, colleges, ATM, bank, police station, electonic shops and so forth. The user can be able to search the data in online. User has to enter the needed location (Example ATM at Loc1) , the application takes the location origin as current location using GPS and the destination location taken from user information.

The application finds the nearby ATM in Loc1 and provides the navigation path. In case if there are more ATM's the list will be provided and the user has to select from these. All these works fine when user is in the available network range. In order to overcome the proposed system has built in database to carry the intitial city information. With this the user can use this application during offline. At this point we need to note the origination location, since the user is

offline the recently used location will be used as origination location and the destination location would be the search location. And the navigation path would be shown. Since the internet and data is growing and updating at faster manner we need the application to be updated to show the detailed, vast, correct, updated informatio. When user comes online, the application itself gathers the data and updates its database. The paper is organized as follows, we discussed a literature survey in section II, the architecture model in section III, the proposed system in section IV, organization of work in section V, implementation in section VI, results and discussion in section VII, conclusion in section VIII, future enhancement and reference follows.

1.2. Literature Survey

1) *List of this applications, which provides city informationduring online.*

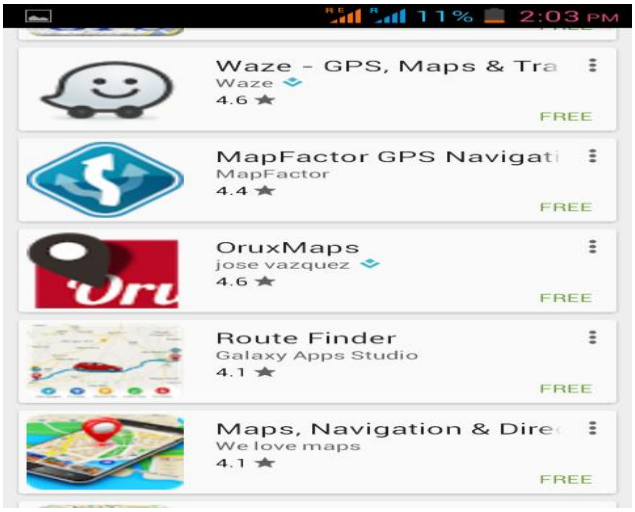

Fig 1: Apps to provide the location information online

2) *List of applications to provide location information during offline.*

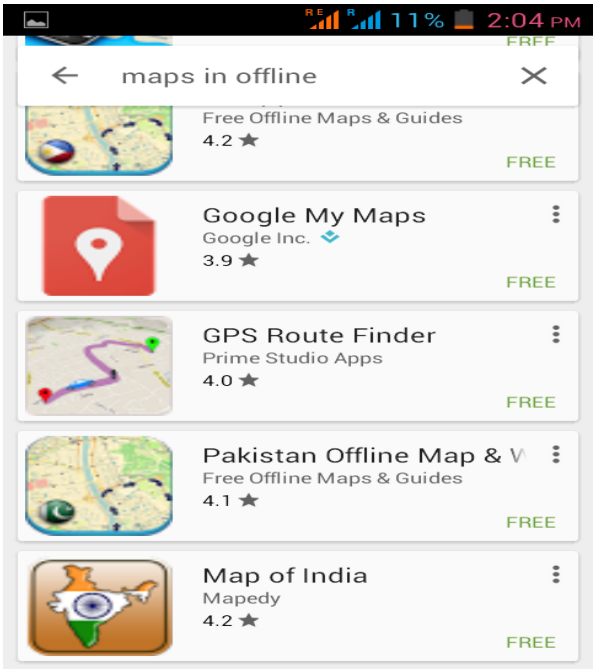

Fig 2: There are no proper apps to be used offline.

The Taiwan Network Information Center, Taiwan began to conduct an annual survey on the number of internet users in Taiwan in year 2002. It is clear that there is a high abd steady growth of mobile of mobile users, indicates users between the year 2006 - 2015. It is clearly seen that there is an high and steady growth of mobile users, including Wi-Fi and Mobile Net, in Taiwan as a consequence of web service promotions and high quality network infrastructure. More importantly, half of Taiwan's population are mobile network users. Hence, it becomes an issue of immediate concern to provide users with a wide variety of mobile with services in a highly efficicent and reliable manner. A statistical data analysis made by Taiwan Tourism Bureau indicaes the number of visitors to Taiwan grew rapidly from 3.4 million (2005) to 9.9 million (2014). Furthurmore, as many as 72.6% of visitors, that is 7.2 million, arrived for tourism. In recent time, there is sharp raise in demand of tourisms information as consequence of policies as Chinese of backpackers admitted to Taiwan. Accordingly, there is definitely need to develop alternatives to conventional mobile to guiding systems, such that easy-to-use interface on mobile devices is develop can take input data from smart phone camera and QR/Bar code reader; users cab then have easy access tour information of interest in a direct manner. A survey conducted by Neilson Company points out that high percentage of mobile shoppers take pictures of QR/Bar code when shopping online. This provides the development of easy-to-use city guiding systems.

2. Architecture model

Fig.3 depicts the system Architecture and flow of user and server and interconnection of the user, server and GPS It organized in a way that supports reasoning about the structure of system which compromises system components, the externally visible property of those components and relationships (e.g. the behavior) between them. Architecture as shown in Fig 3 represents the overall process of our proposed system.

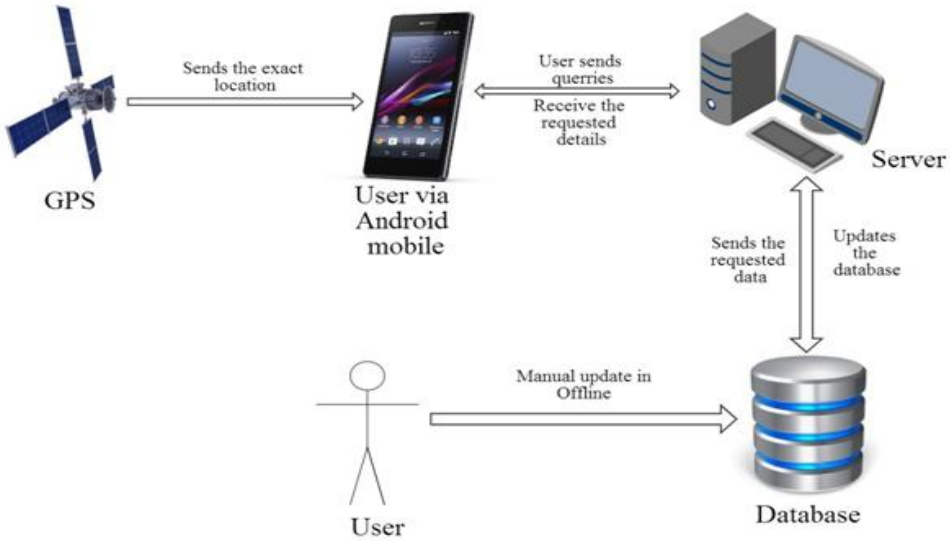

Fig. 3: System Architecture.

2.1 Proposed system

In the proposed system, providing a platform where user can do location search, updation and query search. In location search, the user to choose the area of interest. And the detailed information on this location would be provided on groups like Schools, Colleges, Banks, ATMs, Police Station, Taluk office, hospitals, Electronic shops, Railway station, Airport, Court and forth on. This follows data mining algorithm.

Updation module is to keep the system up to date. It collects the information when network in on and upgrades the application. This done on admin and user mode. User mode is applicable for every user and updation made by each user is not visible to other.

Admin mode is generalised mode where the changes done is propagated to all users. Query search module is to provide user a means of search when the desired location information is unlnown.

This acts like a normal google search that is user can provide the same seach keys as he uses in google search. This is for offline database. Search module follows the Steming algorithm. And detailed study of each module follows.

2.2 Advantage of proposed system:

- City information can be obtained during offline
- Application is updated when there is change in city information and this is done through frequent upgrades
- There is minimal use network as the data obtained during offline
- The database uses internal memory and of less space
- Related and relevant information is provided using the query search (keyword search)

3. Module description

There are 4 modules in this application listed as below.

- Server Modules
- Searching in Offline and Online using Ontology
- Add and Share location
- Updating offline database

3.1 Service module

This module mainly used to search the location of a particular place in online from our server. The user can able to download the location to the local database using the server. Here MYSQL is used.

3.2. Searching in offline and online using ontology

In this module user can search location in online and in offline mode. The current location of the user can be obtained using indoor tracking technique and dead reckoning technique.

Indoor tracking is a network of device used to wirelessly(WIFI,GPS) locate the user's current location, who is located inside the building. Dead reckoning is a process that is designed to estimate current location based on previously determined location.

3.3 Add and share location

In this module the user can be able to add location details of particular place to the server using data offloading method. Data offloading method used to deliver the original data's to the targeted server from mobile device. After adding the location to server, server share location to other user who is all using this application.

3.4 Updating offline database

In our application we are using SQ Lite as a offline database. The user gets the data from the centralized server and data will be send to the SQ Lite. In this module the user can be able to update the location details from the server to the offline database.

4. Experimental Results

The proposed system is implemented with Pentium IV 2.4 GHz, the RAM used as 512 GB, the Hard Disk used as 40 GB, the Mobile Device is used an Smart Phones. The software used is Eclipse kepler IDE, the Back End is used as SQL YOG and MYSQL database**,** the Operating system is Windows7, coding language JAVA and Android. Input design is process of converting User- originated inputs to a computer based format.

Input Design is one of most expensive phase of the operation of computerized system and is often the major problem of a system. Application takes internal database information, GPS data during online. Frequent database updates happens during application upgrade.

Output Design generally refers to the result and information that are generated by the system from any end users, output is the main reason for developing system and the basis on which evaluate the usefulness of the application. The output designed in such a way, that is attractive, convenient and informative.

Services designed in Java with various features which make the web page output more pleasing and the client is designed using XML. As the outputs are most important sources of information to users, better design should improve the system's relationships with us and also will help in decision making.

4.1 Results and discussion

The final outcome page consists of the followings.

Location search: This page provide user name and password this is the start up page for this application.

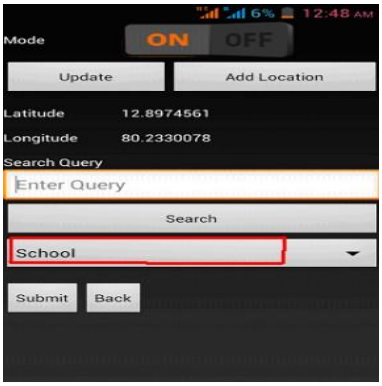

Fig.4: online mode search

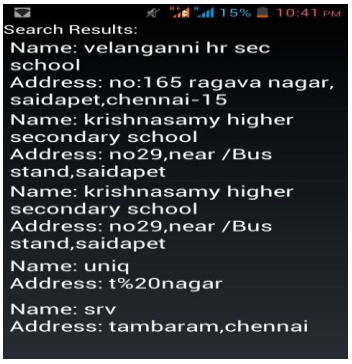

Fig.5: Location search for hospital list in Chennai

Fig.4 depicts the selection of online mode. Lets find the list of hospitals in location search. And below is the output.

Fig.5. provides the list of hospitals in Chennai city. Upon selecting the hospital the app displays the path between user current location and hospital using google maps.

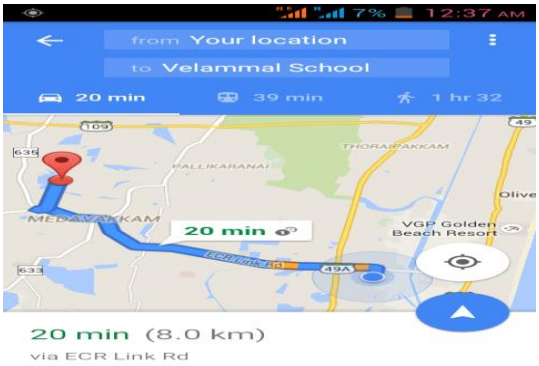

Fig.6: Location search providing path between user current location and selected hospital location.

Add and share location : The add and share module provides a means for user to add city information in their own local database that is every user data is unavailable for other user.

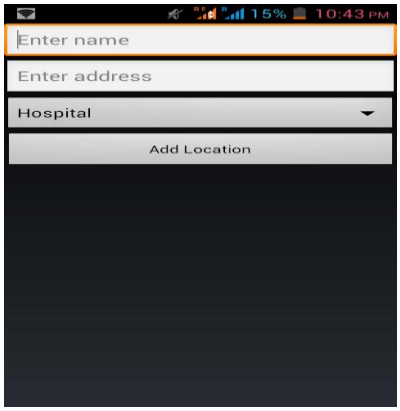

Fig.7: Add and share

Fig.8: Residency Screen before add and share screen

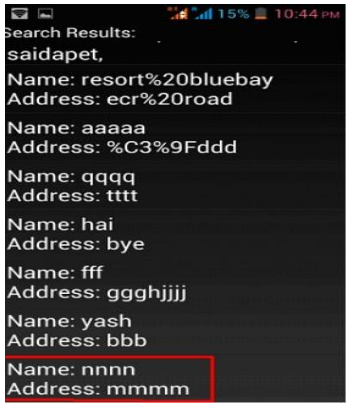

Fig.9: Residency screen after adding “nnnn” of location

User has to enter the name and address of the recidency in respective text boxes. Latest data for location search screen. User enters name of residency as “nnnn” and address as “mmmm” as shown in below fig9.

Query search : Query lets the user to search the information by providing the search keywords. User has to provide the search keyword in the highlighted textbox as in Fig.11.

Fig.10: Query search screen

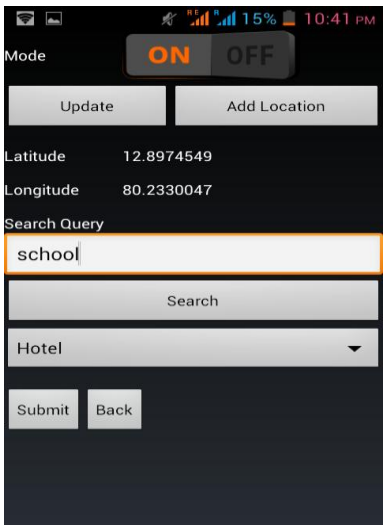

Fig.11: Search key “School”

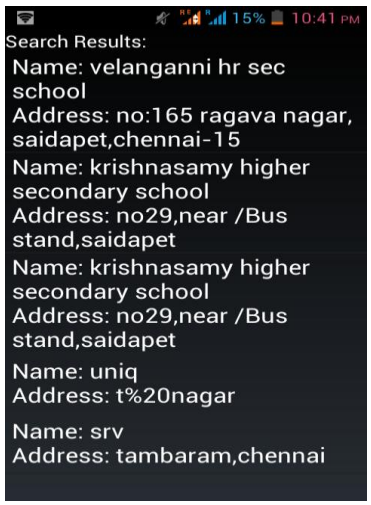

Fig.12: Output screen of “School” search

Figure 10 and 11 shows the query interface. Here user has provided the exact keyword. The matched details are shown in figure 12.

5. Conclusion

The core component of this map is a location management scheme that provides offline and online location information in everyday lives. Each user searches his/her own location in map incrementally with a help of centralized server and a local server. We minimize energy consuption of a device by using a minimum set of sensors based on user activity. User privacy was also considered by designing a decentralized system.

Our belief is that the proposed approach complements current localization technology, taking an important step to expand the domain of mobile services to indoor environments in daily lives. Although focuses on the major source of user context (i.e., location), we believe that our approach is building block toward a sophisticated system that provide various user context, including both location and situation. In future, this work can be extended for users based on voice search.

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