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Mobile user location Prediction in cellular network using Agent Technique

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Abstract— In mobile computing to determine the future location of Mobile user movement is used to manage communication and to provide the Quality of location based services. Mobile computing surroundings are considered by wireless links are not faster and comparatively below privileged hosts are battery powers were inadequate , inclined to frequent interruptions. Mobile hosts (MHs) caching a data in a wireless network helps to slove the problems related with slow, inadequate bandwidth wireless links, by plummeting preserving bandwidth. Battery power is preserved by plummeting the number of up-link requests. There are some problems due to incomplete wireless communication, partial client source, suspension of client and unobstructed mobility. So it is problematic to uphold the data cache and pre-fetch in mobile computing. Three key techniques, namely, FLA (Future Location Agent), PLA (Preceding Location agent) and CLA (Contemporary Location agent) have been designed and proposed the future mobile user location using the user movement history. These methods use log and thread harmonization Classical for data caching and prefetching conservation in site founded queries .This method consequences in abridged server workload saving of wireless bandwidth and abridged network traffic.

Keywords—mobile computing , Datacache , mobile cache , mobile agent

I. INTRODUCTION

The client appeal enquiry for data and invited data are directed to the server. The server answers data to the close clients and set the record on the server to pathway the client movement. In the client cache there are three Agents, namely, FLA, PLA and CLA are preserved as shown in (Figure 1). These uphold the cache dependability, upsurge the native cache hit ratio and avoid each appeal presence directed to the server subsequent in network traffic flow decrease.

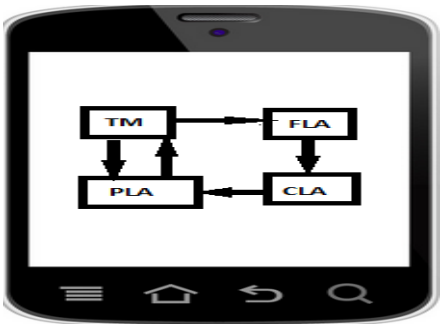

Figure 1. Architecture for Location based system

TM= Thread Manager/Thread supervisor
FLA = Future location Agent
PLA = Preceding Location Agent
CLA = Contemporary Location Agent

Table 1: Components of Location Based System and their function

Component	Server	Client
FLA (Future location Agent)	The server directs the two base station data to the client	The client attends for reply for two base station data save in FLA and saves pathway on future location for mobile host movement
PLA (Preceding Location Agent)	The server directs the contemporary base station ID	The client attends for the ID of the contemporary base station, the client thread supervisor directs the present base station data to the preceding location agent
CLA (Contemporary Location Agent)	The server directs the contemporary base station ID/after a appeal from client to send the	The client attends for the ID of the contemporary base station, client thread supervisor get the contemporary base station data from Future location

	contemporary base station information	Agent/severs/another node

Future location Agent (FLA)
Client Future location Agent attends to the server transfer the adjacent place to the base station data like bistro, traveller place, etc. After getting the demanded data, client thread supervisor saves the data in FLA and saves pathway on future location for mobile host movement.

Preceding Location Agent (PLA)
Client thread supervisor attends to the server transfer the contemporary base station ID, the thread supervisor compares with present base station ID, if it is not valid ID and sends present data to the preceding location Agent for upcoming use.

Contemporary Location Agent (CLA)
The client attends for the ID of the contemporary base station from the server, client thread supervisor acquires the contemporary base station data from Future location Agent and saves the data in the contemporary location agent.

II.EXPLANATION OF TECHNIQUES

Display the stages elaborate in the planned procedure. Mobile user history stores in LBS server. Whenever Mobile user gives the input as a source to destination to the server . The server checks the user history and fixed the path by the mobile user frequently the used same path as shown in table 2 . Server yields the track to a mobile client and client record is modernized to specify whether the data is usable or not. The server transmissions new base station ID and if client wants harmonizes starts with the Thread Supervisor of the client to style cache data object consistent. The client thread supervisor verify the transmission base station ID with base station ID in contemporary location Agent, it is usable leftovers same. Then CLA data sends to PLA (preceding location Agent). Future Location Agent verify with base station ID, if same it store the data in CLA, If not, Harmonize with the server to style mobile client cache as usable data object.

III SCREEN SHOT OF MOBILE OUTPUT SCREEN

Display potshot of mobile shelter with exploration box is shown in Figures. Display potshot for user go in the source and destination exploration is shown in Figures 2 . The agent directs the source and destination to the server , the server verify the user past , set the pathway and show to the mobile user shown in figure 3 , figure 4 and figure 5 . The mobile user displays to enter the data for the search as shown figure 6 and figure 7. The mobile user enters hotel data. The agent verify for the hotel appeal in contemporary location in the native cache. If the demanded data is obtainable in the native cache,it will be showed, then it will be dispatched to the server and the reply is conventional and saved in the native cache for the upcoming use (figure 8, figure 9 ,figure 10 ,figure 11 figure 12 and figure 13). Mobile shows the server restate with tilt of hotels and the user wants the report (Figures.14). The agent directs the appeal to the server, for which the server replies by showing the report and site using Google map in mobile (Figure 14 and figure 15). Another example, as shown in user enters the appeal for the tilt of temples in the contemporary location (Figures.16 and figure 17). The user appeal is verifed with a native cache. If obtainable in the native cache, list of temples gets showed. The user wants the report of the particular temple.Agent verify in the native cache and shows with site using Google map (Figures.18 , figure 19 and figure 20).

Table 2: Mobile user history

Person ID	Date	Cell tower id	Name place	Packet description	Same path set flag
42	23-1-2017	C1, c2, c4 c6	Singalanoor, ramnagar , saibaba, marthimalai	About shopping placess	**Set path**
42	23-1-2017	C6, c4,c2,c1	Marthmalai, Ramnagar Saibaba, singalanoor	About shopping places	**Set path**
42	24-1-2017	C1, c3 c5, c6	Singalanoor, Vadavaali Marthamali		Not path
42	25-1-2017	C6, c4,c2,c1	Marthmalai, Ramnagar Saibaba, singalanoor	About shopping placess	**Set path**

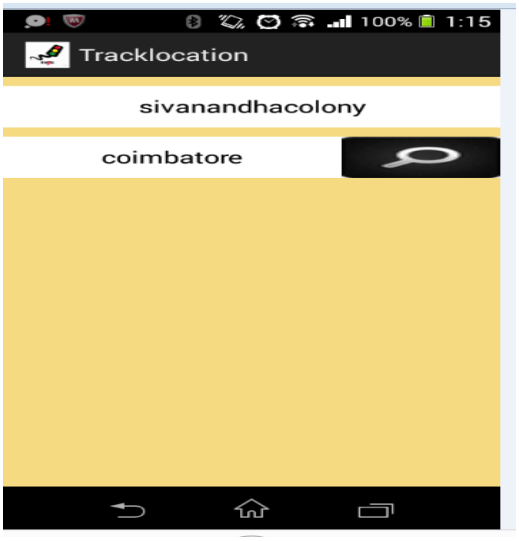

Figure 2: Mobile User

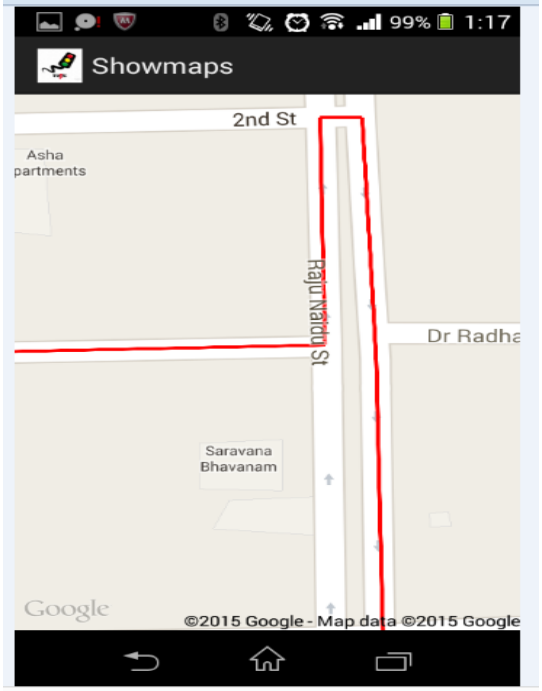

Figure 3 : set the path

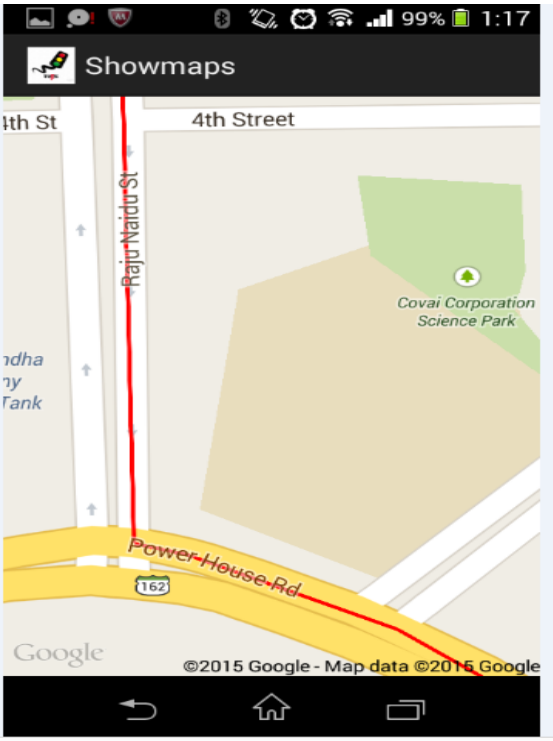

Figure 4. Display path

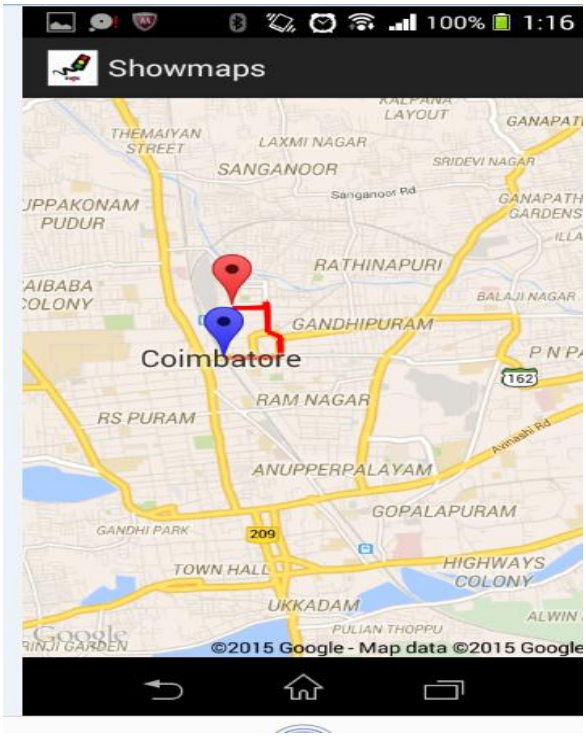

Figure 5: display source and destination

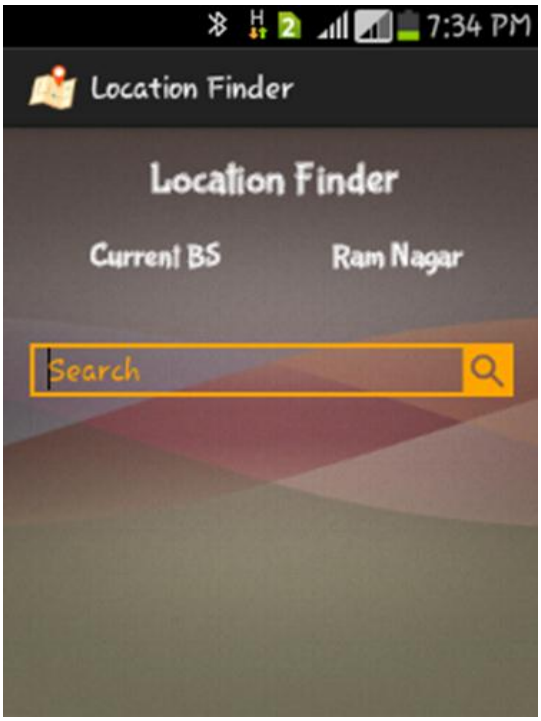

Figure 6: Mobile User

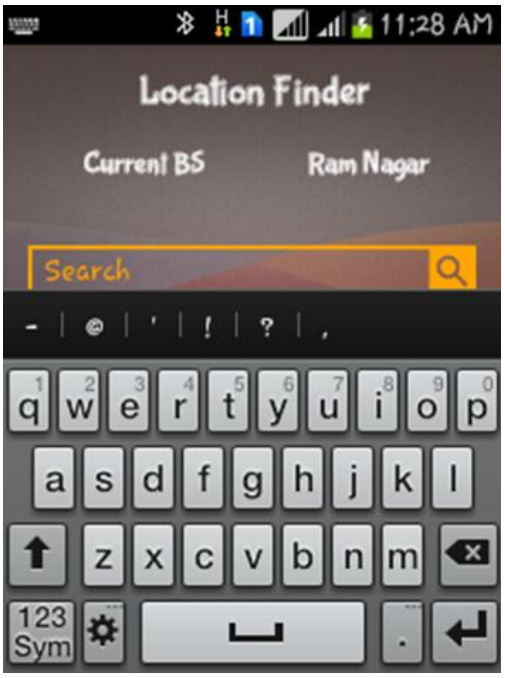

Figure 7: Demand Search

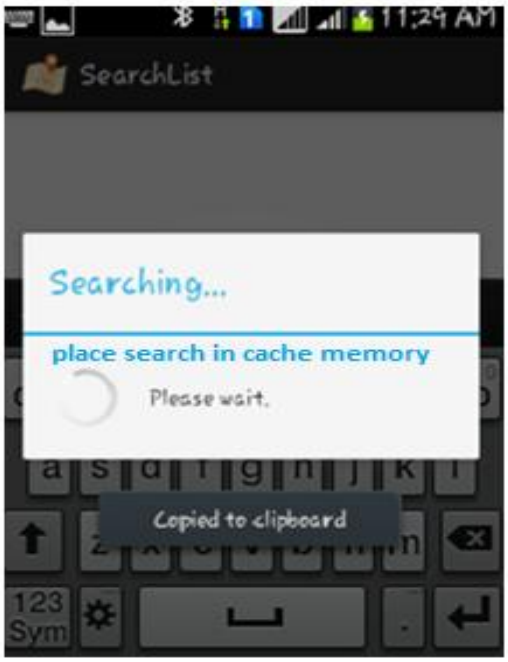

Figure 9: Location Searcher

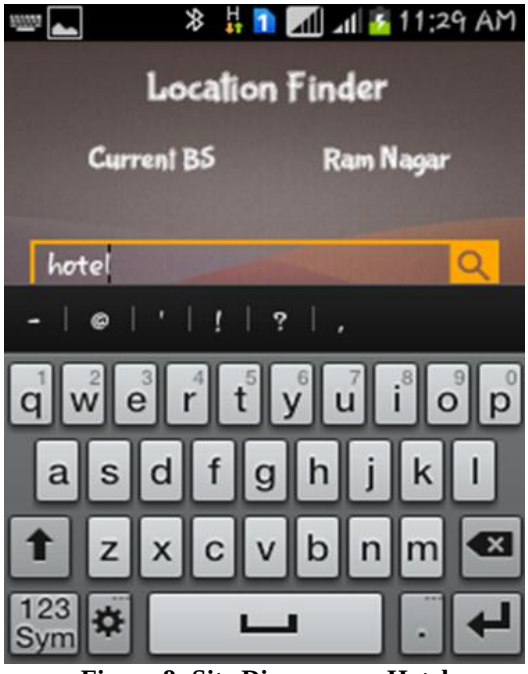

Figure 8: Site Discoverer - Hotel

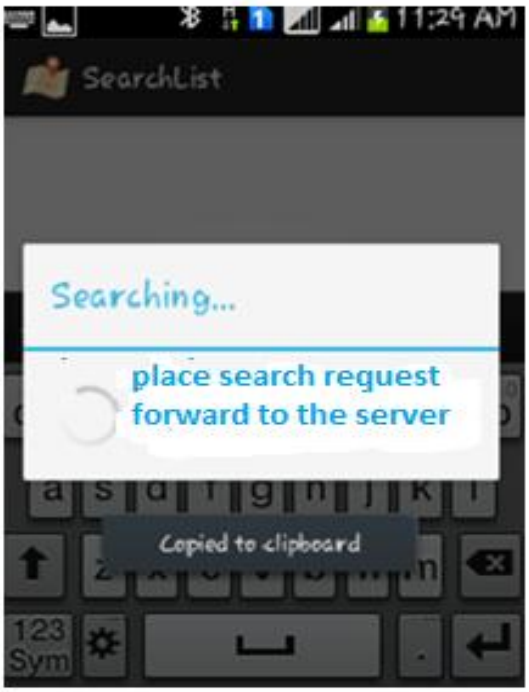

Figure 10 : Server Query

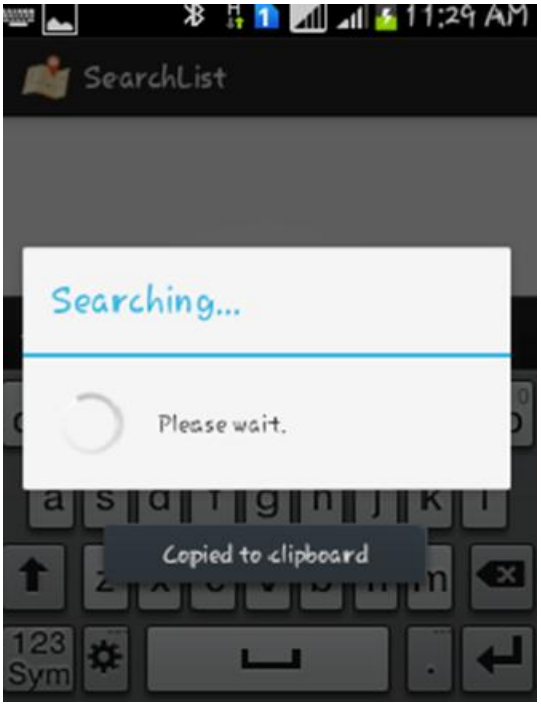

Figure 11: Server Reply

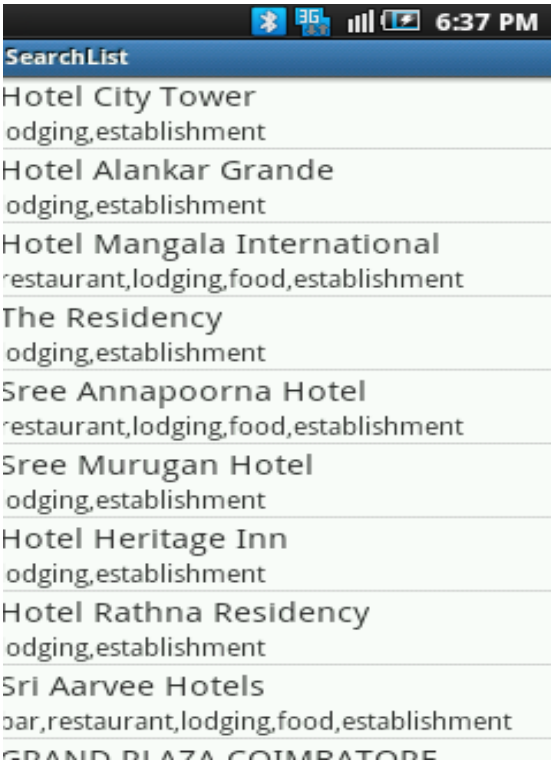

Figure 12: Exploration Outcome

Figure 13: Site Outcome

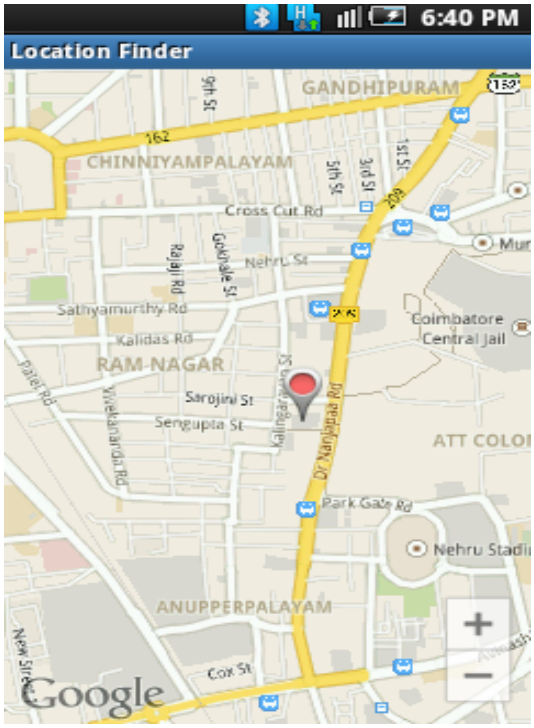

Figure 14 :Google Map

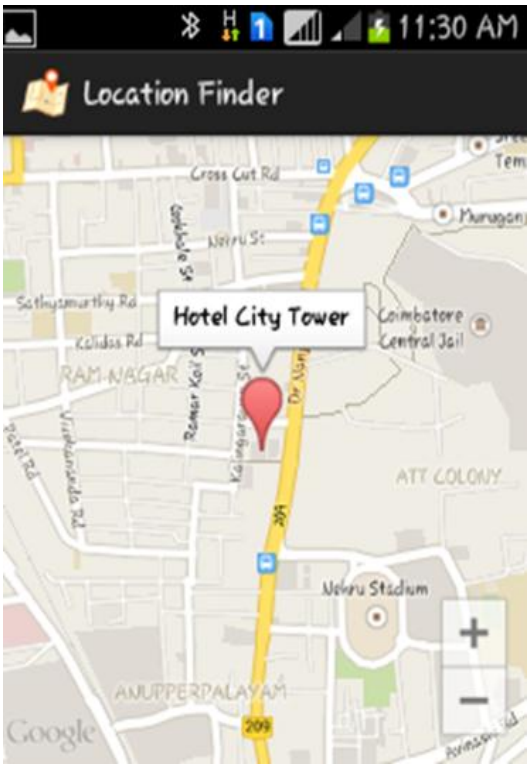

Figure 15 : Site Show in Map

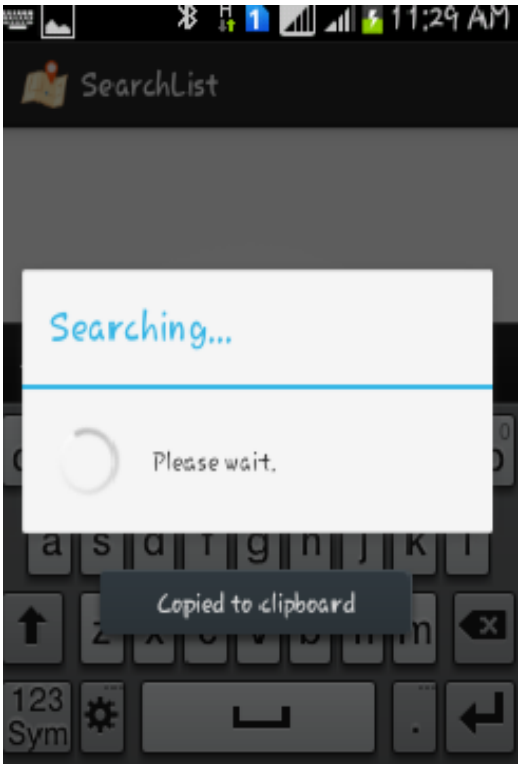

Figure 17: Native Cache Exploration

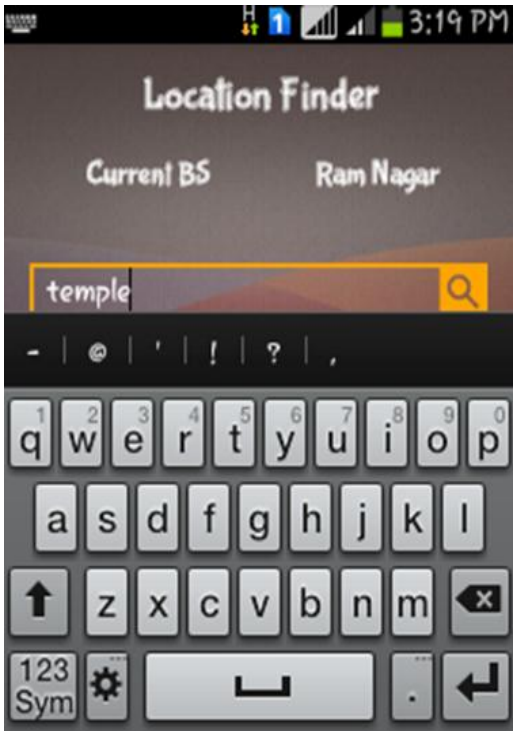

Figure 16: Site Discoverer - Temple

Figure 18: Data Cache

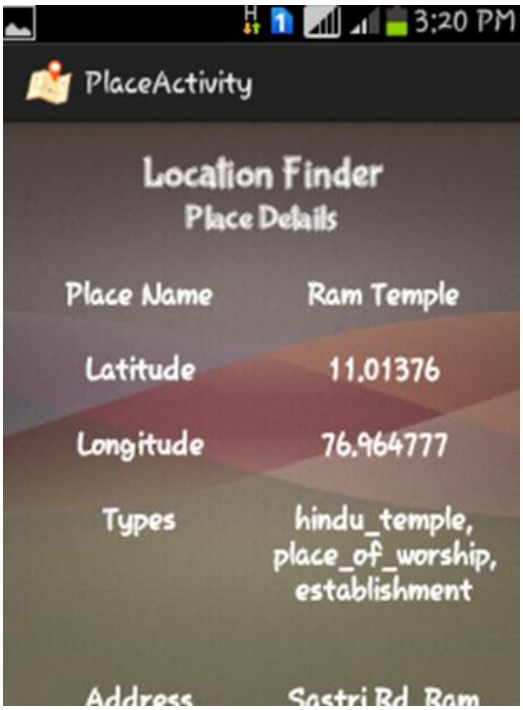

Figure 19: Data Display

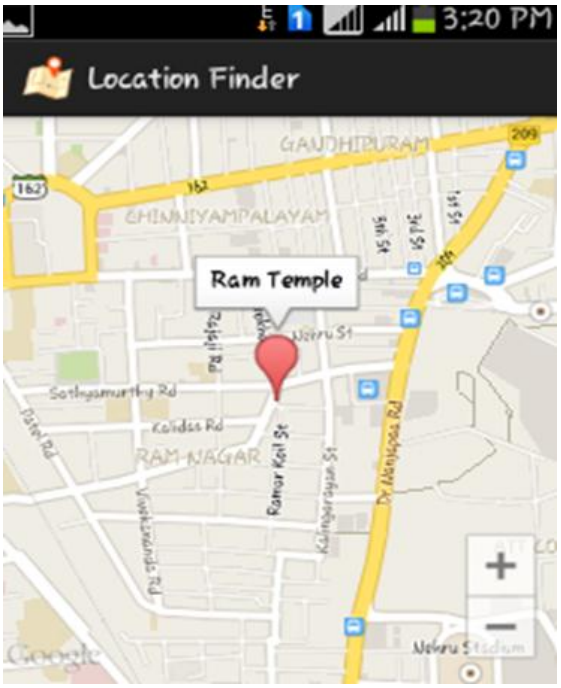

Figure 20: Place Site Show

IV. CONCLUSION

In this paper, projected a new method agent model for data caching and perfecting maintenance for location based quires. We designed a new method to Mobile user location Prediction in cellular network using Agent Technique. This method decreases load effort in the server and wireless bandwidth are saved, increase hit ratio in native cache, avoiding each demand direct to the server so the network traffic flow decreases.

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