

Medicine Availability Search System

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Abstract: Nowadays everyone is using smartphones and it has become an important part of their daily life. During medical emergencies, the patient or the relative of the patient faces problem in getting the availability of nearby medical store with the required medicine, our work is proposing a solution to that. As there is need to do search for the recommended medicine available in the nearest medical store along with the real time and location in case of medical emergency, we proposed a system which will provide the user with both of this information on their smartphone. In order to improve the search of the medicine, an algorithm is proposed, which gives the result at a faster rate. The proposed system provide web interface for pharmacist to access medicine related data from the remote server database. This accessibility of the remote server database have been provided to both user and pharmacist.

Keywords: Smartphone, server, web interface, database, GPS.

I. INTRODUCTION

The introduction of mobile computing devices which is followed by smartphones and tablet computers has greatly impacted many fields, including medicine. In today's world, not able to find a pharmacy in the shortest time and at the exact moment of needing a medicine can be considered a serious problem. Smartphones and tablets combine both computing and communication features in a single device that can be held in a hand or stored in a pocket, allowing easy access and use at the point of care. In addition to voice and text, new mobile device models offer more advanced features, such as web searching, global positioning systems (GPS), high-quality cameras, and sound recorders. With these features, as well as powerful processors and operating systems, large memories, and high-resolution screens, mobile devices have essentially become handheld computers.

Advancements in technology have always had major impacts in medicine. Medicine is integral part of the health care and the modern health care is unthinkable without the availability of necessary medicine. They not only save lives and promote health, but prevent epidemics and diseases and illness. But problem of medicine availability in nearest store arises many times and people need to roam for a single medicine to get it. For example suppose a person has went to trip after going there that person is suffering from a health problem and the person don't know anything about that particular area. The person knows which particular medicine he need to take, now the problem arise is from which medical store he can get that medicine in that area. He need to go to every medical store in that area which will take lot of time and no guaranty that he will get the medicine.

This kind of situations are faced by the people in their life. In this situations the proposed work will help them in solving their problem. It will show the medical store details having availability of the required medicine. Because medicine plays an important role in treating certain conditions and diseases, but they may be taken with care and on time. Many time medical emergency happens, so the availability is important.

The rest of the paper is organized as follows: In Section II of this paper a discussion about related works is included. The other existing systems are discussed here. Then we move on to Section III that include the discussion about proposed work that is about medicine availability search system which contains software architecture, module description and search algorithm. Next comes Section IV that includes the results and discussion about implementation of the system with application and comparison with earlier work. Then finally the Section V concludes the paper.

II. RELATED WORK

The work by Annu Anna Lal [1], describes most of the Medical search engines were found limited in information Retrieval due to vocabulary mismatch. In their paper the authors, proposed a novel model in-order to expand the user interaction so as to get improved search results.

Some of the android applications are made to provide the medical service as online ordering of medicine. The work by Rajat Chaudhary et al [2], described Netmed is an app that allows you to browse for medicines and order them online using your smartphone. Along with browsing the medicines, you are able to view substitutes and provide the ability to ask a pharmacist about the medicine related doubt, but limited to certain cities in India.

The work done in iMed-S [3] is another application that allows you to just browse for medicines and their alternatives easily. It does not allow you to order the medicines online or talk to any expert. This application is helpful when you just need to find alternatives to a certain medicine, but does not give enough information about medicines.

The work done in 1mg – Health App for India [4] is an interesting device app that is built by HealthKart [6] to allow users to perform a lot of app tasks from within the app. The app allows you to search and buy medicines, along with finding doctors nearby or booking a lab test. Apart from all this, it also allows you to reorder medicines that you've ordered before and set reminders for eating your medicines on time. It also has an articles section where you can find a lot of articles related to health and medicine.

CareOnGo – Your Medicine Store (Android) [3], this app allows you to care for yourself on the go by getting information about medicines, along with their prices. The app also provides Frequently Asked Questions (FAQs) and Substitutes for all the medicines that they offer. They also allow you to upload your prescription by taking a picture and then sending it to their server.

All of the above mention android application allows us for online medicine ordering and suggest substitute if required medicine is not available but they don't give the information about location of medical store in the current area.

III. PROPOSED WORK

The existing system iMed suggest the medicine but it takes time because it start by asking questions form symptoms and at last it suggest the medicine but not location. The main idea is to make the availability of medicine by simply entering the name of the medicine, by manually selecting the location or by using GPS location search.

The proposed approach is totally based on the availability of the medicines. The customer or user will start the application and after that he or she will select the particular location to find out a medical stores and different types of medicines which is not available in each and every store as per the location entry the application will show and give the information about medical stores and medicines. If the user don't know about the place or you can say that user is unaware about the location so that application has a module of GPS location tracking that module use to find out user location. The GPS will easily find out the customer location and as per the entered location the details of medical stores and medicines will be display.

A) Software Architecture:

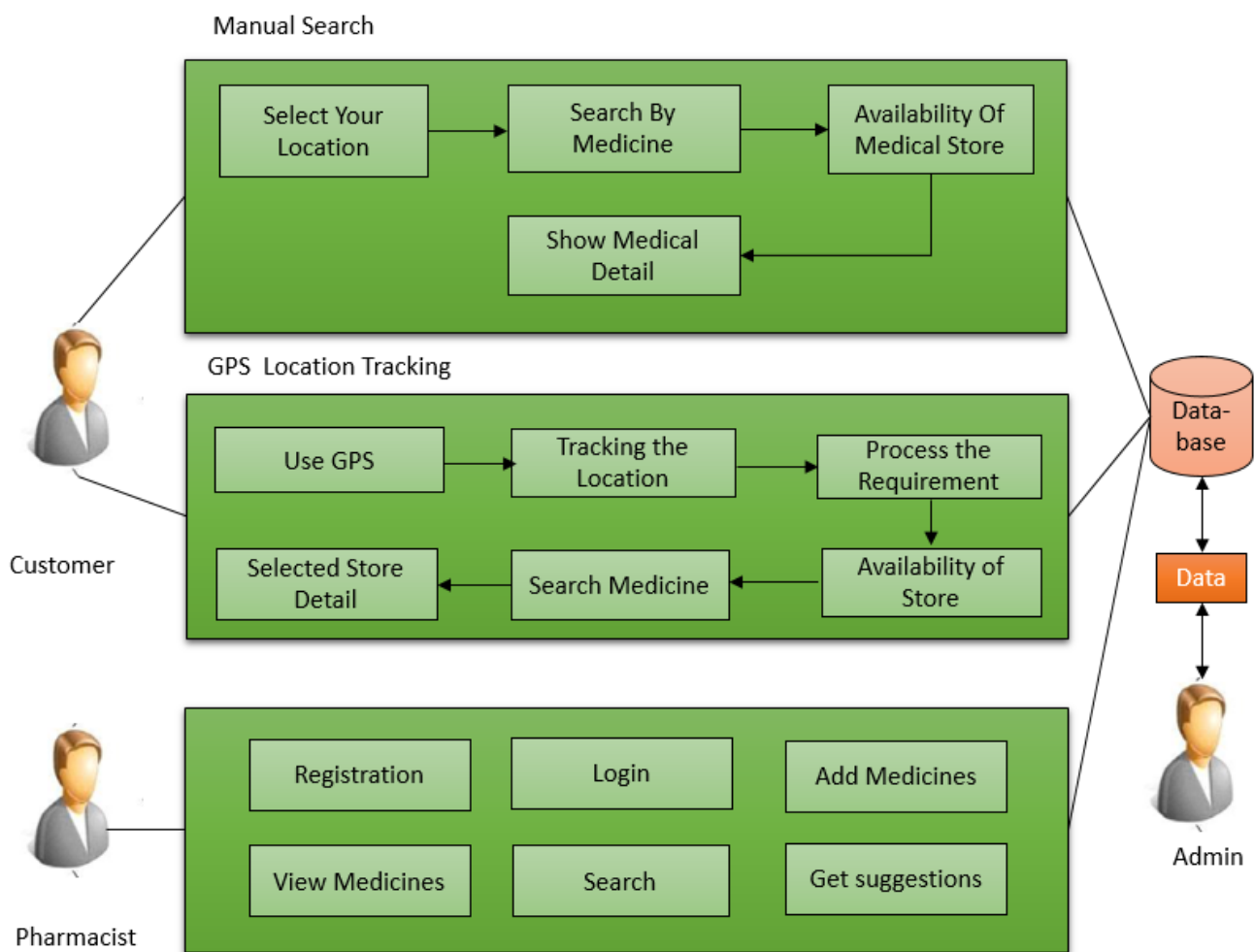


Fig.1 Software Architecture

B) Module Description:

The System contains the following modules:

1. User:

- a) Customer: In this module the customer searches for medical store by entering the location and medicine name. As a result the location of the medical store can get from the manual location search or GPS location tracking.
- b) Administrator: Administrator will be differentiated from other normal users by providing a username and password. Administrator will have the rights to enter or insert new search related data into the site. Admin can maintain the registered pharmacist list and able to delete any account if it found illegal.
- c) Pharmacist: All the details related to medical stores, their locations, their highlights will be provided by pharmacist in pharmacist module. This module maintains every information present in the system through a centralized database. The pharmacist can add, Update, and delete the medicine data also can see the data entered by him/her through View Medicines, can

search for medicine in their account, can change the status of medicine whether Active or In-Active, and also can get suggestions from customer.

2. Search:

This module provide the facility for performing the manual search & by using GPS location tracking approach

- Manual location Search: The customer or user will login the application and select the particular location to find-out the medical stores. The user will enter the medicine name and check whether the medicine are available in that medical store or not.
- GPS Location Tracking: The user only select a GPS module that module automatically track the location of the customer and store the location into the system database and as per the location the application gives the information of medical stores address & contact, and also the medicines.

3. Registration: This is the module where various registrations will take place. The registration for pharmacist and administration. The registration details are stored in database.

4. Login: By this Form user will login into this system by passing user credentials like Username and Password. This login module includes the pharmacist login and admin login. Login provides security to the application.

C) The Database Schema

D=(id, medical_store_name, medical_store_address, location, medicine_name)

D) Search Algorithm:

Input: medicine_name, location, Database D;

Output: medical_store_name, medical_store_address.

Step1: Start

Step2: Enter location, medicine_name.

Step3: Retrieve the information from database D.

Step4: for each entry in database in D

Fori ∈ all entry

if (location= =D[i].location && medicine_name==D[i].medicine_name)

then

return medical_store_name, medical_store address.

else

Medicine not found.

End

End

Step5: Stop

IV. RESULT AND DISCUSSION:

The implementation of web application which acts as a server and pharmacist registration is done here in the following way:



Fig.2: Homepage of Medicare

The login and registration of the pharmacist is done here, where after login the pharmacist will get options as My Profile: Pharmacist can see the profile data given at registration time such as name, medical store name, license number, email id, phone number, address, and have facility to update profile. Add medicines: Pharmacist can add medicine available in their store. View Medicine: pharmacist can see the added medicines and facility to edit and delete, Search medicine: pharmacist can search the

medicine by simply entering the single keyword, Suggestion Box: here pharmacist get the suggestion from the user, Logout. The admin has provided the login after which the admin can check how many store are registered with this and have right to delete any store in the list if it found unethical. Forgot Password is provided for password recovery where after giving email Id pharmacist need to enter new password and confirm password field and the password get recovered. User Search is provided for the normal user for medical store search in particular area.

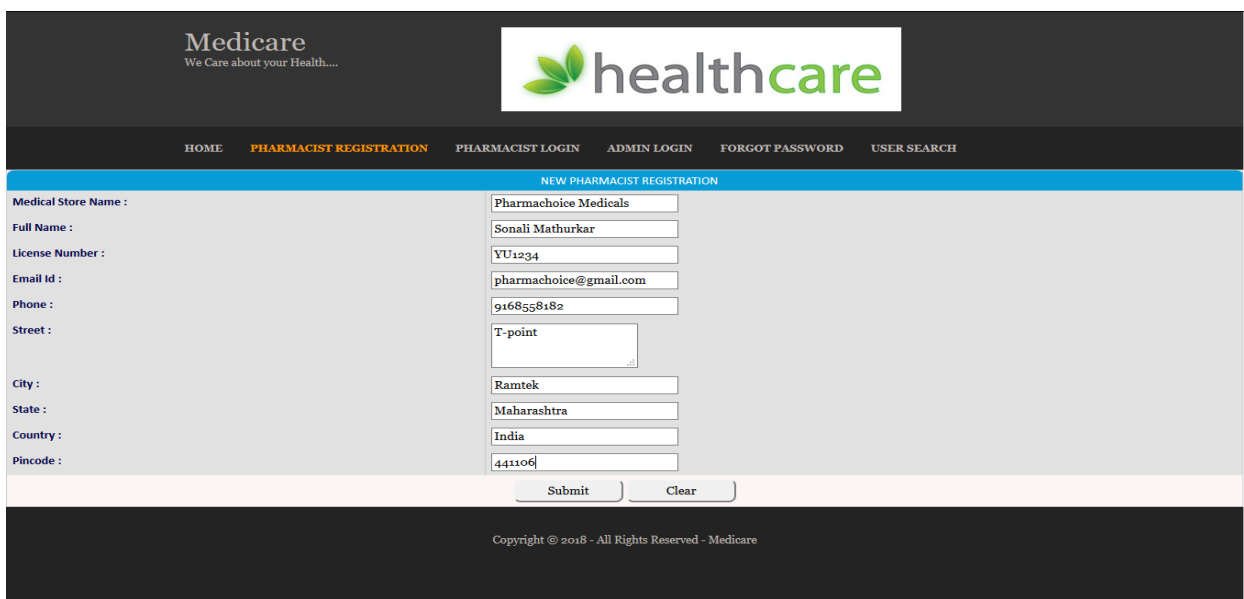


Fig.3: Pharmacist Registration

The figure 4 shows the android application of Medicare, where the figure.4(a) shows the Area Name, City Name, and Medicine name. On clicking the search button they will get the address of medical store where they get their required medicine. If the user don't know about the place or you can say that user is unaware about the location so that application has a module of GPS location tracking that module use to find out location. The GPS will easily find out the customer location and as per the entered location the details of medical stores and medicines will be display as shown in figure.4 (b).

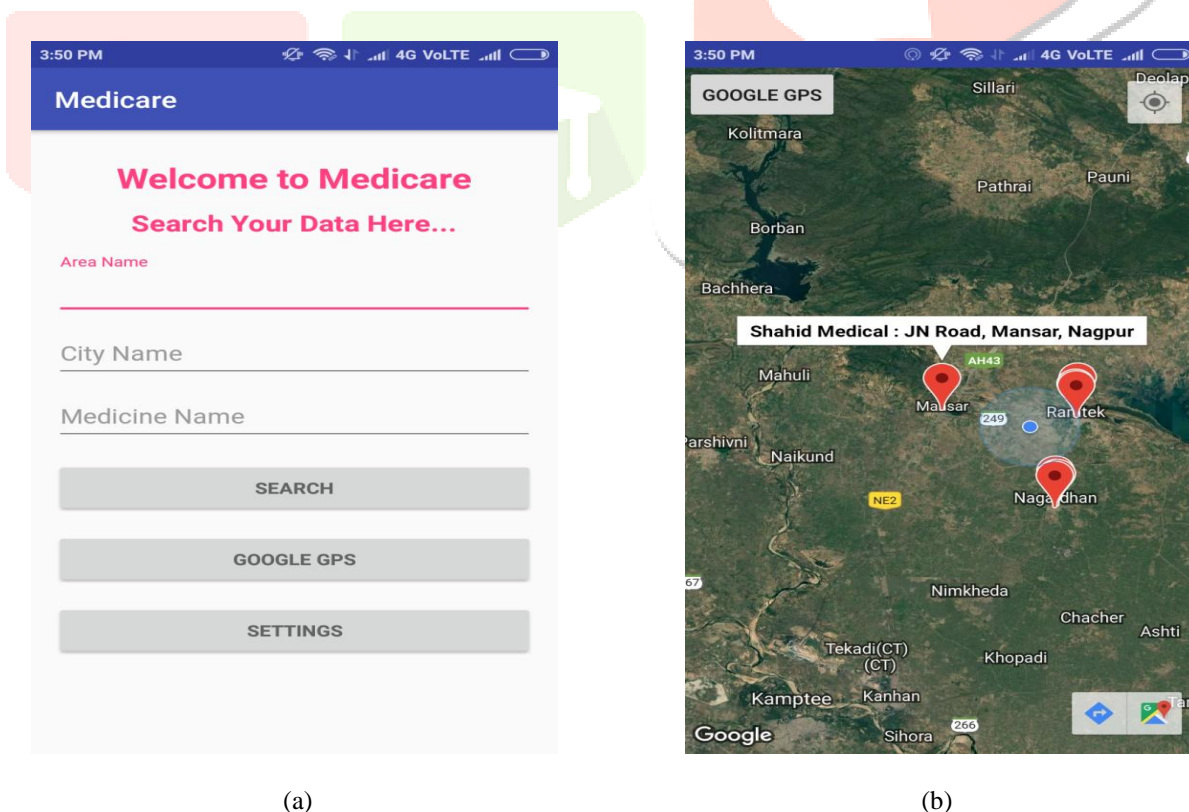


Fig.4: Android application for Medicare (a)Manual Search,(b)GPS search

A) Applications:

The following are the applications:

- User can access it on smartphones.
- It will help pharmacist to maintain their data remotely. This means it will eliminate unnecessary travelling, or work from their remote device while pharmacist is out of the pharmacy.

- Pharmacist can sale their medicines easily.

B) Comparison with earlier work:

Table 1: Comparison of MediCare with earlier work

	lmg – Health App	iMed	Medicare
Accessibility	Registered user	Any user	Any user
Application Type	Website and mobile application	Web application	Website and Android application
Search for Medicine Availability	yes	No	Yes
GPS Tracking	No	No	Yes
Medical Store Address	No	No	Yes
Algorithm	-----	Boyers Moore Horse Pool	User Define
Search By Medicine Name	yes	No	Yes
Search by symptoms	No	Yes	No
Pharmacy Record	Yes	No	Yes
Time Consumption	More	More	Less
Suggestion box	No	No	Yes
Medicine Ordering	Yes	No	No
Medicine Substitutes	Yes	Yes	No
Health Information	Yes	No	No

V. CONCLUSION

As getting medicine during emergency at the earliest is essential for the survival of a patient getting the information about the nearest medical store having required medicine availability have permanent importance.

The proposed approach used in our tool improves the searching by nearby medical store based on manual and GPS tracking.

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