**Problem Identified:**

In our daily life the involvement of GPS is increasing rapidly and smart phones are the fine doors towards this innovation which was once just a fantasy. But everyone cannot acquire a smart phone so easily because of so many constraints. This is the major barrier when it’s important to acquire the location of a person. It’s very difficult to get usable location information when user uses a low end mobile phone.

It is pretty clear that in health sector, a huge number of problems can be solved very easily if the valid location information is available to the respective authorities. This way we can not only prevent the outbreaks of certain deadly diseases but can also save many other lives that unknowingly shift themselves towards diseases.

**Solution:**

Keeping all the limitation in mind we started exploring the solutions and found out that the coordinate information can be extracted from the address. This way a person who doesn’t own a very high end smart phone and have no GPS can still help in building the location based information, can report their problems and can seek for help which will eventually be very easy to provide since now the approximate location will be available.

By using the SMS as the medium of information health authorities can now acquire the approximate location of any person and can build the location aware management system which will not only be capable of responding to the problems very quickly but will be able to predict the upcoming problems before time and can prepare for them.

We designed a SMS server that can receive and send text messages automatically and can acquire the required information by parsing the contents and by converting the physical addresses into latitude and longitude by geo tagging. This information, combined with other useful information is then stored into a server from where a system analyses it and can generates appropriate alert for respective teams so that they can perceive the problem before time.

Another application of this system is that if a person sends a text message which indicates some disease including the address of that person, the system can then locate the closest hospitals and doctors and sends back the addresses and contacts to the person via SMS.

This problem is solved with the help of patients address, by this we can easily analysis that which disease is most common in society.

**Features:**

* By sending physical address via SMS from any person over the country the system tries to convert it into Latitude and Longitude and makes it possible to plot the information on a map.
* If unable to convert the information into precise location, it generalizes the information and plot it based on proximity.
* Doctors can be registered in the system and can store information i.e. location, name, CNIC, contact no and disease of any patient by just sending this information via SMS.
* Any person can send a text message and report a disease. Based on the knowledge built up by the system it can respond automatically and provides the information related to nearest doctors and hospitals.
* Can track the spread of any disease in any particular radius and automatically generates alerts for respective authorities.
* Anyone can see the information built up by system online on a map.
* The identities stay anonymous for any unauthorized person.
* On every reception of SMS, server will reply with response SMS that the data has been saved successfully or not and also sends a unique marker id.

**Future Work:**

* Can generate alerts based on predefined roles in case a particular disease crosses a certain threshold.
* If a person registers a disease system will be able to identify nearest medical stores and will be able to prescribe medicine for common diseases.
* Cost will also be able to monitor this way and system will be able to tell the prices to the patients as well.
* System can be integrated with SMS based traffic congestion on different routes and can share this information with patients so they can use a different route to reach hospitals quickly.
* In case of an emergency report system can act as a dispatch unit for ambulance and can direct them to an approximate location which can save the critical minutes.

**SERVER END**

**Extracting Information**

**Replaces Address to Latitude and Longitude using Geocoding**

**Database**

**Web Server**

**SMS Parsing**

**SMS Server** (Running State)

**Google Map Extract the latitude and longitude from database and marked the place**

**USER END**

**WEB Page**

**Login**

Admin

**Show Google Maps with all information**

**Add new Doctor**

**Change Map Settings**

**Dashboard**

GUEST

**Show Google Map with only allowed marked places**

Doctor

Admin

**Show Google Maps with all information**

**Application Work**

**GET the Unique ID from the user**

Until Exit

**If OK**

NO

YES

**Server reply OK or NOT**

**Display Input Form to collect data about the patient**

**Send the data to Server**

**Send ID to Server using SMS**