



EPIC WATCH

Introduction

In our world today various reasons makes it impossible for us to leave apart. People in the cities, due to the fact that we want to reduce our cost and the world famous discussions in today's life “Climate change” we are bound to come together or meet some body in a day (In a bus, train, at work or various meeting places). For those of us who stays in the villages for the obvious reason poverty allow us always to be close to each other, either by asking for help or sharing the same facilities. This means that whatever you are or whoever you are, we are confronted with one common enemy, being a victim to the spread of epidemic. The multimillion question is “should we leave in this world with fear?”

As a solution we proposed a system that can gather consistent, accurate and up-to-date data about various symptoms in our locality which can help in determining and declaring an area as epidemic so that adequate measures can be taken against it. There by we can take away our fear since we have not found any planet that we can leave apart. Various symptoms allows for the determine and declaring of an epidemic in an area, this means that prompt and fast access to these symptoms will help in reducing the risk of spreading this diseases, thereby reducing the spread of epidemic in an area.

Most of these diseases are airborne or spread by other agents, having data for expert to analysis might have slow for the spread of cholera in Haiti in 2010 or Swine flu in USA in 2010, just to mention a few. In the 2010 cholera outbreak in Haiti over 1500 people were affected in a day and more than 135 people died in that day. This tell us that having a system that can compare symptoms of diseases, since most of these diseases have two or more common symptoms and trigger an alarm for us to take immediate action is inevitable in our world today.

It is in view of this that we have developed Epic Watch that will capture, analysis and process data based on threshold to declare an area as epidemic so it will help to save life's in any part of the world.

Use Case

Mainly there are 2 users who use our system: the representative who enters the details of the person who is suffering from disease - the doctor who handles the situation and replies to the queries. The use of Epic watch starts when the area is declared as an epidemic by the database.

At first the people who are suffering from any disease will visit the health post. Then the responsible person over the health post will login in our web based application and enter the symptoms of that person on it. Database will check on each entry (Address and Symptoms). In any case the symptoms are not matched with database the message will be sent to the responsible person (doctor), then he checks the system and clarifies the problem and if the situation is beyond his control then the area will be declared as an epidemic and the necessary steps will be taken.

In other words, there are three criteria for which Epic Watch system uses to determine the possibility of epidemic eruption. For instance, if number of people reported from the same location is more than 10 people, then the system will check similarity of their symptoms and determine the possibility of epidemic eruption. Epic watch is mainly used when there were same symptoms from the same address and if it is above the threshold value, then an alarm will be triggered in form of SMS and email to the responsible person of that area.

We can use Social media (Facebook, Twitter and soon) to inform about the Epidemic to other people also.

Architecture

The Epic watch has mainly 3 parts that are visible in the figure. In Epic watch service, Epic watch server acts as a central connection part for sharing information between the victim and the doctor. All the basic functionalities were implemented in the server and they are accessible only to authorised persons.

The services offer the following functionalities

- a. Step 1: People who are suffering from any disease will visit the health post.
- b. Step 2: The responsible person over the health post will login in our web based application and enter the symptoms of that person on it.
- c. Step 3: Database will check on each entry (Address and Symptoms).
- d. Step 4: If there were same symptoms from the same address and if it is above the threshold value, then an alarm will be triggered in form of SMS and email to the responsible person of that area.

- e. Step 5: If the situation is emergency then a message is delivered to doctor and notifies him about the situation.
- f. Step 6: The situation can also be notified through social networks.

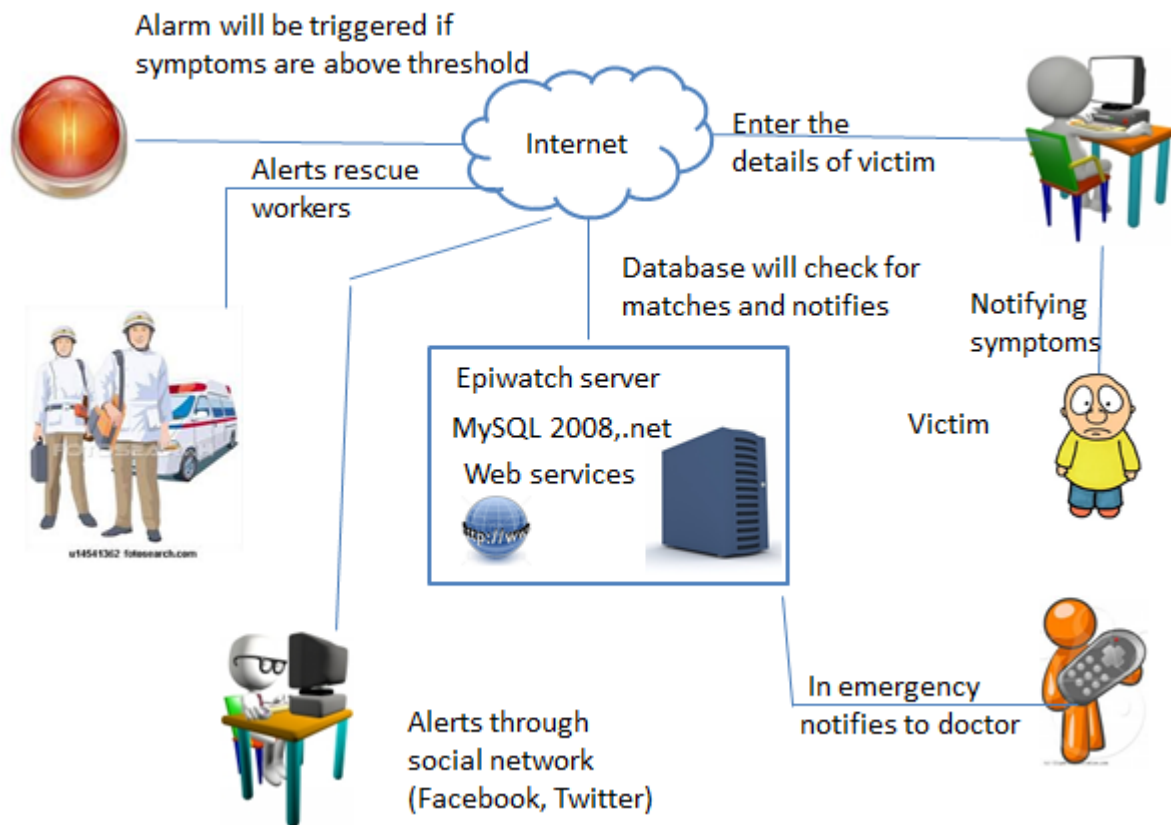
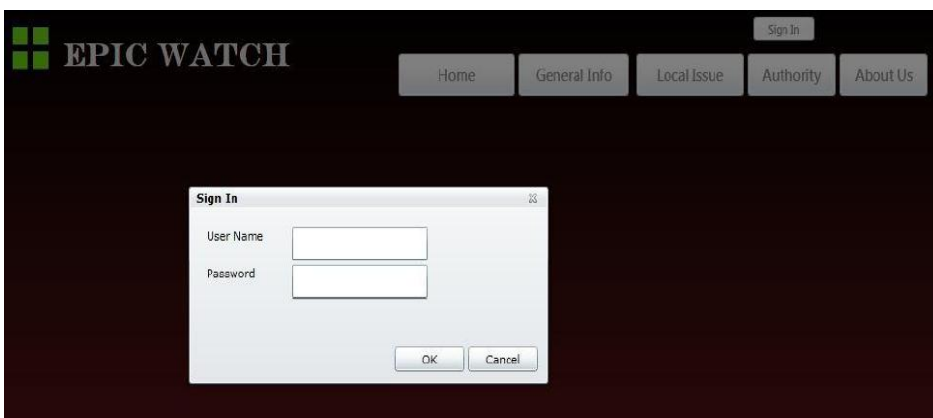


Figure: EPIC WATCH Architecture

Here are some prototype snapshots of our application that we had built during code camp.



Snapshot 1: Login page

EPIC WATCH Sign In

[Home](#)
[General Info](#)
[Local Issue](#)
[Authority](#)
[About Us](#)

Please enter your details information:

First name:

Sur name:

Gender: Male Female

Age:

Address:

Please mention the symptoms that you are currently facing

Symptoms 1	Symptoms 2	Symptoms 3	Symptoms 4
<input type="text" value="Diahorea"/>	<input type="text" value="Diahorea"/>	<input type="text" value="Diahorea"/>	<input type="text" value="Diahorea"/>

Snapshot 2: Enter Symptoms through our application

Technologies used



The main user interface is implemented with Silverlight. We used visual studio to develop console and graphical user interface applications along with windows forms applications. SQL server is used in visual studio that enabled packaging of tiered databases as part of an application. We used Microsoft blend 4 for creating graphical interfaces for front end for designing XAML based interfaces for Silverlight applications.

Conclusion

Our major challenges during the Epic watch is that many people die due to the fact that they are not aware of a situation like Epidemic is in their area. This is due to the fact that there are no records kept about the analysis of the epidemic.

Epic watch system presented here is intended to ease to declare an area as an epidemic zone so that necessary action could be taken to remedy the situation. at first our interface for the community asks to input the case by describing the symptoms, then this is sent to the database. Then one needs to distinguish an abnormal rise in cases from a usual seasonal increase. History is needed. In the database if the cases send is more that the threshold (comparing the history) then the system sends an alert message to the authorities.

We have developed this application for the fact that there are no records kept about the analysis of the area as an epidemic and also make this as a centralized way of communication for the victims.

This Epic watch can be used to keep the records for future use and also to raise awareness among people about the epidemic.