

Dynamic Traffic Analyzer Using Twitter

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Abstract – Traffic congestion is a worldwide problem. In this paper, we present a system to dynamically analyze traffic and its causes, using twitter stream analysis. Twitter is a social networking site which allows people to share and read tweets. The system fetches the tweets from twitter; categorizes the tweets related to traffic; processes the tweets; notifies the registered users about it via Google Maps.

Keywords - Data mining, Traffic event detection, Twitter, Google Maps.

I. INTRODUCTION-

The population is increasing and therefore people want their own vehicles to travel. As the number of vehicles increase congestion also increases. To avoid this problem large cities use hardware sensors like cameras and radars to monitor traffic status. These tools function well but they have some limitations. One of these limitations is the high maintenance costs of these tools. Another limitation is that the tools cover only the certain area of the network. Hence, we implement a system which overcomes the problem of traffic congestion by using twitter.

Twitter is a social networking site which allows people to share and read tweets. It enables users to send and read short 140-character messages. Twitter users can broadcast tweets and follow other user's tweets.

The user logs in to the twitter account. System fetches the tweets through twitter stream analysis. The tweets are categories such as traffic or non-traffic. Those related to traffic are further differentiated on the basis of their causes like earthquakes, accidents, landslides, fire etc. Further user receives notification about the event detected and also will be able to see the location of the traffic on map through an android application.

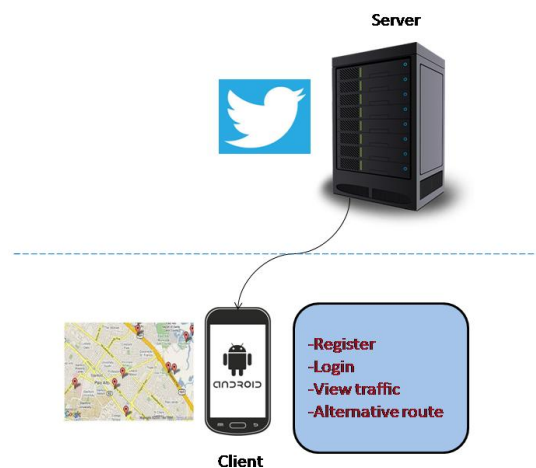
II. PROPOSED METHODOLOGY AND DISCUSSION

Android clients need to register themselves to the application .Then authentication of client will be performed

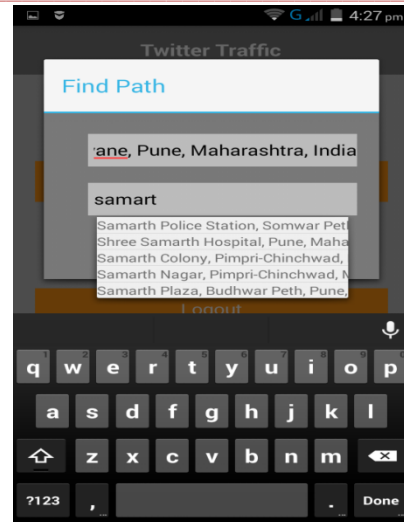
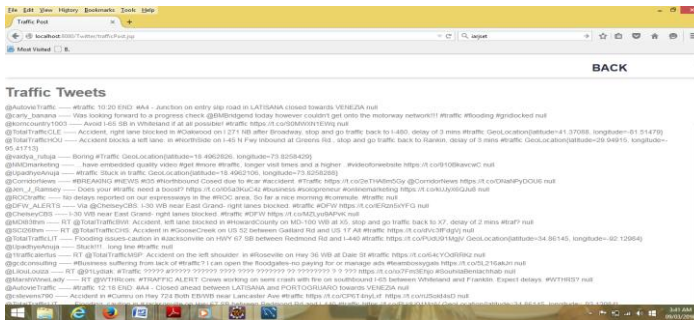
by administrator after successful registration. If they are already registered then they will just login by using the username and password. When the client will log in to the system, he has to click on find route after which he will enter the source and destination using the Google auto feed and then by clicking on submit button he will be able to see the traffic on that particular route through Google map. Additional to that the client can also see the alternative route in order to avoid traffic congestion.

III. SYSTEM ARCHITECTURE –

The implementation of whole system, server, database and client is show in below figure.



IV. IMPLEMENTATION-



On server side there is web application through which system will be fetching the tweets and for that dev.twitter.com will be used. The tweets which are fetched are real time along with locations. The user has to enable its precision location in order to detect its location.

We fetch the tweets by using twitter API. Then we classify tweets i.e. traffic related and non-traffic related tweets. Further we pass traffic related tweets to client i.e. android app via server, where user has to create account and login to the account. After successful login into the account the user has to set source and destination. After the route is displayed on map, if the traffic high then alternative route can be provided to the user along with the duration required to reach the destination.

Once the source and destination are entered user can see the traffic location on map. If any one posts the tweet along with the cause of the traffic it will get displayed.

1. Interfaces-

The Streaming APIs give access to all tweets as they are published on Twitter. The Streaming API only sends out real-time tweets, whereas the Search API gives historical tweets. You will see tweets keep flowing in your screen. They are a sample of public data flowing through Twitter at a particular moment. The data returned is in JSON format. Locations of the tweets can be found by streaming API or search API. In our system, we are using streaming API to get geographical location. The streaming API returns tweets, as well as several other types of messages all in JSON format.

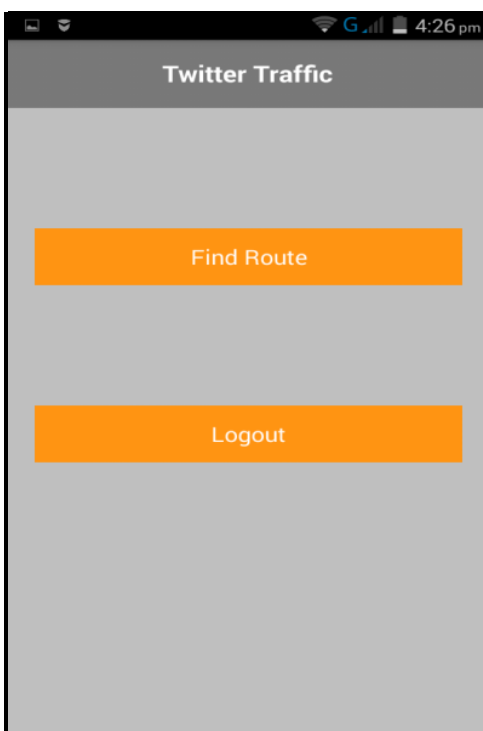
User must register their app project on the Google Developers Console and get a Google API key which you can add to their app to use the Google Maps Android API.

CONCLUSION AND FUTURE SCOPE-

As nowadays maximum people are using internet services so if they use our application, it will be beneficial for them as they can avoid getting stuck in a traffic jam. In future as many people will be using twitter as a result of which more and more tweets will be generated due to which the accuracy of the system will get increased.

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