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Smart Geo-Fencing Based reminder services on To-Do-List

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Abstract - *Smart Geo-fencing is a to-do-list based location service that allows user to send notification who enter/exit in a geographical region, known as a geo-fence. With the boom of smart phones, location-related services became a best topic and perfect solutions were dispense over the last years. The seniority of app are based on the idea to present location-specific data in case the mobile user asks for it. Now a days, it has become one of the main location relate mobile marketing scheme. Although, the process of developing geo-fences is currently manual, i.e. a shop owner must specify the location and the latitude and longitude of area around it to build the geo-fences. The new user don't have idea about best grocery, gym, mallet near them with the help of our application they get the required information. We seek to solve this problem by designing a novel end-to-end technology for get notification as per to-do-list maintain by user to design a location based smart geo-fences. The geo-fence techniques tries to get contiguous notification of locations.*

Key Words: geo-fence, latitude, longitude.

1. INTRODUCTION

Now a day's smart phone devices can provide a lot of contingent details of a user like there location, physical state, humidity, temperature, news, various video, etc. that can aid a droves of use cases. In the company, location based peddle has become increasingly important due to the inflate mobile user base. In this form of peddle, a brand targets it's mobile application users with an offer for their product as well as service, based on their Geo-Fencing location. Geo-fencing is a location based techniques that allows company to push notification to user through messages, coupons, real-time updates, etc. in specific earthly areas called geo-fences. Geo-Fencing consists of two large stages. The 1st stage is geo-fence outline which involve of a selection of key locations within an area of regard and definition of dedicated boundaries encase these locations. The 2nd stage is on-time noticing which is about geo-fence deployment and testing for the existence of mobile gadget middle the establish set of geo-fences in real-time. The real-time noticing problem has seen active curiosity from the research faction, but the geo-fence outline problem has not been inscribe in depth. We only focus on the geo-location outline problem in our paper.

Now a days, location-based services are an essential aspect of mobile devices like smartphones, iOS phones or tablets. While taking the user's location into account, they are used to check or to search for location-related information (e.g. near shops, nearby gym, near restaurant). Thereby, a location based service is being search and the required information is being presented by a smart phone application only as per the to-do list created by the user. However, the required location-specific data is being send by rather than being notify to the user. In existing system, all major mobile OS introduced build in support for proactive location based service, better known as Geo-Fencing. In this study, the mobile phones is able to send related information to the user about location-sated data in case the user enter in a dedicated zone, called geo-fence. This characteristic is mainly used by location-based reminder app as a easy way for users to be reminded about their to-do's at near locations. In other way very promising system area deals with location-based service. Mobile phone users that are walking or driving close to a dedicated district are supposed to be potential users and will be proactively notify about sales shops and many more.

Generally, Geo-Fencing is implement on the mobile phones only. It contain the constant positioning of the mobile phones as well as the constant matching of the smart device's position with a set of geo-fences. Regrettably, check the user's location with respect to a geo-fence outline requires more assets on the mobile phones. These resources might not be available on phones or their use would amplify the battery evacuate notably, making it practically unusable. Therefore, this paper initiation a new infrastructure-oblige detain for Geo-Fencing. Thereby, a thin mobile user is manage for the situate while the heavy-weight action of monitoring geo-fence framework is executed within the configuration. The configuration is thereby examine to follow the central paradigm of the mobile system to support mobile phone in their daily work.

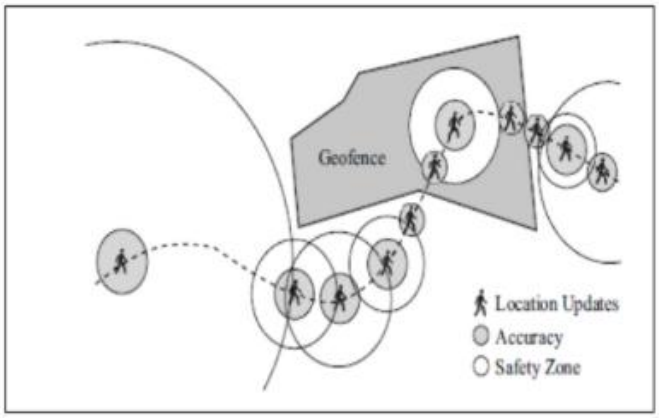

Fig: Geo-Fencing Concept

2. LITERATURE SURVEY

1 Infrastructure-assisted Geo-fencing: Proactive Location-based Services with Thin Mobile Clients and Smart Servers

This paper is based upon more experienced notation of Geo-fencing. In many cases, it is insufficient to decide whether a user is a present target for proactive ads or geo-notifications in general by just observing the users location with respect to a single Geo-fencing area.

2 Energy-Efficient Location and Activity-Aware On-Demand Mobile Distributed Sensing Platform for Sensing as a Service in IoT Clouds.

In this paper they implemented a context-aware, specifically, location and activity aware mobile sensing platform called context-aware mobile sensor data engine (C-MOSDEN) for the IoT domain. We evaluated the proposed platform using three real-world scenarios that highlight the importance of *selective sensing*. The computational effectiveness and efficiency of the proposed environment are investigated and are used to highlight the advantages of context-aware selective sensing.

3 Automatic Sentiment Analysis for Unstructured Data

In this paper they are going to explain about exiting methods, way's to do sentimental analysis for unstructured data which reside on web. The sentiment analysis is nothing but the new approach which will helps us to suggest appropriate result based on user's review.

3. RELATED WORK

In most cases, a Gen-Fencing technique can be differentiate as either being a smart phone-based or centralized infusion. In a centralized infusion, a mobile phone is mainly being pursue by the near about infrastructure, e.g. by proximity detection. A particular Geo-Fencing element within the system, e.g. possess by a mobile-user or as a 3rd-Party favor, is then always matching the situation of the mobile phones opposed to a set of geo-fences. In case of an enter or exit task, the geo-notification can be either transmit to the mobile phone, or can further be used as an input for location information services. These type of Geo-Fencing techniques are mainly used in case a naive position is needed, e.g. for accounting cause in mobile-based public transport system. Long days before the most popular type of Geo-Fencing system in use is the mobile-based problems. That's why, the locate, e.g. set with GPS, as well as the compare with a set of geo-fences is run on the mobile device. Today, mobile based Geo-Fencing is keep up by all main mobile based operating systems in form of combined location-based reminders or as APIs for 3rd Party apps. In addition, many companies provide their own designed mobile-based Geo-Fencing solutions as the part of their 3rd Party SDKs. Another very encouraging Geo-Fencing approach is comes out. It is based upon a hybrid solution as a merger of a central element within the infrastructure and a geo-fence matching engine at the mobile phones. In contrast to a mobile-based system, only a relevant subset of all geo-fences gets checked on the mobile phones.

Without forget track of the preceding general challenges, the architecture and instance introduced in this paper is based upon a more suave notion of Geo-Fencing. As raise the moving behavior of a target regarding many temporally related geo-fences should be determined rather than relying on a single geo-fence. An experimental example is given in where a Geo-Fencing technology should support a fleet manager to monitor the schedule and route adherence of the vehicles by defining multiple geo-fences along the routes.

4. PROPOSED METHOD :

The Geo-Fencing architecture and prototype presented in this paper goes beyond the functionality of all the Geo-Fencing systems introduced so far and enables the next generation of Geo-fencing as described. Our approach is basically a mixture of a mobile-based and centralized solution where the positioning is executed on the mobile device and the advanced In our proposed system of a Geo-Fencing location based service using to-do-list is for small retail user and environment pole to the above and encompasses two main parts: a mobile based application for smartphone users and web based application for retail sites. In web application we provide many facilities as login, self-registration, add perspective product, check history about pending orders, give discount, etc. In addition at the time of registration we ask for latitude and longitude for end to end communication between user and system. System offers a geo-fence system with the help of real time location based notification techniques which is based on android application. Geo-fence scenarios are submitted by the Geo-fence Designer UI using a XML representation.

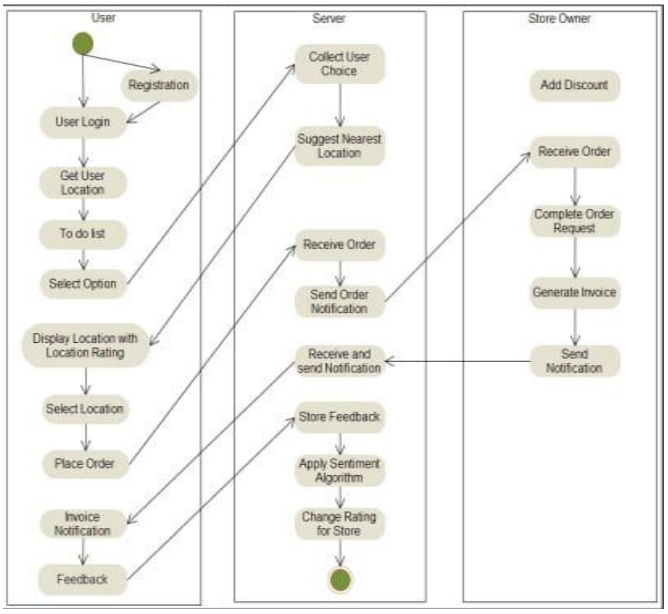

Fig: System Architecture

4.1 Mathematical Model :

1) Input Feedback

$S = \{s_1, s_2, s_3 \ldots\ldots s_n\}$

Where S is the input string

2) Identify sentiment

$A = \{a1, a2, a3\ldots\ldots an\}$

Where, "A" is the main set of sentiments

3) Identify features

$F = \{f1, f2, f3\ldots\ldots\ldots\ldots fn\}$

Where, "F" is main set of features

4) Identify features

$C = \{c1, c2, c3\ldots\ldots\ldots\ldots cn\}$

Where, "C" is main set of Classification group

Classification sentiment of F :

$$\text{If } f1 \in \sum c1, c2\ldots..cn$$

$$C \leftarrow f1$$

.

.

.

$$\text{If } fn \in \sum c1, c2\ldots..cn$$

$$C \leftarrow fn$$

Where,

f1,f2…f2 = extracted feature

C = classification group

4.2 Algorithm :

Natural Language Processing For Sentiment Analysis

Sentiment analysis is the process of detecting positive or negative opinion in text. It's often used by businesses to detect sentiment in social data, shops brand reputation, and understand customers need.

Sentiment analysis algorithms fall into one of three buckets:

1. **Rule-Based**
2. **Automatic**
3. **Hybrid**

We used Rule-based Approaches :

Usually, a rule-based system uses a set of human-crafted rules to help identify subjectivity, polarity, or the subject of an opinion.

These rules may include various NLP techniques developed in computational linguistics, such as:

- *Stemming*, *tokenization*, *part-of-speech tagging* and *parsing*.
- Lexicons (i.e. lists of words and expressions).

Calculating sentiment polarity:

Ps = fs / Fx

Where,

Ps = polarity of sentiment s

fa = feature of sentiment

Fx = total no of feature

5. DESIGN MODULE

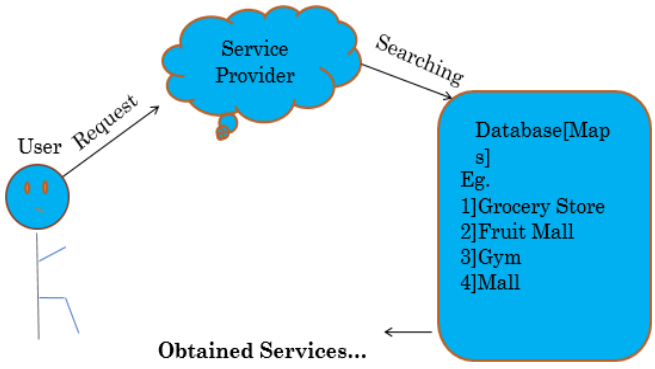

Fig: Proposed Design Module

In this project, we provide the location based services to the user. The service is provides as per client requirement using the to-do-list when user ask for it.

This application is dealing with the geo-notification based services and it is reliable to provide the location based information to the user, which will help to identify that the client enter or leave the Dedicated zone. The technology behind providing location based services is called as Geo-Fencing.

This project present new way of monitoring the user's location in the environment. Here the mobile phones are considered as clients, they are responsible to locate itself.

The service offers a discount and the probability of the service selected by user would significantly improved which lead to changes of the service status. This introduce the new way of Location Specific information with the sentiment analysis.

6. CONCLUSION :

A new system architecture for the next generation of Geo-Fencing was presented. It takes a major step from a mobile based towards an infrastructure-based Geo-Fencing system in order to shift the main computation load of advanced Geo-Fencing from the mobile clients to the resource-flexible infrastructure. This opens up new possibilities for sophisticated geo-fence scenarios that state-of-the-art Geo-Fencing systems are yet not able to process. Hence, it broadens the application range of Geo-fencing to the fields of e.g. smart retail environment, by allowing system administrators respectively local retailers to specify the requirements for getting geo-notifications in a far more precise and powerful way. As a consequence, the whole group of mobile device users and therefore potential receivers of geo-notifications can be narrowed down to a relevant target group of potential customers for which the geo-notifications might be of high interest.

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