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Location Based Advertisement Using Geofencing

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ABSTRACT: A geo-fence is a virtual barrier that surrounds a physical region. A geo-fence can be created based on the user's requirements by taking various radius factors into account, or it can simply be a predefined set of boundaries. Geofencing is an innovative technology, an online marketplace for proactive contextual services that allows users to easily find interesting services, can easily subscribe to it and to allow providers offer their services for a variety of applications. Geo-fencing is use of geo-fence. The global positioning system (GPS) is a feature that is used to determine geographic borders. It has a vastly expanding range. Relatively very few applications deal with geo-notifications, which are meant to proactively inform mobile and stationary users of location-specific information. Geo-fencing is the name of the technology that underlies proactive location-based services. The main objective of this research was to understand how the use of spatial data can improve advertising performance for customers. Tracking systems and monitoring, based on global navigation services by satellite, and include geofencing function, could also contribute to the exact location of an institution or company and increase sales and business perspective efficiently. Instead of large billboards they can now advertise on smartphones which is economically and accurately tested.

KEYWORDS:- Geo-fencing, Location Based Services, Global Positioning System(GPS), Geo-notification.

I. INTRODUCTION

Geofencing hospitality is a prototypical geofence-enabled mobile application for the android mobile operating system. It consists of an exemplary user interface for activating respectively deactivating the geofencing service and a component that deals with positioning and communication. The core purpose is to demonstrate the feasibility of our approach in general.

Geofencing is a method of defining a virtual barrier on a real geographical location. Mobile marketing has been taken to the next level with geofence, which gives hotels the ability to advertise specifically to potential customers within certain geographic radius. Geofencing constructs a virtual boundary around a business location using a combination of technologies including GPS & RFID. Geofencing area can be as small as 50 meters and as large as an entire city. Geofencing technology defines a virtual boundary around a real-world geographical area and by doing so, a radius of interest is established that can trigger an action in a geo-enabled phone or other portable electronic device. Geofencing helps you in keeping control of your business by notifying you when a potential consumer is passing by your hotels, by a competitors, or entering into a predefined area.

Location tracking is the precursor to geofencing and everything that has anything to do with geo specific marketing. To get it working, you need to use a mapping product like Google map to map out the regions you want to geofence. This region can be in a circular shape in most cases. Once your desired region is mapped out for geofencing, you can then target your consumers via their mobile phones GPS. Then you can monitor your geofence through the day for potential prospects or customers who might be interest Smarted in your offer. It keeps to track them until that to go out Geo-fencing is a location-based service that allows marketers to send messages to smart phone users who enter a predefined geographical area. This helps them to target the foot traffic in the vicinity of a point-of-interest. Marketing messages can be personalized to each user segment and can be auto-triggered on entry/exit from a geo-fence. A geo-fence is a virtual perimeter for a real-world geographic area.

Our prototype is based upon the idea to transform each specification of geofence scenario into a complex event pattern which interns serves as the parameterization of the stream processing system. The problem to determine if

mobile device passed a sequence of geofences in a certain temporal order and within defined time constraints is thereby mapped onto the problem to find particular event pattern within device specific

II. METHODOLOGY

A. Geofence

Geofence is defined in the form of a area that uses longitude, latitude and some form of area description. A geofence is not only defined as a circle but in many cases are only available as a circle. We will use only circles from now on so when we write geofence we will mean a circular geofence. Another important aspect of the geofence is that it must be a representation of an area in the real world.

B. Geopush

Geopush is short for geofence push. A geopush notification is a push message that contains information that is dependent on a geofence location. This means that a geofence location transition must trigger the geofence push. Geopushes can come directly from a server, as it was done in the past. Technically a geopush can be simulated by the OS without the need to get it from a server but when reading online many will assume that if you use geopush that the message comes directly from a server.

C. Geotrigger

Geotrigger is short for geofence trigger and is almost the same as a geopush notification but refers to the state change rather than the message to the user which means a geotrigger triggers a geopush notification. Important to know for this thesis is that a geotrigger in my application will be triggered locally on the phone and not on a server.

D. Geofence transition

There are three different transitions that can occur.

- 1) **Enter transition:** This means that most of the area that our given position and its accuracy spans are inside the geofence, and last time I checked I where outside the geofence. In other words I have entered a geofence.
- 2) **Exit transition:** this means that most of the area that our given position and its accuracy spans are outside the geofence, and last time I checked I where inside the geofence. In other words, I have exited a geofence.
- 3) **Dwell transition:** this means that most of the area that our given position and it's accuracy spans are inside the geofence, and last time. I checked I where inside the geofence. In other words, I am dwelling inside a geofence.

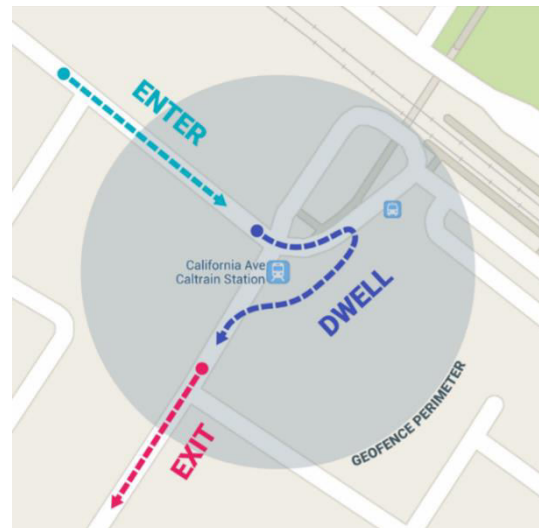


Fig.1 Showing the Geofence transitions

Proposed System

This system intends to create and deploy a mobile application for hospitality businesses that supports the Geofencing technology. The approach here is “Monitoring of targets with respect to geofences that need to be passed in a specific defined order to trigger a geo-notification”. The purpose of this system is to use geofencing APIs for small and medium business to promote their products and services which would boost their business generating more revenue. The designed application will trigger notification depending on the location of an entity and whether they are entering, dwelling or exiting the geofence. Geofencing boundaries are defined in radius. The radius for Geofences is specified between 100 and 200 meters. The Usage of two geofence triggers: One that activates when a device enters a geofence and another that does the same when it leaves one. The Geofencing API cleverly makes use of the sensors on the device to precisely pin point the location of the device. The broadcast receiver can instruct an app to

begin working in the background or, if preferred to emit a notification. Someone who is visiting to new places wants to learn about the offers that are currently being offered there. The main objective of the Geofencing Hospitality is to create and market a mobile application that enables businesses to make avail the customers a better deal by sending offers through notification when they enter a geofenced area. The application provides various levels of interaction which are triggered by the geofences. Geofencing Hospitality provides the users with the best deals available at desired locations and helps stakeholders to target the customers when enters the geofenced area.

Literature Survey

The location-based services (LBS) have recently undergone a massive shift in popularity. The emergence of GPS receivers on the mobile devices has now made it much possible for the first time that proactive monitoring services or having to install many different applications for the same type of LBS's. companies need to invest in advertising to raise awareness of new products, prices and special offers (see informative advertising). Until recently, advertising strategies are primarily for the companies to adapt the traditional media and the nearest geofences.

In the Existing system also, the app detects the user's location through the GPS. By using the geofencing the admin can know when someone entered into the Geofence. But it has some limitations like the existing system has a clumsy interface. And In the existing system, there is no common application for the advertisement purposes for all the small & medium businesses , the big brands & franchise have their own system for advertisement purposes. The system can even be tuned to send out different messaging to match consumer preferences or special events happening in the area. This allows a company to advertise to people who are most likely to become customers, at the places where those people are most likely to be found.

Functionalities Used:

Various functional modules that can be implemented by the project will be:

1. **Geofencing System Module** : Geofencing Hospitality will be formulated on the following modules as per the requirement of administrator
 - A. **Geofence Module** : Using Google Maps to create desired location.
 - Creating marker of desired radius for the geofence.
 - **Geofence Monitoring** - Requesting geofence monitoring (request the necessary permissions).
 - **Geofencing Client** - To access the location APIs creating instance of geofencing client.
 - **Create and Add Geofence** –
 - Geofence.Builder - To create geofence setting the desired radius, duration, and transition types for the geofence.
 - GeofencingRequest class and GeofencingRequestBuilder -to specify the geofences to monitor and to set how related geofence events are triggered.
 - **Broadcast Receiver** - To handle a geofence transition.
 - B. **Notification Module** : Geofence events will be delivered by using notification channels.
 - **Handle geofence transitions** –Abroadcast receiver like GeofenceBroadcastReceiver notices that the Intent was invoked and can then obtain the geofencing event.
 - **Log transition details** - After detecting the transition event via the PendingIntent, the BroadcastReceiver gets the geofence transition type and tests whether it is one of the events the app uses to trigger. The service then sends a notification and logs the transition details.

IV. RESULTS AND DICUSSION

In this section the outcomes are listed that authenticate faithful working of the system.The figures shown below depict the results in the following manner.

In our proposed project there will be an admin who will have the data of the both customers and the sellers including the offer details which is displayed as shown below.

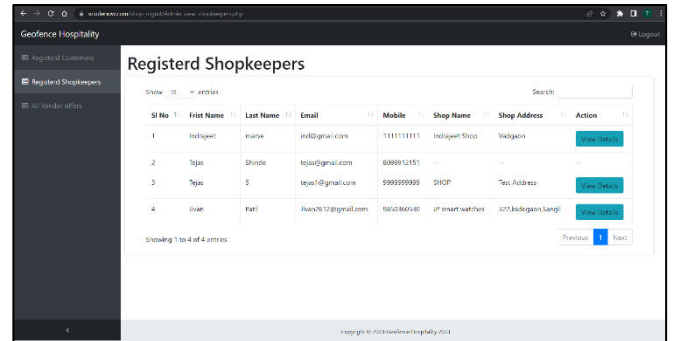
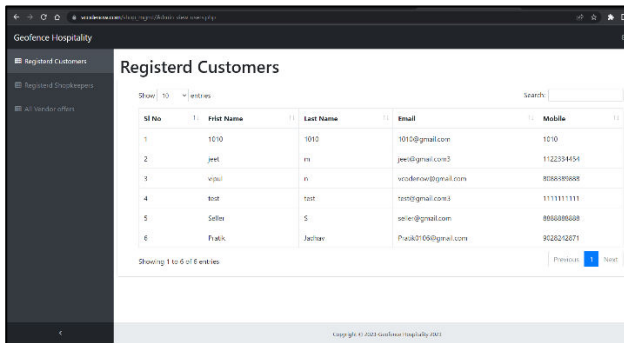


Fig.2.1 & 2.2 Showing the Details of Registered customers and Registered Shopkeepers

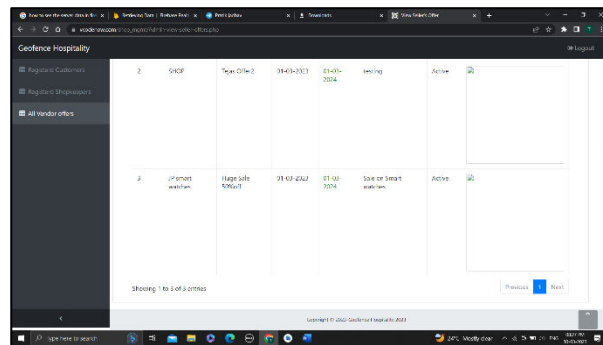


Fig 2.3 Showing the Details of offers which are offered by the shopkeepers

Basically, when the shopkeeper wants to use this app he/she has to register as show in the figure no.3.1 After registering the shopkeeper have to add the shop details in which he had given the option of the creating the geofence as well.

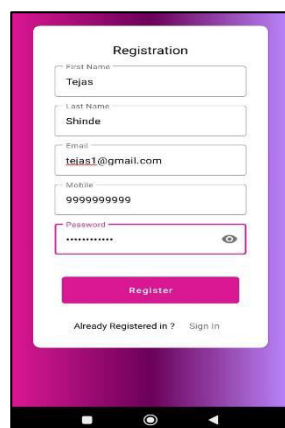


Fig.3.1

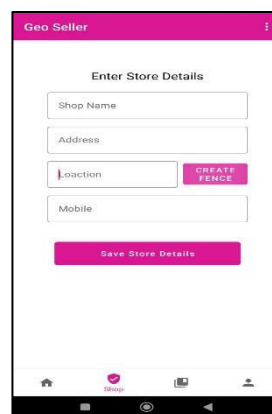


Fig 3.2

As shown in the figure no 3.3 the shop keeper can create the geofence by long pressing on the location where the shop is located. After the geofence created the shopkeeper can add the offers as shown in the figure no 3.4 so that they will trigger to the customer when entered into geofence.

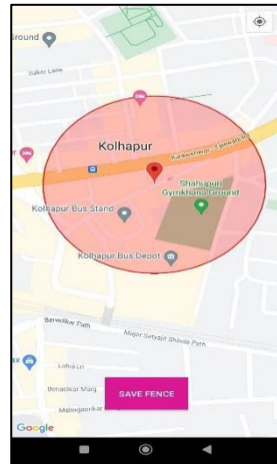


Fig.3.3

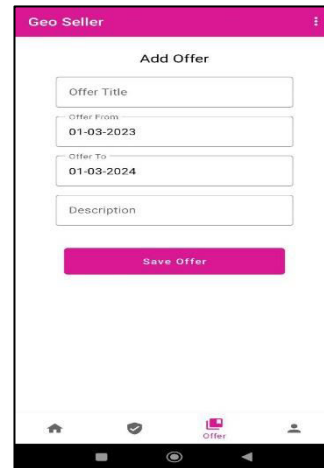


Fig 3.4

When coming to the customer, he/she also have to register & allow location permission to trigger the nearby shopkeeper notifications, the triggered notification are show in the figure no.4.1 and in the figure no 4.2 the offers are listed is shown.



Fig.4.1



Fig 4.2

V. CONCLUSION

In this paper a new concept is proposed for the future marketplaces in order to distribute GFSs according to a generic service format that will allow the users to easily find and subscribe to services.

The proposed system acts as platform for small to medium business to extend their reach towards customers and overcomes the drawbacks of traditional marketing as well as existing system This system provides efficient way for business to market the products and services as advertises are delivered directly to the user's mobile phone and also the cost to set up infrastructure is much less as compared to other marketing strategies.



REFERENCES

- 1 Abhishek Singh , Ankit Pal, Divyansh Garg, Dolly Yadav4 , “Location-based services using geofencing”, International Journal of Advance Research and Development,2018.
- 2 A.H. Abbas, Mohammed I. Habelalmateen, SyukranJurdi, L. Audah and N.A.M. Alduais “GPS Based Location Monitoring System with Geo-fencing Capabilities” Conference Paper in AIP Conference Proceedings, November 2019. https://www.researchgate.net/publication/337194171_GPS_based_location_monitoring_system_with_geofencing_capabilities.
- 3 Nehal Bengre, Vidya Kamath, SaumeelGajera, “Location based Mobile Advertising using GPS” , International Journal of Engineering Research & Technology(IJERT),2015.
- 4 J. Martens and U. Bareth, “A Declarative Approach to a User-centricMarkup Language for Location-based Services,” in Proc. of the 6th Int.Conf. on Mobile Technology, Application and Systems, ser. Mobility’09. New York, NY, USA: ACM, 2009, pp. 38:1–38:7.
- 5 Y. Yu, S. Tang, and R. Zimmermann, “Edge-Based Locality SensitiveHashing for Efficient Geo-Fencing Application,” in Proc. of the 21stACM SIGSPATIAL Int. Conf. on Advances in Geographic Information Systems, ser. SIGSPATIAL’13. New York, NY, USA: ACM, 2013, pp.576–579



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