

Location Based Advertising Android Advertising Application

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Abstract—Advertising is a form of marketing through which various companies communicate with their customers. Earlier forms of mobile advertising were through sms or mms but today it is possible through e-mail, android application & many different ways [3]. This paper conveys our proposed advertising application based on location based services. This paper mainly focuses on detecting the users location through GPS (Global Positioning system) or network provider and sending the position-aware advertisements as notifications on their android devices.

Keywords— *GPS, Network Provider, Position-aware, Android application, location based services, Web Service.*

I. INTRODUCTION

Location based services is growing at a very faster rate in the field of marketing. Location based services deals with providing advertisements depending on users current mobile location [1].

The ability to detect users location and to provide relevant information about the advertisements within the range of their surroundings in real time through notification can be a game changer in the field of advertising.

Mobile location based advertising is also called as geo-targeting or ring fencing [3].

Location based advertising(LBA) is an android application use to Display Ads/offers according to the preference set by the client so no unnecessary advertisements will be displayed to the user.

The main objective of the LBA is to evaluate the user position through the GPS/Network Provider and display ads in terms of notification with user ranging within 1km from the shop, which not only saves lots of time but also gives faster advertising.

From user point of view there is no need of searching ads in newspaper/banner as LBA application will be much faster in real time [2].

II. LITERATURE SURVEY

A. *Origin of concept*

Earlier, SMS was a media - called the “seventh mass media channel” by several media and mobile experts - and even more, it is a two-way mobile media, as opposed to one-way immobile media like radios, newspapers and TV. The possibility of fast delivery of the messages and the ubiquity of the technology (it does not require any additional functionality from the mobile phone, all devices available today are capable of receiving SMS), make it ideal for time and location based advertising .

Mobile advertising is changing at a rapid growth. This will help to reach large number of customers in a more efficient ways. However it should be kept in mind that the rapid change in the technology used by mobile advertisers can also have adverse effect to the number of consumers being reached by the mobile advertisements, due to technical limitations of their mobile devices [4] .

Targeted mobile advertising needs customization of specific ads, so that these ads reached the specific customer and not the wrong one [3]. Previously users location was detected using a special hardware device that was attached to the users mobile device and then its location was detected, According to the detected location, various deals and offers would be displayed on users mobile device.

These advertisements are based only on the users current location. So, one will get unnecessary deals even if the user is

not at all interested in these deals. There are no preferences set by the user as per their interest. This is a huge drawback as one can get frustrated due to such unavoidable messages.

The overall performance of the application will degrade as large amount of data needs to be fetched from the database and displayed to the user. Thus, this makes the application less efficient and slower response time.

B. Existing System Examples

- Save zippy

This app detects the users location through the GPS [5]. There are various categories displayed such as electronics, foods, clothing etc. One can click on any of these categories and get various deals based on their location. Various coupons are also available but mostly these coupons are for credit card holders only. One can also get rewards as we enter into a mall and can collect points to get a discount later on.

This application offers the following functionalities:

1. Search offers from various categories based on our current location.
2. Easily search for coupons depending on various brands.
3. Earn points and get rewards whenever we enter a shopping mall.

III. PROPOSED SYSTEM

The purpose of LBA is to Display Ads/offers according to the set preference by the client and no unnecessary display of advertising to the user. The main objective of the LBA is to evaluate the user position through the GPS/Network Provider and display ads in terms of notification to user ranging within 1km from the shop, which not only saves lots of time but also gives faster advertising and marketing.

The whole process of evaluating user location is done in the back-end by continuously tracking its longitude & latitude which will lead to proper accuracy of position of user. From user point of view there is no need of searching ads in newspaper/banner as LBA application will be much faster in real time.

The location co-ordinates of the users mobile is detected by the LBA application installed on the users mobile. These co-ordinates are then sent to the back end of the administrator website that is hosted on the server. At the back end it checks under which range the coordinates fall and what are the preferences selected by the user.

According to these constraints the various deals and offers within that range are fetched and again transferred to the android application on the users mobile device. With this information the user is also provided with the description of the

offer as well as with the direction to the particular shop and their contact number.

A. Location detection

Location of the user is firstly detected using the GPS service or through users network provider [6].

The user location is checked continuously after a specific time interval so that the notifications are received as soon as the location of the user is changed.

Once the location of the user is detected it is then sent to the back end website through a web service.

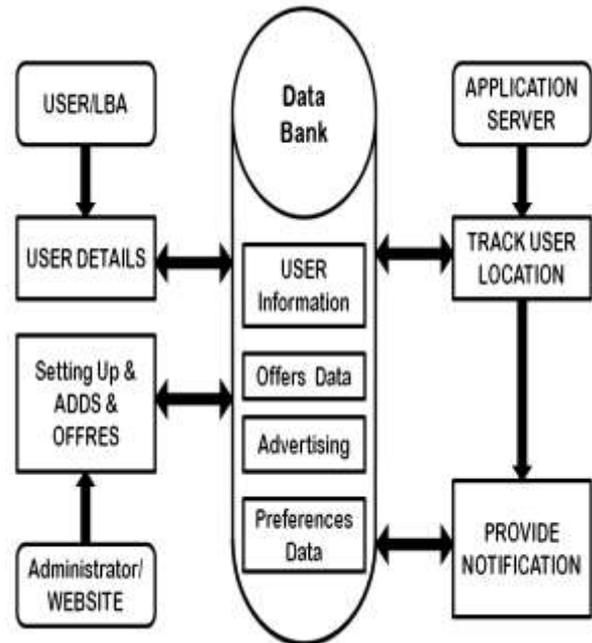


Fig 1.Flow of LBA application

B. Web Service

Web service is created in order to send the user location and users selected preferences in form of a request to the back end server. Then this web service will fetch the deals and offers based on the preferences selected by the user.

These selected data will be attached as a response and send it back to the specific user. These responses will be displayed as notifications to the users.

C. Google maps and direction API

API is application programming interface that is a set of protocols and routines for building software applications. With the help of API's one can build various modules performing different functionalities independent of their respective implementations.

Maps and direction API are used to help user by providing the exact location and direction to the particular shop from their current location.

When the user clicks on the notification of a particular offer, an overall description of the offer, contact information and direction option are displayed.

D. Administrator website

An administrator website is developed to store all the shops and their particular offers. The admin will have all the rights to register different shops under various categories and their location as well.

The database will be created using SQL server management studio. The shop owners can have their own login id and password, so that they can add offers and deals independent of their location. It contains all the information about **different users** of the application. It also contains data of different **offers and advertisement** of various shops and retailers according to their locations. It also maintains information about the **preferences** entered by the users.

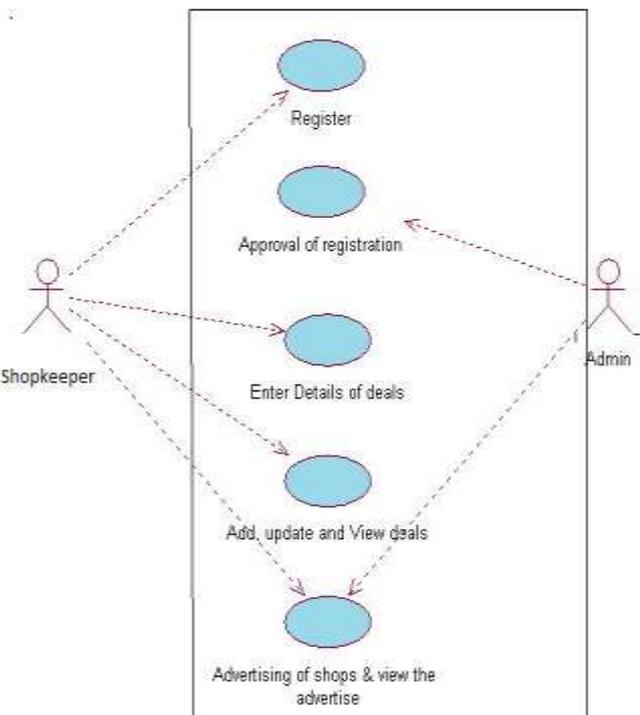


Fig 2a.Use-Case Diagram 1

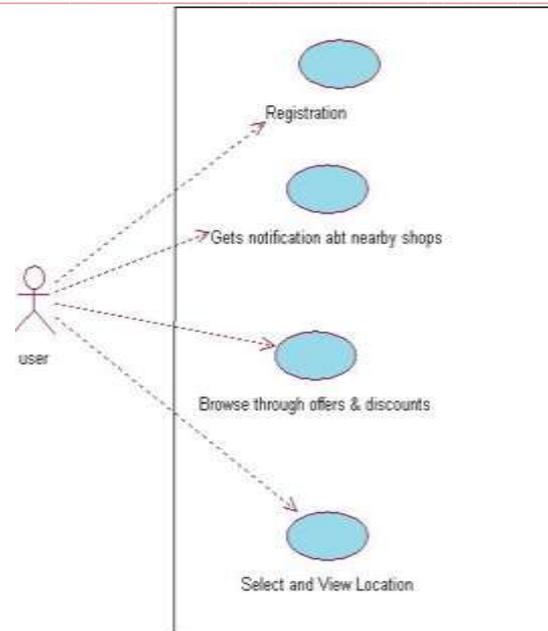


Fig 2b.Use-Case Diagram 2

E. Technologies to be used

For development of this LBA application one will require Android Software Development Kit and to execute it Mobile phone or tablet with Android Operating system. Other technologies that are used to develop this app are SQL server management studio, VB.net or ASP.net in visual studio 2010 are used to build the administrator website.

Google maps and directions API are used do provide direction and map. Different searching algorithm can be used for fetching the offers from the database.

IV. CONCLUSION

Tracking user location through network provider or GPS was difficult few years before so marketing based on geo-positioning was not possible. In this paper, we present a proposed system and an approach for location based advertising based on current location of user. The proposed system will reduce the efforts for finding deals and offers by getting notifications for specific categories only and that to in real time. It will not only help user but also the vendors by providing advertisements of various offers and deals by simply uploading it on the administrator website. Thus LBA is an approach that demonstrates how collaborative mobile applications can help user improve their shopping experience by empowering them to access relevant information where and when they want it.

V. REFERENCES

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