Advertisement Based Lock Screen Using Location and Time Information

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Abstract— **Advertisements are more important for locality based business to improve their sales through advertisement to attract more new customers. In this project, we integrate Advertisements template with mobile lock screen using drop box, Google docs and Recharge API in order to display advertisement as lock screen for every individual android mobile users. By displaying advertisements on lock screen based on location of the user using lbs or GPS with current time. Business people advertisements can reach any individuals mobile lock screen by using this apps. This project gives mutual benefit for all of the three entities, the user, application owner and advertiser.**

Index Terms—**Google docs, Dropbox, Recharge API, Adv, Mobile Application, LBS, GPS.**

I. INTRODUCTION

Nowadays in mobile phones Google's android operating system is still relatively new. However, Android Operating System has been progressing quite rapidly. An Android phone is a smartphone running on Google's open-source Android operating system. Many different manufacturers make Android phones, including HTC, Motorola, and Samsung [2]. Dozens and dozens of different Android phones are now available and all of the major cellular carriers in the U.S. offer Android phones [2]. Today almost every user has an Android Smartphone because of the features such as multitasking, ease of notifications, app market, diverse phone options and android widgets [3]. The numbers of users having smartphones equipped with GPS have increased rapidly. Hence, it can be used efficiently for personal security or various other protection purposes.

We are showing the advertisements based on location and time on the lock screen of phone. When user will unlock his phone, each time he will get a single point which he can redeem to get his mobile recharged. The advertisements will be downloaded from dropbox server and the registration details will be stored on Google Docs. We will be using Jolo Mobile recharge API in order to recharge the mobile.

This system can be used by people having android mobile OS 2.2 or above. This application can be used by people to know the latest offers going on in the current area where they are present.

II. Literature Survey

Advertisements are more important for locality based to improve their sales through advertisements to attract more customers. For that purpose from the beginning there were many more techniques used.

Era's	Techniques used
19th Century	Color painted cloth banners were used
Mid of 19th Century	Radio was new medium for advertisements
End of 19th Century	Television became the most popular medium for advertising.
20th Century	Internet was proved to be economically and efficient medium for advertising.
2005-2008	Mobile was the next technology which was boon for advertising. Due to SMS services it became more popular in short period of time.
2009-2011	Advertisements were done through popular websites. Websites like facebook, YouTube etc. became medium for advertisements.

In the current decade android Smartphone has taken place in the mobile market on large scale. It has been became most important need of human being. Afterwards android applications were developed for advertisements. There were many more applications developed for advertising, using various technologies. Such as android Smartphone lock screen advertising using location and time.

As time spends application developed with more features, using barcode [1], using lock screen patterns [2]. But there are no benefits to the user. The application which we are going to develop in that user gets benefits with the

use of application.

On each unlock user get points in terms of points we are providing amount of money in terms of balance.

III. Proposed System

a. Existing System

The screen locking system provides various features like unlock phone using random number, taking system backup via email, receive notification of SIM change, track incoming calls and messages when the phone is lost or stolen. It is very difficult for the attacker to unlock the phone[6]. In this screen locking system each circle can retouched maximum of seven times. There are total six circles in this lock and therefore it is very difficult to remember the color pattern of each circle. Attacker cannot use a personal data such as contacts and messages[6]. Since this application after sending backup of contacts and messages via e-mail, deletes all the contacts and messages from the phone. If the phone is lost then the user can track his Smartphone by receiving notification of SIM card such as serial number, contact number, network operator and IMEI number of the device via message[6]. The facility of delivering incoming calls and incoming messages from one device to another device helps user to know who is calling and sending messages on their device.

The analysis shows that this screen locking system ensures protection of personal information. User can catch a thief by tracking their own device. There are total three attempts for unlocking the phone. If owner of the Smartphone fails to unlock the phone within three attempts then one random number is generated. Using that random number owner can unlock his Smartphone. The snapshot of unlocking the phone using random number ,If the owner of the Smartphone fails to unlock the phone within three attempts using random number then this screen locking application will delete all the contacts and messages from the phone and it will generate backup of contacts and messages in the phone memory. If internet is available in the Smartphone this backup will be sent to owners email id.

b. Proposed Module
a. Related Work

Most of the user keep their Smartphone's with them at all times, the likelihood of it getting left behind at restaurant, Gym, or other locations that they previously visited are probably pretty high and the chances of that left-behind-phone getting stolen and fondled deeply without their approval is probably even higher[4,6]. The first line of defense against evil doers is lock screen[6]. However, even with these solutions, major problems could still result after a mobile device is lost[6]. If a user has a non-stock Android device like the Galaxy S3, then there are some differences in functionality but for the most part they all act in a similar fashion [1]. First, to access the lock screen options, the universal location tends to be in Settings-Security. From there, one should see an option

towards the top called "Screen lock," which then takes us to the lock screen options once tapped.

Slide is probably the most commonly used lock screen of all it's basically the default. This lock screen is not secure by any means, and only asks that the user of the phone grab the circle with a lock inside and slides it outside of a larger circle to unlock the phone. There are no passwords or patterns, it's simply a way to keep the phone from turning itself on and then accessing all sorts of info in the pocket or purse without your knowing Face Unlock was introduced back in Ice Cream Sandwich as a fun way to unlock the phone using a face of the user. In order to set this option up, one has to place his face inside of a face-shaped ring of dots using front facing camera until the device decides that the face is enough to be able to unlock with it. Once approved, a user will be asked to provide a backup option in case the device cannot recognize his face.

The two backup options are PIN or pattern , PIN and Password unlocks are exactly as they sound. One should either create a pattern, a numeric PIN, or an alpha-numeric password that needs to be entered in order to unlock the phone. These are likely the most secure of them all. If a user forgets the pattern, PIN, or password, then he is not allowed to access the phone Fingerprint scanning technology is becoming increasingly important with everyday security measures and can provide an affordable, effective and reliable means of identification [1]. Atrix Smartphone, made by Motorola supplies a finger scanning system. Motorola Atrix 4G has a feature called Fingerprint Scanner. Overlapping processes on the screen and low speed are the main problems in this system.

b. System Architecture

The system architecture consists of the two types that is "using GPS" and "using LBS".

The architecture diagrams which consist of GPS technology it consist of android phone, Google docs, drop box, recharge API. The consumer can receive advertisements from dropbox based on location and time. The dropbox can store edited advertisement and publish them using location and time of consumer via internet. The location and time will be sending to the dropbox using GPS. The Google docs consist of consumer registration.

Consumer registration contains name, location, Mobile number, e-mail id, IMEI number. The IMEI number of the customer will directly retrieved from the network with the help of mobile number. The part of recharge API is used to send the amount of benefits to the consumer. Each unlock will give one point to the consumer. These points will be stored in the Google docs. When consumer will get hundred points, consumer can redeem them using recharge API. Recharge API will check that request of redeem from Google docs. Consumer can't get beneficial amount twice in day on same device because when we are providing amount of benefits to the customer we are going to check his IMEI number of the device.
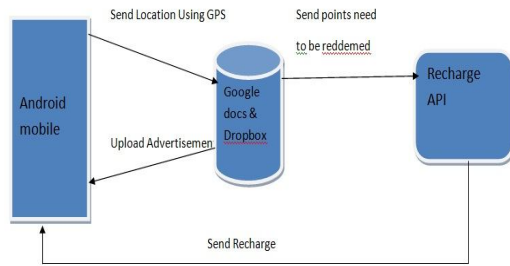
Using GPS:-

Figure No. 1System Architecture using GPS

The architecture diagram which is consist of LBS technology that contains android phone, mobile database, Google docs.

Android phone will send location to the mobile database using location based services. Mobile database can store edited advertisements. When consumer's GPS service is turned off then also he can get the advertisement through LBS. Mobile database sends the advertisements to lock screen based on location and mobile time.

The mobile database contains count points of unlock also. When user turn on internet service then points will get automatically store on the Google docs as well as advertisement images of mobile database also get upgrade from the dropbox.
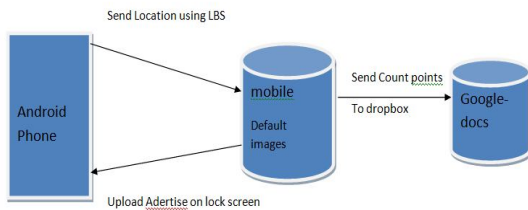
Using LBS:-

Figure No. 2System Architecture using LBS

IV.Technology Preview:-

A. Google docs:

Google doc is developed by google for the purpose of sharing and store the information. Google docs are useful for many more purpose. Google Docs is a open source database. It is an online word processor that lets you create and
Format text documents and collaborate with other people in real time. And it is a free web based application in which documents and spreadsheets can be created, edited and stored online.

Google docs are easy to access from anyplace, anytime and anywhere.

B. Dropbox

Dropbox is a home for all your photos, docs, videos and files. Anything you add to dropbox will automatically show up on all our smartphones. It is a personal cloud storage service that is frequently used for file sharing and collaboration. And it is a application for available for windows, Macintosh and Linux desktop Operating System.

C. Recharge API

In the market there are various types of recharge API's available. In this project user is able to get recharge in terms of points for that purpose recharge API is used.

D. Location Based Services(LBS)

Location Based Service (LBS) LBS is mobile service that has the capability to provide real time information based on the user's location[7,8,9]. Geographical Information System (GIS) has been the heart of LBS in order to provide all the functionalities in LBS. First, we may send location information to remote parties. This set of services are commonly used today, e.g., in location tracking applications. Second, use location information to make communication decisions, e.g., a user agent may automatically disable instant messaging when driving[7,8,9]. Third, location changes can trigger communication actions, e.g., when a person's user agent gets a location notification indicating the person enters a room, the user agent may automatically turn on the light of the room. Sending location information to remote parties for location tracking. Locations are usually represented in geospatial coordinates or civil addresses for tracking. By enabling to upload real time location and to create the content "on the spot", we can expect more variety of location-based services[7,8,9].

E. Global Positioning System(GPS)

The Global Positioning System(GPS) is a spacebased Satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites[4,8,9]. The system provides critical capabilities to military, civil and commercial users around the world. It is maintained by the United States government and is freely accessible to anyone with a GPS receiver[4,8,9].

GPS is often used by civilians as a navigation system. On the ground, any GPS receiver contains a computer that "triangulates" its own position by getting bearings from at least three satellites. The result is provided in the form of a geographic position - longitude and latitude - to, for most receivers, within an accuracy of 10 to 100 meters [4,8,9]. Software applications can then use those coordinates to provide driving or walking instructions. Getting a lock on by chemical composition need not be reported if the main purpose of a paper is to introduce a new measurement technique. Authors should expect to be challenged by reviewers if the results are not supported by adequate data and critical details.

the GPS receivers on the ground usually takes some time especially where the receiver is in a moving vehicle or in dense urban areas [4,8,9].

The initial time needed for a GPS lock is usually dependent on how the GPS receiver starts. The receiver has a general idea of which satellites to look for because it knows its last position and the almanac data helps identify which satellites are visible in the sky [4,8,9]. This takes longer than a hot start but not as long as a cold start.The GPS receiver has to attempt to lock onto a satellite signal from any available satellites, basically like polling, which takes a lot longer than knowing which satellites to look for. This GPS lock takes the longest[4,8,9].
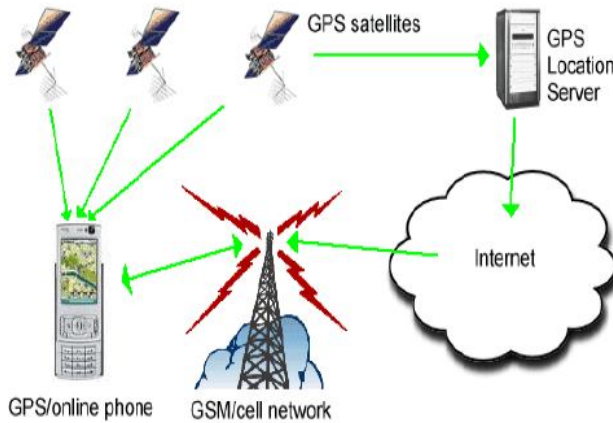

Figure No.3Architecture of GPS

V. Application GUI

Here are some snapshots of the application's User Interface.

1. Registration Form:-

At the time of installation process user needs to do his registration to take the benefits of the application. Here in that user have to provide his basic information like Name, Mobile number, City and State.

2. Main Lock-Screen:-

After completion of installation process user is ready to use the application. Here the GUI design of android Smartphone's lock screen contains one button to unlock the screen. All advertisement templates will be displayed over here in this form.

3. User Activity form:-

This GUI form is acknowledged as user activity form, because user has to decide whether service will on or off. User has came to know about total earnings of his whole day. User can redeem his total earning with the help of 'Redeem' button.

4. Mobile Recharge form:-

After using redeem button user has to provide some basic information about mobile user such as network operator, mobile number and amount. User can do recharge through this form.

5. Recharge Result:-

User can get recharge result in the form of text message in this form. User can get acknowledgement of his recharsge activity through this form in the form of text.

CONCLUSION

We have designed this application for advertisement purpose which is beneficial for the merchandise as well as the application users. Both the parties are in profit. Merchants can publicize their products or enterprise and on the other hand the customers for application users get some revenue and important knowledge of the sellers. Thus it's fruitful for both the parties.

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