Off-Site and Mobile Activity Management via Mobile Location- Based Technology

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ABSTRACT:
The application used the advanced features available on smart phones, such as: mobility, mobility sensors and GPS that is available on the smart phones to offer practical solutions for many problems the companies, firms and individual face. The problem that the research tries to solve efficiently is location and tracking the coordinates of mobile employees. Mobile employees who are required to perform tasks outside their company/firm and deliver reports about the progress and completion of their tasks, e.g. The companies that work in such an area face a problem with their scales people regarding the credibility of their assumptions whether the job is done as planned, as well as the difficulty in tracking the location of employees and verifying the completion of the tasks, the failure in a accomplishing the tasks correctly leads to the loss in resources and funds the companies

KEY WORDS: GPS.LBS, Smart phone, Mobile applications

1. INTRODUCTION:
the ubiquities of wireless network and the trend toward component miniaturization lead to the evolution of cell phones from more telephony devices to powerful mobile computing platforms that provide the basis for a host of other applications .todays mobile phones are typically equipped with devices such as GPS sensors [1],Wi-Fi and 3G wireless radios. Capable steaming high bandwidth, Internet content, touch, screen, based user interface, still and video cameras. Bluetooth transceivers and accelerometers [2].
Similar to computer a mobile operating system provides the primary execution environment for applications on the phone. Analogous to programs on a PC, apps can be downloaded and installed on mobile phones .Because of the growing general purpose computing capabilities of mobile devices.
Combined with their increasing popularity and adoption rate [3], it is expected that hand .held mobile phones will became the next PC [4].
The technology trend have enable innovative , exciting and compelling mobile application to become widely available, from gaming to multimedia to social network [5].
Hand-in hand with growth of the raw computing of mobile phone.
Various middleware / OS platforms that allow developers to take advantages of the computing resources to create feature-rich applications that provide compelling user interface and functionalities
A wide selection of proprietary and open-source mobile OS platforms exist .the most prominent ones being: Apples iOS, googles, android, Symbian from Symbian foundation, RIM Blackberries OS, and Microsoft's windows mobile.
Google's android OS, popular open. Source platform based on the Linux-kernel [3] and Java development environment [6].a growing number of cell phone manufactures and vendors such as Motorola, Samsung and HTC, have adopted android as the platform of choice for their products. For example in Jane (2010).Google announced that 68000 apps are now available on the android market and the number hit the 100000 mark

before the end of Jules. According to the reported statistics, the numbers of apps downloaded to android enable mobile handsets reached 1 billion as of Jules 2010[1].

2. MOBILITY AND LOCATION SENSING:

The ability to sense location is one aspect where a mobile device distinguishes itself from a traditional PC in terms benefits and utilities .unlike a PC, a mobile device can be easily carried by the user and conveniently accessed for location based applications such as looking up driving directions, maps, etc. [1].

The importance and usefulness of location-sensing has already been well recognized and accepted, with the popularities of GPS based navigation systems [2].the form factor and portability of a mobile phone makes it ideal for such applications.

Most of today's smart-phones have location sensing capabilities built in since people are most likely to use mobile phones on the go and away from home or office apps that leverage location-based services can add real value to the user and thus provide a good return on investment for mobile device. A number of the elements of location in a way that adds value to the user .some popular examples are:-

1. Four square a mobile app that allows users to check in, at various consumer and vestals outlets such as restaurants malls hotels etc. and reward points [7].

2. Loop, which allows users to track the location of their Facebook friends and receive alerts when they are nearby [8].

3. Go Walla, which allows users to broadcast their location on twitter, share photos of places they visit with their friends, and get localized coupons and offers [9, 10].

3. HOW TO FIND A PRESENT LOCATION OF A MOBILE USER:

The idea of using the mobile handsets and phones is to deliver the valuable services except the basic communication that had been started in the early 1990, when internet was added invoice telephones [11].

Location-based services or LBS [12] refer to "a set of applications that exploit the knowledge of the geographical position of a mobile device in order to provide services based on that information".

LBS provide the mobile clients personalized services according to their current location. They also open a new area for developers, cellular service network operators, and service providers to develop and provide value – added services: advising clients of current traffic conditions, providing routing information, helping the users to find nearby shopping malls.

LBS offer many merits to the mobile clients. For the mobile user, the examples of LBS are [13]:-

A. To determine the nearest business or service, such as a bank or hotels.
B. Receiving alerts, such as notification of sell in shopping malls or news of traffic jam nearby.
C. Friend finder or receiving the location of the stolen phone.

4. HOW TO FIND A PRESENT LOCATION OF USER USING GPS:

All cell phones constantly broadcast a radio signal, even when not on a cell. The cell phone companies have been able to estimate the location of a cell phone for many gears using triangulation information from the tower receiving the signal. However, the introduction of GPS, technology into cell phones has meant that cell phone GPS tracking now makes this information a lot more accurate.

GPS technology now more common place in many new smart phones, this means that the location of anyone carrying a GPS enabled smart phone can be accurately tracked at any time. Cell phone GPS trucking can therefore be a useful for business owners, parents, friends and co-workers looking to connect with one another. Science a cell phone already works like a tow- way radio when communicating with cell towers.

The GPS capability simply extends the radio signal reach to space satellites. A- GPS technology is the advanced technology with suited for mobile device more accurately.

A-GPS takes assistance from GPRS and at times, the service provider network information to pin-point the current location accurately. Moreover the amount is reduced by diverting most of the work to the assistant

server instead. A typical GPS enable cell phone uses a GPRS or other such internet based data communication to build a contact with the assistance server for GPS. This exercise usually is a bit slow if we are connecting with the server for the first time. As this technique does not take into account the cell phone service provider network completely, we only pay the GPRS usage charge and nothing else. The only down-side to this technology is that on GPS server cannot utilize any of the three standby satellites for GPS connection [14].

Figure 1 GPS Technology

5. GPS TECHNOLOGY:
Since obstacles like trees and balding can affect how long it takes oar signal to travel to a tower in GSM method so that we use GPS measurement method. It orders to determine oar location.
GPS receiver has to determine:
1. The location of three at least satellites above as.
2. And where we are in relations to those satellites.
The receiver then uses trilateration to determine oar exact location. Basically, it draws a sphere around each of three satellites it can location. These three spheres intersect in two points. One is in space, and one is on the ground at which the three spheres intersect is our location [15].
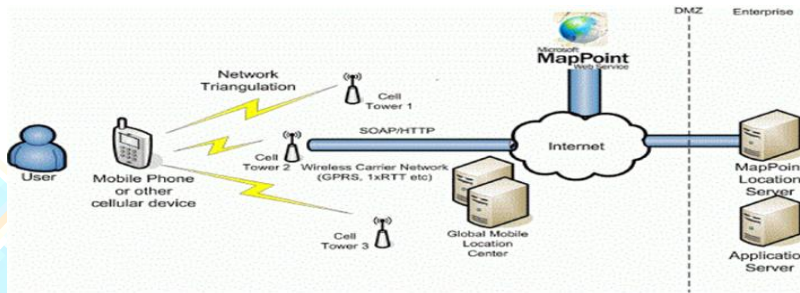
Figure 2 the LBS System

6. THE PROPOSED SYSTEM:

The application used the advanced features available on smart phones, such as: mobility, mobility sensors and GPS that is available on the smart phones to offer practical solutions for many problems the companies, firms and individual face.

The problem that the proposed system tries to solve efficiently is location and tracking the coordinates of mobile employees. Mobile employees who are required to perform tasks outside their company firm and deliver reports about the progress and completion of their tasks, e.g.

The companies that work in such an area face a problem with their scales people regarding the credibility of their assumptions whether the job is done as planned, as well as the difficulty in tracking the location of employees and verifying the completion of the tasks, the failure in a accomplishing the tasks correctly leads to the loss in resources and funds the companies.

THE PROPOSED SYSTEM IS TWO MAIN PARTS:

A- The android app is installed on the employee's smart phone: The application offers on easy-to-use interface through which the employee can enter live feed about his/her activities and tasks status. In turn, the application adds the geographical location of the employee to every task via the use of GPS and sends the fall information to the main server along with the coordinates.

B- The web portal that the server's offers can be used by the manager of the company/firm to offer real time information for all the reports of the sales people through a central database connected to the application, the web portal also can locate the employees at any given moment.

The benefits of the application

1. Verifying the credibility of the employees.
2. Detailed knowledge about geographical area.
3. Unified report layout.
4. Effective central management.
5. Annulment of the e-mail usage.
6. Easiness of writing and delivering reports.

The proposed system is distinguished from previous systems by the following:

1. The ability to follow unlimited number of field employee.
2. The ability of the employees to send reports to the company headquarters from his location.
3. The ability of the company to validate the accuracy and authenticity of the send reports.
4. The ability of documenting and archiving the locations and visits of the employee.

5. The ease of reports production.
6. The unification of the style of the reports by using a predesigned template.
7. The ease of communication between the company headquarter and the field employees.
8. A highly centralized control and monitoring over all employees.
9.

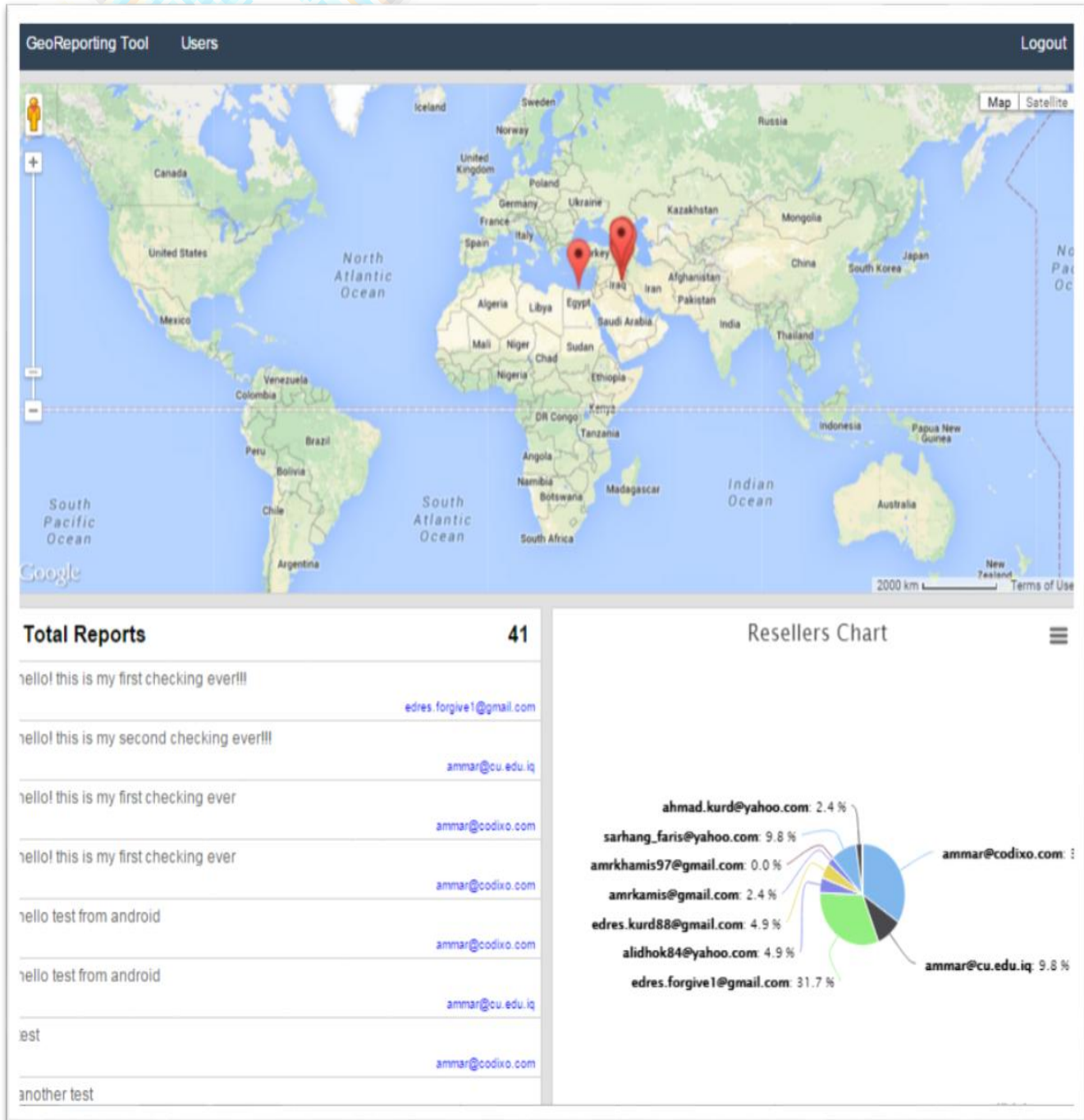## 7. The layout of the proposed system
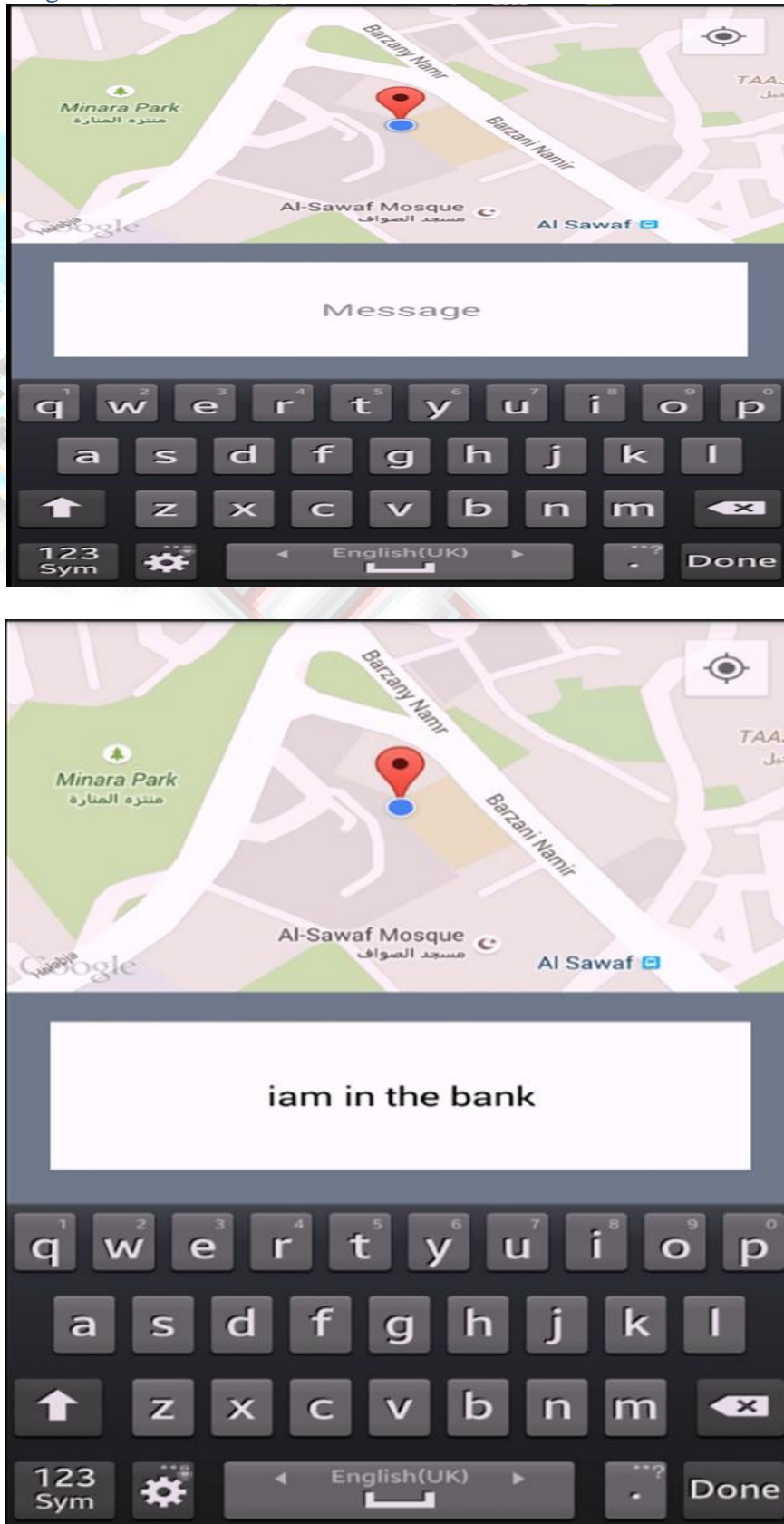

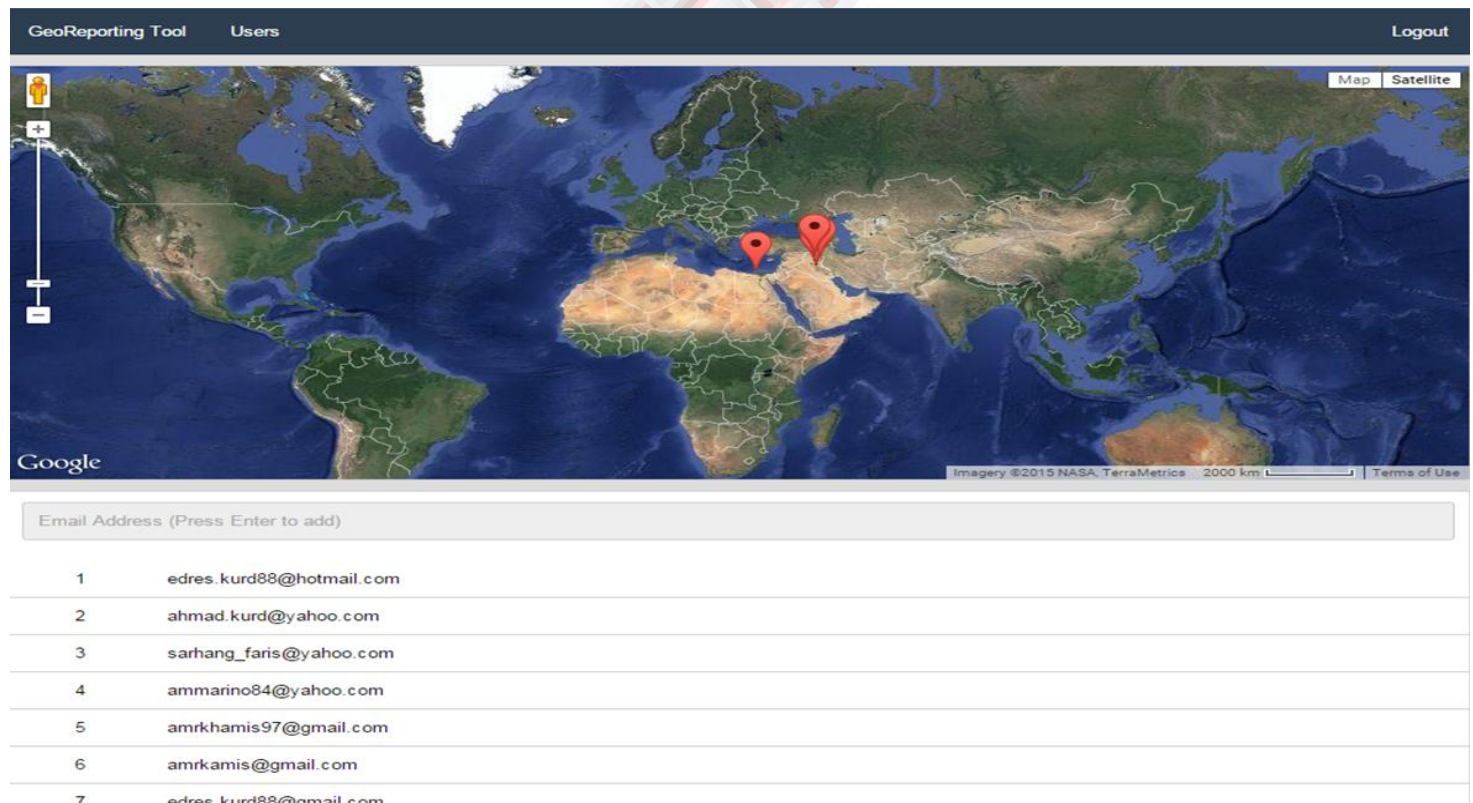**Figure 3 The Main Window of the Proposed System**
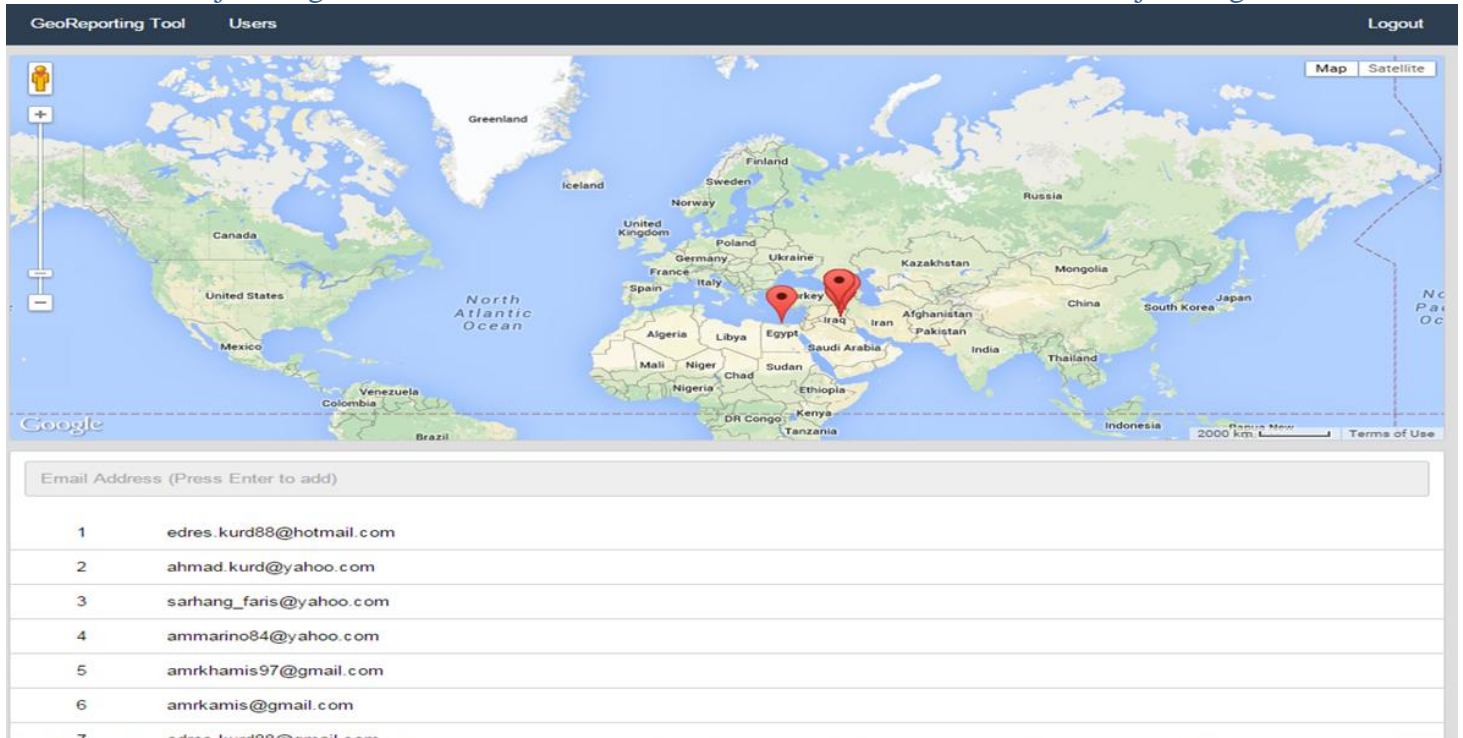
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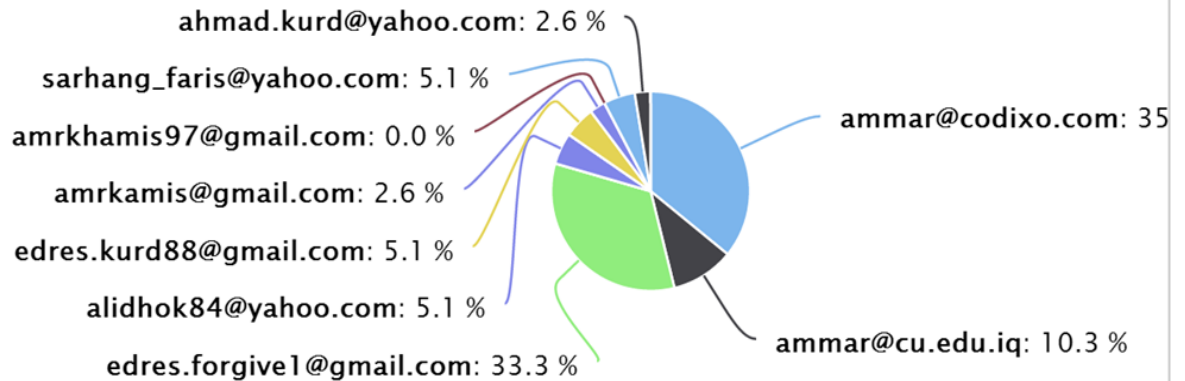
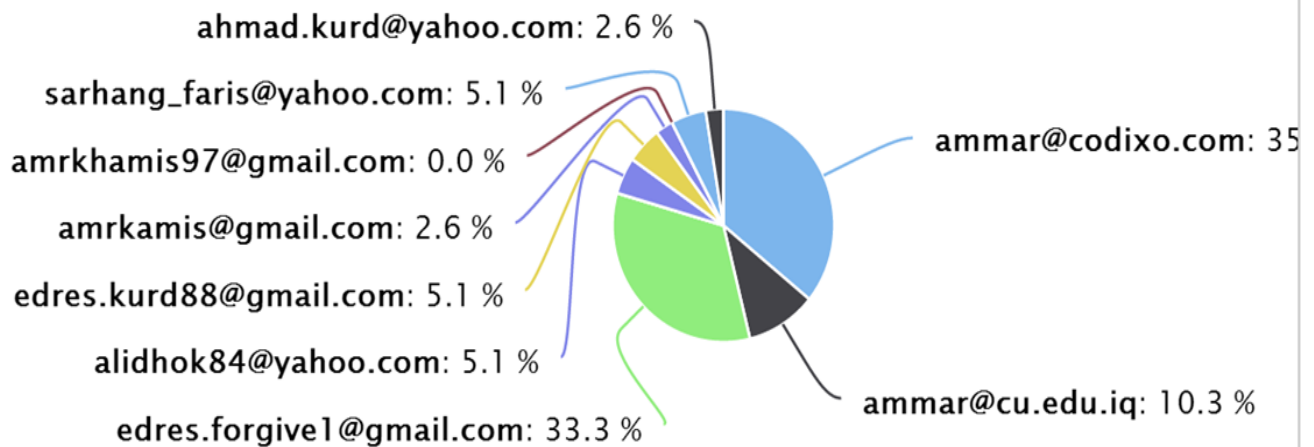**Figure 5 The E-mail Address of the employees**

Figure 6 the Final Reports

8 .CONCLUSIONS:

1. The system provides a competent way in tracking field employees.
2. The system provides an easy knowledge-based method in producing unified report templates.
3. The system enables discovering high-marking and low-marking geographical areas.
4. The system provides a centralized field work management.
5. The system is equipped with an expert yet easy interface.

9. REFERENCES:

1. manay singhal&Anupamshukla , " Implementation of location based services in Android using GPS and web services " , IJCSI Journal , , Vol.9, Issae1 , NO2, 2012
2. Location Based services on mobile in India for IAMAI, Version: 14, April 2008.
3. Qusay H. Mahmoud, J2ME and location based series, March 2004
4. GPS tracking," GPS Tracking system ", http//www.eetimes.com /design/ communication design.
5. Virrantaus, K.andMarkkala, J.," Developing GIs supported location .Based services. In web information systems engineering ", IEEE, 2001.
6. Consortium, O.G.," open location services 1.1", 2005
7. Amitkushwaha&Vineetkushwaha," location Based services using Android mobile operating system ", IJAET Journal, mar. 2011.
8. Jakia man, "study on location based services ", http: //hdl.handle.net /10361/781
9. Dineshmanandhar&Yongcheolsah,"GPS signal Acquisition and Tracking _ An Approach towards Development of software based GPS Receiver ".
10. GPS Location, "Tracking GPS location in Android", http://www.Javacodegeeks .com.
11. Snekkenes,E.," concepts for personal location privacy policies", proceeding of Electronic commerce ,2001
12. Langheinrich, m.," A privacy awareness system for ubiquitous computing environments", proceeding of ubicomp, 2002.10. Mohammed A.Qadeer&AnkarChandra, (2012),
13. abhijeetTekawade&Ravindrashinde,(2013).
14. Mobile tracking application for location friends using LBS international journal of innovative research in computer and communication engineering, vol. 1, issue 2.
15. amitkushwaha 7 vineetkushawaha , (2011),
16. Location based services using android mobile operating system, IJAFT, vol. 1 missue1.
17. m.zahaby and p. ganjuar ,(2009)
18. Location tracking in GPS using Kaman filter through SMSm IEEE.