METHOD, SYSTEM AND DEVICE FOR FINDING LONELINESS IN ONE OR MORE USERS

DESCRIPTION

FIELD OF INVENTION

[0001] The present invention relates generally to tracking one or more users through their devices and more particularly, a smart safety network relates for determining a loneliness of a user in a crowd sourcing environment.

INFORMATION RELATING TO PRIOR APPLICATION

[0002] This application claims priority from Singapore Patent application filed on 19 August 2019, with application number 10201907628V and title "A Smart safety network system for tracking a mobile computing device in an emergency environment and a method thereof".

RELATED ART

[0003] Wearable device often refers to device that is attached to the human body to sense health parameters, physical movements, body conditions, environmental condition around, location (GPS), etc. Some wearable devices are employed with a display and other user interface mechanism to provide information, indication, alarm, and other sensory stimulations to user. Generally, every mobile device has a built-in GPS circuitry which tracks the user and updates the location of the user to the application server, periodically. Currently, it is possible to track the location of a mobile phone using means like triangulation, Global Positioning System (GPS) co-ordinates and so on. The co-ordinates of the mobile phone, obtained using triangulation or GPS may be sent to a distant location and used to track the location of the mobile phone. However, for the above methods to work, mobile phone should be turned on. Only if the mobile phone is turned on, the GPS module present in the mobile phone work, and the mobile phone will be able to transmit its co-ordinates to a distant location.

[0004] Normal aged people may meet family members, friends, colleague on a regular basis to perform their daily chores such as home and office related work etc., and to improve their relationship. Loneliness in people is observed in every age group and are people who are aged are worse affected. Loneliness is a human emotion which are complex and unique to each individual. Since, it does not have a single common cause, the prevention and treatment of this potentially damaging state of mind can vary dramatically, to person to person. Loneliness is a state of mind wherein which causes people to feel empty, alone, and unwanted. People who are

lonely often crave human contact, but their state of mind makes it more difficult to form connections with other people.

[0005] The people make a constant connection or contact to avoid loneliness and becomes active by making healthier discussions with family members, friends, colleagues and other people. Often, people, also performs activities which they like and make them happy, such as hanging out with family members, friends, performing outdoor activities, discussing and spending time in social networking sites with peer friends etc. Loneliness in person is attributed by both situational factors such as moving to a new location and internal factors such as depression, personal loss etc. Loneliness has negative impact on person's health, and may lead to cardiovascular disease, stroke, increased stress levels, decreased memory and learning, antisocial behavior, Poor decision-making, depression etc. People disconnect themselves and becomes inactive due to loneliness. Loneliness in person should be avoided at any cost, and there are some techniques to avoid them and become social. One of the solutions would be, focusing on developing quality relationships with other people who share similar attitudes, interests, and values with you, such as family members, friends, colleagues etc.

[0006] Hence, there is a need to find loneliness in a person, by dynamically tracking the person's activity, location, event participation along with one or more users who are related or unrelated to the person. The person is invited to one or more events, activities marked by one or more users of the network. These users who are involving in some sort of activities or performing similar activities in the same vicinity may have similar interests of the person. These events activities, and locations, are tracked through a smart wearable and a connected mobile device. Through this method, the person can able to identify a whether he is lonely or not.

SUMMARY OF THE INVENTION

[0007] In one aspect, a method for identifying and tracking plurality of mobile computing devices through a first mobile computing device comprising, scanning for a plurality of mobile computing devices through a first mobile computing device in the vicinity of a first user, located in a first geographical location, identifying and acquiring device information of one or more mobile computing devices, tagging a geo location to each of the identified mobile computing devices, processing the unique ID and location information of each mobile computing device in first geographical location and preparing and storing a first list at the database. In an embodiment, the first mobile computing device is configured with a GPS circuitry. In another embodiment, the device information is a unique ID of the mobile computing device. In yet another embodiment, the geo location is the current location of the first user. In yet another embodiment, the unique ID and captured geo location of each of the mobile computing devices

in the vicinity of the first user. In yet embodiment, the first mobile computing device is a smart wearable or a mobile device, and the first geographical location is a home of first user.

[0008] In another aspect of present invention, the system comprising, a mobile computing device, a mobile device, an application server and a database. The mobile computing device is connected with the mobile device which is further configured with a mobile application which can monitor one or more activities, event, location of a user. The application server is capable determining a loneliness factor and lonely users in a network, retrieving event and location log of one or more users for any geographical location, finding a closeness factor with respect to one or more users, averaging the time duration spent by total number of users relating to one or more events and location, finding a threshold limit for each activity of one or more users, and further determining the loneliness factor for each and every activity. In an embodiment, one or more users are categorized based on loneliness factor. The database is capable of storing all information relating to the user.

BRIEF DESCRIPTION OF FIGURES

[0009] These and other features, aspects, and advantages of the present invention will become better understood when the following detailed description is read with reference to the accompanying drawings in which like characters represent like parts throughout the drawings, wherein:

[0010] FIG. 1 illustrates the example diagram of a smart safety network system for tracking a smart wearable or mobile device having access to the global positioning system (GPS).

[0011] FIG. 2 illustrates the example system for transmitting and processing the first set of data in an embodiment of the present invention.

[0012] FIG. 3 is a flow chart describing the first method 300 for identifying and tracking plurality of mobile computing devices through a first mobile computing device.

[0013] FIG. 4 is a flow chart describing the second method 400 for identifying and tracking plurality of mobile computing devices through a first mobile computing device.

[0014] FIG. 5 is a flow chart describing the method 500 for mark and increment a ‘count of view’ or ‘visit log’ when the first mobile computing device recognizes one or more listed mobile computing devices of other users in the vicinity of the first user.

[0015] FIG. 6 is a flow chart describing the method 600 for mark and increment a ‘location log’ when the first mobile computing device recognizes one or more listed mobile computing devices of other users in the vicinity and in one of the marked locations of the first user.

[0016] FIG. 7 is a flow chart describing the method 700 for determining the closeness factor or relationship between the first user and one or more users of the smart safety network system.

[0017] FIG. 8A is a flow chart describing the method 800 for determining the loneliness factor for each and every activity of a user of the smart safety network system.

[0018] FIG. 8B is a flow chart describing the method 850 for monitoring one or more users having higher loneliness factor of the smart safety network system.

[0019] FIG. 9 is a flow chart describing the method 900 for determining whether a first user is lonely with respect to the one or more factors of the smart safety network system, in an embodiment of the present invention.

[0020] FIG. 10 is a block diagram 1000 illustrating the internal modules of application server in an embodiment of the present invention.

[0021] Further, skilled artisans will appreciate that elements in the drawings are illustrated for simplicity and may not have been necessarily been drawn to scale. For example, the flow charts/ flow diagrams illustrate the method in terms of the most prominent steps involved to help to improve understanding of aspects of the present invention. Furthermore, in terms of the construction of the device, one or more components of the device may have been represented in the drawings by conventional symbols, and the drawings may show only those specific details that are pertinent to understanding the embodiments of the present invention so as not to obscure the drawings with details that will be readily apparent to those of ordinary skill in the art having benefit of the description herein.

DETAILED DESCRIPTION

[0022] For the purpose of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawings and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated system, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

[0023] It will be understood by those skilled in the art that the foregoing general description and the following detailed description are exemplary and explanatory of the invention and are not intended to be restrictive thereof.

[0024] Reference throughout this specification to “an aspect”, “another aspect” or similar language means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrase “in an embodiment”, “in another embodiment” and similar language throughout this specification may, but do not necessarily, all refer to the same embodiment.

[0025] The terms "comprises", "comprising", or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a process or method that comprises a list of steps does not include only those steps but may include other steps not expressly listed or inherent to such process or method. Similarly, one or more devices or sub-systems or elements or structures or components proceeded by "comprises...a" does not, without more constraints, preclude the existence of other devices or other sub-systems or other elements or other structures or other components or additional devices or additional sub-systems or additional elements or additional structures or additional components.

[0026] Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this invention belongs. The system, methods, and examples provided herein are illustrative only and not intended to be limiting.

[0027] Embodiments of the present invention will be described below in detail with reference to the accompanying drawings.

[0028] FIG. 1 illustrates the example diagram of a smart safety network system for tracking a user, events, locations, closeness factor with respect to the other users and loneliness factor through the smart wearable or mobile device having access to the global positioning system (GPS). The smart safety network system is primarily capable of identifying whether user is alone in a geographical location, can able to track one or more users and their devices which are in the vicinity of the first user. The one or more users of the network may have one or more mobile computing devices which are configured with an application, that can track the user activities in real time and further capable of identifying whether the subject user is lonely at any circumstances. The objective is to identify the users of the smart safety network who are lonely, who feel lonely and also to guide them, engage them in one or more activities to avoid such lonely circumstances.

[0029] As shown there, a first mobile computing device 102 used by a first user or a user and is capable of scanning the nearby devices which are in the vicinity of the first user. When a first user moves from one location to another location, or inactive, the first mobile computing device 102 is capable of identifying all mobile computing devices which comes in the vicinity of the first user and add a geo location to subject mobile computing devices. The first mobile computing device 102 basically used to identify whether the first user is socially active, which includes meeting family members, visiting friends, engaging in one or more outdoor activities, or performing any activity which makes the first user ‘active’ and to measure the loneliness factor.

[0030] The first mobile computing device 102 is a smart wearable which is attached with the human body to record and monitor one or more activities of the first user. In an embodiment, the first mobile computing device 102 is configured with a global positioning system (GPS), and can able to record the location information of the first user. The first mobile computing device 102 uses short or medium range communication methods such as Bluetooth, BLE, WiFi etc., to scan the nearby mobile computing devices. The mobile computing devices (106, 108, 110 and 112) may be dynamic devices such as PDAs, cellular phone, smart phone, a smart watch, smart fitness bands, smart shoes, smart glass, smart earphones/ headphones, smart clothing, smart jewelry, laptop, etc. to name a few. In an embodiment, the first mobile computing device 102 is also capable of scanning static devices and its identities such as routers, computers, laptops etc.

[0031] In one aspect of the present invention, the first mobile computing device 102 scans the vicinity of the first user and retrieve or obtain device identities from those mobile computing devices. Further, the first mobile computing device 102 can prepare a first set of data by tagging a geo location to the subject identified devices. The first set of data is transmitted to an application server through one or more communication methods and standards and stored in the database. This first set of data can be accessed by the first user by any time, through a smart wearable or mobile application configured in mobile device of first user. The mobile application configured in the mobile device provide a graphical user interface, where in which, the first user at any time, can able to track the activities, meeting, events, visited locations, etc. The mobile application primarily provides event log, activities log, location log, closeness factor with respect to family members, friends, colleagues, acquittance, and other users, and loneliness factor.

[0032] FIG. 2 illustrates the example system for transmitting and processing the first set of data in an embodiment of the present invention. As shown there, the system includes, a smart wearable connected to a mobile device. In an embodiment, the smart wearable may transmit the first set of data directly to the application server. In another embodiment, for those smart wearables which do not have a built in GPS, may transmit the device identities to the connected mobile device. The smart wearable uses short range communication methods to transmit the device identities to the mobile device. And, mobile device which is configured with a mobile application is capable of receiving the device identities and may add a GPS or location co-ordinates to the device identities and prepare a first set of data. The first set of data is transmitted to the application server through a communication network. The application server is centralized server which can receive first set of data from plurality of users of smart safety network system.

The application server and database are configured in such a way to store the information corresponding to the plurality of nearby mobile computing devices (106, 108, 110 and 112) and associate the information with the first mobile computing device.

[0033] In one aspect, each of the devices including the first mobile computing device 202, mobile device of first user, mobile computing devices (106, 108, 110 and 112) are configured to scan and send real time information of themselves and of their nearby devices respectively to the application server 208 through a communication network 206. The real time information (the first set of data) primarily includes information pertaining to location coordinates along with their time stamp and unique ids. The location coordinates are determined using GPS circuitry embedded in each of the mobile device 204. The application server 204 is further connected to a database 210, and the database 210 is configured to store location information, name, unique ID of the first mobile computing device and mobile device 202, and other mobile computing devices, address, gender, age, last location, phone no, group name, health data, past travel route data, pertaining to the first users of the aforesaid devices etc. In an embodiment, the unique ID may be one of MAC Id, SSID, device id etc.

[0034] FIG. 3 is a flow chart describing the first method 300 for identifying and tracking plurality of mobile computing devices through a first mobile computing device in the vicinity of a first geographical location of first user. The identification and tracking of one or more devices leads to identification of one or more users of smart safety network system, who are very near to the first user. In an embodiment, the set of users who are in the close vicinity of the first user may be first called, when a SOS is initiated by the first user or automatically initiated by the application server whence the first user is in trouble and requires immediate help. The method includes step 302 of scanning for a plurality of mobile computing devices through a first mobile computing device in the vicinity of a first user, located in a first geographical location, wherein, the first mobile computing device is configured with a GPS circuitry. In an embodiment, the first mobile computing device is a smart wearable or a mobile device which has built in GPS circuitry, step 304 of, identifying and acquiring device information of one or more mobile computing devices in the vicinity of first user, wherein, the device information is a unique ID of the mobile computing device, step 306 of tagging a geo location to each of the identified mobile computing devices of in the vicinity of first user, wherein, the geo location is the current location of the first user, wherein, the unique ID and geo location information of each of the mobile computing devices in the vicinity of the first user is transmitted to the application server. Step 308 of, processing the unique ID and location information of each of the mobile computing devices received from the first mobile computing

device of first user and step 310 of, preparing a first list with unique ID and location information of mobile computing devices in reference to the first geographical location of the first user, and storing the first list in the database. Every time, the first mobile computing device scans the first geographical location for a new mobile computing device, when any new mobile computing devices are found, then the first mobile computing device immediately implements this method and add the unique id to the first list. In an embodiment, the first geographical location is named as 'Home' of first user. In an embodiment, the one or more users of smart safety network system who are in the vicinity of first user is mapped as first primary contacts when an SOS is initiated. In another embodiment, the profiles of one or more users who are near to first user are checked for similar kind of interests, activities with respect to the first user. Further, when the first user is having higher loneliness factor, the application server maps a nearer user who is having similar or same interests as the first user, to contact the first user and to avoid loneliness of first user.

[0035] In an embodiment, the first user may create a group of users which may belong to one of family members, friends, colleagues, acquaintances, others etc., for his convenience. The group of users belongs to the same smart safety network system. In another embodiment, the first mobile computing device may request the first user to add the name of the person, mobile number if any and the group in which that person belongs and does not belong to the smart safety network system. The first mobile computing device along with the first set of data send the name of person and his/her group to the application server. After processing such information in application server, the database is capable of mapping the locations of persons relating to the first user and with their respective group name. Hence, the application server at any time, may able to track the last known locations of each and every user of the network and users outside the network along with name of the persons they meet through their device identities.

[0036] When the first user is travelling to one or more locations which are known or unknown to the first user, the mobile computing device of first user is capable of identifying and scanning that particular location for one or more users of network or unknown users, through the first computing device. The following paragraph describe the manner in which the first user identifies the one or more users which are known or unknown to the network. This further identification of one or more users in the user's second location helps the application server to draw and find one or more friends, family members, colleagues to the first user who have similar kind of interest and map them together.

[0037] FIG. 4 is a flow chart describing the second method 400 for identifying and tracking plurality of mobile computing devices through a first mobile computing device, when the first user travels to a second geographical location from the first geographical location. The method includes step 402 of scanning for a plurality of mobile computing devices through a first mobile computing device in the vicinity of a first user, located in a second geographical location, wherein, the first mobile computing device is configured with a GPS circuitry. In an embodiment, the first user can travel to a second geographical location from a first geographical location. The second geographical location may the frequently visited place of first user, such as park, office, etc. In step 404 of, identifying and acquiring device information of one or more mobile computing devices in the vicinity of first user through the first mobile computing device in the second geographical location, wherein, the device information is a unique ID of the mobile computing devices in the second geographical location.

[0038] In step 406 of, checking whether the identified device information of mobile computing devices in second geographical location are already inserted in first list of mobile computing devices belonging to the first geographical location. If, device information is already inserted in the first list, then the control is transferred to step 408, otherwise, the control is transferred to the step 410. In step 408 of, retrieving the all location information of identified mobile computing device from the application server, with respect to first user.

[0039] For example, the second user meets first user at the first geographical location ('home' of first user), the smart wearable of first user identifies the devices carried by second user and tags the geolocation to it and stores in the first list. After two days, second user again meets the first user in a second geographical location (for example, a park), then the smart wearable of first user identifies the same device has been carried by the second user, logs it as an entry in application server, that, the first and second users are met twice, with same device ids, but in two different locations. When, the smart wearable recognizes the second user through device information, it immediately notifies the first user with log of location information where and all first and second users are met in the past. The smart wearable with this information, informs the first user with a message, "you are meeting the second user for a second time in this week, and the first meeting was happened at your home".

[0040] In step 410 of, tagging a geo location to each of the identified mobile computing devices in the vicinity of first user in the second geographical area, wherein, the unique IDs of only those mobile computing devices which are not in the first list are considered, collected and tagged with the current location of first user.

[0041] In step 412 of, processing the unique ID and location information of each of the mobile computing devices received from the first mobile computing device of first user and step 414 of, preparing and second list with unique ID and location information of mobile computing devices in reference to the second geographical location of the first user, and storing the second list in the database.

[0042] In the similar way, the first user may visit one or more geographical locations and can meet one or more users of the network which are known or unknown to the first user. The first user makes friends who has same or similar interests, in one or more locations or wherever the first user visits. In an embodiment, every profile of user may have a profile compatibility factor, which helps the first user and one or more users of the network to identify the people who has similar or set of activities, interests etc. Once identified, the user can meet other users in a location to continue with their interests, to participate in an event common to the users etc. The application server also records and tracks all such activities which are scheduled, marked, created by the one or more users of the network. The loneliness factor for those users who are all socially active is lesser compare to users who are not interacting socially. Hence, the first mobile computing device of first user is capable of scanning for a plurality of mobile computing devices and obtaining device information of each and every mobile computing devices in the vicinity of a first user, in all geographical locations. Further, the first mobile computing device of first user is capable of identifying the name and group name of a second user whom the first user is meeting (in real time), or vice versa, by comparing the device information of second user, collected by the first mobile computing device with the data of first user available in the database. When, the application server found a match (for example, details of earlier meetings), then, it may forward these details to first mobile computing device of first user, such as, but not limited to, name of second person, number of devices under second user and its device information, group in which the second user belongs to, last meeting location, how many times the first and second met, the duration of meeting, how safe is the second person to the first person etc. The application server applies machine learning algorithm to track and update these data which are very vital to the first user and also helps in ensuring the safety of the users in the network. In an embodiment, the application server maintains an event log for each and every user of network, to track one or ongoing or upcoming events scheduled by one or more users of the network. In another embodiment, the event log has a history of all events, ongoing events, and upcoming events of first user. The application server may create one or more event logs relating to social networking sites (social activities), physical activities, interpersonal activities, device related activities.

[0043] The first event log has the details of social networking sites, whom in which the first user is a member, such as facebook, twitter, Instagram, whatsapp etc. Further, the type of social network, duration at which the first user is spending time in each of social networking sites, the people in which the first user interacts and relationship between them etc, the posts, tweets made by the first user, time at which posting such messages online etc are monitored by the application server in real time, recorded and stored appropriately in the database.

[0044] The second event log has the details of physical activities performed by the first user, such as walking, running, jogging, swimming, playing any sport, performing workouts in gym, yoga, or performing any activities in outdoor or indoor. Further, the profile details of users involved in that activity, type of activity, location of activity (indoor or outdoor), actual geographical location of such activity, list of people involved in that activity, time spent in such activities etc are monitored by the application server in real time, recorded and stored appropriately in the database.

[0045] The third event log has the details of first user meeting a family member, colleagues, visiting a person who is known or unknown to the network, online meetings (such as video calling, voice calling etc scheduled through one or more known meeting applications), meeting one or more friends, or meeting any other person such as delivery boy, doctor, advocate etc. Further, the names of users, location of meeting, time spent during meeting, subject of meeting (such as personal, official etc), are monitored by the application server in real time, recorded and stored appropriately in the database.

[0046] The fourth event log has the details of first user's mobile devices, smart wearables or any devices in smart home or other devices. The mobile application configured in mobile device is capable of monitoring the activities performed by the first user in real time, such as making a normal GSM based call, sending a message, details of one or more apps configured in the mobile application. Further, the names of users whom the first user made a call, or sent a message, app in which the first user is frequently used, or apps in which is opened for most of the time, any notes made by first user etc, are monitored by the application server through the mobile application in real time, recorded and stored appropriately in the database.

[0047] The application server creates a location log for each user of the network. Further, the location log contains, list of all places visited by first user (hourly, daily, weekly, monthly, yearly), details in which whether the first user visited places with one or more users, or went alone, total time spent in that location, whether that location is relating to any event or activity already scheduled or created or invited for the user.

[0048] Hence, the application server gathers all information relating to the first user, which may determine the closeness factor of first user with one or more users of network. In an embodiment, the application server is also capable of determining the loneliness factor based on the closeness factor, event and location logs. The closeness factor is being determined by frequency at which the person meets other people who are known, related, and unrelated persons.

[0049] For every event or activity of user, a visit log is maintained at the server, which means that the user is physically present at the event/activity location or virtually present in all online related activities such as browsing in social networking sites, making a virtual voice or video call to other user, attending a meeting, webinars, etc. The visit log is appropriately incremented based on the presence of first user. In an embodiment, the application server processes the entries of visit log in real time, since it involves the participation of one or more users engaged in an activity and at a location. The following paragraphs describes the manner in which the visit log is being incremented by the application server in real time.

[0050] FIG. 5 is a flow chart describing the method 500 for mark and increment a 'count of view' or 'visit log' when the first mobile computing device recognizes one or more listed mobile computing devices of other users in the vicinity of the first user. The event log includes 'visit log' of the first user.

[0051] The method includes step 502 of, scanning a plurality of mobile computing devices through a first device in the vicinity of a first user, located in one or more geographical locations or current location, wherein one or more geographical location includes, home, work, park etc. In an embodiment, the current location may be any location which is different from the other known locations listed by the first user, such as home, work, park etc.

[0052] In step 504 of, identifying and acquiring device information of one or more mobile computing devices by the first mobile computing device, when the first user in the vicinity of one or more user of the network or user's unknown to the network. In one example, the first mobile computing device of first user may automatically initiate scan and to identify a list of known mobile computing devices in the vicinity of the first user, which are in the range of 1ft to 10ft. In an embodiment, the range at which first mobile computing device may scan may vary up to 1m to 100m. The first mobile computing device compares the device information of those mobile computing devices in the range with the information available from the database for the first user.

[0053] In step 506 of, checking whether the identified mobile computing devices of one or more users is listed in any one of the groups relating to first user. In an embodiment, the first user may

create one or more groups, having one or more users of safety network system, with their mobile computing devices and their unique IDs. In an embodiment, the first user may create one or more groups based on the geographical locations, that he visits frequently. The application server finds any user's data which is already being available in the lists of first user. For example, the application server prepares a 'visit log' and maintains them under the profile data of each and every user. When, first user meets the other known user or users, or vice versa, then the application server makes an entry in the 'visit log' of first user and each and every user who are in the vicinity of first user. The visit log is prepared dynamically by the application server by implementing the one or more machine learning algorithms. In an embodiment, to make and mark an entry in the visit log or 'count of view', the other user need not have to interacted or met with the first user, the vicinity of other user from the first user is sufficient enough to make an entry in the visit log. In an embodiment, the visit log may be paused or stopped by application server, on request from the subject user, since, visit log maintains all device data which are in range of subject user. In another embodiment, the visit log may be made private, that is only visible to the subject user and which can hide the details of other users of network who are not part of user's known list such as home, work etc. But, however, the application server keeps a record of locations (including a current and past) of each and every instance of first user and other users of network.

[0054] If, the identified mobile computing device(s) is listed in any one of the groups relating to first user, then the control is transferred to step 508, otherwise, the control is transferred to step 510. In step 508 of, retrieving the user information, location history information relating to the identified mobile computing devices. In an embodiment, first mobile computing device may prepare a list of known users of subject safety network and unknown persons, who may be the owners of mobile computing devices which are in the vicinity of first user. In an embodiment, the application server retrieves the details of known users of network with their, unique ID of device, name of user, group in which the user is relating to first user, total number of devices that are in the vicinity of first user, past location history of such identified users of network etc.

[0055] In step 510 of, tagging a geolocation (current location of first user) to the unique id of each of the identified mobile computing devices of other users (for example, internal users, or users who use smart safety system) which are known to the network and may be unknown to the first user and other external users. The data (unique id, tagged location) relating to such users are stored in a separate list at the database. This scenario happens when the application server could not able to retrieve or user data is unavailable at the database. In step 512 of, preparing

a visit log for first and second user in the network. In an embodiment, the visit log contains the information such as total number of visits, duration of meeting or visit (time spent), visits by first user to second user at any geographical location and vice versa, visits by one or more users of network or user's unknown to the network to the first user etc.

[0056] In step 514 of, incrementing and marking a count in visit log of first user and other users of the smart safety network, who are being identified by their mobile computing device. In an embodiment, the visit log is incremented every time when the first user meets a known user of the smart safety network, irrespective of the location they meet. In an embodiment, the known users are users who are registered users of smart safety network and are similar to first user. For example, user A and user B are in smart safety network, when user B meets user A at A's home, then visit log of both users A and B is incremented by 1 and total number of meeting count is '1'. When user B meets user A at A's office, then visit log of both users A and B is incremented by 1 and total number of meeting count is '2'. When user A meets user B at B's office, then visit log of both users A and B is incremented by 1 and total number of meeting count is '3'. When user A meets user B at a park (a common place), then visit log of both users A and B is incremented by 1 and total number of meeting count is '4'.

[0057] For every location the first user visit, a location log is maintained at the server, which means that the location of every activity or event or meeting made by the first user is tracked and recorded at the application server. The location log is appropriately incremented based on the presence of a first user at a geographical location. Predominantly, the users of smart safety network can set certain geographical locations as safe, moderately safe, unsafe etc. Based on this information and along with the locations visited by the user, the application server may suggest and mark the locations which are safe, moderately safe and unsafe during any time in a day. The following paragraphs describes the manner in which the location log is being incremented by the application server in real time.

[0058] FIG. 6 is a flow chart describing the method 600 for mark and increment a 'location log' when the first mobile computing device recognizes one or more listed mobile computing devices of other users in the vicinity and in one of the marked locations of the first user. In an embodiment, the first user can mark location as 'home', 'office' 'park' etc., and may be first user's default locations. In step 602 of, observing the location information in each of the users, that include a first user and other known users who are in the vicinity of the first user, through the application server, first mobile computing device and other mobile computing devices. In step 604 of, checking whether the current location of first and other users is in any one of the marked locations of first user and other user. If, it is found that the current location is any one

of the marked locations of first user and other user, then the control is transferred to step 606, otherwise the control is transferred to step 608.

[0059] In step 606 of, preparing a location log for first and other users in the network. In an embodiment, the location log contains the information such as total number of locations marked by first user, frequent locations of first user and time of visit, duration spent at one or more marked location of first user, location which are common to first and other users of network, locations by first user to other users when they meet or visit and vice versa, locations of one or more users of network or user's unknown to the network to the first user etc.

[0060] In step 610 of, incrementing location count for both first and second user by the application server. In an embodiment, the application server maintains a location log for each and every user of the smart safety network, and under the profile information. The application server increments a count in location log, when the first user and other user meets at any location marked by any one of the first or other user. For example, user A and user B are in smart safety network, when user B meets user A at A's home, then location log for 'home' of user A is incremented by 1 and location log of user B remains unchanged, since, B is meeting A in A's marked location. The total number of location log is maintained with respect to the user and their location of meeting.

[0061] When both A and B are working in an office and marked 'office' as location in their respective profiles, then whenever user B meets user A and/or user A meets user B at 'office', then location log for 'office' of both users (A & B) are incremented by 1, since both A and B had marked their location as 'office'.

[0062] In step 608 of, mark and store current geo location of both first user and other user in the database. The current geo location is the location where both first and other user did not add or mark as default locations in their respective lists. After adding the current location to the database and in their respective lists, then when the next time they meet, then the subject location is notified to both first and second user.

[0063] For every person the first user visit, a closeness factor is determined and maintained at the application server, which means that the meeting or visiting of every person by first user is being tracked and recorded at the application server. In one example, the closeness factor is appropriately varies based on the relationship with the first user, such as family member has a closeness factor of '1' (highest), a friend may have a closeness factor of '0.75' (moderate), a colleague may have a closeness factor of '0.5', an acquittance may have a closeness factor of '0.25' and an unknown person may have a closeness factor of '0' with respect to the first user. Since, the application server maintains the records of the visits/meetings made by first user,

which can predict a closeness factor based on total number of visits made by first user with respect one or more users in the network. The following paragraphs describes the manner in which the closeness factor is being determined by the application server in real time.

[0064] FIG. 7 is a flow chart describing the method 700 for determining the closeness factor or relationship between the first user and one or more users of the smart safety network system. In an embodiment, the other user is second user, who may visit or meet the first person in any one of the geographical locations as identified by the first user. In another embodiment, the application server employs one or more algorithms to identify and determine the closeness of an any user in a network with respect to the first user. Further, the application may prepare a list of users who might have visited or met the first user in a given duration, to the first user and create one or more groups such as family member, colleague, friend, acquittance or unknown users depending on the frequency of meeting or visits by that user or the first user, in a first or second or any geographical location set by the first user. The first user may accept that list and the same is saved in the database based on the approval from the first user. The first user is also allowed to modify the list of users suggested by the application server for creating a group, any time. The closeness factor is kept confidential to each and every users of network and only the user may have the complete control over marking and placing a user in any one of the groups. If a user is being addressed in two of the groups, then he is very close to the first user. The following example groups may be created by user or suggested by application server, such as home, office, school friends, college friends, acquittance etc.

[0065] In step 702 of, observing the location and profile information of first and second user, wherein, the second user is another user of the smart safety network system. In step 704 of, checking whether the second user frequently meets or visits the first user at a first geographical location, wherein the first geographical location is the home location of first user. In an embodiment, the first geographical location may also be a home location for the second user. If the second user frequently meets or visits the first user, the control is transferred to step 706, otherwise, the control is transferred to 708. In step 706 of, marking the second user as a ‘Family member’ of first user and subject profile information of first user is updated by the application server and saved in the database. Similarly, the marking is done in second user’s profile, that is, marking the first user as a ‘Family member’ of second user and subject profile information of second user is updated by the application server and saved in the database. In an embodiment, both users are considered as ‘home’ group.

[0066] In step 708 of, checking whether the second user frequently meets or visits the first user at a second geographical location, wherein the second geographical location is the office

location of first and second user. If the second user frequently meets or visits the first user or vice versa, the control is transferred to step 710, otherwise, the control is transferred to 712. In step 710 of, marking the second user as a 'Colleague' of first user and subject profile information of first user is updated by the application server and saved in the database. Similarly, the marking is done in second user's profile, that is, marking the first user as a 'Colleague' of second user and subject profile information of second user is updated by the application server and saved in the database. In an embodiment, both users are considered as 'office' group.

[0067] In step 712 of, checking whether the second user meets the first user at least in 7-15 days in a month at any of geographical location or may be frequently for example, thrice a week, wherein, the any geographical location implies to any location outside home and office. If so, the control is transferred to step 714, otherwise, the control is transferred to step 716. In step 714 of, marking the second user as a 'Friend' of first user and subject profile information of first user is updated by the application server and saved in the database. Similarly, the marking is done in second user's profile, that is, marking the first user as a 'Friend' of second user and subject profile information of second user is updated by the application server and saved in the database. In an embodiment, both users are considered as 'friend' group.

[0068] In step 716 of, checking whether the second user occasionally meets the first user at any of geographical location. If so, the control is transferred to step 718, otherwise, the control is transferred to step 720. In step 718 of, marking the second user as a 'Acquittance' of first user and subject profile information of first user is updated by the application server and saved in the database. Similarly, the marking is done in second user's profile, that is, marking the first user as a 'Acquittance' of second user and subject profile information of second user is updated by the application server and saved in the database. In an embodiment, both users are considered as 'Acquittance' group. In step 720 of, marking the second user as a 'unknown user' for first user and added to 'unknown' group.

[0069] FIG. 8A is a flow chart describing the method 800 for determining the loneliness factor for each and every activity of a user of the smart safety network system. In step 802 of, retrieving the closeness factor, event, and location log of one or more users for any geographical location of a first user by an application server, connected with the database. In an embodiment, the closeness factor, event log, visit log, and location log may have different impact in deriving the loneliness factor. In another embodiment, the application server may provide equal values to all the attributes such as closeness factor, event and location log, since they make an equal impact in determining the loneliness factor. The database which maintains

tables of data relating to the profile of first user, may retrieve the above information to the application server through a request.

[0070] In step 804 of, monitoring the closeness factor, event and location log of one or more users for any geographical location of a first user by an application server through the first mobile computing device and mobile device of first user.

[0071] In step 806 of, averaging the time duration spent by total number of users relating to one or more events and location by an application server. In an embodiment, the application server retrieves all user data such as total number of users of network, active users participated in the event, total time spent in doing such event, start and end time of event, location of event etc. with respect to one such event. The application server may further determine the average time spent by each of the active participated user with respect to the total time spent by all active users. In the similar way, the application server may determine the average time spent for each event. The application server may also provide the average data for each and every user, for their every event. In an embodiment, the average contribution of first user may be greater or lesser or equal to the average data of one or more users (total number of active users) with respect to the same event.

[0072] In step 808 of, finding a threshold limit for each activity of one or more users by an application server. In an embodiment, the application server finds at least one minimum threshold to qualify ‘active’ status for an event. The users who falls under minimum threshold are considered as ‘inactive’.

[0073] For example, consider an activity ‘putting likes for the posts’ in social networking site (for example, Facebook), the average user who visits facebook who spends an average time of 3 hours in a day, can put on an average of at least 10 likes, for the every 30 posts he views and subject user is considered ‘active’ in facebook (social media). If a first user, who spends same amount of time in facebook, but puts only 5 likes for the 30 posts he viewed and subject first user is considered as ‘inactive’ in social media. The threshold value for considering whether the user is ‘active’ on ‘inactive’ is being determined by the duration, total likes/shares per day, number of posts viewed etc.

[0074] In another example, consider an activity ‘making tweets’ in social networking site (for example, twitter), the average user who visits twitter who spends a time of 30 minutes, can put on an average of at least 4 tweets, and subject user is considered ‘active’ in facebook (social media). If a first user, who spends same amount of time in twitter, but puts only 1 tweet then subject firs user is considered as ‘inactive’ in twitter social media. The threshold value for

considering whether the user is ‘active’ on ‘inactive’ is being determined by the duration, total tweets per day, number of tweets viewed etc.

[0075] In another example, consider a physical activity, running in a location known to the first user, and people known to first users are also participating. But, the first user is not interacting with any of the known persons, or socially not available for those people, and when the first user particularly avoiding one or more known persons, then the first user is considered as ‘inactive’, even though first user is participating in such physical activity. In an embodiment, when user particularly avoids some of known people, then the first user is considered as ‘lonely’ or ‘isolated’. The participation such as meeting the friends, interacting with them, spending quality time with them during such event is considered as ‘active’.

[0076] In another example, the first user is not regularly meeting the family member, friends, colleagues or any other person and avoids such meeting or visiting them, is considered as ‘inactive’. Further, when the first user stays at a location for 2 days and performs no activity is considered as ‘inactive’.

[0077] In another example, the first user not at all using mobile device to make calls, or to send messages for at least 3 days, is considered as ‘inactive’. A different threshold limit is set for each activity, in which the first user must engage, and prove ‘active’ (or socially available), otherwise, when first user is not participating in any events or hardly participate in any event, then, the application server determines that first user wanted isolation from others and is appropriately marked as ‘lonely’. By the time, application server finds that the first user is ‘lonely’, it immediately calls and intimate for other people who are family members, friends and tries to engage the first user in any kind of mood changing activity, to not to feel ‘lonely.

[0078] In step 810 of, determine the loneliness factor for each and every activity by the application server. The application server is capable of identifying and correlating one or more data sets relating current participating events, activities, location log, visit log of first user and compares with the average of all events, activities, location logs, visit logs of one or more users of the network and determine whether the first user is lonely or not. In an embodiment, the loneliness factor is determined every day for every user of the network.

[0079] FIG. 8B is a flow chart describing the method 850 for monitoring one or more users having higher loneliness factor of the smart safety network system. In step 852 of, determine the loneliness factor for each and every activity by the application server. In step 854 of, categorize one or more users based on loneliness factor, by the application server through different buckets, such as 100%, 75%, 50%, 25 % and 0%, whereas 100% shows that the first user is very lonely, 75% shows that the first user is considerably lonely, 50% shows that the

first user is moderately lonely, but less active, 25% shows that the first user is considerably moderately active, 0% shows that the first user is active.

[0080] In step 856 of, monitoring one or more users having higher loneliness factor by the application server. In one example, the application server monitors the users or group of users who fall between 50% to 100% loneliness factor, because these users require additional care and affection, togetherness, cheering, compared to other users. The application server may try to involve these segment of users in to a lot of interesting activities which are designed specifically to avoid the loneliness. The mobile application provides and lists such engaging activities immediately when the user falls above 50% category of loneliness factor.

[0081] FIG. 9 is a flow chart describing the method 900 for determining whether a first user is lonely with respect to the one or more factors of the smart safety network system, in an embodiment of the present invention. In step 902 of, monitoring loneliness factor, closeness factor, event and location log of a first user by the application server. In step 904 of, the application server checks whether any abrupt change in activities or irregularities by the first user is found in the profile data, event and location log, due to the behavior of first user. If yes, the control is transferred to step 906, otherwise the control is transferred to step 902.

[0082] In step 906 of, the application whether the first user is involved in any activity in social network at least for 3 days with other users. If yes, the control is transferred to step 908, otherwise the control is transferred to step 910. In step 908 of, the application server marks first user as ‘active’ and normal with respect to the ongoing activities. In step 910 of, the application server marks the first user as 25% lonely, since the first user is not actively participating in events/activities of social network.

[0083] In step 912 of, the application server checks whether the user made any phone calls or messages in at least for 3 days with other users. If yes, then the control is transferred to step 908, otherwise the control is transferred to step 914. In step 914 of, the application server marks the first user as 50% lonely, since the first user is not using mobile device and not making any calls or sending any messages to his family members or friends and not actively participating in events/activities of social network.

[0084] In step 916 of, the application server checks whether the user physically meet any other users within a week. If yes, then the control is transferred to step 908, otherwise the control is transferred to step 918. In step 918 of, the application server marks the first user as 75% lonely, since the first user is not at all meeting anyone including family members, friends for a week’s time, not using mobile device and not making any calls or sending any messages to his family members or friends and not actively participating in events/activities of social network.

[0085] In step 920 of, the application server checks whether the user is not in same location at least for a week. If yes, then the control is transferred to step 908, otherwise the control is transferred to step 922. In step 922 of, the application server marks the first user as 100% lonely, since the first user is not going out for anything and stays at one location for a longer duration, not at all meeting anyone including family members, friends for a week's time, not using mobile device and not making any calls or sending any messages to his family members or friends and not actively participating in events/activities of social network.

[0086] In an embodiment, the application periodically checks the above criteria to differentiate the normal users and the people who are lonely. In an embodiment, wherein the first user is a lonely person and is in emergency situation in a geographical location, and initiates a SOS, wherein, a signal is transmitted to the application server. The applications server fetches all related information including profile information, device logs, event logs, location logs, closeness factor, loneliness factor of first user and capable of analyzing and correlating the data with other user's data of the smart safety network system. In one example, application server may also find the details of last person whom first user had met before raising SOS, the location of meeting, duration of meeting and whether this person is very close the first person and state of mind through loneliness factor. The application server, and data in smart safety system helps to locate the current location of first user in more sophisticated manner. In an embodiment, the devices which are in the vicinity of the first user, may belong to other users of the network, which are known or unknown to the first user. Further, the first user can tag a name or person name to the identified one or more devices which are in the vicinity of the first user, when the person is unknown to the first user and not part of the network.

[0087] In another embodiment, the first user can manually provide the closeness factor with those unknown people. In yet another embodiment, the closeness factor can be derived based on number of times the first user meets this unknown user. The first user can also provide trust factor for those unknown people, he meets every day. The mobile application configured in the mobile device and/or application server employs one or more machine learning algorithms to determine the closeness factor for first user with respect to one or more users, known or unknown to first user and unknown to the network. In yet another embodiment, the first user may also enter the relationship between the known user such as a family member, a friend, colleague etc or an unknown person such as doctor, advocate, delivery boy. The relationship details ultimately determine the closeness factor between the first user and the known or unknown persons and has an impact while determining the loneliness factor. The closeness

factor, event log, device log, location log combinedly used to identify whether the first user is lonely or not.

[0088] FIG. 10 is a block diagram 1000 illustrating the internal modules of application server in an embodiment of the present invention. As shown there, the application server 208 has a device identification module 1002, a location module 1004, an event module 1006, a first factor module 1008 and a second factor module 1010. In one aspect, the device identification module 1002 is capable of monitoring one or more mobile computing devices and processing device information with geo location of one or more mobile computing devices in the vicinity one or more users of the network. In an embodiment the device identification module 1002 maintains a device log. The location module 1004 works in combination with device identification module 1002 and is capable of identifying one or more locations of user and processing such locations in relation to one or more other users of the network. In an embodiment, the location module 1004 maintains a location log.

[0089] The event module 1006 is capable of creating one or more events, processing the information relating to subject one or more events, maintains an event log for each and every activity of user. The event module 1006 is also capable of extracting the participation coefficient of one or more users with respect to the event. In an embodiment, the event module 1006 has an activity checker unit to monitor one or more events in real time.

[0090] The location and event module (1004 and 1006) may average the time duration spent by one or more users at a given location and event. Thereby, the user may be categorized active and inactive (lonely) state. In an embodiment, each module (1004 and 1006) generates a threshold limit for every event, which are stored in the database for future retrieval.

[0091] The first factor module 1008 is capable of analyzing a closeness between a first user and one or more users of the network. The first factor module 1008 also identifies the closeness between one or more users of the network by correlating the combination of values received from the device identification module 1003, the location module 1004 and the event module 1006. In an embodiment, the first factor module 1008 provides a closeness factor in order to determine the loneliness factor. The second factor module 1010 is capable of identifying a loneliness of a first user, by comparing the one or more values received from device identification module 1002, location module 1004, event module 1006 and the first factor module 1008 with respect to first user and one or more users of the network.

[0092] In an embodiment, the threshold values of location and event modules are automatically determined by each module based on the average of time duration spent in every event by one or more users. In another embodiment, the device identification module, the location module,

the event module, the first and second factor module may not be modules of application server, and each such module may work independently and store the processed data under profile information of each user, at data.

Scenario 1: When the first user meets an unknown person

[0093] **Case: 1** – When the first user meets an unknown person at his home, for example, a delivery person visits the first user to deliver grocery. The first user is about to open the door, and the smart wearable and/or mobile device configured with the specific mobile application, is capable of identifying any device ids, in and around the vicinity of first user. The smart wearable identifies that there is a mobile device/wearable device in the vicinity of the first user, carried by unknown person (a delivery person) and immediately records the mac-Id and tags a geo location automatically to that identified device, by using built in GPS or through the connected mobile device having the GPS module. For example, the tagged geo location may be 'home' location of first user. The details of identified device with its geo location (for example, 'home') is sent to application server for processing and stored in a separate list in database for the first user. Meeting is directly meeting the person, there is a possibility that the delivery person may come in close vicinity of first user and do not meet the first person. The embodiments of the present disclosure also covers meeting known person, meeting unknown person, known persons who comes to the close vicinity of first user (purpose is not meeting the first user), and unknows persons who comes to the close vicinity of first user (purpose is not meeting the first user). The database maintains a known user list and unknown user list with their frequency of visit to first user, and the frequency at which the first user is meeting the known and unknown user in a given period of time. The database prepares a second set of information, based on number of visits or meeting made by the first user in reference to known and unknown users, frequency of visit along with location of visit or meeting. The database records the device ids and its geo location every time, when the first user visits or meets a new person (may be known or unknown person to the first user).

[0094] Case: 2 - When the first user meets the same delivery person (having a device, with same mac-Id) for the second time in the same week at the home location, then the smart wearable of first user records a log of such person's visit (number of visits by that person is incremented to 2) in the database that, the same person with same device id, is been identified in the same location (home location). In an embodiment, the first user can also add the name of the delivery person who frequently delivers the grocery.

[0095] Case: 3 - When the first user meets the same delivery person (having a device, with different mac-Id), next time, not necessarily in a week's time but at the home location of first

user, then the smart wearable of first user identifies a new device id in the vicinity of the first user and immediately captures the mac-Id and tag a geo location and send it for processing. In an embodiment, the user through the mobile application, can able to see the list of such devices which came in the vicinity of the first user. In another embodiment, when the first user recognizes that the same delivery person had visited to deliver the grocery, then the first user can point the name of the person, and can modify the entry. The application server receives the request for modification and insert the newly identified device Id under the same name. In an embodiment, the record of delivery person in the database, shall have two device ids, pointing to the same geo location (home location) and number of visits is incremented to 3.

[0096] Case: 4 – when the user meets the same delivery person (having a device with any one of two identified device ids), anywhere outside the home location not necessarily in a same week or month, then the smart wearable of first user identifies that one of the device Ids is matching to the delivery person and also records the current location (first user meeting the delivery person) and store this data in database. In an embodiment, the record for the delivery person in the database, shall have two devices and its device ids, shall point to two different location of meeting the first user with total number of meetings is incremented to 4. In an embodiment, the application can able to track the activities of first user through his smart wearable device.

[0097] The drawings and the forgoing description give examples of embodiments. Those skilled in the art will appreciate that one or more of the described elements may well be combined into a single functional element. Alternatively, certain elements may be split into multiple functional elements. Elements from one embodiment may be added to another embodiment. For example, orders of processes described herein may be changed and are not limited to the manner described herein. Moreover, the actions of any flow diagram need not be implemented in the order shown; nor do all of the acts necessarily need to be performed. Also, those acts that are not dependent on other acts may be performed in parallel with the other acts. The scope of embodiments is by no means limited by these specific examples. Numerous variations, whether explicitly given in the specification or not, such as differences in structure, dimension, and use of material, are possible. The scope of embodiments is at least as broad as given by the following claims.

[0098] Benefits, other advantages, and solutions to problems have been described above with regard to specific embodiments. However, the benefits, advantages, solutions to problems, and any component(s) that may cause any benefit, advantage, or solution to occur or become more pronounced are not to be construed as a critical, required, or essential feature or component of any or all the claims.

Claims

We Claim,

1. A method for identifying and tracking a plurality of mobile computing devices (106, 108, 110 and 112) through a first mobile computing device (102), the method comprising:

scanning for a plurality of mobile computing devices (106, 108, 110 and 112) through the first mobile computing device (102) in the vicinity of a first user, when the first user is located in a first geographical location and a second geographical location, wherein the first mobile computing device (102) is configured with a global positioning system (GPS) circuitry;

identifying and acquiring device information of one or more mobile computing devices in the first geographical location and the second geographical location by the first mobile computing device (102), wherein the device information comprises a unique ID of each mobile computing device, and wherein the identified device information of mobile computing devices in the second geographical location is checked with respect to device information already acquired in the first geographical location;

tagging a geo location to each of the identified mobile computing devices in the vicinity of the first user in the first geographical location and the second geographical location, wherein the geo location corresponds to a current location of the first user, and wherein the unique ID and the tagged geo location information of each of the mobile computing devices in the vicinity of the first user are transmitted to an application server through a communication network (206), and wherein, when the first user is located in the second geographical location, unique IDs of only those mobile computing devices not present in the first geographical location are collected and tagged with the current location of the first user;

processing, at the application server, the unique ID and the geo location information of each mobile computing device corresponding to the first geographical location and the second geographical location;

preparing and storing, in a database connected with the application server, a first list corresponding to the first geographical location and a second list corresponding to the second geographical location;

determining, at the application server, an active or inactive status of the first user based on frequency of visits, duration of presence at geographical locations, and

participation in events, as derived from the first list, the second list, and associated logs; and

mapping, upon initiation of an SOS by the first user, one or more users from the first list and the second list who are in the vicinity of the first user as primary contacts, wherein the mapped users are checked for similarity of interests and activities with respect to the first user prior to initiating contact.

2. The method as claimed in claim 1, wherein the first mobile computing device (102) is a smart wearable or a mobile device (202), and wherein the first geographical location is a home of the first user and the second geographical location is an office of the first user.
3. The method as claimed in claim 2, wherein the first geographical location and the second geographical location correspond to a first group and a second group respectively associated with the first user.
4. The method as claimed in claim 1, further comprising steps for preparing a visit log, the steps comprising:

scanning a plurality of mobile computing devices (106, 108, 110 and 112) through the first mobile computing device (102) in the vicinity of the first user located in one or more geographical locations, wherein the one or more geographical locations comprise a home location, a work location, or any other location;

identifying and acquiring device information of one or more mobile computing devices by the first mobile computing device (102) when the first user is in proximity to the one or more mobile computing devices at the one or more geographical locations;

checking whether the identified mobile computing devices corresponding to one or more users of a network are listed in any one of one or more groups relating to the first user;

retrieving user information and location history information relating to the identified mobile computing devices, wherein a subject user associated with the identified mobile computing devices belongs to any one of the groups relating to the first user;

preparing a visit log for the first user and the subject user of the network; and

marking and incrementing a count in the visit log whenever the first mobile computing device (102) of the first user and a mobile computing device of the subject user come in the vicinity of each other at any geographical location.

5. The method as claimed in claim 1, further comprising steps for preparing a location log, the steps comprising:

observing location information of each of a plurality of users through their respective mobile computing devices, including the first user and one or more other users of a network, wherein the one or more other users are known users or unknown users of the network;

checking a current location of the first user and the one or more other users, wherein the current location corresponds to any one of one or more marked locations of the first user and the one or more other users;

preparing a location log for the first user and the one or more other users of the network; and

marking and incrementing a count in the location log whenever the first mobile computing device of the first user and a mobile computing device of the one or more other users come in the vicinity of each other at any geographical location.

6. The method as claimed in claim 5, wherein the known users are second users of the network.

7. A system for identifying and tracking a plurality of mobile computing devices, the system comprising:

a first mobile computing device (102) configured to scan and identify a plurality of other mobile computing devices in the vicinity of a first user at one or more geographical locations, wherein the first mobile computing device (102) is configured with a global positioning system (GPS) circuitry;

a mobile device (202) communicably connected with the first mobile computing device (102), the mobile device (202) being capable of receiving and acquiring device information of one or more mobile computing devices, wherein a geo location is added to the device information to prepare a first set of data comprising device information and geo location, and wherein the device information comprises a unique MAC ID of a mobile computing device in the vicinity of the first mobile computing device (102);

a communication network (206) configured to transmit the first set of data from the mobile device (202) to an application server (208);

the application server (208) configured to receive the first set of data through the communication network (206), process the first set of data, and prepare a first list corresponding to a first geographical location and a second list corresponding to a second geographical location visited by the first user; and

a database connected with the application server (208) and configured to store the first list and the second list, wherein, upon initiation of an SOS by the first user, one or more users from the first list and the second list who are in the vicinity of the first user are mapped as primary contacts, and wherein profiles of the mapped users are checked for similarity of interests and activities with respect to the first user prior to initiating contact.

8. The system as claimed in claim 7, wherein the application server (208) comprises:

a device identification module configured to monitor and process device information of one or more mobile computing devices together with corresponding geo location information and maintain a device log;

a location module configured to identify and process one or more locations associated with one or more users of a network and maintain a location log;

an event module configured to create one or more events, process information relating to the one or more events, maintain an event log, and extract a participation coefficient of one or more users, wherein the event module comprises an activity checker to monitor the one or more events; and

a first factor module configured to analyze interaction between the first user and one or more users of the network by correlating values received from the device identification module, the location module, and the event module.

9. The system as claimed in claim 8, wherein threshold values used by the application server (208) are automatically determined based on an average of time duration spent by one or more users in each event.

10. The system as claimed in claim 8, wherein the device identification module, the location module, the event module, and the first factor module are components of the application server (208).

Abstract

METHOD, SYSTEM AND DEVICE FOR FINDING LONELINESS IN ONE OR MORE USERS

In one aspect, the system comprising, a mobile computing device, a mobile device, an application server and a database. The mobile computing device is connected with the mobile device which is further configured with a mobile application which can monitor one or more activities, event, location of a user. The application server is capable determining a loneliness factor and lonely users in a network, retrieving event and location log of one or more users for any geographical location, finding a closeness factor with respect to one or more users, averaging the time duration spent by total number of users relating to one or more events and location, finding a threshold limit for each activity of one or more users, and further determining the loneliness factor for each and every activity. In an embodiment, one or more users are categorized based on loneliness factor. The database is capable of storing all information relating to the user.

[FIG. 8A]