Abstract: Users may be interested in tracking characteristics of members of a social network. Systems and methods for identifying and presenting information about members of a social network to a user are disclosed. A user profile tracking tool enables a member of a social network to perceive the evolution of members' profiles over time or over stages of a medical condition.
TRAILING CHARACTERISTICS OF A SOCIAL NETWORK

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application claims priority from U.S. Provisional Patent Application Serial No. 60/828,067, filed on October 3, 2006 and entitled "Tracking Characteristics of Members of a Social Network", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

This disclosure relates to tracking characteristics of members of a social network. More particularly, this disclosure relates to tracking medical conditions and physical, physiological, and/or psychological characteristics of users of a social network.

BACKGROUND

Users may be interested in tracking characteristics of members of a social network. Users may access a communications network, such as the Internet, to retrieve information regarding members of a social network.

SUMMARY

A web-based community networking portal modifies a user's profile over time so as to maintain an accurate and current profile of the user. Modifications to the user's profile may be made in response to changes that are explicitly entered by the user and/or in response to observed changes in the user's behavior. A history of the user's profile is also maintained. As a result, the user's profile remains current, but the community networking portal also is capable of presenting snapshots of the user's profile at different points in time.

A user profile tracking tool enables a member of a community (e.g., a social network) to perceive the evolution of the member's profile over time by capturing snapshots of the member's profile at different times and displaying visual representations of the snapshots. In addition, the user profile tracking tool enables the member to perceive the evolution of another member's profile over time (with authorization from that other member) by capturing snapshots of the other member's
some implementations, the user profile tracking tool also may enable the member to perceive an average evolution of other members' profiles over time by capturing snapshots of the other members' profiles (with authorization from those other members) at different times and compiling an average representation of the other members' profiles over time.

In one example, a user can track various physical, physiological, or psychological characteristics of the user over time. For example, the user can track his/her blood pressure, blood glucose level, basal body temperature, weight, and/or body mass index (BMI) over time. Additionally or alternatively, a user can track his/her exercise routine and/or his/her mood over time. By tracking two or more physical, physiological, and/or psychological characteristics, a user may be able to determine how a change in one physical, physiological, and/or psychological characteristic impacts other physical, physiological, and/or psychological characteristics. For example, a user may track both his/her blood pressure and his/her mood over time. The user then can manually compare changes in his/her blood pressure to changes in his/her mood over time to determine if changes in his/her blood pressure potentially caused changes in his/her mood or vice versa, or the user may be alerted to such correspondence and trends by a system that automates such comparisons.

In addition to tracking his/her own physical, physiological, or psychological characteristics, a user also can track physical, physiological, or psychological characteristics of other users and/or the user can compare his/her own physical, physiological, or psychological characteristics against other users’ physical, physiological, or psychological, characteristics. Additionally or alternatively, the user can compare his/her own physical, physiological, and/or psychological characteristics against average physical, physiological, or psychological characteristics for all known users, or for users that share one or more of profile attributes or physical conditions with the user. For example, a user that tracks his/her blood pressure may be able to compare his/her blood pressure against the average population's blood pressure.

In another example, a user can track the evolution of a medical condition from which the user suffers. For instance, a user that has been diagnosed with cancer can track the evolution of the disease over time. Tracking the evolution of the disease over time may enable the user to gauge the effectiveness of various different treatments.
treatments on the disease. Additionally or alternatively, tracking the evolution of the
disease may enable the user to monitor changes in various physical, physiological,
and/or psychological characteristics of the user.

In still another example, a user that has been diagnosed with a medical
condition can access snapshots over time of the profiles of other users that have been
diagnosed with the same medical condition. In so doing, the user may be able to gain
an insight and adjust personal expectations regarding the likely progress of their
medical condition towards a cure. For instance, if a user recently has been diagnosed
with a particular type of cancer, the user can access snapshots of the profile of another
user that has been diagnosed with the same type of cancer in order to monitor the
progression of the cancer in the other user. A similar approach can be used based on
several other users, or an average therefrom. By accessing snapshots of the profiles of
one or more other users that have been diagnosed with the same cancer, the user may
be able to develop expectations as to what to expect as the user progresses through
treatment for the cancer. Additionally or alternatively, accessing snapshots of the
profiles of one or more other users that have been diagnosed with the same cancer and
concurrently accessing indications of treatments undertaken by those other users may
enable the user to identify how different users have reacted to different treatments for
the cancer. As such, accessing snapshots of the profiles of one or more other users
that have been diagnosed with the same cancer may enable the user to identify a
treatment regimen that is most appropriate for the user. A tool allowing the user to
narrow other patients based on their profile and history can aid the user's appreciation
of the likely effectiveness of treatments for the user's condition.

In some implementations, a particular user that has just been diagnosed with a
medical condition can identify one or more other users that also were diagnosed with
the same medical condition and whose profiles matched, or were otherwise similar to,
the particular user's profile at the time of, or prior to, diagnosis.

An average user profile also may be generated for users that share one or more
attributes, or that have shared one or more attributes at different points in time, such
that snapshots of the average user profile may be accessed. In one example, an
average profile may be generated for a group of users that all suffer from the same
type of cancer by compiling and aggregating information from each user's profile
such that the average user profile represents an average profile for all of the users that
suffer from the same type of cancer.

Additionally or alternatively, an average profile may be generated for a group
of users that all suffer from the same type of cancer and that all have received, or are
receiving, the same treatment by compiling and aggregating information from each
user's profile such that the average user profile represents an average profile for all of
the users that suffer from the same type of cancer and that have received, or are
receiving, the same treatment. As such, a user may be able to access and compare
average user profiles for groups of users that all suffer from the same type of cancer
but that have undergone different treatment regimens. By comparing average user
profiles for groups of users that suffer from the same type of cancer but that have
undergone different treatment regimens, a user may be able to identify the advantages
and disadvantages of the various different treatment regimens. In addition, by
comparing average user profiles for groups of users that suffer from the same type of
cancer but that have undergone different treatment regimens, a user may be able to
select the treatment regimen that is most appropriate for the user.

In one general aspect, a user profile is maintained for tracking one or more
characteristics of a user associated with the user profile. The user profile includes a
particular characteristic of the user. A first snapshot of the user profile is generated at
a first instant in time. At the first instant in time, an original value is associated with
the particular characteristic of the user, and the first snapshot of the user profile
reflects that the original value is associated with the particular characteristic of the
user at the first instant in time. After generating the first snapshot of the user profile a
request to associate a new value with the particular characteristic of the user is
received and the new value is associated with the particular characteristic of the user
in response to receiving the request to associate the new value with the particular
characteristic of the user. A second snapshot of the user profile is generated at a
second instant in time that occurs after associating the new value with the particular
characteristic of the user. The second snapshot of the user profile reflects that the new
value is associated with the particular characteristic of the user at the second instant in
time. A visual representation of an evolution of the user profile over a time period is
displayed that includes the first instant in time and the second instant in time, wherein
the visual representation of the evolution of the user profile over the time period that
includes the first instant in time and the second instant in time reflects that the original value was associated with the particular characteristic of the user at the first instant in time and that the new value was associated with the particular characteristic of the user at the second instant in time.

Implementations may include one or more of the following features. For example, the particular characteristic of the user may be a medical condition, the original value may represent a first stage of the medical condition, and the new value may represent a second stage of the medical condition.

In another aspect, a plurality of user profiles may be maintained for users that share a medical condition. Each of the plurality of user profiles corresponds to an individual user and includes a value associated with a characteristic that is related to the medical condition. The value associated with the characteristic that is related to the medical condition changes from a first state to a second state over time. For each of the plurality of user profiles, an evolution of the medical condition is tracked by recording a period of elapsed time between the change in the value associated with the characteristic related to the medical condition from the first state to the second state. An average period of elapsed time between the change in value associated with the characteristic related to the medical condition from the first state to the second state is calculated by averaging the recorded period of elapsed time between the change in the value associated with the characteristic related to the medical condition from the first state to the second state for each of the plurality of user profiles. Thereafter, an average user profile based on the plurality of user profiles, is generated. The average user profile includes the average period of elapsed time between the change in value associated with the characteristic related to the medical condition from the first state to the second state. A visual representation of an average evolution of the medical condition over time is displayed. The visual representation of the evolution of the medical condition over time includes a visual representation of the average period of elapsed time between the change in value associated with the characteristic related to the medical condition from the first state to the second state.

In another general aspect, a user profile is maintained for a user. A first value of a physical characteristic of the user and a first value of the user's mood are recorded at a first instant in time in the user profile. A second value of a physical characteristic of the user and a second value of the user's mood are recorded at a
second instant in time in the user profile. A visual representation reflecting the first value of the physical characteristic of the user at the first instant in time, the second value of the physical characteristic of the user at the second instant in time, the first value of the user's mood at the first instant in time, and the second value of the user's mood at the second instant in time is displayed. The visual representation enables the user to track a change in the user's mood from the first instant in time to the second instant in time relative to a change in the physical characteristic of the user from the first instant in time to the second instant in time.

DESCRIPTION OF DRAWINGS

FIGS. 1a-1e are examples of graphical user interfaces that enable a user to track the user's blood pressure over time.

FIG. 2 is an example of a graphical user interface that enables a user to track the user's blood glucose level over time.

FIG. 3 is an example of a graphical user interface that enables a user to track the user's basal body temperature over time.

FIG. 4 is an example of a graphical user interface that enables a user to track the user's weight gain during pregnancy over time.

FIGS. 5a and 5b are examples of graphical user interfaces that enable a user to track the user's exercise routine over time.

FIG. 6 is an example of a graphical user interface that enables a user to track the user's weight loss (or gain) and body mass index over time.

FIGS. 7a and 7b are examples of graphical user interfaces that enable a user to track the user's mood over time.

FIG. 8 is an example of a graphical user interface that enables a user to track and compare both the user's blood pressure and the user's mood over time.

FIG. 9a is an example of a graphical user interface that presents a visual representation of snapshots of different users' profiles over time.

FIG. 9b is an example of a graphical user interface that presents a visual representation of the average progression of brain cancer in patients that selected different treatments.

FIGS. 10-11 are examples of graphical user interfaces that track a medical condition with respect to a clock.
FIG. 12 is an example of a graphical user interface that enables a user to view his/her characteristics in relation to characteristics of similarly situated users at each point in time of a clock.

FIGS. 13-15 are examples of graphical user interfaces that enable a user to view one or more of his/her characteristics in relation to characteristics of other users suffering from the same medical condition.

FIG. 16 is an example of a graphical user interface that enables a user to view a prediction of one or more of his/her characteristics.

Fig. 17 is an example of a system for tracking members of a social network.

**DETAILED DESCRIPTION**

Users may rely on a health portal to manage a health care needs for users and their families. For example, a health portal may be configured to reduce the burden of tracking a characteristic (e.g. blood pressure, blood glucose, basal body temperature, weight, and mood) of users in a social network. In addition, the health portal may provide tools that assist a user in managing a medical condition, for example, by tracking the user's condition using different metrics, suggesting relevant information, and enabling the user to perceive the progress of other, similarly-situated users. The user may track his/her progression through a medical condition and/or treatment of the medical condition.

FIG. 1a is an example of a graphical user interface (GUI) 100 that enables a user to track the user's blood pressure over time. The GUI 100 includes a data entry block 102, a chart 104, a chart button 106, a log button 108, a view all button 110, a this week button 112, a this month button 114, and a this year button 116.

The data entry block 102 enables a user to enter the user's blood pressure, the time and date the blood pressure reading was taken, and a note about the blood pressure reading. The user can instruct the system to save the data entered in the data entry block 102 by selecting the save button 102(a). Data entry block 102 illustrates an example of one mechanism for data collection. Additional mechanisms also may be used to enter data. For example, a sphygmomanometer, or other blood pressure measuring device, may be equipped with a universal serial bus (USB) adapter so as to enable the user to measure his/her blood pressure and directly input the measured blood pressure through a USB interface on a client computer. Additionally or
alternatively, a sphygmomanometer, or other blood pressure measuring device, may
be equipped with a wireless adapter (e.g., Bluetooth) that allows the
sphygmomanometer to input a measured blood pressure to a local client computer
over a wireless network, such as, for example, a wireless personal area network
(PAN).

The chart 104 presents a visual representation of the user's blood pressure
measurements over time. More particularly, the chart 104 presents visual
representations of the user's systolic and diastolic blood pressure measurements over
time. In addition, the chart provides an indication of potentially troublesome blood
pressure measurements. For example, the chart identifies certain blood pressure
measurements as potentially being indicative of pre-hypertension or hypertension.

By selecting the chart button 106, a user instructs the system to display the
chart 104 of the user's blood pressure measurements. By selecting the log button 108,
a user instructs the system to display a journal-like log of the user's blood pressure
measurements. The journal-like log of the user's blood pressure measurements is
discussed in greater detail below in connection with FIG. 1e.

Other views of the chart 104 also may be displayed. For example, by selecting
the view all button 110, a user can instruct the system to display all of the user's blood
pressure measurements in the chart 104. Similarly, the user can instruct the system to
display the current week of blood pressure measurements for the user in the chart 104
by selecting the this week button 112, the user can instruct the system to display the
current month of blood pressure measurements for the user in the chart 104 by
selecting the this month button 114, or the user can instruct the system to display the
current year of blood pressure measurements for the user in the chart 104 by selecting
the this year button 116. FIG. 1b illustrates an example of the this week view of the
chart 104. FIG. 1c illustrates an example of the this month view of the chart 104.
FIG. 1d illustrates an example of the this year view of the chart 104.

As discussed above, a user's blood pressure measurements also may be
visually displayed in the form of a journal-like log. FIG. 1e is an example of a GUI
that tracks a user's blood pressure measurements over time in the form of a log.
The GUI 150 includes a data entry block 102, a log 152, a chart button 106, and a log
button 108.
The log 152 displays the user's blood pressure measurements, including the systolic and diastolic measurements, over time. In addition, the log 152 displays user entered notes associated with one or more of the user's blood pressure measurements. The ability to enter notes associated with the user's blood pressure measurements may enable the user to track how one or more external factors influence the user's blood pressure. For example, the ability to enter notes associated with the user's blood pressure may enable the user to track how job-related stress influences the user's blood pressure. Additionally or alternatively, the ability to enter notes associated with the user's blood pressure may enable the user to track how exercise, diet, or other factors influence the user's blood pressure.

A user can switch back and forth between the chart display of FIG. 1a and the log display of FIG. 1e by toggling the chart button 106 and the log button 108.

Blood pressure is one example of a characteristic that a user can track. The user may also track other physical, physiological, and/or psychological characteristics, such as the user's blood glucose level, the user's basal body temperature, the user's weight, the user's exercise routine, the user's BMI, and/or the user's mood.

FIG. 2 is an example of a GUI that enables a user to track the user's blood glucose level over time. FIG. 3 is an example of a GUI that enables a user to track the user's basal body temperature over time. FIG. 4 is an example of a GUI that enables a user to track the user's weight gain during pregnancy over time. These GUIs allow a user to provide information about the user's blood glucose, basal body temperature, and weight, as well as notes. These GUIs also present blood glucose, basal body temperature, and weight information to a user. The blood glucose, basal body temperature, and weight information may be presented to a user in the form of a chart or a journal-like log.

FIG. 5a is an example of a GUI 500 that enables a user to track the user's exercise routine over time. The GUI 500 includes a data entry block 502 and a chart 504. The data entry block 502 enables the user to enter the duration of a workout, a category type for the workout, the date of the workout, the time of the workout, and notes associated with the workout. In addition, the data entry block enables the user to enter the user's weight. The category type for the workout may include the following categories, for example: conditioning, running, sports, bicycling, outdoors activities, housework, and other.
Information entered into the data entry block 502 can be saved by selecting the save button 502(a). After data associated with a workout is entered and saved, an estimate of the number of calories burned during the workout may be calculated. The estimated number of calories may be based on the duration of the workout, the weight of the user, and/or the type of exercise. The chart 504 presents a visual representation of the calories burned during different workouts for which the user has saved information. Information about the user's workout also may be visually displayed in the form of a journal-like log. FIG. 5b is an example of a GUI 550 that tracks a user's exercise routine over time in the form of a log. The GUI 550 includes a data entry block 502, and a log 552.

The log 552 displays information related to the user's workouts over time. For each workout, the log displays an exercise date and time, an exercise duration, an exercise category, an exercise activity, an estimated number of calories burned during the workout, the user's weight, and notes associated with the workout.

FIG. 6 is an example of a GUI 600 that enables a user to track the user's weight loss (or gain) and BMI over time. The GUI 600 includes a data entry block 602 and a chart 604. The data entry block enables a user to enter the user's height, the user's weight, the time, the date, and notes associated with the height and weight measurement. Information entered into the data entry block 602 can be saved by selecting the save button 602(a).

In one example illustrated in FIG. 6, the chart 604 presents a visual representation of the user's BMI measurements over time. In another example, the chart 604 may present a visual representation of the user's weight over time. In addition, the chart provides an indication of potentially troublesome BMI and/or weight measurements. For example, the chart identifies certain BMI and/or weight measurements as potentially being overweight.

FIG. 7a is an example of a GUI 700 that enables a user to track the user's mood over time. The GUI 700 includes a data entry block 702 and a chart 704. The data entry block enables a user to enter an indication of the user's mood, a time associated with the user's mood, a date associated with the user's mood, notes associated with the user's mood, and one or more influences on the user's mood. Influences on the user's mood may include, for example, relationship influences, money influences, work influences, family influences, health influences, and/or other
influences. Information entered in the data entry block can be saved by selecting the save button 702(a). The chart 704 displays a visual representation of the user's mood over time.

Information about a user's mood also may be visually displayed in the form of a journal-like log. FIG. 7b is an example of a GUI 750 that tracks a user's mood over time in the form of a log. The GUI 750 includes a data entry block 702, and a log 752. The log 752 displays information related to the user's mood over time. Each entry in the log 752 includes a date and time, an indication of the user's mood, one or more influences on the user's mood, and notes associated with the user's mood.

By tracking two or more physical, physiological, and/or psychological characteristics at the same time, a user may be able to determine how a change in one physical, physiological, and/or psychological characteristic impacts one or more other physical, physiological, and/or psychological characteristics. For example, a user can use two or more of the GUIs illustrated in FIGS. 1-7 to track and compare two or more physical, physiological, and/or psychological characteristics in order to determine how a change in one physical, physiological, and/or psychological characteristic impacts one or more other physical, physiological, and/or psychological characteristics of the user. Alternatively, a single GUI may enable a user to track and compare two or more physical, physiological, and/or psychological characteristics over time.

FIG. 8 is an example of a GUI 800 that enables a user to track and compare both a physical, physiological, and/or psychological characteristic of the user and the user's mood over time. The GUI 800 includes a data entry block 802 and a chart 804. For example, GUI 800 displays the user's blood pressure and mood over time. The data entry block 802 enables the user to enter the user's systolic and diastolic blood pressure, the time and date the blood pressure reading was taken, a note about the blood pressure reading, and a mood. The data entry block may be different depending on the physical, physiological, and/or psychological characteristics of the user being tracked and compared. For example, if the user's weight and mood were being tracked over time, the data entry block 802 would enable the user to enter the user's weight, the time and date the weight was measured, a note about the weight reading, and a mood. The user can instruct the system to save the data entered in the data entry block 802 by selecting the save button 802(a). Using the GUI 800, the user can
compare, for example, changes in his/her blood pressure to changes in his/her mood over time to determine if changes in his/her blood pressure potentially caused changes in his/her mood or vice versa. For example, FIG. 8 illustrates that the diastolic and systolic blood pressure of the user increased during the same time as sharp decline in the user's mood.

FIG. 9a is an example of a GUI 900 that presents a visual representation of snapshots of different users' profiles over time. More particularly, the GUI 900 presents snapshots of the profiles of four different users 902, 904, 906, and 908 that have been diagnosed with brain cancer but that have chosen different treatment regimens. As illustrated in FIG. 9a, User #1 chose chemotherapy, User #2 chose radiation therapy, User #3 chose a combination of chemotherapy and radiation therapy, and User #4 chose holistic therapy.

The snapshots of the users' profiles may be summarized by the stages of the medical condition associated with each user. The progression of many medical conditions may be expressed in at least 2 stages. For example, cancer can generally be expressed in 4 stages. Stage 1 may mean that the tumor is relatively small and contained within the organ it originated in. Stage 2 may mean that the tumor is larger than in stage 1, but still localized. Stage 3 may mean that the tumor is larger than in stage 2 and that there are cancerous cells in the nearby lymph nodes. Stage 4 may mean that the cancer has spread from its originated organ to another body organ.

In one implementation, the duration of the stages of a user's medical condition may be determined through an analysis of the physical, physiological, and/or psychological characteristics associated with a user over time. For example, the system may recognize a sharp increase in a user's blood pressure over a short period of time as an indication of progression into a subsequent stage of the medical condition associated with the user. In another implementation, the user and/or a third-party, such as a healthcare provider, may enter information indicating the start of a stage associated with the user's medical condition.

For example, the snapshots of User #1’s profile indicate that User #1 was in stage 1 for twelve months before progressing to stage 2. User #1 then remained in stage 2 for six months before progressing to stage 3 for six more months. User #1 remained in stage 3 for six months before progressing to stage 4 for two months before passing away. The snapshots of the profiles of the other users 904, 906, and
908 similarly illustrate the progression of the brain cancer in the other users over time. The snapshots of the GUI 900 allow a user to quickly compare the progression of other users suffering from a common medical condition.

The user profiles selected to be presented as snapshots in the GUI 900 may be selected by the system or by the user requesting the snapshots. For each user profile snapshot, the system or a user must select a single user profile among all or a subset of user profiles utilizing the same treatment to heal a medical condition. In one implementation, the system or user may choose to display the user profile snapshot of the most recently updated user profile among all user profiles utilizing the same treatment. For example, the system may have selected User #1’s profile in the GUI 900 because it was the most recently updated user profile among all user profiles utilizing chemotherapy to treat brain cancer.

In another implementation, the system or user may choose to display the user profile snapshot of the first user to utilize a specific treatment to address a medical condition. In still another implementation, the system or user may choose to display the user profile snapshot of the most active user to utilize a specific treatment to address a medical condition. The most active user may be determined to be the user with the highest number of updates to his/her user profile. In another implementation, the system or user may choose to display the user profile snapshot of the most viewed user to utilize a specific treatment to address a medical condition. In another implementation, the system or user may choose to display the user profile snapshot of a user in the requesting user’s friend list on the website or on another third party service (instant messaging service providers, such as, for example, AIM, ICQ, Yahoo Messenger, and Microsoft Messenger).

FIG. 9b is an example of a GUI 950 that presents a visual representation of the average progression of a medical condition in users that selected different treatments. The GUI 950 presents visual representations of four average user profile snapshots 952, 954, 956, and 958 that have been diagnosed with brain cancer but that have chosen different treatment regimens. More particularly, the GUI 950 includes a visual representation of a first average user profile snapshot 952 of patients that selected chemotherapy treatment, a second average user profile snapshot 954 of patients that selected radiation therapy treatment, a third average user profile snapshot 956 of patients that have selected a combination of chemotherapy and radiation therapy
treatments, and a fourth average user profile snapshot 958 of users that have selected holistic therapy treatments.

The group of user profiles used to determine an average user profile snapshot for each treatment may be selected by the system or by the user requesting the average user profile snapshot. In one implementation, average user profile snapshot may be based on all of the user profiles in the system utilizing the same treatment. In another implementation, an average user profile snapshot may be based on user profiles of users within a specific geographic location utilizing the same treatment. For example, a user may be interested in the progression of others users in his/her city utilizing the same treatment to address a medical condition, and so, the user may limit the average user profile snapshot to be based on only those users in his/her city utilizing the same treatment.

In another implementation, an average user profile snapshot may be based on user profiles of users in the user's friend list on the website or on another third party service. In another implementation, an average user profile snapshot may be based on user profiles of users active in a specific forum or discussion board. For example, the user may be active on a forum associated with his/her medical condition and wish to limit the user profiles to only those of other active users of that same forum.

For example, the first average user profile snapshot 952 of the GUI 950 indicates that 75% of the users that selected chemotherapy were cured or went into remission in stage 1, 10% of the users that selected chemotherapy were cured or went into remission in stage 2, 5% of the users that selected chemotherapy were cured or went into remission in stage 3, 5% of the users that selected chemotherapy were cured or went into remission in stage 4, and 5% of the patients that selected chemotherapy passed away. In addition, the first average user profile snapshot 952 indicates that the average user that selected chemotherapy that progressed into stage 2 spent twelve months in stage 1. In addition, the first average user profile snapshot 952 indicates that the average user that selected chemotherapy progressed into stage 3 after 18 months progressed into stage 4 after 24 months. The other average user profile snapshots 954, 956, and 958 similarly illustrate the progression of the cancer in users that selected different treatments.

FIG. 10 illustrates an example of a GUI 1000 that tracks the progression of a medical condition with respect to a clock. More particularly, a clock is used as a
visual representation of the progression of a disease with respect to time such that the
clock can be used to navigate the progression of the disease and to better identify
more relevant content to the user at different stages through the progression of the
disease.

For example, the progression of breast cancer in a user may be tracked with
respect to a clock. In such an example, the initial diagnosis may represent an early
time on the clock, such as 1 o'clock in the GUI 1000. In addition, at the time of the
initial diagnosis, content that is highly relevant to an individual that has just been
diagnosed with breast cancer may be provided to the user. For instance, suggested
treatments may be provided to the user. In addition, suggested questions for a
physician and suggested secondary reading may be provided to the user. The
suggested treatments, questions, and secondary reading may be based on information
provided by other users or by third-party sources. Third-party sources may include,
for example, healthcare providers, medical journals, medical encyclopedias, medical
pamphlets, and/or other online resources. Thereafter, as the user undergoes treatment
for the breast cancer, the clock may be used as a visual representation of the
progression of the disease and the treatment. Different stages of the treatment and/or
disease may be indicated by later times on the clock. For example, in the GUI 1000, 4
o'clock represents the treatment progression and 8 o'clock represents the remission
progression. In addition, at different periods of time, new content that is relevant to
the user's progression through treatment and/or the disease may be provided to the
user. For instance, when the user is about to embark upon a treatment program,
suggested questions for physicians may be provided. In addition, suggested
secondary reading related to side effects of the treatment as well as activities to
mitigate detrimental side effects of the treatment may be provided to the user.

Similarly, when the user enters remission, content relevant to living with breast cancer
in remission may be provided to the user.

In another implementation, the GUI 1000 may track the progression of a
medical condition in stages with respect to a clock. The progression of the medical
condition may be based on an average user profile associated with a selected
treatment of the medical condition. The average user profile may be the same or
different than the average user profile used to illustrate an average user profile
snapshot in FIG. 9b. In one implementation, a user may click on an average user
profile snapshot in the GUI 950 to view the progression of the average user profile with respect to a clock in the GUI 1000. In this way, a user may switch between a timeline view of an average user profile and a clock view of the same average user profile.

In another implementation, the clock hand may represent the current progress of a user. For example, the GUI 1000 indicates that the user is currently at 1 o'clock on the progression of his/her medical condition and still in the initial diagnosis period. In another example, a second user may be in remission, so the clock hand would point to 8 o'clock. In another implementation, a user may move the clock hand to learn more about the progression of a medical condition. For example, a user who is currently at 1 o'clock and still in the initial diagnosis period may be interested in reading about the lifestyle the user may lead during the remission period. The user may drag the clock hand to 8 o'clock and then choose to view the suggested readings for users in remission.

FIG. 11 illustrates a second example of a GUI 1100 that tracks the progression of a medical condition with respect to a clock. More particularly, the GUI 1100 is an example of a clock tracking the progression of the average user profile of a user treating brain cancer with chemotherapy, such as User #1 of FIG. 9b. As illustrated by the User #1 profile snapshot 952, stage 1 of brain cancer for an average user undergoing chemotherapy may carry on for the first 12 months of the 26 month progression. Correspondingly, stage 1 starts at 12 o'clock in the GUI 1100 and ends at 5 o'clock. During stage 1, content that is highly relevant to an individual recently diagnosed with brain cancer may be provided to the user. For example, suggested treatments, suggested questions for a physician, and suggested secondary reading may be provided to the user. Stage 2 of brain cancer for an average user undergoing chemotherapy may continue for another 6 months and, correspondingly, stage 2 starts at 5 o'clock and ends at 8 o'clock in the GUI 1100. Stage 2 takes up less clock time than stage 1 because the duration of stage 2 is shorter than the duration of stage 1 in the User #1 profile 952.

Similarly, stage 3 of brain cancer for an average user undergoing chemotherapy may continue for another 6 months and, correspondingly, stage 2 starts at 8 o'clock and ends at 11 o'clock in the GUI 1100. Finally, stage 4 of brain cancer for an average user undergoing chemotherapy may continue for only 2 months and,
correspondingly, stage 4 starts at 11 o'clock and ends at 12 o'clock in the GUI 1100. Because stage 4 has the shortest duration, it is assigned the least clock time. At the beginning of each stage content that is highly relevant to a user currently in that stage of a medical condition may be provided to the user, as explained with reference to FIG. 10.

In one implementation of the GUI 1100, each stage may be emphasized on the clock by shading and/or coloring the area corresponding to each stage. For example, the clock in the GUI 1100 has four shading patterns, each associated with a different stage of brain cancer. Emphasizing the area corresponding to each stage may allow a user to more quickly assess the duration of each stage and allow the user to easily move the clock hand to a different stage to learn more about that stage.

FIG. 12 is an example of a GUI 1200 that enables a user to view his/her characteristics in relation to characteristics of similarly situated users at each point in time of a clock. The GUI 1200 includes a clock 1202 and one or more information graphics 1204. The one or more information graphics may be, for example, one or more scatter plots, one or more histograms, one or more bar graphs, one or more pie charts, and/or one or more line charts. In the example illustrated by the GUI 1200, the medical condition of the user has progressed to 1 o'clock in clock 1202. As a result, one or more information graphs present characteristics of the user in relation to similarly situated users at the same level of progression. The one or more information graphs allow the user to quickly compare his/her characteristics with characteristics of other users at each level of progression without having to access and view additional screens. Each information graphic may present information about one or more characteristics of the user. The user may customize the characteristics to be displayed by the one or more information graphics 1204. For example, the user may choose to view blood glucose information in addition to or instead of blood pressure information in the GUI 1200.

For example, the systolic blood pressure, the diastolic blood pressure, and the mood of the user are presented in relation to similarly situated users in the one or more information graphics 1204. The one or more information graphics 1204 indicate that the user's mood at 1 o'clock is lower than at least 75% of similarly situated users. Consequently, the user may decide to adjust his/her perspective about the medical condition or to seek professional psychiatric help.
The similarly situated users may be selected by the system or by the user. The similarly situated users may be all users who have undergone or are undergoing the same level of progression of a medical condition or a subset of those users. Users who have undergone or are undergoing the same level of progression may be selected from among the most recently updated users, the most active users, the most viewed users, users in the requesting user’s friend list on the website or on another third party service, users within a specific geographic location, users active in a specific forum or discussion board, and/or users that have viewed the requesting user’s personal website or blog. The characteristics of the selected similarly situated users are analyzed to provide the user with statistics about the similarly situated users. For example, the one or more information graphics 1204 illustrate the 25th and the 75th percentile values for the systolic blood pressure, the diastolic blood pressure, and the mood of selected similarly situated users. In another example, different statistics, such as the mean and/or median of the systolic blood pressure of similarly situated users may be presented by the one or more information graphics 1204.

The user may choose to move the clock hand of the clock 1202 to learn more about the progression of a medical condition. If the user selects a time beyond the current progression of the user, the system will not have information about the characteristics of the user at that level. As a result, the system may only display the characteristics of selected similarly situated users at the selected level of progression. By viewing the characteristics of selected similarly situated users at a later progression level, the user may better understand how his/her characteristics may change in the future.

FIG. 13 is an example of a GUI 1300 that enables a user to view one or more of his/her characteristics in relation to characteristics of other users suffering from the same medical condition over time. The GUI 1300 includes a chart 1302 and a data entry block 1304. For example, the chart 1302 illustrates blood glucose levels of a user over a seven month period by a solid line. Two dashed lines indicate the 25th and 75th percentile values for blood glucose levels of other users suffering from the same medical condition over the same seven month period. Different statistics, such as the mean and/or median of the blood glucose levels of other users may also be presented by the chart 1302. The user may choose to be compared to all or a subset of
users in the chart 1302 by selecting one or more groups of users in the data entry block 1304.

In one implementation, the data entry block 1304 allows the user to select all other users suffering from the same medical condition or to limit the other users to those in a specific stage of the medical condition, those that ultimately survived the medical condition, those with a similar user profile, those with whom the user has shared his/her experience, and/or those within a specific geographic distance of the user. In another implementation, the user may have additional options to limit the other users. For example, the additional options may include limiting other users to the most active users, the most viewed users, the users in the requesting user's friend list on the website or on another third party service, the users active in a specific forum or discussion board, and/or the users that have viewed the requesting user's personal website or blog.

If the user selects to be compared to all other users, the system will analyze one or more characteristics of all other users suffering from the same medical condition and display statistics associated with the one or more characteristics in the chart 1302. For example, in the GUI 1300, the user selected to be compared to all users. The GUI 1300 presents the 25th and 75th percentile values for blood glucose levels of the users over a seven month period in the chart 1302. By viewing the chart 1302, a user may realize that his/her blood glucose levels are average to below-average and steadily declining. Such a realization may prompt the user to seek professional help to improve his/her blood glucose levels.

In another example, the user may choose to be compared to all users at a specific stage of the medical condition associated with the user. The user may be at the second stage of the medical condition and may want to compare one or more of his/her characteristics to users at the same stage. In another example, the user may want to compare one or more of his/her characteristics to users who survived the medical condition associated with the user. In another example, the user may want to compare one or more of his/her characteristics to users suffering from the same medical condition with similar profiles. Users with similar profiles may include users sharing at least one personal characteristics, such as income or education level, with the user. Alternatively, the system may compare all or a subset of personal characteristics of the user to the corresponding characteristics of another user. If the
correlation between the two profiles is greater than a threshold amount, then the other user is determined to have a similar profile. For example, a user may be a 25 year-old male with an annual salary of $50,000 living in Washington, DC who suffers from the medical condition of melanoma. If the similarity threshold is 75%, then all other users suffering from melanoma who share at least three of the four characteristics relating to the user may be identified as having similar profiles. For example, another user suffering from melanoma who is a 25-year-old male living in Washington, DC earning $100,000 a year may be identified as a user with a similar profile.

In another example, a user may choose to compare one or more of his/her characteristics to users suffering from the same medical condition with whom the user has shared his experience. These users may be identified as those active in the same discussion board as the user, contributing to the same chat room as the user, those that have previously emailed or messaged the user, and/or those that have accessed the user’s personal website and/or blog. In another example, a user may choose to compare one or more of his/her characteristics to users suffering from the same medical condition within a specific geographic distance of the user.

FIG. 14 is an example of a GUI 1400 that enables a user to view one or more of his/her characteristics in relation to characteristics of other users suffering from the same medical condition over time. The GUI 1400 includes a chart 1402 and a data entry block 1404. For example, the chart 1302 presents blood glucose levels of a user by a solid line. The user may choose to be compared to other users or choose to display stage indicators by selecting the appropriate box in data entry block 1404.

For example, in the GUI 1400, the user has selected to be compared to other users and has selected to view stage indicators. The chart 1402 displays the blood glucose levels of a user and the 25th and 75th percentile values for the blood glucose levels of other users suffering from the same medical condition associated with the user. Different statistics, such as the mean and/or median of the blood glucose levels of other users may also be presented by the chart 1402. In one implementation, the other users may include all users suffering from the same medical condition associated with the user or a subset of users selected by the user, as described with reference to FIG. 13. In another implementation, the other users may be the same users used to determine the average user profile snapshots, as described with reference to FIG. 9b.
In the GUI 1400, the user has also selected to display stage indicators. The stage indicators designate the start and end of each stage associated with the medical condition. For example, the chart 1402 indicates that stage 2 starts at month 14 and ends at month 20. In one implementation illustrated in FIG. 14, the stage indicators may be vertical lines located at the month corresponding to the start or end of a stage. The lines may each be the same color or may be a different color to signify the different stages. In another implementation, the stages may be emphasized by shading and/or coloring the area corresponding to each stage. Emphasizing the area corresponding to each stage may allow a user to more quickly assess the duration of each stage and allow the user to easily view the value of his/her and other users' characteristics in each stage.

FIG. 15 is an example of a GUI 1500 that enables a user to view one or more of his/her characteristics in relation to characteristics of other users suffering from the same medical condition over time. The GUI 1500 includes a chart 1502 and a slider bar 1504. In one example, the chart 1502 may display the blood glucose levels of a user and the 25th and 75th percentile values for the blood glucose levels of other users suffering from the same medical condition associated with the user. Different statistics, such as the mean and/or median of the blood glucose levels of other users may also be presented by the chart 1502. In one implementation, the other users may include all users suffering from the same medical condition associated with the user or a subset of users selected by the user, as described with reference to FIG. 13. In another implementation, the other users may be the same users used to determine the average user profile snapshots, as described with reference to FIG. 9b.

Slider bar 1504 allows the user to learn more about his/her characteristic in relation to the characteristic of other users suffering from the same medical condition at a specific point in time. For example, in the GUI 1500, the user has moved the slider control to learn more about his/her blood glucose level in relation to the blood glucose level of other users in month three. As the user moves the slider control, data associated with the blood glucose levels of the other users are presented to the user.

In one implementation, the blood glucose levels of each user can be presented, so that the user can visualize the distribution of blood glucose levels. However, if the number of other users is relatively high, a user may have difficulty distinguishing between the data points associated with each user due to overlap. Therefore, in
another implementation, if the number of other users is greater than a threshold
number, the data points presented may be limited to a specific number. The threshold
number of other users may be equal to the specific number of data points presented.

For example, if the number of other users is 1000, only 15 representative data
points may be presented in the chart 1502. If blood glucose levels range from 0 mg/dl
to 225 mg/dl, then each of the 15 representative data points may represent 15 mg/dl.
As a result, the first representative data point will represent all of the users with a
blood glucose level between 0 and 15 mg/dl and the tenth representative data point
will represent the number of user with a blood glucose level between 135 and 150
mg/dl. In one implementation, the size of each representative data point may be
indicative of the number of users in its associated data range. For example, there may
be only 1 user with a blood glucose level between 135 and 150 mg/dl, but 100 users
with a blood glucose level between 150 and 165 mg/dl. As a result, the representative
data point associated with the 150 to 165 mg/dl blood glucose range will be much
larger than the representative data point associated with the 135 to 150 mg/dl blood
glucose range. The chart 1502 presents an example of the implementation wherein
the size of the representative data points correspond to the number of users being
represented. In another implementation, the color of each representative data point
may be altered depending on the number of users in its associated data range. For
example, the representative data point may be darker if the number of users in its
associated data range is higher. In still another implementation, the size and the color
of each representative data point may be different to reflect the number of users in its
associated data range.

The magnitude of the range corresponding to each representative data point
may be dependant on the characteristic being presented and the number of
representative data points being presented. For example, if the magnitude of the
range of values for a characteristic is greater, the magnitude of the range associated
with each representative data point will be greater. Similarly, if the number of
representative data points is lower, the magnitude of the range associated with each
representative data point will be greater because the magnitude of the range of values
for a characteristic will be represented by fewer representative data points.

In one implementation, as presented by the GUI 1500, the slider bar 1504 may
have only one slider control, in another implementation, the slider bar 1504 may have
more than one slider control, so that the user may compare details of a characteristic
at two or more points in time.

FIG. 16 is an example of a GUI 1600 that enables a user to view a prediction
of one or more of his/her characteristics over time. The GUI 1600 illustrates a chart
1602 of a characteristic of the user over time or over stages of the medical condition.
The solid data line in the chart 1602 indicates that data associated with the user for
that period of time or for that stage of the medical condition exists. The dashed data
line in the chart 1602 indicates that data used for that period of time or for that stage
of the medical condition has been predicted. One or more of characteristics of a user
may be predicted by analyzing the progress of other users suffering from the same
medical condition associated with the user. In one implementation, the other users
may include all users suffering from the same medical condition associated with the
user or a subset of users selected by the user, as described with reference to FIG. 13.
In another implementation, the other users may be the same users used to determine
the average user profile snapshots, as described with reference to FIG. 9b.

For example, the system may identify a group of users treating brain cancer
with chemotherapy. The system may find that, on average, the blood glucose levels
of the users decreased by 50% between the second and the third month of the medical
condition. Therefore, to predict a change in blood glucose level of a user between the
second and third month of treatment, the system will calculate the blood glucose level
of a user at the end of the third month to be 50% the blood glucose level of a user at
the end second month. Using similar analysis, the system may predict the blood
glucose level of a user at any point in time or at any stage of the medical condition.

FIG. 17 is an exemplary networked computing environment for tracking
characteristics of users of a social network. The client applications 1710A and
1710B, claim server 1720, and the health portal server 1730 of the networked
computing environment 1700 may be distributed geographically and interconnected
using a communication network 1740.

The client applications 1710A and 1710B, claim server 1720, and the health
portal server 1730 typically each include one or more hardware components and/or
software components, such as, for example, a general-purpose computer (e.g., a
personal computer) or software on such a computer capable of responding to and
executing instructions in a defined manner. Other examples of hardware include a
special-purpose computer, a workstation, a server, a device, a component, other physical or virtual equipment or some combination of these capable of responding to and executing instructions. Other examples of software include a program, a piece of code, an instruction, a device, a computer, a computer system, or a combination of these for independently or collectively instructing the user client applications 1710A and 1710B, claim server 1720, and the health portal server 1730 to render, interact, and/or operate as described. Software may be embodied permanently or temporarily in any type of machine, component, physical or virtual equipment, or storage medium capable of providing instructions.

In particular, the client applications 1710A and 1710B may be used, for example, to render and interact with the graphical user interfaces discussed with respect to FIGS. 1-16. The client applications 1710A and 1710B may each represent a separate user operating a computer to access and modify a user profile at the health portal server 1730 using communication the network 1740. The client applications 1710A and 1710B may include a communications interface used by the communications programs to send communications through the communication network 1740. The communications may include e-mail, audio data, video data, general binary data, or text data (e.g., encoded in American Standard Code for Information Interchange (ASCII) format).

The communication network 1740 typically provides direct or indirect communication between the client applications 1710A and 1710B, the claim server 1720, and the health portal server 1730, irrespective of physical separation. Examples of the communication network 1740 include the Internet, the World Wide Web, WANs, LANs, analog or digital wired and wireless telephone networks (e.g., Public Switched Telephone Network (PSTN), Integrated Services Digital Network (ISDN), and a type of Digital Subscriber Line (DSL)), radio, television, cable, or satellite systems, and other delivery mechanisms for carrying data. The communication network 1740 may include, for example, a wired, wireless, cable or satellite communication pathway.

The claim server 1720 may be, for example, associated with a health care provider (e.g., a doctor's office), a health insurance provider (e.g., a "health maintenance organization" or HMO), a health care billing processor, or another organization. Also, the claim server 1720 may be configured or programmed to
process health information (e.g., a bill from a doctor's office) and generate claims from the processed health information. Generating a claim may include sending data related to the claim to the health portal server 1730 using the network 1740.

The health portal server 1730 may be configured to interact with the client application 1710A and 1710B and the claim server 1720 to enable tracking characteristics of members of a social network using the network 1740. In particular, the health portal server 1730 may receive information relating to characteristics of users of a social network through communication with client application 1710A and 1710B. The health portal server 1730 may process the information relating to characteristics of users of a social network to provide the information to client application 1710A and 1710B. The health portal server 1730 may also enable additional functionality, such as, for example, interaction with health information generally or specific to a health claim or profile, facilitate user-to-user communication through, forums or newsgroups, or send reminders or notification relating to health information.

Because the computer-based system for performing the operations described above may be particularly useful in the context of enabling a user to access a health portal, the systems and operations described previously described were directed to a health care environment. Nevertheless, the system and operations disclosed herein may be implemented to display information in contexts other than health care. For example, the system and operations disclosed herein may be implemented to display information in contexts of financial information and/or real estate information.

The described systems, methods, and techniques may be implemented in digital electronic circuitry, computer hardware, firmware, software, or in combinations of these elements. Apparatuses embodying these techniques may include appropriate input and output devices, a computer processor, and a computer program product tangibly embodied in a machine-readable storage device for execution by a programmable processor.

A process embodying these techniques may be performed by a programmable processor executing a program of instructions to perform desired functions by operating on input data and generating appropriate output. The techniques may be implemented in one or more computer programs that are executable on a programmable system including at least one programmable processor coupled to
receive data and instructions from, and to transmit data and instructions to, a data storage system, at least one input device, and at least one output device. Each computer program may be implemented in a high-level procedural or object-oriented programming language, or in assembly or machine language if desired; and in any case, the language may be a compiled or interpreted language.

Suitable processors include, by way of example, both general and special purpose microprocessors. Generally, a processor will receive instructions and data from a read-only memory and/or a random access memory. Storage devices suitable for tangibly embodying computer program instructions and data include all forms of non-volatile memory, including by way of example semiconductor memory devices, such as Erasable Programmable Read-Only Memory (EPROM), Electrically Erasable Programmable Read-Only Memory (EEPROM), and flash memory devices; magnetic disks such as internal hard disks and removable disks; magneto-optical disks; and Compact Disc Read-Only Memory (CD-ROM). Any of the foregoing may be supplemented by, or incorporated in, specially-designed application-specific integrated circuits (ASICs).

Various modifications may be made. For example, useful results still may be achieved if steps of the disclosed techniques are performed in a different order and/or if components in the disclosed systems are combined in a different manner and/or replaced or supplemented by other components.
WHAT IS CLAIMED IS:

1. A computer implemented method comprising:
   maintaining a user profile for tracking one or more characteristics of a user associated with the user profile, the user profile including a particular characteristic of the user;
   generating a first snapshot of the user profile at a first instant in time, wherein at the first instant in time, an original value is associated with the particular characteristic of the user, and
   the first snapshot of the user profile reflects that the original value is associated with the particular characteristic of the user at the first instant in time;
   after generating the first snapshot of the user profile, receiving a request to associate a new value with the particular characteristic of the user;
   associating the new value with the particular characteristic of the user in response to receiving the request to associate the new value with the particular characteristic of the user;
   generating a second snapshot of the user profile at a second instant in time, wherein
   the second instant in time occurred after associating the new value with the particular characteristic of the user, and
   the second snapshot of the user profile reflects that the new value is associated with the particular characteristic of the user at the second instant in time;
   and
   displaying a visual representation of an evolution of the user profile over a time period that includes the first instant in time and the second instant in time,
   wherein the visual representation of the evolution of the user profile over the time period that includes the first instant in time and the second instant in time reflects that the original value was associated with the particular characteristic of the user at the first instant in time and that the new value was associated with the particular characteristic of the user at the second instant in time.

2. The computer implemented method of claim 1 wherein
   the particular characteristic of the user is a medical condition,
   the original value represents a first stage of the medical condition, and
the new value represents a second stage of the medical condition.

3. A computer implemented method comprising:
maintaining a plurality of user profiles for users that share a medical
condition, each of the plurality of user profiles corresponding to an individual user
and including a value associated with a characteristic that is related to the medical
condition, wherein the value associated with the characteristic that is related to the
medical condition changes from a first state to a second state over time;
for each of the plurality of user profiles, tracking an evolution of the medical
condition by recording a period of elapsed time between the change in the value
associated with the characteristic related to the medical condition from the first state
to the second state;
generating an average period of elapsed time between the change in value
associated with the characteristic related to the medical condition from the first state
to the second state by averaging the recorded period of elapsed time between the
change in the value associated with the characteristic related to the medical condition
from the first state to the second state for each of the plurality of user profiles;
creating an average user profile based on the plurality of user profiles, wherein
the average user profile includes the average period of elapsed time between the
change in value associated with the characteristic related to the medical condition
from the first state to the second state;
displaying a visual representation of an average evolution of the medical
condition over time, wherein the visual representation of the evolution of the medical
condition over time includes a visual representation of the average period of elapsed
time between the change in value associated with the characteristic related to the
medical condition from the first state to the second state.

4. The computer implemented method of claim 3, wherein the plurality of
user profiles for users that share a medical condition are limited to user profiles for
users affiliated with a user viewing the visual representation of an average evolution
of the medical condition over time.
5. The computer implemented method of claim 4 wherein the users affiliated with a user viewing the visual representation of an average evolution of the medical condition over time are users on a friend list of the user viewing the visual representation of an average evolution of the medical condition over time.

6. The computer implemented method of claim 3, wherein the plurality of user profiles for users that share a medical condition are limited to user profiles for users who share the same medical condition as a user viewing the visual representation of an average evolution of the medical condition over time.

7. The computer implemented method of claim 3, wherein the plurality of user profiles for users that share a medical condition are limited to user profiles for users who are at the same level of progression of the medical condition as a user viewing the visual representation of an average evolution of the medical condition over time.

8. The computer implemented method of claim 3, wherein displaying a visual representation of an average evolution of the medical condition over time comprises displaying a timeline indicating the average period of elapsed time between the change in value associated with the characteristic related to the medical condition from the first state to the second state.

9. The computer implemented method of claim 3, wherein displaying a visual representation of an average evolution of the medical condition over time comprises displaying a clock indicating the average period of elapsed time between the change in value associated with the characteristic related to the medical condition from the first state to the second state.

10. The computer implemented method of claim 9, further comprising displaying content that is relevant to the user viewing the visual representation of an average evolution of the medical condition over time.

11. A computer implemented method comprising:
maintaining a user profile for a user;
recording a first value of a physical characteristic of the user at a first instant in time in the user profile;
recording a first value of the user's mood at the first instant in time in the user profile;
recording a second value of a physical characteristic of the user at a second instant in time in the user profile;
recording a second value of the user's mood at the second instant in time in the user profile;
displaying a visual representation reflecting the first value of the physical characteristic of the user at the first instant in time, the second value of the physical characteristic of the user at the second instant in time, the first value of the user's mood at the first instant in time, and the second value of the user's mood at the second instant in time, so as to enable the user to track a change in the user's mood from the first instant in time to the second instant in time relative to a change in the physical characteristic of the user from the first instant in time to the second instant in time.

12. The computer implemented method of claim 11 wherein the physical characteristic of the user is one of blood pressure, blood glucose, basal body temperature, or weight.

13. The computer implemented method of claim 11 further comprising predicting a third value of a physical characteristic of the user at a third instant in time later than the second instant in time if the third value of a physical characteristic has not been recorded.

14. A system comprising instructions on a computer readable medium that when executed on a processor cause the processor to:
 maintaining a user profile for tracking one or more characteristics of a user associated with the user profile, the user profile including a particular characteristic of the user;
generate a first snapshot of the user profile at a first instant in time, wherein
at the first instant in time, an original value is associated with the particular characteristic of the user, and

the first snapshot of the user profile reflects that the original value is associated with the particular characteristic of the user at the first instant in time;

receive a request to associate a new value with the particular characteristic of the user after generating the first snapshot of the user profile;

associate the new value with the particular characteristic of the user in response to receiving the request to associate the new value with the particular characteristic of the user;

generate a second snapshot of the user profile at a second instant in time, wherein

the second instant in time occurred after associating the new value with the particular characteristic of the user, and

the second snapshot of the user profile reflects that the new value is associated with the particular characteristic of the user at the second instant in time; and

display a visual representation of an evolution of the user profile over a time period that includes the first instant in time and the second instant in time, wherein the visual representation of the evolution of the user profile over the time period that includes the first instant in time and the second instant in time reflects that the original value was associated with the particular characteristic of the user at the first instant in time and that the new value was associated with the particular characteristic of the user at the second instant in time.

15. The system of claim 14 wherein

the particular characteristic of the user is a medical condition,

the original value represents a first stage of the medical condition, and

the new value represents a second stage of the medical condition.

16. A system comprising instructions on a computer readable medium that when executed on a processor cause the processor to:

maintain a plurality of user profiles for users that share a medical condition, each of the plurality of user profiles corresponding to an individual user and including
a value associated with a characteristic that is related to the medical condition,
wherein the value associated with the characteristic that is related to the medical
condition changes from a first state to a second state over time;

track an evolution of the medical condition by recording a period of elapsed
time between the change in the value associated with the characteristic related to the
medical condition from the first state to the second state for each of the plurality of
user profiles;

generate an average period of elapsed time between the change in value
associated with the characteristic related to the medical condition from the first state
to the second state by averaging the recorded period of elapsed time between the
change in the value associated with the characteristic related to the medical condition
from the first state to the second state for each of the plurality of user profiles;

create an average user profile based on the plurality of user profiles, wherein
the average user profile includes the average period of elapsed time between the
change in value associated with the characteristic related to the medical condition
from the first state to the second state;

display a visual representation of an average evolution of the medical
condition over time, wherein the visual representation of the evolution of the medical
condition over time includes a visual representation of the average period of elapsed
time between the change in value associated with the characteristic related to the
medical condition from the first state to the second state.

17. The system of claim 16, wherein the plurality of user profiles for users
that share a medical condition are limited to user profiles for users affiliated with a
user viewing the visual representation of an average evolution of the medical
condition over time.

18. The system of claim 17 wherein the users affiliated with a user viewing
the visual representation of an average evolution of the medical condition over time
are users on a friend list of the user viewing the visual representation of an average
evolution of the medical condition over time.
19. The system of claim 16, wherein the plurality of user profiles for users that share a medical condition are limited to user profiles for users who share the same medical condition as a user viewing the visual representation of an average evolution of the medical condition over time.

20. The system of claim 16, wherein the plurality of user profiles for users that share a medical condition are limited to user profiles for users who are at the same level of progression of the medical condition as a user viewing the visual representation of an average evolution of the medical condition over time.

21. The system of claim 16, wherein displaying a visual representation of an average evolution of the medical condition over time comprises displaying a timeline indicating the average period of elapsed time between the change in value associated with the characteristic related to the medical condition from the first state to the second state.

22. The system of claim 16, wherein displaying a visual representation of an average evolution of the medical condition over time comprises displaying a clock indicating the average period of elapsed time between the change in value associated with the characteristic related to the medical condition from the first state to the second state.

23. The system of claim 22, further comprising displaying content that is relevant to the user viewing the visual representation of an average evolution of the medical condition over time.

24. A system comprising instructions on a computer readable medium that when executed on a processor cause the processor to:
   maintain a user profile for a user;
   record a first value of a physical characteristic of the user at a first instant in time in the user profile;
   record a first value of the user’s mood at the first instant in time in the user profile;
record a second value of a physical characteristic of the user at a second instant in time in the user profile;
record a second value of the user's mood at the second instant in time in the user profile;
display a visual representation reflecting the first value of the physical characteristic of the user at the first instant in time, the second value of the physical characteristic of the user at the second instant in time, the first value of the user's mood at the first instant in time, and the second value of the user's mood at the second instant in time, so as to enable the user to track a change in the user's mood from the first instant in time to the second instant in time relative to a change in the physical characteristic of the user from the first instant in time to the second instant in time.

25. The system of claim 24 wherein the physical characteristic of the user is one of blood pressure, blood glucose, basal body temperature, or weight.

26. The system of claim 24 further comprising instructions on a computer readable medium that when executed on a processor cause the processor to predict a third value of a physical characteristic of the user at a third instant in time later than the second instant in time if the third value of a physical characteristic has not been recorded.
FIG. 1A

Blood Glucose

Women's Health
- Fertility
- Basal Body Temp
- Pregnancy: Weight Gain

Lifestyle
- Exercise Routine
- Weight Loss: Bill
- General: Med

Chart

Log

Systolic (mmHg)

Diastolic (mmHg)

200 - 180 - 160 - 140 - 120 - 100 - 80 - 60

08/23 - 08/30 - 09/01 - 09/06 - 09/13 - 09/20 - 09/27 - 10/04

This year

This month

This week

This day

Syctolic has decreased about since your previous value

Note:
- Time: 1:42 PM
- Date: 10/02/2008

108

106

104

110

112

114

116

102
Systolic has decreased a lot since your previous value

Systolic: 140 Time: 4:22 PM Note: I hate my boss
Diastolic: 75 Date: 10/02/2006
Systolic has decreased a lot since your previous value

Systolic: 140  Time: 4:22 PM  Note: I hate my boss
Diastolic: 75  Date: 10/02/2006
Track My Blood Pressure

Tracking your blood pressure (BP) is important for everyone. It's the most important piece of health information for most people. Knowing how it varies with exercise, stress, diet and other activities is useful to better understand your health. We now know that the old idea of only checking your BP when you see the doctor is not enough. If you are over 35, tracking your BP can help you know if your BP is beginning to move out of the normal range. For people with slightly elevated BP (called pre-hypertension) or with elevated BP (called hypertension), tracking BP can assure that your treatments are effective. Every adult should be tracking their BP.

<table>
<thead>
<tr>
<th>Date</th>
<th>Systolic</th>
<th>Diastolic</th>
<th>Note</th>
<th>Chart</th>
<th>Log</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/24/06 16:07 EDT</td>
<td>120</td>
<td>60</td>
<td>Tired today</td>
<td>Chart</td>
<td>Log</td>
</tr>
<tr>
<td>09/25/06 16:17 EDT</td>
<td>115</td>
<td>55</td>
<td>Feeling alive</td>
<td>Chart</td>
<td>Log</td>
</tr>
<tr>
<td>09/26/06 16:11 EDT</td>
<td>110</td>
<td>55</td>
<td>I love life</td>
<td>Chart</td>
<td>Log</td>
</tr>
<tr>
<td>09/27/06 16:18 EDT</td>
<td>115</td>
<td>60</td>
<td>It's gonna be a long week</td>
<td>Chart</td>
<td>Log</td>
</tr>
<tr>
<td>09/28/06 16:19 EDT</td>
<td>118</td>
<td>65</td>
<td>A really long day</td>
<td>Chart</td>
<td>Log</td>
</tr>
<tr>
<td>09/29/06 16:19 EDT</td>
<td>110</td>
<td>55</td>
<td>TGIF</td>
<td>Chart</td>
<td>Log</td>
</tr>
<tr>
<td>10/01/06 16:21 EDT</td>
<td>110</td>
<td>55</td>
<td>I love weekends</td>
<td>Chart</td>
<td>Log</td>
</tr>
<tr>
<td>10/02/06 16:10 EDT</td>
<td>140</td>
<td>75</td>
<td>I hate my boss</td>
<td>Chart</td>
<td>Log</td>
</tr>
</tbody>
</table>

Displaying 1 - 9 of 9

Average: 

<table>
<thead>
<tr>
<th>All</th>
<th>Last entries</th>
<th>From</th>
<th>to</th>
<th>Calculate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>09/25/2006</td>
<td>10/02/2006</td>
<td>Calculate</td>
</tr>
</tbody>
</table>

Systolic: 140 Time: 4:22 PM Note: I hate my boss

Diastolic: 75 Date: 10/02/2006
### Energy burned (calories)

<table>
<thead>
<tr>
<th>Duration</th>
<th>Energy Burned</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 minutes</td>
<td>3,000</td>
</tr>
<tr>
<td>25 minutes</td>
<td>2,750</td>
</tr>
<tr>
<td>20 minutes</td>
<td>2,500</td>
</tr>
<tr>
<td>15 minutes</td>
<td>2,250</td>
</tr>
<tr>
<td>10 minutes</td>
<td>2,000</td>
</tr>
<tr>
<td>5 minutes</td>
<td>1,750</td>
</tr>
<tr>
<td>3 minutes</td>
<td>1,500</td>
</tr>
<tr>
<td>2 minutes</td>
<td>1,250</td>
</tr>
<tr>
<td>1 minute</td>
<td>1,000</td>
</tr>
<tr>
<td>30 seconds</td>
<td>750</td>
</tr>
<tr>
<td>15 seconds</td>
<td>500</td>
</tr>
<tr>
<td>10 seconds</td>
<td>250</td>
</tr>
</tbody>
</table>

**Note:** TGIF

**Activity:** Select a category

**Time:** 4:38 PM

**Date:** 10/22/2006

**Weight:** 175 lbs

**Category:**

---

**SUBSTITUTE SHEET (RULE 26)**
<table>
<thead>
<tr>
<th>Date</th>
<th>Duration</th>
<th>Category</th>
<th>Activity</th>
<th>Weight (lbs)</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/24/06</td>
<td>60</td>
<td>Running</td>
<td>12-18 m/min, leisure,</td>
<td>180</td>
<td>Feeling good</td>
</tr>
<tr>
<td>09/25/06</td>
<td>60</td>
<td>Cycling</td>
<td>4-6 mph (9km/h),</td>
<td>180</td>
<td>Arms are sore</td>
</tr>
<tr>
<td>09/26/06</td>
<td>60</td>
<td>Cycling</td>
<td>powerlifting or body</td>
<td>178</td>
<td>My body is</td>
</tr>
<tr>
<td>09/27/06</td>
<td>60</td>
<td>Cycling</td>
<td>4-6 mph (9km/h),</td>
<td>178</td>
<td></td>
</tr>
<tr>
<td>09/28/06</td>
<td>60</td>
<td>Cycling</td>
<td>powerlifting or body</td>
<td>178</td>
<td></td>
</tr>
<tr>
<td>10/02/06</td>
<td>60</td>
<td>Cycling</td>
<td>4-6 mph (9km/h),</td>
<td>178</td>
<td></td>
</tr>
</tbody>
</table>

**Average:**
- **Date:** 09/25/06 to 10/02/06
- **Duration:** 60 minutes
- **Weight:** 178 lbs

**Note:** TGF

**Displaying 1 - 6 of 6**

**SUBSTITUTE SHEET (RULE 26)**
Track My Vitals
Overview

Basic Vitals
Blood Pressure
Blood Glucose

Women's Health
Fertility: Basal Body Temp
Pregnancy: Weight Gain

Lifestyle
Exercise Routine
Weight Loss / BMI

General Mood

Tracking your mood on a regular basis can help you visualize your mood over time and help identify activities, stresses and medicines that may be affecting your mood. With the journaling function, add notes as to what influences your mood and identify trends.

<table>
<thead>
<tr>
<th>Date</th>
<th>Value</th>
<th>Influence</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/23/06 17:49 EDT</td>
<td>😊</td>
<td>Work</td>
<td>Working on the weekend stinks</td>
</tr>
<tr>
<td>09/24/06 17:03 EDT</td>
<td>😊</td>
<td>Family</td>
<td>I love Sundays</td>
</tr>
<tr>
<td>09/25/06 17:51 EDT</td>
<td>😊</td>
<td>Work</td>
<td>Just another manic monday</td>
</tr>
<tr>
<td>09/26/06 17:03 EDT</td>
<td>😊</td>
<td>Work</td>
<td>I hate Tuesdays</td>
</tr>
<tr>
<td>09/27/06 17:05 EDT</td>
<td>😊</td>
<td>Work</td>
<td>Finally got that project finished</td>
</tr>
<tr>
<td>09/28/06 17:06 EDT</td>
<td>😊</td>
<td>Work</td>
<td>Almost there...one more day</td>
</tr>
<tr>
<td>09/29/06 17:00 EDT</td>
<td>😊</td>
<td>Money, Work</td>
<td>Payday and TGIF!</td>
</tr>
</tbody>
</table>

Displaying 1 - 7 of 7

Average: 😊 All 😊 Last entries

Time: 5:07 PM
Date: 10/02/2006
Note: Almost there...one more day

Mood: 😊😊😊😊😊
Influences: Relationship, Money, Work, Family, Health, Other

FIG. 7B
Progression of Brain Cancer Based on Treatment

User: User #1
Treatment: Chemotherapy
Stage 1: 12 months
Stage 2: 18 months
Stage 3: 24 months
Stage 4: 26 months

User: User #2
Treatment: Radiation Therapy
Stage 1: 9 months
Stage 2: 14 months
Stage 3: 20 months
Stage 4: 22 months

User: User #3
Treatment: Chemotherapy & Radiation Therapy
Stage 1: 16 months
Stage 2: 20 months
Stage 3: 26 months
Stage 4: 32 months

User: User #4
Treatment: Holistic Therapy
Stage 1: 6 months
Stage 2: 12 months
Stage 3: 14 months
Stage 4: 20 months

FIG. 9A

SUBSTITUTE SHEET (RULE 26)
FIG. 9B
1100

User #1 - Progression of Brain Cancer Treated with Chemotherapy

FIG. 11

SUBSTITUTE SHEET (RULE 26)
FIG. 13

- 75th Percentile
- 25th Percentile

Blood Glucose

- 12/00
- 1/01
- 2/01
- 3/01
- 4/01
- 5/01
- 6/01
- 7/01

1304

- Show all Users
- Show Users in Stage
- Show all Users who Survived
- Show Users with Similar Profile
- Show Users with whom I have Shared my Experience
- Show all Users within - Miles of Me
FIG. 14
FIG. 15
FIG. 16