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(54) **METHOD AND ELECTRONIC DEVICE FOR IDENTIFYING GOLF SWINGS AND TRACKING STATISTICS DURING A GOLF ROUND**

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(57) **ABSTRACT**

A system and method for automatically identifying a golf swing without any active participation on the part of the golfer is disclosed. The application program stored on and operating from an electronic device system uses data from a gyroscope and accelerometer to identify the golf swing. The system also automatically keeps statistics about the golfer's round of golf based on the GPS location of the identified swings.

Server

122

Public Network

124

Processor

102

104

Network
Communication
Hardware

106

Gyroscope

120

118

Memory

Electronic
file

Application
Program

110

Accelerometer

108

112

116

114

Global Positioning
System Unit

Interactive
Display

100

FIG. 1A

Start

F1a

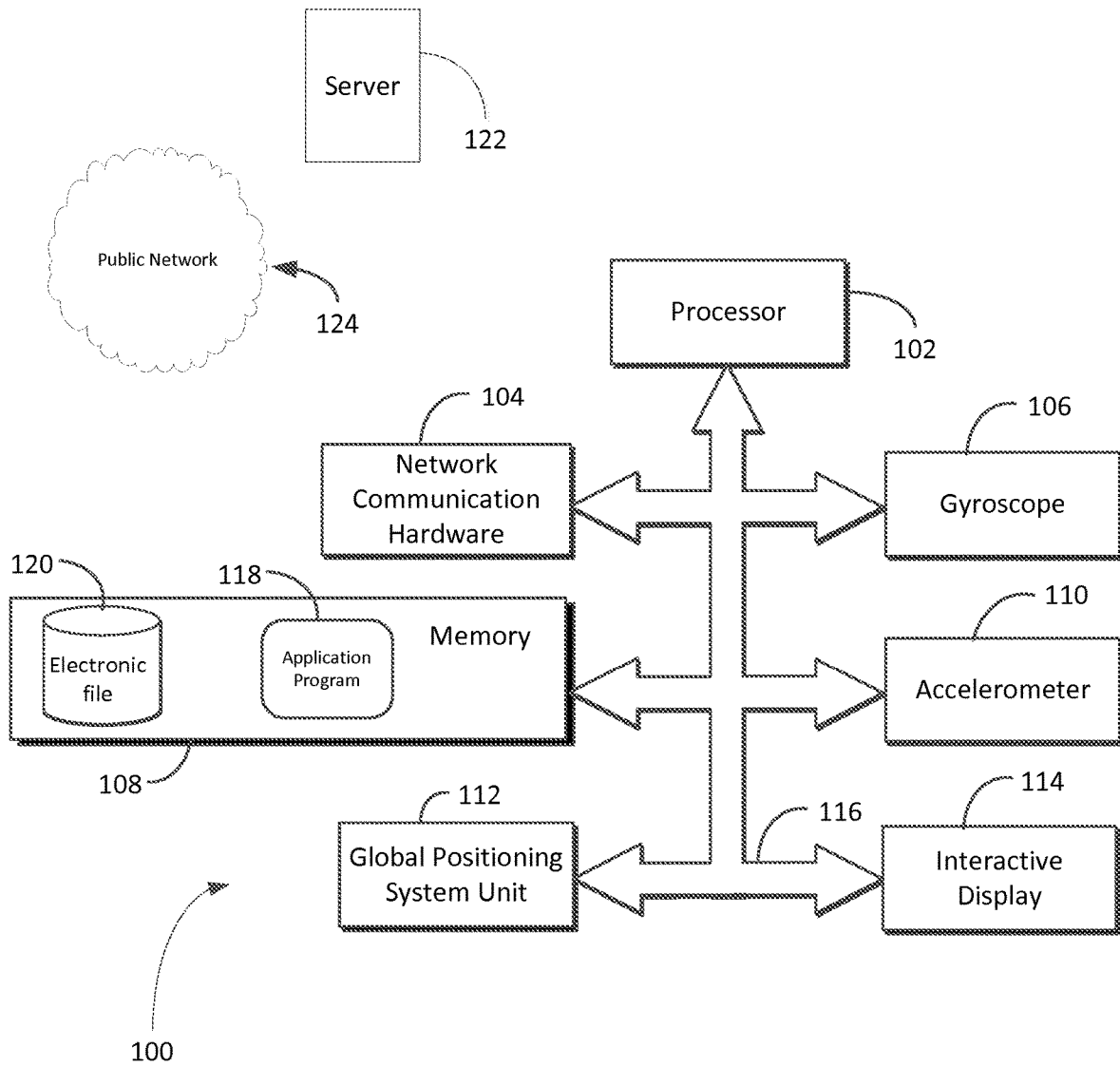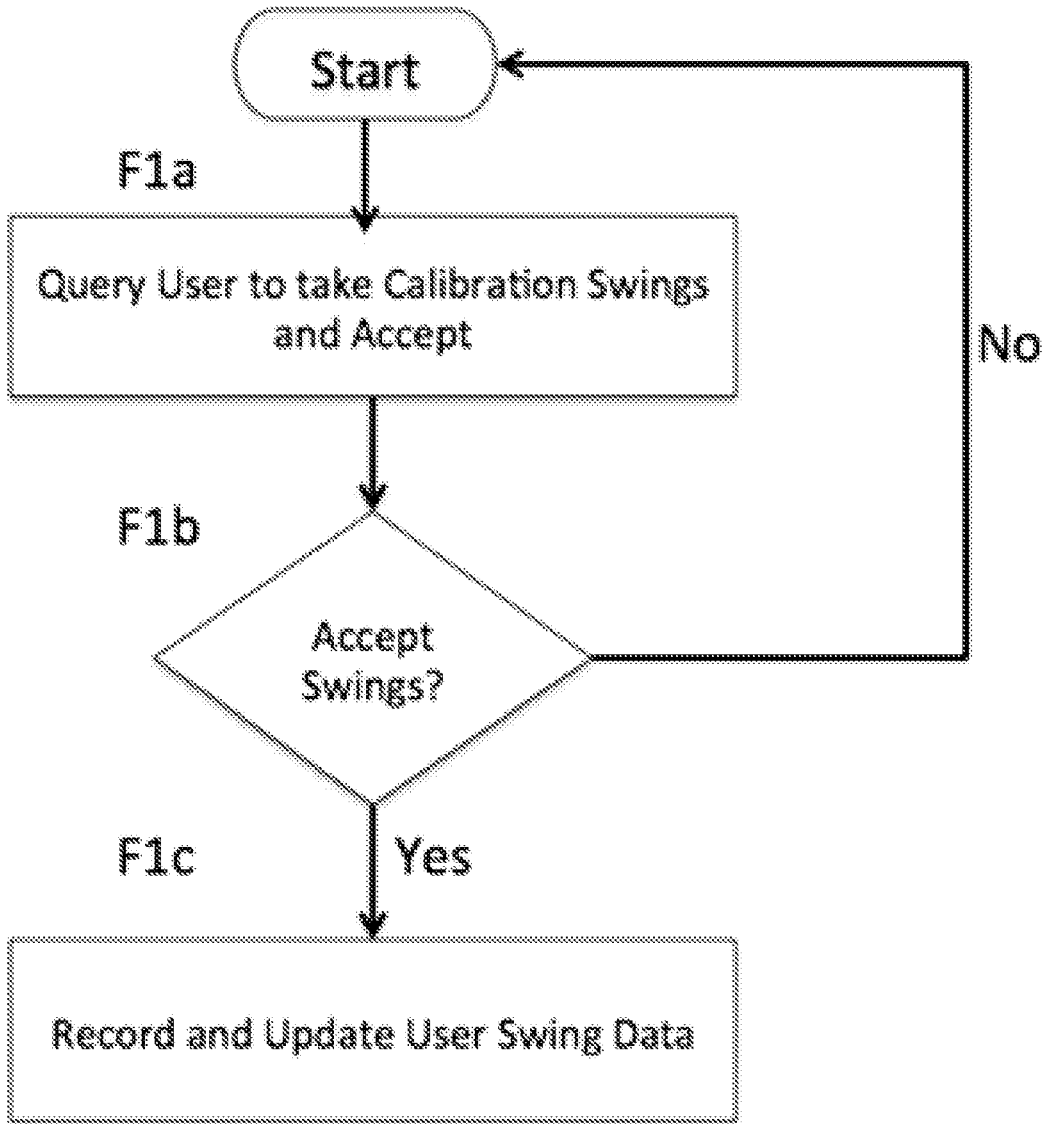Query User to take Calibration Swings and Accept

F1b

Accept Swings?

No

F1c   Yes

Record and Update User Swing Data

FIG. 1B

FIG. 2

FIG. 3

Start

Golfer takes a
Recorded Swing   F4a

Determine Golfer's
Position   F4b

F4c

Golfer on   No   Golfer in   No   Golfer on
Tee Box?   Fairway   Green?
                              Area?

F4d   Yes   Yes   Yes

Tee-off Subroutine   Fairway Subroutine   Green Subroutine

Compile and Record
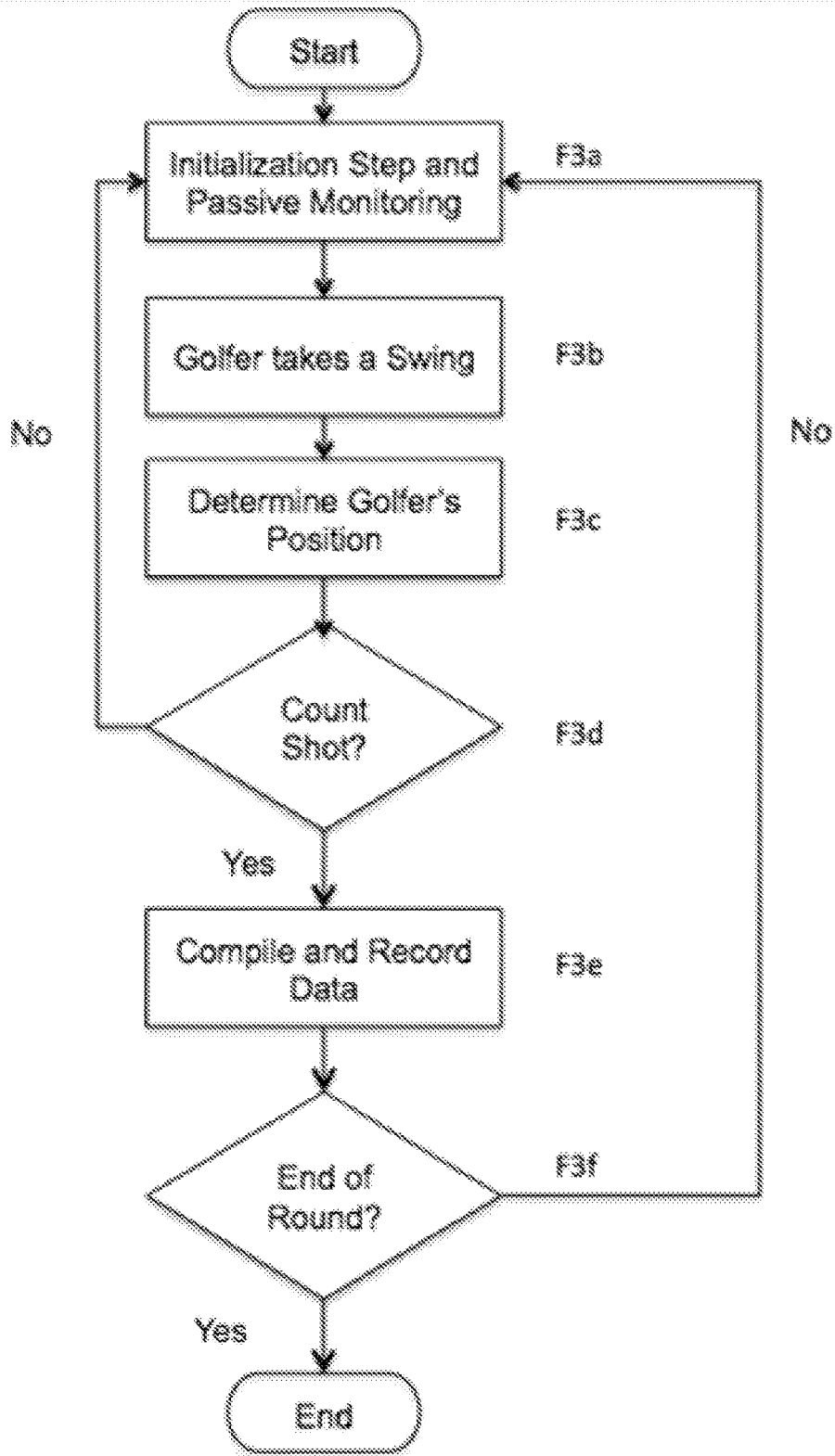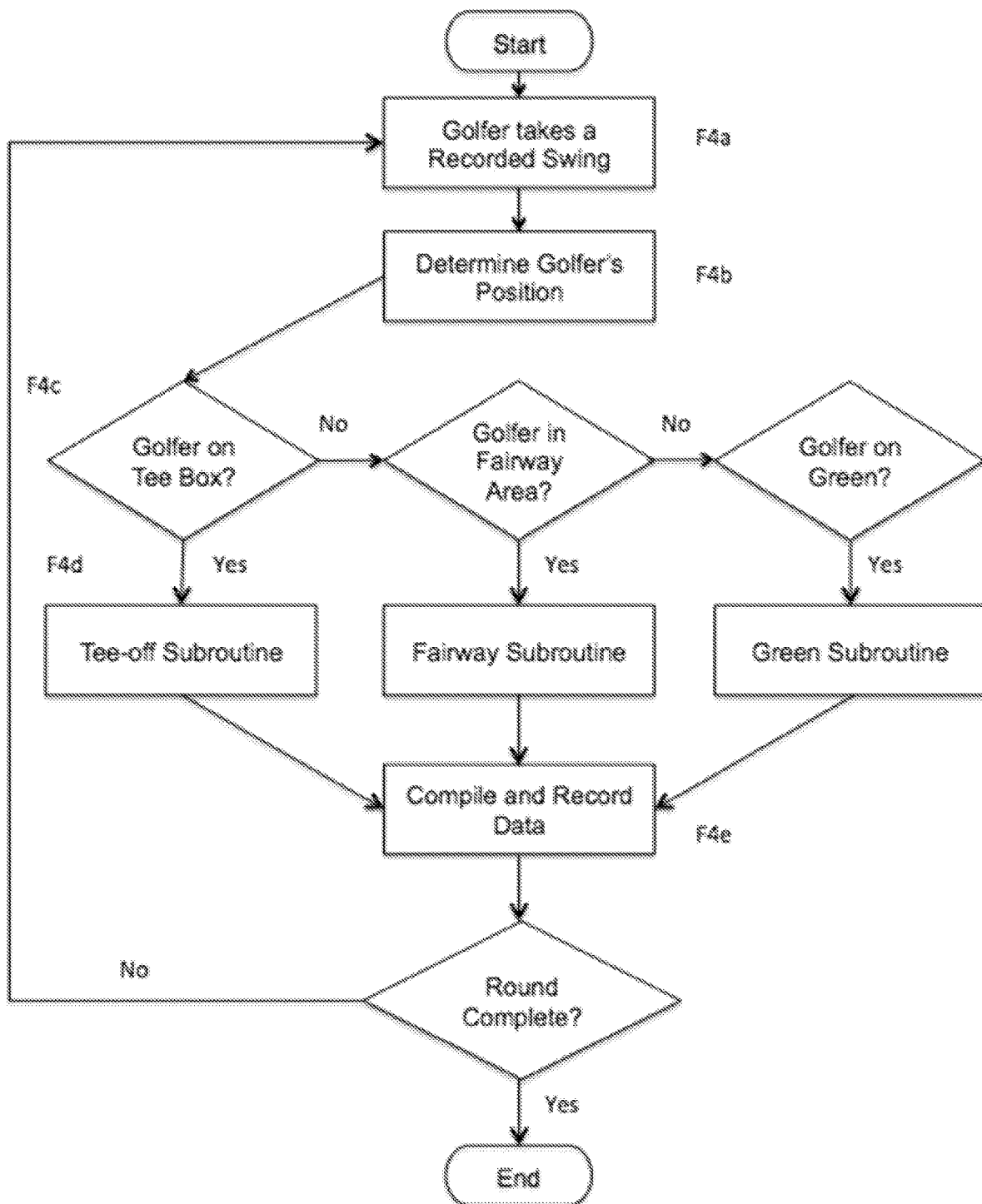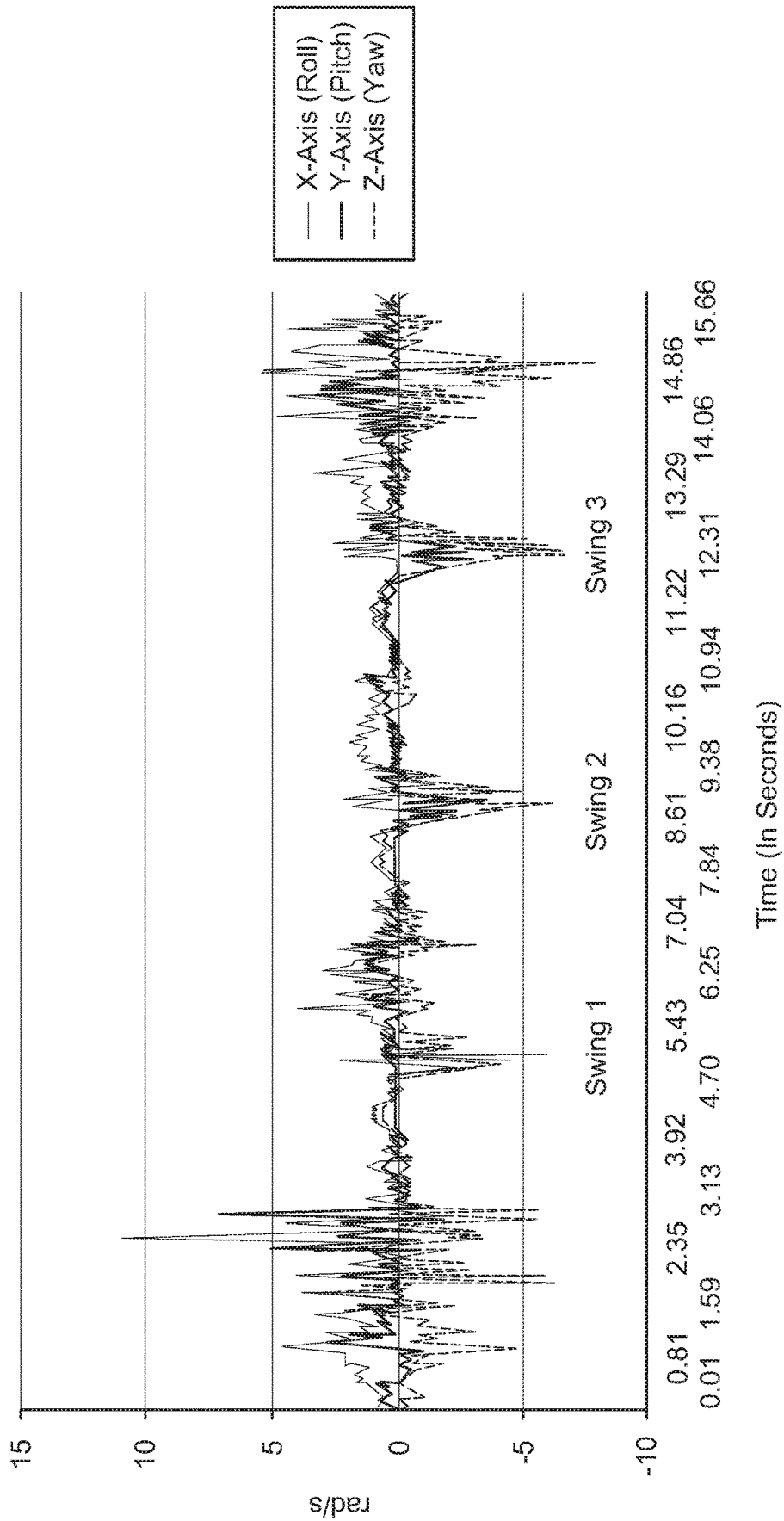Data   F4e

No

Round
Complete?
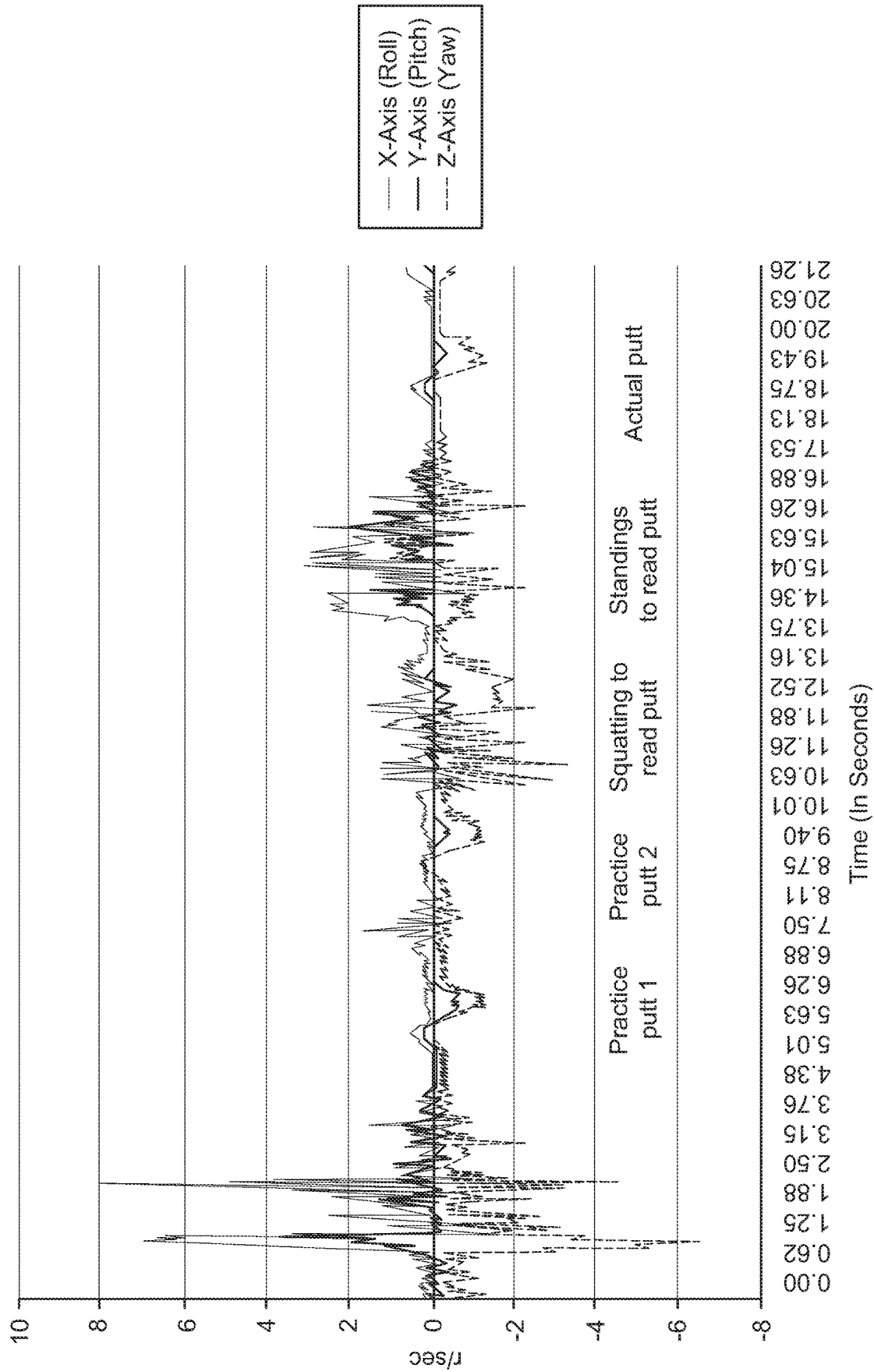
Yes

End

FIG. 4

FIG. 5

FIG. 6

METHOD AND ELECTRONIC DEVICE FOR IDENTIFYING GOLF SWINGS AND TRACKING STATISTICS DURING A GOLF ROUND

[0001] This application is a continuation of U.S. application Ser. No. 14/740,020, filed Jun. 15, 2015, which claims the benefit of and priority to U.S. Provisional Patent Application Ser. No. 62/012,676, filed Jun. 16, 2014. Both of the above applications are incorporated by reference in their entireties for all purposes.

TECHNICAL FIELD

[0002] The present disclosure relates to methods and electronic devices for identifying golf swings and tracking statistics during a round of golf.

BACKGROUND

[0003] There are an estimated 24.1 million golfers in the United States, making it among the most popular sports in the country. Golf is a sport driven by statistics, and there is significant demand in the golf community for personalized golf statistics. Typically, golfers manually keep track of records such as scores, greens in regulation, length of shots, and fairways hit. Such manual record keeping is subject to guesswork and human error. To alleviate these problems, automated techniques have been developed. These methods have their own drawbacks, however. Automated techniques for recording golf statistics typically require wearable devices, including those attached to golf equipment or the player. Often these systems require an affirmative step before each golf shot, and significant time after the round to upload and capture the data.

[0004] Hybrid solutions have been developed using smartphones, but such systems typically require manual entry of data by the user during or after the round, or require active use while on the course. Furthermore, many golfers have a negative association with actively using cell phones and other technology during a round.

SUMMARY

[0005] The disclosure describes a novel electronic/software based system and method for automatically identifying a golf swing without any active participation on the part of the golfer with the system and method, other than the golfer carrying with him or her, the electronic device that the system and application program are stored on. In a preferred but non-limiting embodiment, the electronic device can be a smartphone or smart watch. The application program stored on and operating from an electronic device system uses data from a gyroscope and accelerometer to identify the golf swing. The gyroscope and accelerometer can also be part of the smartphone or smart watch. The application program cross references/compares a golfer's potential swing against/with a calibrated process to eliminate false positives using built-in logic. The system and method also automatically keeps statistics about the golfer's round of golf based on the GPS location of the identified swings and logic to eliminate practice swings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] While the appended claims set forth the features of the present techniques with particularity, these techniques may be best understood from the following detailed description taken in conjunction with the accompanying drawings of which:

[0007] FIG. 1A is a block diagram that shows example components of the electronic device;

[0008] FIGS. 1B, 2, 3, and 4 are flowcharts showing various functions of the electronic device; and

[0009] FIGS. 5 and 6 show how different swings can be distinguished based on gyroscope readings.

DETAILED DESCRIPTION

[0010] The disclosure is directed to a method and electronic device ("device") that passively compiles statistical information during a round of golf. Possible embodiments of the device include a smartphone or similarly enabled device worn by a user (such as in a pants pocket, holstered to the golfer's belt, on a wrist, etc.). In various embodiments, an application executing on the device analyzes data from a gyroscope sensor, accelerometer sensor, and global positioning system ("GPS") capabilities within the device itself as well as information from other personal electronic devices to automatically record golfing statistics. These statistics include, but are not limited to: driving distance, number of putts, approach distance, shot dispersion, fairways hit, greens in regulation, approach accuracy from different yardages, longest drive, individual round vs. historical performance, and personalized trend analysis.

[0011] When swinging a club, the motion of a user's body can be measured by the gyroscope and accelerometer sensors present within the device. The golf swing motion creates a distinct pattern in the gyroscope and accelerometer sensor data that is distinguishable from other motions a golfer makes while on the golf course. The device monitors these instruments until it identifies readings consistent with a golf swing. When calibrated to the user, a built in logic engine (executing as part of the application) eliminates false positives and practice swings, ensuring that only true swings are recorded by the application. Using the GPS data, the application can track shot location within feet, allowing for real-time monitoring, recording, and tracking of personalized golf scores and statistics.

[0012] Turning to FIG. 1A, an embodiment of the electronic device, generally labeled 100, includes a processor 102, network communication hardware 104 (e.g., WiFi chip or a cellular baseband chipset), a gyroscope 106, a memory 108, an accelerometer 110, a GPS unit 112, and an interactive display 114 (e.g., a touchscreen, etc.). Each of the elements of FIG. 1A is communicatively linked to one or more other elements via one or more data pathways 116. Possible implementations of the data pathways 116 include, without limitation, wires, conductive pathways on a microchip, and wireless connections. Possible implementations of the processor 102 include, without limitation, a microprocessor, microcontroller and a controller. In various embodiments, the processor 102 retrieves instructions and data from the memory 108 and, using the instructions and data, carries out many of the methods described herein. Among the possible instructions that the processor 102 carries out include those of an application program 118. Thus, when this disclosure refers to the application program 118 carrying out an action, it is, in many embodiments, the processor 102 that actually carries out the action (in coordination with other hardware components of the device 100 as necessary).

[0013] The memory 108 can be implemented as volatile memory, non-volatile memory, or a combination thereof. The memory 108 may be implemented in multiple physical locations and across multiple types of media (e.g., dynamic random access memory plus a hard disk drive, cloud based, etc.).

[0014] In an embodiment, the application program 118 monitors the accelerometer 110 and the gyroscope 106 to determine when the user has taken a shot, as will be described below in further detail in conjunction with FIGS. 3-5. Once the application program 118 detects a shot, the application program 118 records the shot's location based on the user's location using the GPS unit 112. The application program 118 will automatically calculate any pertinent golf statistics such as, but not limited to, shot distance, whether a shot was out-of-bounds or in a hazard, driving distance, number of putts, approach distance, shot dispersion, fairways hit, greens in regulation, approach accuracy from different yardages, longest drive, and further personalized golfing statistics. Optionally, the user may add events (e.g., via the interactive display 114) such as penalty strokes or notes to account for certain hazards and drops. The application program 118 saves this data to an electronic file 120. User inputs are optional if the user wishes to add events. These can be inputted by the user on the device 100 directly.

[0015] The application program 118 uses the GPS unit 112 to obtain the user's location when the application 118 detects a swing or putt. The application program 118 also uses the GPS unit 112 to determine where on the course the user has made a shot. This application program 118 uses the data to determine the user's score and other personalized statistics. This process is described in further detail below in conjunction with FIG. 4.

[0016] By using the network communication hardware 104, the application program 118 can communicate with a remotely located server 122 over a public network 124 (e.g., the Internet). The server 122 (which has a database of golf courses and their layouts) will provide the application program 118 with updated data on the golf course on which the user is playing.

[0017] Turning to FIG. 1B, actions carried out by the device 100 to calibrate the application program 118 in an embodiment are as follows. At F1a, the application program 118 prompts the user to take swings to calibrate the application program 118.

[0018] The application program 118 asks the user (via the interactive display 114) to take three calibration full swings, three calibration chip shots, and three calibration putts with the device on their person. The application program 118 records the sensor readings from the gyroscope 106 and accelerometer 110 before, during, and after each swing. The gyroscope 106 measures the rotation of the device 100 along the x, y, and z-axis. The accelerometer 110 measures the magnitude of g-force acceleration exerted on the device 100 during a swing.

[0019] At F1b, the application program 118 queries the user to find out whether the swings were performed correctly. If the user inputs an affirmative response, the process moves to F1c, at which the application program 118 saves the gyroscope and accelerometer readings taken during the calibration swings to an electronic file 120 in the memory 108. The application program 118 will eventually use these readings as a baseline to detect when the user makes

subsequent swings and to eliminate false positives. If the user inputs a negative response, the calibration process returns to F1a.

[0020] Turning to FIG. 2, actions carried out by the device 100 to determine the golf course on which the user is playing in one non-limiting embodiment are as follows. At F2a, when the application program 118 is initialized, the application program 118 uses data from the GPS unit 112 to determine the user's location. Based on the user's GPS coordinates, the application program 118 will automatically contact the server 122 to search an indexed database of known golf courses and determine which course the golfer is playing preferably based on the user's location information.

[0021] At F2b, the application program 118 prompts the user to confirm that the application program 118 has correctly identified which course the user is playing on. This will be most useful at locations with multiple golf courses. However, it is within the scope of the disclosure that the application program can recognize which course from multiple golf courses, where the GPS data information provides a precise or almost precise geographical spot of the user's exact location, such that the user's location is matched to a specific one of the multiple golf courses at the general location (e.g. country club with two or more 18 hole courses, etc.).

[0022] At F2c, the application program 118 receives the user's response to the prompt of F2b. If the user responds affirmatively, the process moves to F2e, at which the application program 118 downloads from the server 122 (via the network 124) the relevant course information in order to keep the user's statistics in the manner described in FIGS. 3-5. The course information can include a map of the golf course with the locations of relevant golf course features. These locations include but are not limited to: tee-boxes, fairways, greens, bunkers, holes, and/or out-of-bounds locations.

[0023] If the user inputs a negative response, the process moves to F2d, at which the application program 118 prompts the user to select the correct golf course from choices provided by the application program 118. The process then moves to F2e, at which it ends.

[0024] Turning to FIG. 3, actions carried out by the device 100 to record the user's golf swings during a round in one non-limiting embodiment are as follows. At F3a, using the method described in conjunction with FIG. 2, the application program 118 automatically determines which course on which the user is playing. The application program 118 continuously monitors the gyroscope 106 and accelerometer 110 to determine when the user takes a swing.

[0025] At F3b, when the gyroscope 106 detects rotational movement around the x, y, or z-axis of the device 100 (otherwise known as roll, pitch, and yaw), the application program 118 automatically measures and records that rotation. The application program 118 then compares these measurements to those taken during the user's calibration shots. For example, during a typical full swing, the gyroscope's y-axis shows a rapid increase in amplitude. A corresponding but smaller increase in the amplitude of the x and z-axis is consistent with the characteristics of a full swing.

[0026] If there is a match or near-match between the rotation of the device 100 during a shot and the rotation of the device 100 during a calibration swing, the application

program **118** also compares the acceleration (as measured by the accelerometer **110**) of the recorded movement to the calibration swings. If the readings from both the gyroscope **106** and the accelerometer **110** match or nearly match the readings of the gyroscope **106** and the accelerometer **110** taken from a calibration swing, then the application program **118** records that the user has taken a potential shot. If there is not a match, then no stroke is recorded, and the application program **118** resumes monitoring. This eliminates false-positives and movements other than golf swings from being recorded as a swing.

[0027] At F**3**c, once the application program **118** detects a potential shot, the application program **118** obtains the user's location from the GPS unit **112** and records the location of the potential shot.

[0028] At F**3**d, the application program **118** determines whether to count the shot. If the application program **118** detects one or more potential shots within predetermined time and/or distance parameters, the application program **118** preferably only records the latest shot in time in the user's statistics. The application program **118** will consider any prior potential shot occurring within these parameters to be a practice swing, and thus will not include such shots in the user's score or statistics.

[0029] At F**3**e, if there are no further potential shots made within a predetermined time and distance of a detected shot, the application program **118** records a shot as having been taken at that location (a recorded shot). The application program **118** records the shot's GPS location, adds the shot to the golfer's score and statistics, and saves the updated statistics to the electronic file **120**. By using the GPS unit **112** to determine shot location, and using the gyroscope **106** and accelerometer **110** to determine when a shot has been made, the application program **118** will automatically determine statistics such as, but not limited to, driving distance, number of putts, approach distance, shot dispersion, fairways hit, greens in regulation, approach accuracy from different yardages, longest drive, and further personalized golfing statistics. An embodiment of such a determining process is further described in conjunction with FIG. **4**.

[0030] At F**3**f, the application program **118** will determine whether the round is over. If there are no further potential shots made within a predetermined time after a recorded shot has been made at the final hole of the course, the application program **118** will determine that the user has ended his or her round and, using the GPS coordinates of all previous shot locations, calculate all relevant golf statistics for the round as well as comparisons to prior rounds at the same course and other courses. Otherwise, the process returns to F**3**a. Optionally, the user can also input on the interactive display that the round of golf has ended which can also automatically cause application program **118** to calculate the relevant golf statistics.

[0031] Turning to FIG. **4**, actions carried out by the device **100** to use GPS data to determine golf statistics in an embodiment are as follows. At F**4**a, the application program **118** carries out the process described in conjunction with FIG. **3**. At F**4**b, when the application program **118** detects a shot, the application program **118** obtains the user's location from the GPS and records the location of the shot. At F**4**c, based on the GPS coordinates, the application program **118** uses the location of the recorded shot to determine the type of shot the user made (e.g., drive, putt, or chip). The application program **118** uses data from the server **122** to

determine the hole on which the user is playing, where on that particular hole the user's recorded shot was made, and whether the hole is a par 3, 4, or 5. The application program **118** keeps different statistics based on both the length of the hole, and the type of recorded shot the golfer makes. To determine what type of shot the user made, the application program **118** uses data from the GPS unit **112** to determine whether the shot was made from the tee box, the green, or any other location on the course, such as a fairway or rough.

[0032] At F**4**d, when a recorded shot is made from inside the tee box, the application program **118** recognizes that the user has begun playing a new hole, compiles the statistics from the previous hole, and begins to record statistics for the new hole. Based on the par for each hole, the application program **118** automatically tracks different statistics (e.g., driving distance is not tracked on a par 3 hole, but is for par 4 and 5 holes). When a recorded shot is made from the tee box on a par 4 or 5 hole, the location of the subsequent recorded shot allows the application program **118** to determine statistics such as driving distance and accuracy automatically. When a recorded shot is made from the tee box on a par 3 hole, the location of the subsequent recorded shot, chip, or putt (as obtained from the GPS unit **112**) allows the application program **118** to determine statistics such as greens in regulation automatically.

[0033] Thus in one non-limiting embodiment, preferably for the tee shot on par 4 or 5 holes (though the technology could be used to determine the length of any golf shot, the GPS data determines the location where the golfer performs the first true golf swing for the tee shot and then determines the location that the golfer performs his or her next second true golf swing which should be the location of the golf ball on the particular hole from the tee shot. The distance between these two locations provides the distance that the golf ball traveled from the golfer's tee shot and can be used for calculating driving statistics. As mentioned above, this calculating technique can be used to calculate the distance any golf shot achieved, through the use of the GPS location of the golfer at consecutive true golf swings.

[0034] When a recorded shot is made from a location other than the tee box or green, the application program **118** can determine whether the golfer's prior shot finished within or missed the fairway. This information allows the application program **118** to automatically compile statistics at the end of the round such as fairways hit, greens in regulation, tee shot dispersion, and approach shot dispersion. For shots within a pre-determined distance of the hole, the application will calculate chipping accuracy and scrambling as well.

[0035] When a recorded shot is made from a green and/or the location of record putts on the green, allows the application program **118** to keep track of putting statistics, such as up-and-downs and lengths of putts.

[0036] At F**4**e, after the first hole, when a recorded shot is made from the tee box, the application program **118** compiles the GPS location of all recorded shots made during the prior hole. This allows the application program **118** to determine all applicable golf statistics automatically. Possible statistics include, without limitation: approach distance, shot dispersion, fairways hit, greens in regulation, approach accuracy from different yardages, longest drive, and further personalized golfing statistics. Once the user completes the final hole of the course, the application program **118** tabulates statistics for the entire round, and can

compare statistics between previously played rounds for the same golf course or other golf courses.

[0037] FIG. **5** shows an example of how the application program **118** can identify a full swing using the readings of the gyroscope **106**. During a full swing, the primary indicator for detecting a swing is the y-axis data from gyroscope **106**. The baseline reading of each axis is 0 radians per second (rad/s). During a golfer's backswing, there is generally rotational movement consistently around 1 rad/s. The through-swing shows a consistent max amplitude of about 6 or more rad/s. The x and z-axis data consistently oscillates similarly to the y-axis, but to a lesser magnitude.

[0038] Using the unique motion of each user's swing, the application will be able to identify swings based on the readings from the gyroscope, and subsequently confirm that a swing took place using data from the accelerometer. When the application program **118** detects a swing, it takes the GPS coordinates of the golfer's location and records them, thus automatically tracking the location of shots taken during a round.

[0039] FIG. **6** shows an example of how the application program **118** can identify a putt using the gyroscope readings from the device. During a putt, the gyroscope data appears as a low amplitude version of a full swing, but with far less z-axis rotation. Typical motions during a putting routine, including squatting behind the ball and picking up the ball to mark its location, create distinctive gyroscope and accelerometer data patterns. Using the unique motion of each user's body during a putt, the application program **118** will be able to identify putts based on the readings from the gyroscope **106**, and subsequently confirm that a swing took place using data from the accelerometer **110**. Just as with full swings, when the application program **118** detects a putt, the application program **118** obtains the GPS coordinates of the

user's location and records them, thus automatically tracking the location of shots taken during a round. As an additional option, to further confirm that a putt has taken place, the application program **118** can use the match the GPS coordinates of the user's location to the information stored/obtained regarding the golf course being played to confirm that the GPS coordinates place the golfer on the green or just off the green where the golfer may still take a putt shot.

[0040] In various embodiments, the methods and electronic device described herein may provide a golfer with highly accurate and personalized statistics. It will provide the golfer with significant advantages over existing score-keeping and statistical tracking methods. These include: (1) The application program **118** can be run on a smartphone, which 3 out of 4 golfers already own, therefore negating the need for expensive additional technology. (2) The application program **118** compiles statistical information automatically, eliminating guesswork and/or distractions from a golfer's focus on the course. (3) The application program **118** provides golfers with extensive statistical information automatically, eliminating the need for an affirmative step during a round. (4) The application program **118** eliminates the stigma of actively using technology during a round to compile statistical data. (5) The application program **118** uses the GPS unit **112** to automatically determine shot distance and other statistics, giving the user more accurate information than estimating from yardage markers. (6) The application program **118** tracks the golfer's statistics from round to round, allowing the golfer to use the application program **118** to improve his or her golf game.

[0041] The following table explaining some of the terms used herein is provided for ease of reference.

Accelerometer	An electronic component that detects acceleration. Typically can detect acceleration on two or three axis, allowing it to sense motion and orientation.
Gyroscope	A component that measures the orientation of the device. It can sense motion and rotation along the device's x, y, and z-axis.
Global Positioning System ("GPS")	A global system of navigational satellites developed to provide precise positional and velocity data used to determine the position of anyone or anything equipped with a GPS enabled device.
Smartphone	A device that combines a cellular phone with additional technology including but not limited to: internet access, an accelerometer, a gyroscope, and GPS capability.
Par	The number of strokes a skilled golfer should take to get the ball from the tee into the hole for a particular golf hole.
Greens in Regulation	A statistic used for describing in percentage terms the number of times a player gets his or her ball onto the putting surface in two shots fewer than the par for the hole.
Practice Swing	A swing made by a golfer prior to striking the ball, which does not count towards his or her score.
Driving Distance	The measure of distance of the first shot made on a par 4 or par 5 hole.
Number of Putts	The number of strokes taken by a golfer once the ball has reached the putting green.
Approach Shot	A shot from the fairway intended to reach the green or the hole.
Shot Dispersion	A measure of the precision of shots made with the same club directed at the same target.
Fairways Hit	The percentage of times a golfer's first shot on a par 4 or par 5 lands on any part of the fairway.
G-Force	A force acting on a body as a result of acceleration or gravity, informally described in units of acceleration equal to one g.
Calibration Swing	A swing made by the golfer to calibrate the application.
Amplitude	The maximum extent of a vibration or oscillation, measured from the position of equilibrium.
X-Axis (Roll)	The twist or oscillation around an axis parallel to the direction of motion.

-continued

Y-Axis (Pitch)	The twist or oscillation around a horizontal axis.
Z-Axis (Yaw)	The twist or oscillation around a vertical axis.
Potential Shot	A shot made by the golfer which may or may not count towards the golfer's statistics.
Recorded Shot	A shot made by the golfer that the application has determined will count towards the golfer's statistics.
Tee Box	The area at the start of a hole from which a golfer's first stroke is taken.
Fairway	The portion of a golf course between a tee box and the corresponding green, with shorter grass than the surrounding area.
Rough	The portion of a golf course outside of the fairways that generally has taller or thicker grass than the fairway.

[0042] It should be understood that the exemplary embodiments described herein should be considered in a descriptive sense only and not for purposes of limitation. Descriptions of features or aspects within each embodiment should typically be considered as available for other similar features or aspects in other embodiments. While one or more embodiments have been described with reference to the figures, it will be understood by those of ordinary skill in the art that various changes in form and details may be made therein without departing from their spirit and scope.

[0043] All components of the described system and their locations, electronic communication methods between the system components, electronic storage mechanisms, etc. discussed above or shown in the drawings, if any, are merely by way of example and are not considered limiting and other component(s) and their locations, electronic communication methods, electronic storage mechanisms, etc. can be chosen and used and all are considered within the scope of the disclosure.

[0044] Unless feature(s), part(s), component(s), characteristic(s) or function(s) described in the specification or shown in the drawings for a claim element, claim step or claim term specifically appear in the claim with the claim element, claim step or claim term, then the inventor does not consider such feature(s), part(s), component(s), characteristic(s) or function(s) to be included for the claim element, claim step or claim term in the claim when and if the claim element, claim step or claim term is interpreted or construed. Similarly, with respect to any "means for" elements in the claims, the inventor considers such language to require only the minimal amount of features, components, steps, or parts from the specification to achieve the function of the "means for" language and not all of the features, components, steps or parts describe in the specification that are related to the function of the "means for" language.

[0045] While the system and method have been described and disclosed in certain terms and has disclosed certain embodiments or modifications, persons skilled in the art who have acquainted themselves with the disclosure, will appreciate that it is not necessarily limited by such terms, nor to the specific embodiments and modification disclosed herein. Thus, a wide variety of alternatives, suggested by the teachings herein, can be practiced without departing from the spirit of the disclosure, and rights to such alternatives are particularly reserved and considered within the scope of the disclosure.

What is claimed is:

1. A computer implemented method performed by an application program running on an electronic device of a golfer for identifying when a golfer takes a real golf swing as opposed to a practice golf swing during a game of golf, said method comprising the steps:

(a) prior to starting a game of golf, receiving by the electronic device digital data representing a plurality of golf swings performed by the golfer;

(b) receiving electronic approval of the golf swings from the golfer by the application program;

(c) receiving data from a gyroscope and an accelerometer disposed within the electronic device when the golfer takes a golf swing during the game of golf;

(d) electronically comparing, by the application program, the received data for the golf swing against the data received in step (a); and

(e) counting the golf swing as a real golf swing during a current game of golf by the application program where the received data matches or is within a predetermined threshold or percentage of one of the golf swings represented by the data received in step (a).

2. The computer implemented method for identifying of claim 1 wherein the data from step (a) is created by the following steps:

(i) electronically prompting the golfer to take a plurality of golf swings by the application program;

(ii) electronically recoding the readings or data from the gyroscope and accelerometer before, during and after each golf swing to measure a rotation of the electronic device along an x, y and z-axis and a magnitude of g-force acceleration exerted on the electronic device during each golf swing; and

(iii) electronically saving the readings or data from the golf swings by the application program to an electronic file of a memory component.

3. The computer implemented method for identifying of claim 2 wherein step (i) comprises prompting the golf to take a plurality of full golf swings, a plurality of chip shot golf swings and a plurality of putting golf swings.

4. The computer implemented method for identifying of claim 2 further comprising the steps of electronically querying the golfer by the application program to indicate either yes or no or an equivalent thereto as to whether the plurality of golf swings are acceptable to the golfer and electronically receiving either (I) an affirmative response from the golfer by the application program prior to performing step (iii) or (II) a negative response from the golfer and repeating steps (i) and (ii) and then electronically querying the golfer again to see if the golfer accepts the plurality of repeated swings.

5. A computer implemented method for recording a golfer's golf swings during a round of golf, said method comprising the steps of:

(a) automatically and electronically determining a specific golf course by an electronic device worn or carried by a golfer while the golfer is at the specific golf based on GPS coordinates received by the electronic device prior to the golfer beginning a game of golf at the specific golf course;

(b) continuously monitoring a gyroscope and accelerometer contained within the electronic device by the application program;

(c) detecting rotational movement of the electronic device by the gyroscope;

(d) automatically measuring and recording rotation of the electronic device by the application program when rotational movement is detected in step (c);

(e) automatically measuring and recording acceleration force on the electronic device by the application program from the rotational movement detected in step (c);

(f) comparing, by the application program, measurements obtained from step (d) to previously stored measurements from the gyroscope representing real golf swings by the golfer;

(g) if a match is determined by the application program from the comparing in step (f), comparing, by the application program, the acceleration measurements obtained in step (e) to previously stored measurements from the accelerometer representing real golf swings by the golfer;

(h) electronically recording, by the application program, that a potential golf shot has been taken by the golfer if a match is determined by the application program from comparing in step (g); and

(i) determining by the application program whether to count the potential golf shot as an actual golf shot for a round of golf that the golfer is currently participating in.

6. The computer implemented method for identifying of claim 5 further comprising the step of electronically obtaining a current location for the golfer on the golf course by the application program from location data received from a GPS unit contained within the electronic device after step (h).

7. The computer implemented method for recording of claim 5 wherein step (a) comprises the steps of:

(i) receiving GPS location data for the golfer by the application program from a GPS unit contained within the electronic device;

(ii) electronically contacting a server by the application program to search an indexed database of known golf courses with the GPS location data; and

(iii) electronically receiving electronic information from the server identifying a specific golf course associated with the GPS location data.

8. The computer implemented method for recording of claim 7 further comprising the steps of electronically querying the golfer by the application program to ask if the specific golf course identified by the server in step (iii) is the golf course that the golfer is currently playing on or about to play on and electronically receiving an affirmative response from the golfer by the application program prior to performing step (b).

9. The computer implemented method for recording of claim 5 further comprising the step of returning to step (b) by the application program where no match or near match is found from the comparing in step (f) or the comparing in step (g).

10. The computer implemented method of claim 5 wherein step (i) comprises the steps of:

(i1) within a predetermined time or distance from the potential golf shot, if there are no other potential golf shots detected by the application program, automatically recording the potential golf shot as an actual golf shot taken by the golfer for the current round of golf; or

(i2) within a predetermined time or distance from the potential golf shot, if one or more other potential golf shots were detected by the application program, automatically recording the latest golf shot in time as the actual golf shot taken by the golfer for the current round of golf.

11. The computer implemented method of claim 10 further comprising the steps of:

(j1) electronically obtaining a current location of a golf ball from the actual golf shot recorded in step (i2) by the application program from location data received from a GPS unit contained within the electronic device;

(j2) electronically adding information regarding the actual golf shot by the application program to a previously saved score and previously saved statistics for the golfer for the current round of golf resulting in an updated score and updated statistics; and

(j3) electronically saving the updated score and updated statistics to an electronic file of a memory component by the application program.

12. The computer implemented method of claim 11 further comprising the step of electronically determining if the current round of golf has ended by the application program.

13. The computer implemented method of claim 12 wherein the step of electronically determining if the current round of golf has ended comprises the step of electronically determining by the application program when no further potential shots have been detected by the application program within a predetermined time after an actual golf shot has been recorded at a final hole for the golf course determined in step (a).

14. The computer implemented method of claim 13 further comprising the step of calculating one or more golf statistics by the application program based on GPS golfer shot locations for the current round of golf stored in the electronic file or another electronic file of the memory component.

15. A computer implemented method for recording a golfer's golf swings during a round of golf and determining golf statistics for the golfer, said method comprising the steps of:

(a) automatically and electronically determining a specific golf course by an electronic device worn or carried by a golfer while the golfer is at the specific golf based on GPS coordinates received by the electronic device prior to the golfer beginning a game of golf at the specific golf course;

(b) continuously monitoring a gyroscope and accelerometer contained within the electronic device by the application program;

(c) electronically detecting by the application program when the golfer has taken a golf shot based on information received by the application program from the gyroscope and accelerometer;

(d) electronically receiving current location data of the golfer for the actual golf shot detected in step (c) by the application program from a GPS unit contained within the electronic device;

(e) electronically recording the location of the actual golf shot by the application program; and

(f) based on the location of the actual golf shot; electronically determining by the application program a type of shot the golfer made.

16. The computer implemented method for recording of claim **15** wherein step (f) comprising the steps of:

(f1) electronically determining by the application program whether the actual golf shot was taken by the golfer at a tee box area, fairway area, rough, out of bounds or green area for a golf hole; and

(f2) electronically identifying the actual golf shot as a drive, putt or chip depending on which area of the golf hole is determined by the application program in step (f1).

17. The computer implemented method for recording of claim **15** further comprising the steps of:

(g) based on the received GPS data for a current location of the golfer and information for the golf course determined in step (a), electronically determining by the application program which hole of the golf course the golfer is currently playing on or about to play on;

(h) electronically determining by the application program from the received GPS data where on the hole determined in step (g) did the golfer take the actual golf shot; and

(i) electronically determining by the application program whether the hole determined is step (g) is a par 3, 4 or 5.

18. The computer implemented method for recording of claim **16** further comprising the step of electronically compiling statistics for a previous hole to the hole the golfer is currently playing or about to play by the application program where the application program electronically determined that the actual golf shot was taken by the golfer from the tee box area in step (f1).

19. The computer implemented method for recording of claim **16** when the actual golf shot is taken from a tee box area for a par 4 or par 5 hole further comprising the step of automatically determining driving distance and accuracy by the application program based on a location of a next subsequent detected actual golf shot by the golfer.

20. The computer implemented method for recording of claim **16** when the actual golf shot is taken from a tee box area of a par 3 hole further comprising the step of automatically determining greens in regulation by the application program based on a location of a next subsequent detected actual golf shot by the golfer.

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