## Claims

We Claim,

1. A smart wearable device for alerting a user, comprising:

a set of sensors capable of monitoring one or more user activities of the user and recording sensor values;

a first communication module capable of communicating with a mobile device, wherein the smart wearable device is paired with the mobile device through the first communication module and enters a non-discoverable mode when connected with the mobile device;

a second communication module capable of:

searching and scanning for one or more nearby wearable devices associated with one or more other users within a predetermined proximity range;

determining a distance between the smart wearable device and the one or more nearby wearable devices based on corresponding received signal strength indicator (RSSI) values;

identifying addresses or identifiers of the one or more nearby wearable devices;

preparing first data comprising at least one identified device identifier and a corresponding received signal strength indicator (RSSI) value;

transmitting the first data to the paired mobile device, the paired mobile device being configured to prepare second data comprising the first data and device details of the user and to transmit the second data to the application server for further processing, wherein the second communication module remains in a discoverable mode while searching and scanning for one or more nearby wearable devices associated with one or more other users; and

an alert unit capable of alerting the user by means of vibration or voice output when the distance between the smart wearable device and one or more nearby wearable devices comes within a predetermined proximity range.

2. The smart wearable device as claimed in claim 1, wherein the first communication module comprises a first Bluetooth (BT) module and the second communication module comprises a second Bluetooth (BT) module, the first BT module connecting and pairing with the mobile device and entering a non-discoverable mode, and the second BT module remaining in a discoverable mode while simultaneously scanning for one or more nearby wearable devices associated with one or more other users within a predetermined proximity range and determining the distance based on corresponding received signal strength indicator (RSSI) values.

3. The smart wearable device as claimed in claim 2, wherein the first BT module and the second BT module provide two different Bluetooth addresses or identifiers, and the two Bluetooth

addresses or identifiers together with a smart wearable device identifier are shared with the mobile device.

4. The smart wearable device as claimed in claim 3, wherein the second BT module is configured to capture the addresses or identifiers of the one or more nearby wearable devices together with corresponding received signal strength indicator (RSSI) values.
5. The smart wearable device as claimed in claim 4, wherein the first data further comprises one or more of sensor data, device data, a timestamp, and a duration for which the one or more nearby wearable devices are within the predetermined proximity range.
6. The smart wearable device as claimed in claim 5, wherein the alert unit is configured to alert the user by means of vibration or voice output when the distance between the smart wearable device and one or more nearby wearable devices comes within a predetermined proximity range of 5 m.
7. The smart wearable device as claimed in claim 6, wherein the second communication module is in discoverable mode while simultaneously scanning, the second communication module scanning for one or more nearby wearable devices associated with one or more other users to detect the one or more nearby wearable devices within the predetermined proximity range while simultaneously remaining discoverable to the one or more nearby wearable devices.
8. The smart wearable device as claimed in claim 7, wherein the first communication module communicates with the mobile device, and the second communication module simultaneously searches and scans for one or more nearby wearable devices within the predetermined proximity range and determines the distance between the smart wearable device and the one or more nearby wearable devices based on corresponding received signal strength indicator (RSSI) values.
9. A system for alerting a user, tracing and tracking one or more users, the system comprising:

    a smart wearable device according to claim 1;

    a mobile device configured to communicate with the smart wearable device through the first communication module;

    an application server configured to receive second data from the mobile device; and

    a database configured to store profile information of one or more users, wherein the second communication module of the smart wearable device searches and scans for one or more nearby wearable devices associated with one or more users within a predetermined proximity range, determines a distance between the smart wearable device and the one or more nearby wearable devices based on corresponding received signal strength indicator (RSSI) values, prepares first data, and transmits the first data to the mobile device, identifies a distance between the smart wearable device and the one or more devices through corresponding received signal strength indicator (RSSI) values, prepares first data comprising sensor data, device data, a list of device IDs found in the within a predetermined proximity range, corresponding RSSI values,

a time stamp and a duration in which the devices are within a predetermined proximity range, and shares the first data with the mobile device,

the mobile device prepares second data comprising the first data and device details of the first user and transmits the second data to the application server;

the application server retrieves the profile information corresponding to the device IDs from the database, and

the application server alerts one or more users when the RSSI value satisfies a predetermined threshold.

10. The system as claimed in claim 9, wherein the mobile device is configured to receive the first data from the smart wearable device, prepare second data comprising the first data and device details of the first user, and transmits the second data to the application server.

11. The system as claimed in claim 10, wherein the application server is configured to:

receive the second data from the mobile device;

search the database using the device identifiers contained in the second data to identify corresponding profile information of one or more users;

determine whether at least one identified user has an infection status of infected or quarantined; and

generate an alert through the smart wearable device when the received signal strength indicator (RSSI) value of the identified device satisfies a predetermined threshold.

12. A method for alerting a user, tracing and tracking one or more users using a smart wearable device, the method comprising:

monitoring one or more user activities through one or more sensors of the smart wearable device and recording sensor values;

connecting the smart wearable device to a mobile device through a first communication module;

searching and scanning, through the second communication module, for one or more nearby wearable devices associated with one or more second users within a predetermined proximity range while the second communication module remains in a discoverable mode;

identifying the one or more nearby wearable devices, corresponding device IDs, and received signal strength indicator (RSSI) values;

determining a distance between the smart wearable device and the one or more identified devices based on the RSSI values;

preparing first data comprising at least one identified device identifier and a corresponding received signal strength indicator (RSSI) value, device data, the device IDs, a time stamp, and a duration for which the one or more devices are within a predetermined proximity range;

transmitting the first data to the mobile device;

preparing, by the mobile device, second data comprising the first data and device details of the first user;

transmitting the second data to an application server;

retrieving, by the application server, profile information corresponding to the device IDs from a database;

determining whether at least one identified user has an infection status of infected or quarantined; and

alerting the first user through the smart wearable device when the RSSI value satisfies a predetermined threshold.

13. The method as claimed in claim 12, wherein the smart wearable device comprises a first Bluetooth (BT) module constituting the first communication module and a second Bluetooth (BT) module constituting the second communication module, the first BT module being connected and paired with the mobile device, and the second BT module simultaneously remaining in a discoverable mode and scanning for one or more nearby wearable devices associated with one or more second users
14. The method as claimed in claim 13, wherein the first data comprises sensor data, device data, a list of device IDs of the one or more identified devices, corresponding received signal strength indicator (RSSI) values, a time stamp, and a duration for which the one or more identified devices are within a predetermined proximity range of the first user.
15. The method as claimed in claim 14, wherein the mobile device receives the first data from the smart wearable device, prepares second data comprising the first data and device details of the first user, and transmits the second data to the application server.
16. The method as claimed in claim 15, wherein the application server:

receives the second data from the mobile device;

retrieves profile information corresponding to the device identifiers contained in the second data from the database;

determines whether at least one identified user has an infection status of infected or quarantined; and

generates and transmits an alert to the smart wearable device to notify the first user when the received signal strength indicator (RSSI) value corresponding to the identified user satisfies a predetermined threshold.