accordance with the authentication result received by the communicator, wherein the authentication result includes at least one of authentication success information indicating that a destination of the electric device is consistent with a user belonging place that is a region to which a user of the mobile terminal identified by the user information belongs or authentication failure information indicating that the destination of the electric device is not consistent with the user belonging place.

[0011] Yet another aspect of the present disclosure is a computer program. The computer program causes a computer to execute receiving a device identification (ID) from an electric device, transmitting the received device ID and user information, receiving an authentication result, and differentiating contents to be displayed in accordance with the received authentication result, wherein the authentication result includes at least one of authentication success information indicating that a destination of the electric device is consistent with a user belonging place that is a region to which a user of the mobile terminal identified by the user information belongs or authentication failure information indicating that the destination of the electric device is not consistent with the user belonging place.

[0012] According to the present disclosure, it is possible to provide a deterrent against selling an electric device in a place other than an original destination.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Fig. 1 is a diagram illustrating a configuration of an authentication system according to an exemplary embodiment.

Fig. 2 is a diagram illustrating a configuration of a ceiling fan according to the exemplary embodiment.

Fig. 3 is a diagram illustrating an example of an App screen according to the exemplary embodiment.

Fig. 4 is a diagram illustrating an example of the App screen according to the exemplary embodiment.

Fig. 5 is a diagram illustrating an example of the App screen according to the exemplary embodiment.

Fig. 6 is a diagram illustrating a function comparison according to the exemplary embodiment.

Fig. 7 is a block diagram illustrating a functional block of each device of the authentication system according to the exemplary embodiment.

Fig. 8 is a sequence diagram illustrating an authentication operation in the authentication system according to the exemplary embodiment.

DESCRIPTION OF EMBODIMENT

[0014] The subject of devices or methods in the present disclosure includes a computer. This computer executes a program, and thus, functions of the subject of devices or methods in the present disclosure are realized.

[0015] The computer includes, as a main hardware configuration, a processor that operates according to the program. A type of the processor is not limited as long as the

CLAIMS

1. An authentication system that includes an electric device and a mobile terminal, comprising:

a storage that stores a device identification (ID) of the electric device;

an authentication unit that determines whether or not a destination of the electric device identified by the device ID is consistent with a user belonging place that is a region to which a user of the mobile terminal belongs; and

a function restriction unit that differentiates control from the mobile terminal on a function provided by the electric device between a case where the destination of the electric device is not consistent with the user belonging place and a case where the destination of the electric device is consistent with the user belonging place.

2. The authentication system according to Claim 1, further comprising an authentication server,

wherein

the authentication server further includes

a user information storage that stores a user ID and the user belonging place in association with each other,

the authentication unit, and

the function restriction unit, and

the authentication unit determines whether or not the destination of the electric device identified by the device ID is consistent with the user belonging place associated with the user ID acquired from the mobile terminal.

3. The authentication system according to Claim 1 or 2, wherein

the electric device has an application function to be restricted in accordance with an authentication result of the authentication unit, and a basic function not to be restricted regardless of the authentication result of the authentication unit, and

the function restriction unit restricts only the application function in accordance with the authentication result of the authentication unit.

4. The authentication system according to Claim 3, wherein the application

function includes at least one of a schedule operation function of the electric device, a timer function, an abnormality notification function, and a grouping function.

5. The authentication system according to Claim 3, wherein the basic function includes at least an ON or OFF function of an operation of the electric device.

6. The authentication system according to Claim 1 or 2, wherein

the electric device includes a remote controller that controls the electric device independently of the mobile terminal, and

the function restriction unit

enables control of the electric device from both the remote controller and the mobile terminal in a case where the destination of the electric device is consistent with the user belonging place, and

enables control of the electric device from only the remote controller in a case where the destination of the electric device is not consistent with the user belonging place.

7. The authentication system according to Claim 3, wherein

the electric device includes a remote controller that controls the electric device independently of the mobile terminal,

the function restriction unit

enables control of the electric device from both the remote controller and the mobile terminal in a case where the destination of the electric device is consistent with the user belonging place, and

enables control of the electric device from only the remote controller in a case where the destination of the electric device is not consistent with the user belonging place,

the mobile terminal enables use of the application function and the basic function, and

the remote controller enables use of only the basic function.

8. The authentication system according to Claim 3, wherein

the electric device is a ceiling fan, and

the application function includes at least one of a schedule operation function of the electric device, a 1/f fluctuation function of a fan, a scene storage function, arbitrary dimming and toning control function, a schedule setting failure notification function, a melody function at a start of an operation, a timer operation function, a sleep mode function, an abnormality notification function, and a grouping function.

9. The authentication system according to Claim 3, wherein

the electric device is a ceiling fan, and

the basic function includes at least one of an ON or OFF function of an operation of the electric device, a fan speed changing function, a rotation direction switching function, and a stepwise dimming and toning control function.

10. A computer program causing a computer to execute

acquiring a device identification (ID) of an electric device,

acquiring information on a user belonging place that is a region to which a user of a mobile terminal belongs,

determining whether or not a destination of the electric device identified by the device ID is consistent with the user belonging place, and

differentiating control from the mobile terminal on a function provided by the electric device between a case where the destination of the electric device is not consistent with the user belonging place and a case where the destination of the electric device is consistent with the user belonging place.

11. An electric device that provides a predetermined function based on a command transmitted in connection with an authentication system that includes the electric device and a mobile terminal,

the authentication system including

a storage that stores a device identification (ID) of the electric device,

an authentication unit that determines whether or not a destination of the electric device identified by the device ID is consistent with a user belonging place that is a region to which a user of the mobile terminal belongs, and

a function restriction unit that differentiates control from the mobile terminal on a function provided by the electric device between a case where the destination

of the electric device is not consistent with the user belonging place and a case where the destination of the electric device is consistent with the user belonging place.

12. A mobile terminal that enables control of an electric device, comprising:

a communicator that receives a device identification (ID) from the electric device, transmits the received device ID and user information to an outside, and receives an authentication result; and

a display that differentiates contents to be displayed in accordance with the authentication result received by the communicator;

wherein the authentication result includes at least one of authentication success information indicating that a destination of the electric device is consistent with a user belonging place that is a region to which a user of the mobile terminal identified by the user information belongs or authentication failure information indicating that the destination of the electric device is not consistent with the user belonging place.

13. The mobile terminal according to Claim 12, wherein the display is configured to selectively display the electric device after the communicator receives the authentication success information, and not to selectively display the electric device after the communicator receives the authentication failure information.

14. A computer program causing a computer to execute

receiving a device identification (ID) from an electric device,

transmitting the received device ID and user information,

receiving an authentication result, and

differentiating contents to be displayed in accordance with the received authentication result;

wherein the authentication result includes at least one of authentication success information indicating that a destination of the electric device is consistent with a user belonging place that is a region to which a user of the mobile terminal identified by the user information belongs or authentication failure information indicating that the destination of the electric device is not consistent with the user belonging place.

15. The computer program according to Claim 14, further comprising:

selectively displaying the electric device after the authentication success information is received; and

not selectively displaying the electric device after the authentication failure information is received.