payment of product prices at stores using electronic money are expected to be much higher.

Citation List

Patent Literature

[0004]

Patent Literature 1: JP 2011-086155A

Summary of Invention

Technical Problem

[0005]

However, when such value is stored in a mobile telephone, an IC chip with the tamper resistance property should be included, or a mechanism that protects the IC chip from illegitimate access should be provided, which is a cause of increasing costs. In addition, when a user replaces his or her mobile telephone by purchase, uses a plurality of mobile telephones, or the like, moving value that has been stored in the mobile telephone to another mobile telephone is cumbersome.

[0006]

Embodiments of the present invention provide a novel and improved information processing system and information processing method that can suppress costs and enable secure exchange of information in near field communication while boosting convenience for users.

Solution to Problem

[0007]

According to a first aspect of the present invention, there is provided an information processing system including a server device, and a non-contact communication tag of which information is readable through near field communication, wherein the non-contact communication tag includes an identification information retaining unit configured to retain identification information for uniquely identifying the non-contact communication tag, an authentication information retaining unit configured to retain authentication information to be used in authentication of the non-contact communication tag, and a near field communication unit configured to transmit the identification information that the identification information retaining unit retains and the authentication information that the authentication information retaining unit retains to another device, which will transmit the received identification information and authentication information to the server device, in near field communication with the other device, wherein the server device includes an information acquisition unit configured to acquire the identification information, the authentication information, and other

information transmitted from the other device, wherein the other information includes a user ID corresponding to the other device and an authentication category level information transmitted from the other device, and wherein the user ID is associated with the authentication category level information, an authentication unit configured to authenticate the non-contact communication tag using the authentication information, and a process execution unit configured to execute a process according to the authentication category level information with which the user ID is associated.

[0008]

According to a second aspect of the present invention, there is provided an information processing method including a step of transmitting identification information for uniquely identifying a non-contact communication tag and authentication information used to authenticate the non-contact communication tag, which are received in near field communication between the non-contact communication tag and another device, to the other device that will transmit the identification information and the authentication information to a server device, a step of acquiring the identification information, the authentication information, and other information transmitted from the other device with the server device wherein the other information includes a user ID corresponding to the other device and an authentication category level information transmitted from the other device, and wherein the user ID is associated with the authentication category level information, a step of authenticating the non-contact communication tag with the server device using the authentication information, and a step of executing a process according to the authentication category level information with which the user ID is associated .

Advantageous Effects of Invention

[0009]

Embodiments of the present invention provide a novel and improved information processing system that can suppress costs and enable secure exchange of information in near field communication while boosting convenience for users.

Brief Description of Drawings

[0010]

[FIG. 1] FIG. 1 is an illustrative diagram showing a configuration example of an information processing system 1 according to an embodiment of the present disclosure.

[FIG. 2] FIG. 2 is an illustrative diagram showing a functional configuration example of a system server 100 according to an embodiment of the present disclosure.

[FIG. 3] FIG. 3 is an illustrative diagram showing a functional configuration example of an IC tag 200 according to an embodiment of the present disclosure.

[FIG. 4] FIG. 4 is an illustrative diagram showing a functional configuration example of a terminal device 300 according to an embodiment of the present disclosure.

[FIG. 5] FIG. 5 is a flowchart showing an operation example of respective devices constituting the information processing system 1 according to an embodiment of the present disclosure.

[FIG. 6] FIG. 6 is an illustrative diagram showing an IC tag 200' that is a modified example of the IC tag 200 according to an embodiment of the present disclosure.

[FIG. 7] FIG. 7 is an illustrative diagram showing a state in which a display device 500 is connected to the IC tag 200 according to an embodiment of the present disclosure.

[FIG. 8] FIG. 8 is a flowchart showing an operation example of the respective devices constituting the information processing system 1 according to an embodiment of the present disclosure.

[FIG. 9] FIG. 9 is a flowchart showing another operation example of the respective devices constituting the information processing system 1 according to an embodiment of the present disclosure.

CLAIMS

1. An information processing system comprising:

a server device; and

a non-contact communication tag of which information is readable through near field communication,

wherein the non-contact communication tag includes:

an identification information retaining unit configured to retain identification information for uniquely identifying the non-contact communication tag;

an authentication information retaining unit configured to retain authentication information to be used in authentication of the non-contact communication tag; and

a near field communication unit configured to transmit the identification information that the identification information retaining unit retains and the authentication information that the authentication information retaining unit retains to another device, which will transmit the received identification information and authentication information to the server device, in near field communication with the other device, and

wherein the server device includes:

an information acquisition unit configured to acquire the identification information, the authentication information, and other information transmitted from the other device, wherein the other information includes a user ID corresponding to the other device and an authentication category level information transmitted from the other device, and wherein the user ID is associated with the authentication category level information;

an authentication unit configured to authenticate the non-contact communication tag using the authentication information; and

a process execution unit configured to execute a process according to the authentication category level information with which the user ID is associated.

2. The information processing system according to claim 1, wherein the authentication category level comprises one or more of ID based on a PIN or biometric authentication, ID based on a trusted execution environment (TEE), ID based on authentication of an embedded secure element (SE), and ID based on authentication of a universal integrated circuit card (UICC).

3. The information processing system according to claim 1, wherein the process execution unit executes the process relating to content that is available in the other device using the other information and the identification information.

4. The information processing system according to claim 3, wherein the content that is available in the other device is a ticket or a coupon.

5. The information processing system according to claim 1, wherein the process execution unit executes an authentication process with respect to the other device using the other information.

6. The information processing system according to claim 5,

wherein the information transmitted from the other device to the server device further includes information of a product price, and

wherein the process execution unit executes the authentication process with respect to the other device and a payment process of the product price for the other device using the information of the product price and the identification information transmitted from the other device.

7. The information processing system according to claim 1, wherein the process execution unit replies to the non-contact communication tag with a result of execution of a process according to the other information and the identification information through the other device.

8. The information processing system according to claim 7, wherein the non-contact communication tag further includes an information display unit configured to display the result of the execution of the process by the process execution unit.

9. The information processing system according to claim 1, further comprising:

a terminal device configured as the other device to execute near field communication with the non-contact communication tag.

10. The information processing system according to claim 9,

wherein the terminal device includes:

a near field communication unit configured to execute near field communication with the non-contact communication tag; and

a communication unit configured to execute communication with the server device, and

wherein the communication unit transmits information of the terminal device at the time of near field communication with the non-contact communication tag and the identification information acquired from the non-contact communication tag to the server device.

11. An information processing method comprising:

a step of transmitting identification information for uniquely identifying a non-contact communication tag and authentication information used to authenticate the non-contact communication tag, which are received in near field communication between the non-contact communication tag and another device, to the other device that will transmit the identification information and the authentication information to a server device;

a step of acquiring the identification information, the authentication information, and other information transmitted from the other device with the server device, wherein the other information includes a user ID corresponding to the other device and an authentication category level information transmitted from the other device, and wherein the user ID is associated with the authentication category level information;

a step of authenticating the non-contact communication tag with the server device using the authentication information; and

a step of executing a process according to the authentication category level information with which the user ID is associated.