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VISITOR MANAGEMENT APPARATUS, VISITOR MANAGEMENT METHOD AND NON-TRANSITORY RECORDING MEDIUM

Abstract

A visitor management apparatus **1** is provided with: an identification information acquiring part **11** for acquiring visitor identification information of a visitor coming to a building, an evaluation value acquiring part **12** for acquiring evaluation value for the visitor by a resident living in the building, a storing part **13** for storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other, and a providing part **14** for providing the visitor identification information and the evaluation value associated with each other and stored in the storing part **13** to an other building differing from the building.

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Background/Summary

DESCRIPTION
Technical Field
[0001] This discloser relates to technical fields of a visitor management apparatus, a visitor management method and a recording medium.
Background Art
[0002] A patent literature 1 discloses a technique relating to a crime prevention system using biometric authentication technology using such as faces, voices or fingerprints, wherein authentication targets are expanded to include a "person having identity that is not known" by users in addition to authentication targets who have been limited to users who are persons selecting registering by using a "database for authentication registered by a person other than users", and a database for authentication is updated in real time by connecting users or a user and an administrator by telecommunication. A patent literature 2 discloses a technique in which since a suspicious person is registered by a center server collecting person images including a suspicious person candidate, wherein person images are imaged by a plurality of intercom slave units respectively provided at dwellings, it is possible to share suspicious person information in an area including a dwelling in which an intercom slave unit and an intercom master unit are provided, furthermore, reliability of the suspicious person information is increased by determining whether or not a suspicious person candidate included in a plurality of person images is the same person, and registering the suspicious person candidate as a suspicious person at the center server when the plurality of person images, that include the suspicious person candidate determined as the same person, meet a predetermined condition. A patent literature 3 discloses an intercom apparatus acquiring face features from an image imaging a visitor, acquiring occupational attribute of the visitor having the face features from the acquired face features, deciding behavior in response to the acquired occupational attribute by using registration information in which occupational attributes and behaviors are associated with each other in advance, ignoring a visitor who is pre-defined not to respond at a user's discretion, additionally being able to share information of the unwelcome visitor with an area.
CITATION LIST
Patent Literature
[0003] Patent Literature 1: Japanese Patent Application Laid Open No. 2005-032051
[0004] Patent Literature 2: Japanese Patent Application Laid Open No. 2007-172083
[0005] Patent Literature 3: Japanese Patent Application Laid Open No. 2012-213092
SUMMARY
Technical Problem
[0006] This disclosure is to provide a visitor management apparatus, a visitor management method and a recording medium aiming to improve techniques described in the prior art literatures.
Solution to Problem
[0007] One aspect of a visiting management apparatus is provided with: an identification information acquiring means for acquiring visitor identification information of a visitor coming to a building, an evaluation value acquiring means for acquiring evaluation value for the visitor by a resident living in the building, a storing means for storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other, and a providing means for providing the visitor identification information and the evaluation value associated with each other and stored in the storing means to an other building differing from the building.
[0008] One aspect of a visiting management method includes acquiring visitor identification

information of a visitor coming to a building, acquiring evaluation value for the visitor by a resident living in the building, storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other, and providing the visitor identification information and the evaluation value associated with each other and stored to an other building differing from the building.

[0009] One aspect of a recording medium on which a computer program is recorded, wherein the computer program causes a computer to execute a management method including: acquiring visitor identification information of a visitor coming to a building, acquiring evaluation value for the visitor by a resident living in the building, storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other, and providing the visitor identification information and the evaluation value associated with each other and stored to an other building differing from the building.

Description

BRIEF DESCRIPTION OF DRAWINGS

[0010] FIG. **1** is a block diagram showing configuration of a visitor management apparatus in a first embodiment.

[0011] FIG. **2** is a block diagram showing configuration of a visitor management apparatus in a second embodiment.

[0012] FIG. **3** is a conceptual scheme showing a building to which the visitor management apparatus in the second embodiment is applied.

[0013] FIG. **4** is a flowchart showing flow of a first example of visitor management operation performed by the visitor management apparatus in the second embodiment.

[0014] FIG. **5** is a flowchart showing flow of a second example of visitor management operation performed by the visitor management apparatus in the second embodiment.

[0015] FIG. **6** is a conceptual scheme showing a visitor management system to which a visitor management apparatus in a third embodiment is applied.

[0016] FIG. **7** is a block diagram showing the visitor management apparatus in the third embodiment.

[0017] FIG. **8** is a flowchart showing flow of visitor management operation performed by the visitor management apparatus in the third embodiment.

[0018] FIG. **9** is a flowchart showing flow of visitor management operation performed by the visitor management apparatus in the third embodiment.

[0019] FIG. **10** is a flowchart showing flow of behavior restriction operation performed by the visitor management apparatus in the third embodiment.

[0020] FIG. **11** is a conceptual scheme showing a modified example of a visitor management system to which the visitor management apparatus in the third embodiment is applied.

DESCRIPTION OF EXAMPLE EMBODIMENTS

[0021] Hereinafter, embodiments of a visitor management apparatus, a visitor management method and a recording medium will be described with referring to figures.

1: First Embodiment

[0022] First embodiments of a visitor management apparatus, a visitor management method and a recording medium will be described. Hereinafter, the first embodiments of the visitor management apparatus, the visitor management method and the recording medium will be described by using a visitor management apparatus **1** to which the first embodiments of the visitor management apparatus, the visitor management method and the recording medium are applied.

[1-1: Configuration of the Visitor Management Apparatus **1**]

[0023] Configuration of the visitor management apparatus **1** in the first embodiment will be

described with referring to FIG. **1**. FIG. **1** is a block diagram showing the configuration of the visitor management apparatus in the first embodiment.

[0024] As shown in FIG. **1**, the visitor management apparatus **1** is provided with a identification information acquiring part **11**, an evaluation value acquiring part **12**, a storing part **13** and a providing part **14**. The identification information acquiring part **11** acquires visitor identification information of a visitor coming to a building. The evaluation value acquiring part **12** acquires evaluation value for the visitor by a resident living in the building. The storage part **13** stores the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other. The providing part **14** provides the visitor identification information and the evaluation value associated with each other and stored in the storing part **13** to an other building differing from the building.

[1-2: Technical Effect of the Visitor Management Apparatus **1**]

[0025] Since the visitor management apparatus **1** in the first embodiment provides the visitor identification information and the evaluation value to the other building differing from the building, it is possible to share information relating to evaluations of visitors among buildings.

2: Second Embodiment

[0026] Second embodiments of a visitor management apparatus, a visitor management method and a recording medium will be described. Hereinafter, the second embodiments of the visitor management apparatus, the visitor management method and the recording medium will be described by using a visitor management apparatus **2** to which the second embodiments of the visitor management apparatus, the visitor management method and the recording medium are applied.

[0027] The visitor management apparatus **2** may be used in a building in which a plurality of residents living in such as an apartment complex e.g., a large apartment house, an apartment house, or the like. An apartment complex management association, which is a corporation, may manage the building such as the apartment complex. The visitor management apparatus **2** may be applied to a building in which a plurality of households share the same entrance. A building corresponding to the visitor management apparatus **2** is not limited to one building. A plurality of buildings that have entrances differing from each other, respectively, and that are managed by the same corporation, may be associated with the same visitor management apparatus **2**.

[2-1: Configuration of the Visitor Management Apparatus **2**]

[0028] Configuration of the visitor management apparatus **2** in the second embodiment will be described with referring to FIG. **2**. FIG. **2** is a block diagram showing the configuration of the visitor management apparatus **2** in the second embodiment.

[0029] As shown in FIG. **2**, the visitor management apparatus **2** is provided with a processing device **21** and a storing device **22**. Furthermore, the visitor management apparatus **2** may be provided with a communications device **23**, an input device **24** and an output device **25**. However, the visitor management apparatus **2** may not be provided with at least one of the communication device **23**, the input device **24** and the output device **25**. The processing device **21**, the storage device **22**, the communication device **23**, the input device **24** and the output device **25** may be connected through a data bus **26**.

[0030] The processing device **21** includes at least one of a CPU (Central Processing Unit), a GPU (Graphics Processing Unit) and an FPGA (Field Programmable Gate Array), for example. The processing device **21** reads computer programs. For example, the processing device **21** may read a computer program stored in the storing device **22**. For example, the processing device **21** may read a computer program recorded on a computer readable and non-transitory recording medium by using a not shown recording medium reading device (e.g., the input device **24** described later) comprised in the visitor management apparatus **2**. The processing device **21** may acquire (in other words, download or read) a computer program from a not shown apparatus outside of the visitor management apparatus **2** through the communication device **23** (or another communication device).

The processing device **21** executes read computer programs. As a result, logical functional blocks for performing operation to be performed by the visitor management apparatus **2** are realized in the processing device **21**. In other words, the processing device **21** can function as a controller to realizing logical functional blocks for performing operation (i.e., process) to be performed by the visitor management apparatus **2**.

[0031] FIG. **2** shows one example of logical functional blocks realized in the processing device **21** for performing visitor management operation. As shown in FIG. **2**, in the processing device **21**, an identification information acquiring part **211**, which is one specific example of an "identification information acquiring means", an evaluation value acquiring part **212**, which is one specific example of an "evaluation value acquiring means", a storage controlling part **213**, which is one specific example of a "storing means", a providing part **214**, which is one specific example of a "providing means", an integrating part **215**, which is one specific example of an "integrating means", and a restricting part **216**, which is one specific example of a "restricting means", are realized. However, the processing device **21** may not be provided with at least one of the integrating part **215** and the restricting part **216**. Operations of the identification information acquiring part **211**, the evaluation value acquiring part **212**, the storage controlling part **213**, the providing part **214**, the integrating part **215** and the restricting part **216**, respectively, will be described later with referring to FIG. **3**-FIG. **5**.

[0032] The storing device **22** can store desired data. For example, the storing device **22** may temporally store computer programs executed by the processing device **21**. The storing device **22** may temporally store data temporally used by the processing device **21** when the processing device **21** is executing a computer program. The storing device **22** may store data to be stored for a long time by the visitor management apparatus **2**. Wherein, the storing device **22** may include at least one of a RAM (Random Access Memory), a ROM (Read Only Memory), a hard disk device, an optical magnetic disk device, an SSD (Solid State Drive), and a disk array device. In other words, the storing device **22** may include non-transitory recording medium.

[0033] The communication device **23** can communicate with an apparatus outside of the visitor management apparatus **2** through a not shown communication network. The communication device **23** may be a communication interface based on standards such as Ethernet (registered trademark), Wi-Fi (registered trademark), and Bluetooth (registered trademark).

[0034] The input device **24** is a device receiving information input to the visitor management apparatus **2** from outside of the visitor management apparatus **2**. For example, the input device **24** may include an operation device (e.g., at least one of a keyboard, a mouse trackball, a touch panel, a pointing device such as a pen tablet, a button, etc.) which can be operated by an operator of the visitor management apparatus **2**. For example, the input device **24** may include a reading device, which can read information recorded, as data, on a recording medium being able to externally attach to the visitor management apparatus **2**.

[0035] The output device **25** is a device outputting information to outside of the visitor management apparatus **2**. For example, the output device **25** may output information as images. In other words, the output device **25** may include a display device (so-called display) which can display an image indicating outputted information. As examples of the display device, a liquid crystal display, an OLED (Organic Light Emitting Diode) display, and the like are cited. For example, the output device **25** may output information as sound. In other words, the output device **25** may include a sound device (so-called speaker) which can output sound. For example, the output device **25** may output information to papers. In other words, the output device **25** may include a printing device (so-called printer) which can print desired information to papers. Moreover, the input device **24** and the output device **25** may be integrally formed as a touch panel.

[0036] Incidentally, since the hardware configuration shown in FIG. **2** is an example, a device other than devices shown in FIG. **2** may be added, or a part of devices may be not provided. Moreover, a part of devices may be replaced with other device having the similar function. Moreover, a part of

functions of the second embodiment may be provided to other apparatus through a network. Functions of the second embodiment may be distributed to a plurality of apparatuses, and the functions may be realized by the plurality of apparatuses. In this way, the hardware configuration shown in FIG. **2** may be modified as appropriate.

[0037] Flow of visitor management operation performed by the visitor management apparatus **2** in the second embodiment will be described with referring to FIG. **3**-FIG. **5**. FIG. **3** is a conceptual scheme showing a building to which the visitor management apparatus **2** in the second embodiment is applied. FIG. **4** is a flowchart showing flow of a first example of visitor management operation performed by the visitor management apparatus **2** in the second embodiment. FIG. **5** is a flowchart showing flow of a second example of visitor management operation performed by the visitor management apparatus **2** in the second embodiment.

[2-2: Building **20** to Which the Visitor Management Apparatus **2** is Applied]

[0038] The building **20** exemplified in FIG. **3** may be a building having N-stores, i.e., a first floor **1**F to an Nth floor NF. The building **20** has an entrance hall EH**1** in which anyone can enter. The entrance hall EH**1** may be provided with a free entrance and exit door FD, in which anyone can freely enter and exit, a first key door KD**1**, in which only allowed person can pass, and a visitor operating terminal T**0**. The visitor operating terminal T**0** may be a terminal operated by a person who is unable to unlock the first key door KD**1** by oneself such as a visitor. A visitor or the like may call a resident who lives in a destination by operating the visitor operating terminal T**0**. Moreover, the operated visitor operating terminal T**0** may acquire personal identification information of the visitor. The personal identification information may be information that allows individuals to be easily identified.

[0039] The first floor **1**F may be provided with one or more dwellings such as a dwelling **1**L and a dwelling **1**M, a common aisle CC**1**, a camera C**1** imaging at least the common aisle CC**1**, an elevator E**1** for moving to other floors, and the like. Similarly, the Nth floor NF may be provided with one or more dwellings such as a dwelling NL and a dwelling NM, a common aisle CCN, a camera CN imaging at least the common aisle CCN, an elevator EN for moving to other floors, and the like. The camera C**1** and the camera CN may image an imaging range at all times.

[0040] The personal identification information may include biometric information. The biometric information may include facial information, iris information, fingerprint information, voiceprint information, or the like. The personal identification information may include information that can be acquired from an ID card or the like including personal specifiable information. The personal identification information may include attribute information of a visitor. The attribute information of the visitor may be information relating to appearance of the visitor, such as wearing goods of the visitor, height of the visitor, outline of a face of the visitor, and physiognomy of the visitor.

[0041] A subject acquiring private identification is an apartment complex management association managing the building **20**. Therefore, acquired personal identification information can be used for a purpose of entering/leaving management, behavior restriction, or the like of visitors in such as shared areas in the building **20**. Moreover, the acquired personal identification information can be shared among residents of the building **20** constituting the apartment complex management association for the purpose of the entering/leaving management, behavior restriction, or the like of visitors in such as the shared areas in the building **20**. The shared areas in the building **20** may include the entrance hall EH**2**, the common aisle CC**1** and the common aisle CCN, for example.

[2-3: First Example of Visitor Management Operation Performed by the Visitor Management Apparatus **2**]

[0042] As shown in FIG. **4**, the identification information acquiring part **211** acquires personal identification information of a visitor to a building (step S**20**). The identification information acquiring part **211** may acquire biometric information of the visitor to the building. The identification information acquiring part **211** may acquire the personal identification information of the visitor by the visitor operating the visitor operation terminal T**0**.

[0043] The evaluation value acquiring part **212** acquires an evaluation value for the visitor by residents living in the building (step S**21**). The resident may perform evaluation for the visitor by operating a terminal that is provided in a dwelling. For example, a resident living in the dwelling NL may perform evaluation for the visitor by operating a terminal TNL. The terminal may be a smartphone possessed by a resident. The storage controlling part **213** may associate the biometric information corresponding to the visitor, the evaluation value for the visitor by the resident and resident identification information for identifying the resident who has performed the evaluation each other, and store in the storage device **22** as visitor information **221**. The storage controlling part **213** may also associate and store one or more attribute information of the visitor as the visitor information **221**. The storage controlling part **213** may store information for identifying a dwelling as the resident identification information. An example of the visitor information **221** that the storage controlling part **213** stores in the storage device **22** is exemplified in Table 1 below.

TABLE-US-00001 TABLE 1

Resident identification information	Visitor biometric information	Visitor attribute information 1	. . .	Visitor attribute information X	Evaluation value
1L	Facial information	Wearing goods	. . .	Physiognomy	7 A information A information A
1L	Facial information	Wearing goods	. . .	Physiognomy	8 B information B information B
1M	Facial information	Wearing goods	. . .	Physiognomy	6 A information A information A
NL	Facial information	Wearing goods	. . .	Physiognomy	8 B information B information B
NL	Facial information	Wearing goods	. . .	Physiognomy	4 C information C information C
NM	Facial information	Wearing goods	. . .	Physiognomy	8 A information A information A

[0044] The integrating part **215** generates an integrated evaluation value by integrating each of evaluation values (step S**22**). The integrating part **215** may be perform integration by adding each of evaluation values. The integrating part **215** may generate an average value of each of evaluation values. The integrating part **215** may generate an integrated evaluation value on the basis of comparative between evaluation values and a predetermined threshold value. The integrating part **215** may generate an integrated evaluation value on the basis of each evaluation values evaluated in a predetermined period such as half a year.

[0045] The integrating part **215** may generate information indicating distribution of each of evaluation values as an integrated evaluation value. The integrating part **215** may generate a histogram of each of evaluation values. When the histogram is generated, it is possible to easily understand how many residents having performed high-evaluation, and how many residents having performed low-evaluation. The integrating part **215** can generate information that allows reference to evaluations of all residents living in the building **20**.

[0046] When evaluation values are integrated, it is easy to understand evaluations of all of residents for visitors, especially when there are many residents living in the building **20**. Since a resident visited by a visitor easily judges about the visitor, it is convenient. Even in an event of inappropriate judgment by a small number of residents, the visitor management apparatus **2** can provide appropriate judgment information by performing appropriate judgment by other residents. The visitor management apparatus **2** safely manages visitors because evaluations for visitors do not depend only on an individual's judgment.

[0047] The integrating part **215** may include not only information of evaluation value but also the number of evaluators in the integrated evaluation value. In this case, a resident can easily judge whether the integrated evaluation value is credible information or not.

[0048] The storage controlling part **213** stores biometric information corresponding to the visitor and the integrated evaluation value corresponding to the visitor in associated with each other (step S**23**). The storage controlling part **213** may associate biometric information corresponding to the visitor with the integrated assessment value corresponding to the visitor, and store them as an integrated visitor information **222** in the storing device **22**. The storage controlling part **213** may also associate and store one or more attribute information of the visitor as the integrated visitor information **222**. An example of the integrated visitor information **222** that the storage controlling

part **213** stores in the storing device **22** is exemplified in Table 2 below.

TABLE-US-00002 TABLE 2 Visitor Visitor Visitor Integrated biometric attribute attribute evaluation information information 1 . . . information X value Facial Wearing goods . . . Physiognomy 7 information A information A information A Facial Wearing goods . . . Physiognomy 8 information B information B information B Facial Wearing goods . . . Physiognomy 4 information C information C information C

[0049] The providing part **214** provides the integrated evaluation value corresponding to the visitor stored in the storing device **22** to the resident living in the building **20** (step S**24**).

[0050] It is assumed that a visitor, who has visited to the building **20**, visits to a resident, who differs from a resident visited by the visitor, living in another dwelling of the same building **20**. In this case, when each resident is called from the visitor via a terminal, an integrated evaluation value corresponding to the visitor is provided to a monitor of the terminal, thereby each resident may be able to confirm evaluation for the visitor of each resident. Each resident can use the integrated evaluation value to judge that the visitor is allowed or denied.

[0051] Judgement to allow or deny the visitor by each resident may be integrated. For example, when a visitor, who is a delivery person of a home-delivery object, visits a plurality of residents living in the building **20**, operation of the visitor operating terminal T**0** by the visitor may be once. Acquiring operation for personal identification information of the visitor may be once at one time during a single visit to the building **20**. Thus, convenience of the visitor is high.

[2-4: Second Example of Visitor Management Operation Performed by the Visitor Management Apparatus **2**]

[0052] As an example of using an integrated evaluation value, the visitor management apparatus **2** may perform behavior restriction operation for a visitor.

[0053] As shown in FIG. **5**, the identification information acquiring part **211** acquires personal identification information of a visiting-again person who visits again (step S**25**). The identification information acquiring part **211** may acquire visiting-again person biometric information of the visiting-again person who visits again. The identification information acquiring part **211** may acquire the personal identification information of the visiting-again person by operating the visitor operating terminal T**0** by the visiting-again person.

[0054] The providing part **214** provides the integrated visitor information **222** stored in the storing device **22** to a resident living in a destination of the visiting-again person (step S**26**). Moreover, when the visitor information **221** by the resident living in the destination is stored in the storing device **22**, the visitor information **221** may be provided to the resident.

[0055] The restricting part **216** estimates which person the visiting-again person is on the basis of the visiting-again person biometric information (step S**27**). The restricting part **216** may search biometric information of a person who is the same as the visiting-again person from biometric information stored in the storing device **22**.

[0056] The restricting part **216** imposes a behavior restriction corresponding to the integrated evaluation value associated with biometric information of the person, who is the same as the visiting-again person, on the visiting-again person (step S**28**). The restricting part **216** may change the behavior restriction imposed on the visiting-again person in response to a request for a behavior restriction on the basis of at least one of the visitor information **221** and the integrated visitor information **222** by the resident living in the destination of the visiting-again person. When a resident living in a destination rejects a visitor, the restricting part **216** may restrict behavior toward a door of a dwelling of the destination even if the visitor is a visitor of whom an integrated evaluation value is high.

[0057] On the other hand, the restricting part **216** may permit a visitor to enter until a door of a dwelling of a destination without permission of a resident of the destination when an integrated evaluation value of the visitor is high. In this case, the operation of the step S**26** may be omitted.

[0058] The restricting part **216** may set a threshold value of an integrated evaluation value, and

may determine whether or not behavior restriction in the building **20** is imposed by comparing the integrated evaluation value with the threshold value. The restricting part **216** may set behavior restrictions according to integrated evaluation values by dividing into multiple-steps levels. The restricting part **216** may arbitrarily set a range of a behavior restriction.

[0059] The restricting part **216** may set a behavior restriction for a visitor by a blacklist method. For example, the restricting part **216** may output for calling attention when a visitor having a low integrated evaluation value comes. Moreover, for example, the restricting part **216** may prohibit that a visitor having a low integrated evaluation value calls via an intercom.

[0060] Alternatively, the restricting part **216** may set a behavior restriction for a visitor by a whitelist method. For example, the restricting part **216** may output for recommending a person when a visitor having a high integrated evaluation value comes.

[0061] The restricting part **216** may perform behavior restrictions of the following five steps levels according to integrated evaluation values, for example.

[0062] First Level: Rejecting unlock of the first key door KD**1**;

[0063] Second Level: Rejecting unlock of the second key door KD**2**; In this case, a visitor can enter until the entrance hall EH**2**; For example, a delivery person waits in the entrance hall EH**2**, and a resident go to the entrance hall EH**2** to collect a home-delivery object;

[0064] Third Level: Permitting moving on a root to the front of a door of a dwelling of a destination; In this case, the restricting part **216** may guide a visitor to the root to the front of the door of the dwelling of the destination by turning on guide lights and/or by changing brightness of lights; Moreover, the restricting part **216** may warn a visitor by generating warning sounds when the visitor intends to move into an area other than the root to the front of the door of the dwelling of the destination;

[0065] Fourth Level: Permitting moving to the front of a door other than the door of the dwelling of the destination;

[0066] Fifth Level: Permitting moving in all areas; Equivalent to an administrator privilege.

[0067] Incidentally, the above-mentioned five steps levels are examples.

[0068] The restricting part **216** may perform a behavior restriction by a biometric authentication in various places in the building **20**. When a visitor intends to pass through the second key door KD**2**, the restricting part **216** may unlock it by a biometric authentication, for example. When a visitor intends to ride on the elevator E**1** and the elevator EN, the restricting part **216** may perform a restriction of riding on by a biometric authentication, for example. For example, the restricting part **216** may restrict a floor in which a visitor can get off.

[0069] Incidentally, the restricting part **216** may restrict persons other than visitors. For example, the restricting part **216** may restrict such that a person, such as a child, who cannot judge whether or not it is dangerous, enters a dangerous area.

[2-4: Fluctuation of Integrated Evaluation Values]

[0070] The integrating part **215** may update an integrated evaluation value each time a visitor visits. In other words, the integrated evaluation value may be changed over time.

[0071] The integrating part **215** may update the integrated evaluation value with information other than evaluation values by residents. For example, the integrating part **215** may change the integrated evaluation value to become lower when a visitor passes through a route other than a designated route. Moreover, the integrating part **215** may change the integrated evaluation value to become lower when a visitor roughly handles a piece of equipment related to the building. Moreover, the integrating part **215** may change the integrated evaluation value to become lower when a visitor has stayed for an inappropriately long time. Moreover, the integrating part **215** may change the integrated evaluation value to become lower when a delivery person of a home-delivery object has roughly handled the home-delivery object. The integrating part **215** may automatically update the integrated evaluated value on the basis of images that are always captured by a camera.

[2-6: Technical Effect of the Visitor Management Apparatus **2**]

[0072] In the case of an apartment complex, a person, who is familiar with a resident such as relative and friend, visits, unlike an office building, or the like, including such as an enterprise handling confidential information. Therefore, visitor management, that is equivalent to the office building, or the like, including such as the enterprise handling confidential information, is not practical. For example, for a visitor, it is impractical to become clear whether or not the visitor is a suspicious person.

[0073] For example, not everyone can be trusted even if they are employees of a famous home-delivery company. It is reassuring to evaluate individuals even if they are employees of the famous home-delivery company.

[0074] Moreover, it is impractical to get high evaluations of many residents in advance for a person who visit all hoses such as a surveyor of the national census.

[0075] Thus, in the case of the apartment complex, an inflexible behavior restriction on a visitor is not realistic, and it is inconvenient if the behavior restriction on the visitor is strict.

[0076] Since the visitor management apparatus **2** in the second embodiment generates the integrated evaluation value by integrating each of evaluation values by each of residents, it is possible to provide useful information for residents. The visitor management apparatus **2** can combine security and convenience by using both of verification using biometric information and evaluation values by residents. When a visitor is identified by biometric information, the visitor can visit to a destination even if visiting to the destination is not expected, thereby convenience is high. When a visitor visits, since an integrated evaluation value corresponding to the visitor is provided to a resident of a destination to which the visitor visits, the resident can know the latest integrated evaluation value. Since the visitor management apparatus **2** can set such as permission privileges for each of residents of destinations even if a visitor is the same, it is safe. Since it is possible to give to a visit-again person permission privilege, which has been given to the visit-again person previously, or the like, convenient is high. Moreover, a visitor can recognize that the visitor is evaluated, thereby it is expected that service provided by a merchant, who visits to the building **20**, will improve.

[0077] Incidentally, in the second embodiment, examples, in which a range sharing personal identification information is in the same building or between buildings managed by the same manager, are described, but the range is not limited. For example, persons belonging to a particular same network may share personal identification information. Moreover, personal identification information may be shared in a device authentication such as an electronic certificate, for example.

3: Third Embodiment

[0078] Third embodiments of a visitor management apparatus, a visitor management method and a recording medium will be described. Hereinafter, third embodiments of the visitor management apparatus, the visitor management method and the recording medium by using a visitor management apparatus **3** to which the third embodiments of the visitor management apparatus, the visitor management method and the recording medium are applied.

[3-1: Visitor Management System **300**]

[0079] The visitor management system **300**, to which a visitor management apparatus **3** in the third embodiment is applied, will be described with referring to FIG. **6**. FIG. **6** is a conceptual scheme of the visitor management system **300** to which the visitor management apparatus **3** in the third embodiment.

[0080] The visitor management system **300** manages visitors visiting to a plurality of buildings. As exemplified in FIG. **6**, the visitor management system **300** may manage visitors visiting to buildings **30-1**, **30-2**, **30-3** and **30**-N in a predetermined area, for example. In each of buildings **30-1**, **30-2**, **30-3** and **30**-N, the equivalent visitor management apparatus **3** may be provided. Buildings **30-1**, **30-2**, **30-3** and **30**-N may communicate information with each other. A building **30** may be an apartment complex. Moreover, a building other than an apartment complex may be included as the building **30** in the predetermined area.

[0081] For example, it may be determined that an area, in which there is a building visited by the same person within a specified period, is within a range of the predetermined area, in which information is shared. For example, an approximate address may be specified from a global IP address. It may be determined that an area is within the range of the predetermined area on the basis of a global IP address. Moreover, it may be determined that an area is within the range of the predetermined area on the basis of the number of hops and ping of a network. Moreover, a device of a database for each of buildings **30** may store a number allocated for each of predetermined areas. In this case, it may be determined that a building is within a range of a predetermined area when the same number is recorded.

[3-2: Configuration of the Visitor Management Apparatus **3**]

[0082] The configuration of the visitor management apparatus **3** will be described with referring to FIG. **7**. FIG. **7** is a block diagram showing the configuration of the visitor management apparatus **3** in the third embodiment.

[0083] As shown in FIG. **7**, the visitor management apparatus **3** in the third embodiment differs from the visitor management apparatus **2** in the second embodiment in that the processing device **21** includes an inter-building providing part **317**, a provided part **318** and an inter-building integrating part **319**. Other features of the visitor management apparatus **3** may be the same as other features of the visitor management apparatus **2**.

[3-3: First Example of Visitor Management Operation Performed by the Visitor Management Apparatus **3**]

[0084] The visitor management apparatus **3** manages visitors of the building **30** corresponding to the visitor management apparatus **3**. The visitor management apparatus **3** makes residents living in the same building **30** share visitor information as well as the visitor management apparatus **2** in the second embodiment. Visitor management operation for making residents living in the same building **30** share the visitor information, that is performed by the visitor management apparatus **3**, may be similar to descriptions with referring to the flowchart of FIG. **3**.

[0085] The visitor management apparatus **3** further shares the visitor information with other buildings **30**. In this point, the visitor management apparatus **3** in the third embodiment differs from the visitor management apparatus **2** in the second embodiment. FIG. **8** is a flowchart showing flow of visitor management operation for sharing the visitor information with the other buildings **30**.

[0086] As shown in FIG. **8**, the identification information acquiring part **211** acquires biometric information of a visitor visiting to a building (step S**20**). The identification information acquiring part **211** acquires visitor identification information by changing the biometric information to information from which a specific person can not be identified (step S**30**).

[Visitor Identification Information]

[0087] Biometric information is a personal identification code and corresponds to personal information. Persons sharing an entrance can be regarded as one corporation. For this reason, residents living in the same building can share personal information of visitors.

[0088] By the way, it is not easy to provide personal information to third parties. In other words, it is not easy to provide visitor information, in which biometric information and evaluation value are associated with each other, to other buildings.

[0089] On the other hand, if it is possible to share information relating to visitors in other buildings, the information can be used as useful information. Therefore, in the third embodiment, in order to share information among buildings, biometric information may be changed to visitor identification information, from which a specific person can not be identified and which can be used to identify each visitor. In other words, the visitor identification information may be information that does not need to be treated as personal information. The visitor identification information may be information relating to person obtained by processing personal information so that a specific person can not be identified.

[0090] The visitor identification information may include attribute information of a visitor. The attribute information of the visitor may be information relating to wearing goods of the visitor, a height of the visitor, an outline of a face of the visitor, a physiognomy of the visitor, or the like.

[0091] The evaluation value acquiring part **212** acquires an evaluation value for the visitor by residents living in the building (step S**21**). Incidentally, in the visitor management operation with referring to the flowchart of FIG. **4**, it is described that the storage controlling part **213** may associate the biometric information of the visitor, the evaluation value for the visitor by the resident, and the resident identification information for identifying the resident performing evaluation with each other, and store as the visitor information **221** to the storing device **22**. The acquiring operation in the step S**20** may be acquiring the biometric information corresponding to the visitor which is stored in the storing device **22**, and the acquiring operation in the step S**21** may be the evaluation value for the visitor by the resident corresponding to the visitor which is stored in the storing device **22**.

[0092] The integrating part **215** generates an integrated evaluation value by integrating each of evaluation values (step S**22**). Incidentally, in the visitor management operation for sharing the visitor information with the other buildings **30**, the operation of the step S**22** may be omitted.

[0093] The storage controlling part **213** associates and stores the visitor identification information corresponding to the visitor and the integrated evaluation value corresponding to the visitor (or the evaluation value (if the operation of the step S**22** is omitted)) with each other (step S**31**). The storage controlling part **213** may associate one or more attribute information as the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor with each other, and may store as the integrated visitor information **322** in the storing device **22**. An example of the integrated visitor information **322** stored in the storing device **22** by the storage controlling part **213** is exemplified in Table 3 below.

TABLE-US-00003 TABLE 3 Visitor attribute information 1 . . . Visitor attribute information X Evaluation value Wearing goods information A . . . Physiognomy information A 7 Wearing goods information B . . . Physiognomy information B 8 Wearing goods information C . . . Physiognomy information C 4

[0094] The inter-building providing part **317** provides one or more attribute information and an evaluation value as the visitor identification information stored in the storing device **22**, as the integrated visitor identification **322**, to other building differing from the building **30** (step S**32**). Incidentally, in the step S**31**, the storage controlling part **213** may store the integrated visitor information exemplified in the Table 2 in the storing device **22**; in the step S**32**, the inter-building providing part **317** may provide one or more attribute information and an evaluation value as the visitor identification information from information included in the integrated visitor information **222**, i.e., information included in the integrated visitor information **322** exemplified in the Table 3, to the other building differing from the building **30**.

[3-4: Second Example of Visitor Management Operation Performed by the Visitor Management Apparatus **3**]

[0095] FIG. **9** is a flowchart showing flow of inter-building integrated evaluation value generating operation performed by the visitor management apparatus **3** in the third embodiment.

[0096] As shown in FIG. **9**, the visitor identification information and the evaluation value acquired by other building are provided to the provided part **318** (step S**33**).

[0097] The inter-building integrating part **319** verifies the visitor identification information provided from the other building with the visitor identification information stored in the storing device **22** (step S**34**). The inter-building integrating part **319** estimates that the visitor corresponding to the visitor identification information stored in the storing device **22**, that succeeded in verification with the visitor identification information provided from the other building, is the visitor corresponding to the visitor identification information provided from the other building (step S**35**). The inter-building integrating part **319** generates an inter-building

integrated evaluation value by integrating the evaluation value (or, the integrated evaluation value (in the building)) corresponding to the visitor identification information provided from the other building and the evaluation value corresponding to the visitor identification information stored in the storing device **22** (step S**36**).

[0098] The inter-building integrating part **319** may integrate evaluation values by adding each of evaluation values. The inter-building integrating part **319** may generate the inter-building integrated evaluation value on the basis of comparing evaluation values and a predetermined threshold value.

[0099] The inter-building integrating part **319** may generate information indicating distribution of each of evaluation values as the inter-building integrated evaluation value. The inter-building integrating part **319** may generate a histogram of each of evaluation values. When the histogram is generated, it is possible to easily understand how many residents having performed high-evaluation in an area, and how many residents having performed low-evaluation in the area. The inter-building integrating part **319** can generate information that allows reference to evaluations of all residents living in the area.

[0100] When evaluation values are integrated, it is easy to understand evaluations of all of residents for visitors, especially when there are many residents living in the area. Since a resident visited by a visitor easily judges about the visitor, it is convenient.

[0101] The storage controlling part **213** associates and stores the visitor identification information corresponding to the visitor and the integrated evaluation value corresponding to the visitor with each other (step S**37**). The storage controlling part **317** may associate one or more attribute information as visitor identification biometric information corresponding to the visitor and the integrated evaluation value corresponding to the visitor with each other, and may store as the inter-building information **323** in the storing device **22**. An example of the inter-building visitor information **323** stored in the storing device **22** by the storage controlling part **213** is exemplified in Table 4 bellow.

TABLE-US-00004 TABLE 4 Visitor attribute information 1 . . . Visitor attribute information X Evaluation value Wearing goods information A . . . Physiognomy information A 8 Wearing goods information B . . . Physiognomy information B 8 Wearing goods information C . . . Physiognomy information C 5

[3-5: Third Embodiment of Visitor Management Operation Performed by the Visitor Management Apparatus **3**]

[0102] As an example of using the inter-building integrated evaluation value, the visitor management apparatus **3** may perform behavior restriction operation for a visitor. FIG. **10** is a flowchart showing flow of the behavior restriction operation performed by the visitor management apparatus **3** in the third embodiment.

[0103] As shown in FIG. **10**, the identification information acquiring part **211** acquires visiting-again person identification information of a visiting-again person visiting again (step S**38**). The identification information acquiring part **211** may the visiting-again person identification information of the visiting-again person by operating the visitor operating terminal T**0** by the visiting-again person.

[0104] The providing part **214** provides the inter-building visitor information **323** stored in the storing device **22** to a resident of a destination of the visiting-again person (step S**39**). Moreover, when the visitor information **221** by the resident of the destination of the visiting-again person is stored in the storing device **22**, the providing part **214** may provide the visitor information **221** to the resident.

[0105] The restricting part **216** estimates which person the visiting-again person is on the basis of the visiting-again person identification information (step S**40**). The restricting part **216** may search visitor identification information of the same person as the visiting-again person from the visitor identification information stored in the storing device **22** on the basis of the visiting-again person identification information. The restricting part **216** imposes behavior restriction corresponding to

an integrated evaluation value associated with the visitor identification information of the same person (step S**41**). The restricting part **216** may perform behavior restrictions of the five-steps levels described in the second embodiment according to the inter-building integrated evaluation value, for example.

[0106] Even if a visitor visits to a building at first time, if the visitor has visited to a neighboring building, an access authority, or the like such as behavior restriction in the neighboring building may be applied to the visitor.

[0107] Moreover, the restricting part **216** may change behavior restriction imposed on the visiting-again person in response to a request of the behavior restriction based on at least one of the visitor information **221** and the inter-building visitor information **323** by a resident of a destination of the visiting-again person. For example, when a resident of a destination rejects a visitor, the restricting part **216** may restrict behavior toward a door of a dwelling of the destination even if the visitor is a person having a high inter-building integrated evaluation value.

[0108] On the other hand, if a visitor has a high inter-building integrated evaluation value, the restricting part **216** may allow the visitor to enter a door of a dwelling of a destination without obtaining permission of a resident of the destination. In this case, the operation of the step S**39** may be omitted.

[3-6: Modification]

[0109] A visitor management system **300′**, to which the visitor management apparatus **3** in the third embodiment is applied, and which is a modification of the third embodiment, will be described with referring to FIG. **11**. FIG. **11** is a conceptual scheme of the visitor management system **300′** to which the visitor management apparatus **3** in the third embodiment is applied.

[0110] In the above-mentioned third embodiment, a case in which information is transmitted and received directly between buildings has been described as an example. As shown in FIG. **11**, a visitor management apparatus **3**-C which is not associated with each of buildings **30** may be provided. In this case, the visitor management apparatus **3**-C may receive information from visitor management apparatuses **3** associated with buildings **30**, and may transmit an integrating result to each of visitor management apparatuses **30**. Each of visitor management apparatuses **3** may perform visitor management operation by using an inter-building integrated evaluation value which is integrated in the visitor management apparatus **3**-C. The visitor management apparatus **3**-C may be a cloud server.

[Example of Using Attribute Information]

[0111] Since attribute information is information from which a specific person can not be identified, there are cases in which a visitor can not be identified on the basis of only single attribute information. Therefore, multiple types of attribute information may be associated with a single visitor. By combining a plurality of attribute information, it is possible to improve possibility of identifying a visitor. Moreover, by narrowing a range of an area in which information is shared, it is possible to improve possibility of identifying a visitor.

[0112] On the other hand, the same attribute information may be positively associated with different visitors. For example, the integrating part **215** may generate evaluation value of each of companies based on attribute information common to a plurality of persons such as a uniform of a company, in addition to an integrated evaluation value for a single person. For example, persons, who wear a uniform of a home-delivery company having a delivery person having a high evaluation value, have the same attribute information. A delivery person having this attribute information may be allowed to use a home-delivery box in a corresponding area, for example. Moreover, a visitor having attribute information with a high evaluation value in a plurality of buildings may be able to obtain at least a part of a common access right in a corresponding area, for example.

[0113] Incidentally, as other shared information relating to a visitor, the visitor information **221** may be given label information such as a delivery person, a resident, a friend of a resident, and

solicitation. The label information may be given by the evaluation value acquiring part **212** when a resident evaluates a visitor.

[0114] Moreover, the identification information acquiring part **211** may use a liveness function. This allows to prevent spoofing using photographs, image, and the like, thereby it is possible to improve security.

[3-7: Technical Effects of the Visitor Management Apparatus **3**]

[0115] Since the visitor management apparatus **3** in the third embodiment provides a visitor identification information and an evaluation value other building other than a building, it is possible to share an evaluation value of a visitor between buildings. For example, when a visitor visits to a building at the first time, it is possible to manage behavior of the visitor in the building by an evaluation for the visitor in other neighboring building, thereby convenient is high. Since the visitor identification information is information, from which a specific person can not identified, changed from biometric identification, the visitor identification information can be shared among buildings without any difficulty. Since the visitor management apparatus **3** generates an integrated evaluation value, it is possible to provide useful information for residents. Since a resident of a destination of a visitor can judge the visitor by using an integrated evaluation value integrated more evaluation values, it is possible to judge with high usefulness. Moreover, since an integrated evaluation value corresponding to a visitor is provided to a resident when the visitor visits the resident, the resident can know the latest integrated evaluation value. The visitor management apparatus **2** can combine security and convenience by using both of verification using visitor identification information and evaluation values by residents. When a visitor is identified by the visitor identification information, the visitor can visit to a destination even if visiting to the destination is not expected, thereby convenience is high.

4: Supplementary Note

[0116] In regard to embodiments described above, the following supplementary notes will be further disclosed.

[Supplementary Note 1]

[0117] A visitor management apparatus comprising:

[0118] an identification information acquiring means for acquiring visitor identification information of a visitor coming to a building;

[0119] an evaluation value acquiring means for acquiring evaluation value for the visitor by a resident living in the building;

[0120] a storing means for storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other; and

[0121] a providing means for providing the visitor identification information and the evaluation value associated with each other and stored in the storing means to an other building differing from the building.

[Supplementary Note 2]

[0122] The visitor management apparatus according to the supplementary note 1, wherein

[0123] the identification information acquiring means acquires biometric information of the visitor, and acquires the visitor identification information by changing the biometric information to information from which a specific person can not identified.

[Supplementary Note 3]

[0124] The visitor management apparatus according to the supplementary note 1 or 2, further comprising:

[0125] an integrating means for generating integrated evaluation value by integrating each of evaluation values for the visitor by each of residents acquired by the evaluation value acquiring means.

[Supplementary Note 4]

[0126] The visitor management apparatus according to any one of supplementary notes 1 to 3,

further comprising:

[0127] a provided means to which the visitor identification information and the evaluation value acquired by the other building are provided from the other building; and

[0128] an inter-building integrating means for generating an integrated evaluation value by verifying the visitor identification information provided from the other building and the visitor identification information stored in the storing means, then estimating the visitor corresponding to the visitor identification information stored in the storing means, that succeeded in verification with the visitor identification information provided from the other building, is a visitor corresponding to the visitor identification information provided from the other building, then integrating the evaluation value corresponding to the visitor identification information provided from the other building and the evaluation value corresponding to the visitor identification information stored in the storing means.

[Supplementary Note 5]

[0129] The visitor management apparatus according to any one of supplementary notes 1 to 4, further comprising:

[0130] an in-building providing means for providing the evaluation value corresponding to the visitor stored in the storing means to a resident, who lives in the building, of a destination of the visitor.

[Supplementary Note 6]

[0131] The visitor management apparatus according to any one of supplementary notes 1 to 5,

[0132] wherein the identification information acquiring means acquires visiting-again person identification information of a visiting-again person visiting again, and

[0133] the visitor management apparatus further comprises a restricting means for searching visitor identification information of a person who is the same as the visiting-again person from the visitor identification information stored in the storing means on the basis of the visiting-again person identification information, and for imposing behavior restriction, that corresponds to evaluation value corresponding to the visitor identification information of the person who is the same as the visiting-again person, on the visiting-again person.

[Supplementary Note 7]

[0134] A visitor management method including:

[0135] acquiring visitor identification information of a visitor coming to a building;

[0136] acquiring evaluation value for the visitor by a resident living in the building;

[0137] storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other; and

[0138] providing the visitor identification information and the evaluation value associated with each other and stored to an other building differing from the building.

[Supplementary Note 8]

[0139] A recording medium on which a computer program is recorded, wherein the computer program causes a computer to execute a management method including: acquiring visitor identification information of a visitor coming to a building, acquiring evaluation value for the visitor by a resident living in the building, storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other, and providing the visitor identification information and the evaluation value associated with each other and stored to an other building differing from the building.

[0140] At least a part of components of each of the above-mentioned embodiments may be combined with at least another part of components of each of the above-mentioned embodiments. A part of components of each of the above-mentioned embodiments may be not used. In addition, to the extent permitted by law, the disclosures of all documents (e.g., publications) cited in this disclosure above are incorporated by reference into this disclosure.

[0141] This disclosure can appropriately be changed within limits being not contrary to summary

of inventions or ideas, that can be read from the scope of claims and all of the specification, a visitor management apparatus, a visitor management method and a recording medium with such changes are also included in technical ideas of this disclosure.

DESCRIPTION OF REFERENCE CODES

[0142] **1**, **2**, **3** Visitor management apparatus
[0143] **11**, **211** Identification information acquiring part
[0144] **12**, **212** Evaluation value acquiring part
[0145] **13** Storing part
[0146] **213** Storage controlling part
[0147] **221** Visitor information
[0148] **222**, **322** Integrated visitor information
[0149] **12**, **214** Providing part
[0150] **215** Integrating part
[0151] **216** Restricting part
[0152] **20**, **30** Building
[0153] **300**, **300′** Visitor management system
[0154] **317** Inter-building providing part
[0155] **318** Provided part
[0156] **319** Inter-building integrating part
[0157] **323** Inter-building visitor information

Claims

1. A visitor management apparatus comprising: at least one memory configured to store instructions; and at least one processor configured to execute the instructions to: acquire visitor identification information of a visitor coming to a building; acquire evaluation value for the visitor by a resident living in the building; store the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other; and provide the stored visitor identification information and the stored evaluation value associated with each other to an other building differing from the building.

2. The visitor management apparatus according to claim 1, wherein the at least one processor is configured to execute the instructions to: acquire biometric information of the visitor, and acquire the visitor identification information by changing the biometric information to information from which a specific person can not identified.

3. The visitor management apparatus according to claim 1 wherein the at least one processor is configured to execute the instructions to generate integrated evaluation value by integrating each of evaluation values for the visitor by each of residents acquired by the evaluation value acquiring means.

4. The visitor management apparatus according to claim 1, wherein the at least one processor is configured to execute the instructions to: receive the visitor identification information and the evaluation value acquired by the other building from the other building; and generate an integrated evaluation value by verifying the visitor identification information provided from the other building and the stored visitor identification information, then estimating the visitor corresponding to the stored visitor identification information, that succeeded in verification with the visitor identification information provided from the other building, is a visitor corresponding to the visitor identification information provided from the other building, then integrating the evaluation value corresponding to the visitor identification information provided from the other building and the evaluation value corresponding to the stored visitor identification information.

5. The visitor management apparatus according to claim 1, wherein the at least one processor is configured to execute the instructions to provide the stored evaluation value corresponding to the

visitor to a resident, who lives in the building, of a destination of the visitor.

6. The visitor management apparatus according to claim 1, wherein the at least one processor is configured to execute the instructions to: acquire visiting-again person identification information of a visiting-again person visiting again, search visitor identification information of a person who is the same as the visiting-again person from the stored visitor identification information on the basis of the visiting-again person identification information, and impose behavior restriction, that corresponds to evaluation value corresponding to the visitor identification information of the person who is the same as the visiting-again person, on the visiting-again person.

7. A visitor management method including: acquiring visitor identification information of a visitor coming to a building; acquiring evaluation value for the visitor by a resident living in the building; storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other; and providing the visitor identification information and the evaluation value associated with each other and stored to an other building differing from the building.

8. A non-transitory recording medium on which a computer program is recorded, wherein the computer program causes a computer to execute a management method including: acquiring visitor identification information of a visitor coming to a building, acquiring evaluation value for the visitor by a resident living in the building, storing the visitor identification information corresponding to the visitor and the evaluation value corresponding to the visitor in association with each other, and providing the visitor identification information and the evaluation value associated with each other and stored to an other building differing from the building.

9. The visitor management apparatus according to claim 2, wherein the at least one processor is configured to execute the instructions to generate integrated evaluation value by integrating each of evaluation values for the visitor by each of residents acquired by the evaluation value acquiring means.

10. The visitor management apparatus according to claim 2, wherein the at least one processor is configured to execute the instructions to: receive the visitor identification information and the evaluation value acquired by the other building from the other building; and generate an integrated evaluation value by verifying the visitor identification information provided from the other building and the stored visitor identification information, then estimating the visitor corresponding to the stored visitor identification information, that succeeded in verification with the visitor identification information provided from the other building, is a visitor corresponding to the visitor identification information provided from the other building, then integrating the evaluation value corresponding to the visitor identification information provided from the other building and the evaluation value corresponding to the stored visitor identification information.

11. The visitor management apparatus according to claim 3, wherein the at least one processor is configured to execute the instructions to: receive the visitor identification information and the evaluation value acquired by the other building from the other building; and generate an integrated evaluation value by verifying the visitor identification information provided from the other building and the stored visitor identification information, then estimating the visitor corresponding to the stored visitor identification information, that succeeded in verification with the visitor identification information provided from the other building, is a visitor corresponding to the visitor identification information provided from the other building, then integrating the evaluation value corresponding to the visitor identification information provided from the other building and the evaluation value corresponding to the stored visitor identification information.

12. The visitor management apparatus according to claim 9, wherein the at least one processor is configured to execute the instructions to: receive the visitor identification information and the evaluation value acquired by the other building from the other building; and generate an integrated evaluation value by verifying the visitor identification information provided from the other building and the stored visitor identification information, then estimating the visitor corresponding

to the stored visitor identification information, that succeeded in verification with the visitor identification information provided from the other building, is a visitor corresponding to the visitor identification information provided from the other building, then integrating the evaluation value corresponding to the visitor identification information provided from the other building and the evaluation value corresponding to the stored visitor identification information.

13. The visitor management apparatus according to claim 2, wherein the at least one processor is configured to execute the instructions to provide the stored evaluation value corresponding to the visitor to a resident, who lives in the building, of a destination of the visitor.

14. The visitor management apparatus according to claim 3, wherein the at least one processor is configured to execute the instructions to provide the stored evaluation value corresponding to the visitor to a resident, who lives in the building, of a destination of the visitor.

15. The visitor management apparatus according to claim 4, wherein the at least one processor is configured to execute the instructions to provide the stored evaluation value corresponding to the visitor to a resident, who lives in the building, of a destination of the visitor.

16. The visitor management apparatus according to claim 9, wherein the at least one processor is configured to execute the instructions to provide the stored evaluation value corresponding to the visitor to a resident, who lives in the building, of a destination of the visitor.

17. The visitor management apparatus according to claim 10, wherein the at least one processor is configured to execute the instructions to provide the stored evaluation value corresponding to the visitor to a resident, who lives in the building, of a destination of the visitor.

18. The visitor management apparatus according to claim 11, wherein the at least one processor is configured to execute the instructions to provide the stored evaluation value corresponding to the visitor to a resident, who lives in the building, of a destination of the visitor.

19. The visitor management apparatus according to claim 12, wherein the at least one processor is configured to execute the instructions to provide the stored evaluation value corresponding to the visitor to a resident, who lives in the building, of a destination of the visitor.

20. The visitor management apparatus according to claim 2, wherein the at least one processor is configured to execute the instructions to: acquire visiting-again person identification information of a visiting-again person visiting again, search visitor identification information of a person who is the same as the visiting-again person from the stored visitor identification information on the basis of the visiting-again person identification information, and impose behavior restriction, that corresponds to evaluation value corresponding to the visitor identification information of the person who is the same as the visiting-again person, on the visiting-again person. assistance apparatus comprising: an acquisition unit configured to acquire biological information of a student measured using a wearable terminal worn by the student; an estimation unit configured to estimate a feeling of the student based on the acquired biological information; and a presentation unit configured to present condition information including the feeling of the student, together with extracurricular activity information on the student's extracurricular activity, on a user terminal used by a teacher.