unit, in association with the business card identifier and the item information received by the partial business card information receiving unit, the accepting unit of each of the input terminals accepts one or at least two pairs of a business card partial character string and item information, from the operator, and the partial business card information transmitting unit transmits partial business card information having a pair of the business card partial character string and the item information accepted by the accepting unit and the business card identifier received by the piece receiving unit, to the business card management server.

[0013] With this configuration, it is possible to efficiently input information on a business card for each item, while protecting personal security.

[0014] According to the business card management server of the present invention, the business card management server further includes: a determination condition storage unit in which a determination condition, which is a condition for determining the business card partial character strings and is a condition indicating that business card partial character strings transmitted from the input terminals of at least two or more operators match each other, is stored; and a determination judging unit that, in a case where the business card partial character strings receiving unit receives two or more business card partial character strings of the same item corresponding to one business card identifier, from two or more input terminals, judges whether or not the two or more business card partial character strings match the determination condition; wherein the business card partial character string accumulating unit determines the business card partial character strings, only in a case where the determination judging unit

[0073] The determination condition storage unit 106 is preferably a non-volatile storage medium, but may be realized also by a volatile storage medium.

[0074] If the business card partial character string unit receives two or more business card partial character strings of the same item corresponding to one business card identifier from the two or more input terminals 20, the determination judging unit 107 judges whether or not the two or more business card partial character strings match the determination condition. The business card partial character strings of the same item are business card partial character strings associated with the same item information.

[0075] The determination judging unit 107 may be realized typically by an MPU, a memory, or the like. Typically, the processing procedure of the determination judging unit 107 is realized by software, and the software is stored in a storage medium such as a ROM. Note that the processing procedure may be realized also by hardware (a dedicated circuit).

[0076] In the privilege identifier storage unit 108, a privilege identifier is stored. The privilege identifier is information for communicating with the privileged input terminal 30 of a privileged operator. The privileged operator is an operator who can view a business card image corresponding to a business card identifier contained in the partial business card information. The privileged operator is, for example, an operator specialized or qualified to protect personal information, secrets, and security, an operator who has made a legitimate contract regarding protection of personal information and secrets with a company or the like operating the business card management system 1, an operator who has made a contract for at least a number of years corresponding to a threshold, or the like.

performed as the processing that judges whether or not pixels match each other. The same is applied to other processing that compares pixels of two images. In this example, processing that judges whether or not pixels do not match each other using a mismatch rate is considered to be substantially the same processing. It is also possible that characters contained in two business card images that are to be compared are converted into text by OCR processing or the like, and, if the text match rate is at least a predesignated threshold, the images are judged to match each other.

[0093] If the piece generating unit 103 ~~acquires two or more pieces from a business card image in the case of judging that there is no same business card image,~~ and acquires two or more pieces from a business card image in the case of judging that there is no same business card image, the registration judging unit 112 may be omitted.

[0094] The input terminals 20a to 20c are information processing terminals that input information on a business card. The input terminals 20a to 20c may be considered as information processing terminals that output the input information on a business card or the like. The output is, for example, transmission to the business card management server 10, or accumulation in an unshown storage unit or the like. The input terminals 20a to 20c may be realized, for example, by a computer, a mobile phone, a portable information terminal, a tablet terminal, a smartphone, or the like.

[0095] The accepting unit 201 accepts input of an operator who inputs a business card partial character string. For example, the accepting unit 201 accepts input of a business card partial character string, in each piece output by the piece output unit 203. The accepting unit 201 may further accept item information

[0119] (Step S310) The determination judging unit 107 reads the determination condition stored in the determination condition storage unit 106, and judges whether or not the read determination condition is satisfied by the partial business card character string contained in the partial business card information received in step S307 and the partial business card character string contained in the partial business card information detected in step S308. If the determination condition is satisfied, the procedure advances to step S311, and, if not, the procedure advances to step S312.

[0120] (Step S311) The business card partial character string accumulating unit 110 accumulates the partial business card character string, the business card identifier, and the item information contained in the partial business card information received in step S307, in association with each other, in the business card information storage unit 101. The procedure returns to step S301.

[0121] (Step S312) The business card image transmitting unit 109 acquires one privilege identifier from the privilege identifier storage unit 108, and transmits input prompting information corresponding to the partial business card information received in step S307, and the business card identifier and the item information contained in the partial business card information, to the privileged input terminal 30 indicated by the acquired privilege identifier. The input prompting information is, for example, a business card image corresponding to the business card identifier contained in the partial business card information. If there are multiple privilege identifiers in the privilege identifier storage unit 108, there is no limitation on the procedure in which the determination judging unit 107 selects one privilege identifier. For example, the business card image transmitting unit 109 may sequentially select one privilege identifier in a

predesignated order, or may select a privilege identifier at random. The procedure returns to step S301.

[0122] (Step S313) The business card image transmitting unit 109 judges whether or not a business card image after a predetermined period of time has passed from the time and date when the accumulation was performed is stored in the business card information storage unit 101. If the image is stored, the procedure advances to step S314, and, if not, the procedure returns to step S301. Note that a business card image for which partial business card character strings corresponding to all of predesignated item information have been already accumulated in the business card information storage unit 101 may be provided with a flag or the like when the partial business card character strings of all items were accumulated, so that this business card image can be excluded from the judgment targets in this step.

[0123] (Step S314) The business card image transmitting unit 109 judges whether or not partial business card character strings of all predesignated items are stored with respect to the business card image after the predetermined period of time has passed detected in step S313. If they are stored, the procedure advances to step S315, and, if they are not stored, the procedure returns to step S301.

[0124] (Step S315) The business card image transmitting unit 109 acquires one privilege identifier from the privilege identifier storage unit 108, and transmits input prompting information corresponding to the business card image detected in step S313, missing item information of this business card image, and the business card identifier of this business card image, to the privileged input terminal 30

indicated by the acquired privilege identifier. The procedure returns to step S301.

[0125] (Step S316) The partial business card information receiving unit 105 judges whether or not privileged partial business card information has been received. If it has been received, the procedure advances to step S317, and, if not, the procedure returns to step S301.

[0126] (Step S317) The partial business card information receiving unit 105 accumulates the partial business card character string, the business card identifier, and the item information contained in the received privileged partial business card information, in association with each other, in the business card information storage unit 101. The procedure returns to step S301.

[0127] If the business card image receiving unit 111 receives a business card image containing a portion other than the business card portion (e.g., receives a business card image containing an image of the background portion other than the business card, etc.), the business card image receiving unit 111 may perform processing that acquires a business card image obtained by extracting only the image of the business card portion from the business card image.

[0128] Note that the procedure is terminated by powering off or an interruption at completion of the process in the flowchart in FIG. 3.

[0129] FIG. 4 is a flowchart illustrating the details of the operation in which the business card management server 10 of the business card management system 1 according to this embodiment transmits the pieces generated in step S304. This flowchart shows a step corresponding to step S306 in FIG. 3.

[0130] (Step S401) The piece transmitting unit 104 substitutes 1 for a counter m and a counter n.

[0131] (Step S402) The piece transmitting unit 104 selects an input terminal 20 as a transmission destination of the piece information. In this example, the privileged input terminals 30 are also considered as the input terminals 20. For example, the piece transmitting unit 104 selects one of the input terminal identifiers stored in advance in an unshown storage unit. The input terminal 20 corresponding to this input terminal identifier is the selected input terminal 20. The input terminal identifier is an identifier for identifying an input terminal 20 that can be selected as a transmission destination of the piece information. The input terminal identifier is, for example, access code, a mail address, an IP address, a MAC address, or the like of the input terminal 20. The input terminal identifier may be any information with which communications with an operator of the input terminal 20 eventually become possible, and examples thereof include a user identifier, a mail address, an account of a messaging service, an account of an SNS (social networking service, etc.), and the like of the operator of the input terminal 20. The input terminal identifier may be an account of a messaging service, an account of an SNS (social networking service, etc.), or the like.

[0132] (Step S403) The piece transmitting unit 104 judges whether or not there is piece information having the same business card identifier as any of the business card identifiers associated with the pieces generated in step S304 in FIG. 3, among the piece information previously transmitted by the input terminal 20 indicated by the input terminal identifier selected in step S402. For example, each time the piece transmitting unit 104 transmits piece information, the business card identifier contained in the transmitted piece information and the input terminal identifier of the input terminal functioning as the transmission destination are accumulated in association with each other in an unshown storage

value, the procedure advances to step S408, and, if not, that is, if the value is the predesignated value or less, the procedure returns to step S402.

[0137] (Step S408) The piece transmitting unit 104 increments the counter n by 1.

[0138] (Step S409) The piece transmitting unit 104 judges whether or not there is an n-th piece in the pieces generated in step S304 in FIG. 3. If there is, the procedure advances to step S410, and, if not, the procedure returns to the upper-level processing.

[0139] (Step S410) The piece transmitting unit 104 substitutes 1 for the counter m. The procedure returns to step S402.

[0140] In the piece transmitting processing described with reference to the flowchart in FIG. 4, the piece transmission is ended if a predesignated number of pieces have been transmitted for each piece. However, the piece transmitting unit 104 may repeat the piece transmission until the partial business card information corresponding to the transmitted pieces is determined or for a predesignated period of time. For example, in step S313 in the flowchart in FIG. 3, if it is judged that there is no business card image after a predetermined period of time has passed, the piece transmitting unit 104 or the like may detect a piece whose corresponding partial business card information is undetermined, from among the pieces transmitted by the piece transmitting unit 104, and, if an undetermined piece is detected, the piece transmitting unit 104 may again transmit that piece. After the piece is transmitted or if no undetermined piece is detected, the procedure may return to step S101.

[0141] FIG. 5 is a flowchart illustrating an operation of the input terminal 20 of the business card management system 1 according to this embodiment.

[0142] (Step S501) The piece receiving unit 202 judges whether or not piece information has been received. If it has been received, the procedure advances to step S502, and, if not, the procedure returns to step S501.

[0143] (Step S502) The piece receiving unit 202 outputs the piece contained in the piece information.

[0144] (Step S503) The accepting unit 201 judges whether or not a partial business card character string has been accepted. If it has been accepted, the procedure advances to step S504, and, if not, the procedure returns to step S503.

[0145] (Step S504) The accepting unit 201 judges whether or not item information has been accepted. If it has been accepted, the procedure advances to step S505, and, if not, the procedure returns to step S504.

[0146] (Step S505) The partial business card information transmitting unit 204 transmits partial business card information having the partial business card character string accepted in step S504, the item information accepted in step S505, and the business card identifier contained in the piece information received in step S501, to the business card management server 10. The procedure returns to step S501.

[0147] Note that the procedure is terminated by powering off or an interruption at completion of the process in the flowchart in FIG. 5.

[0148] FIG. 6 is a flowchart illustrating an operation of the privileged input terminal 30 of the business card management system 1 according to this embodiment. In the flowchart, the same reference numerals as in Fig.5 denote

the same or corresponding steps, and, thus, in this example, a detailed description thereof has been omitted.

[0149] (Step S606) The input prompting information receiving unit 206 judges whether or not input prompting information and a business card identifier have been received. If they have been received, the procedure advances to step S606, and, if not, the procedure returns to step S601.

[0150] (Step S607) The input prompting information output unit 207 outputs the input transmission information received in step S606.

[0151] (Step S608) The privileged accepting unit 205 judges whether or not a partial business card character string has been accepted. If it has been accepted, the procedure advances to step S609, and, if not, the procedure returns to step S508. The privileged accepting unit 205 may accept multiple partial business card character strings.

[0152] (Step S609) The privileged partial business card information transmitting unit 208 transmits privileged partial business card information having the partial business card character string accepted in step S608, the item information accepted in step S607 with respect to each partial business card character string, and the business card identifier received in step S606, to the business card management server 10. The procedure returns to step S601.

[0153] Note that the procedure is terminated by powering off or an interruption at completion of the process in the flowchart in FIG. 6.

[0154] Hereinafter, a specific operation of the business card management system 1 in this embodiment will be described. A conceptual diagram of the business card management system 1 is shown in FIG. 1.

[0179] The piece output unit 203 outputs the piece contained in the piece information received by the piece receiving unit 202. The output is, for example, displaying on a monitor.

[0180] FIG. 14 is a view showing a display example of a piece by the piece output unit 203. The output is, for example, displaying on a monitor 203a. In this example, the piece output unit 203 displays a piece in a display region 140 for piece display. Furthermore, it is assumed that the piece output unit 203 displays, as an example, multiple input field pairs 143 each having a character string input field 141 for accepting a partial business card character string with respect to the displayed piece and an item input field 142 for accepting item information, and a complete button 144 for inputting completion of the input.

[0181] The operator of the input terminal 20 with the input terminal identifier being "OP0004" sees a piece displayed in the display region 140, and inputs a recognizable character string, that is, a character string in the image of a portion without blurring shown in the piece, to the character string input field 141, by operating an unshown keyboard or the like. The accepting unit 201 accepts the character string input to the character string input field 141, as a partial business card character string corresponding to the piece. In this example, it is assumed that the operator has input a character string "Suzuki", to the character string input field 141 of one of the input field pairs 143.

[0182] Furthermore, if the operator inputs item information of the input text to the item input field 142, the accepting unit 201 accepts the input item information. For example, it is assumed that a master table or the like having multiple item information applicable to partial business card character strings is stored in advance in an unshown storage medium or the like. In response to the operation

table of the item information, for example, the operator may delete the piece information, for example, without inputting a partial business card character string or the like with respect to this piece. Alternatively, the operator inputs a predesignated character string (e.g., a character string "others", "logo", etc.) as a partial business card character string, and further inputs predesignated item information (e.g., "others", "logo", etc.). The business card management server 10 that has received the partial business card information containing the partial business card character string and the item information may delete the information contained in the partial business card information, for example. Note that the piece generating unit 103 may not generate any piece from information that cannot be converted into characters in advance by OCR processing or the like.

[0185] The piece generating unit 103 may not generate any piece from a portion in which information cannot be converted into a character string, such as a logo mark. For example, no piece may be generated from a portion that cannot be recognized in OCR processing or the like, or in which the recognition rate is a threshold or less. Furthermore, no piece may be generated from a portion in which the size of a minimum rectangle surrounding an image or the like is a threshold or more.

[0186] If the operator clicks on the complete button 144 using a mouse or the like, the accepting unit 201 judges whether or not a partial business card character string has been accepted. In this example, the character string "Suzuki" has been accepted, and, thus, it is judged that a partial business card character string has been accepted. The accepting unit 201 judges whether or not item information has been accepted with respect to each accepted partial business card

character string. In this example, the item information "family name" has been accepted as item information corresponding to the character string "Suzuki", and, thus, it is judged that item information has been accepted.

[0187] As described above, in this example, the accepting unit 201 has accepted a partial business card character string and item information corresponding to this partial business card character string. Accordingly, the partial business card information transmitting unit 204 transmits partial business card information having a pair of the partial command character string "Suzuki" and the item information "family name" corresponding to this partial command character string accepted by the accepting unit 201, and the business card identifier "0010006" contained in the piece information, to the business card management server 10. If the accepting unit 201 has not accepted at least one of the partial business card information and the item information, information is not transmitted to the business card management server 10, and, for example, the piece output unit 203 displays a message or the like for prompting input of such information, on the monitor 203a or the like. If the accepting unit 201 has accepted multiple pairs of the partial business card character string and the item information, the partial business card information transmitting unit 204 may transmit, for each pair of the partial business card character string and the item information, partial business card information having the business card identifier, to the business card management server 10. The partial business card information transmitting unit 204 may transmit partial business card information further having the input terminal identifier of that terminal, stored in advance in an unshown storage unit or the like.

[0188] The other input terminals 20 that have received piece information also perform similar processing.

[0189] The partial business card information receiving unit 105 of the business card management server 10 receives the partial business card information, from the input terminal 20 with the input terminal identifier being "OP0004". The business card information receiving unit 105 judges whether or not at least a predesignated number of partial business card information each having a pair of a business card identifier and item information matching the pair of the business card identifier "0010006" and the item information "family name" contained in the received partial business card information are stored in an unshown storage unit in which received partial business card information is to be stored. The predesignated number is a number obtained by subtracting 1 from the number of transmissions of the same piece information (2, in this example), and, in this example, the predesignated number is 1. In this specific example, the same piece information is transmitted to multiple (two, in this example) different input terminals 20, and, thus, if the item information that is input at the input terminal 20 with respect to this piece is correct, partial business card information having a pair of the same business card identifier and the same item information may be stored. If partial business card information having a pair of the same business card identifier and the same item information is not stored, the received partial business card information is accumulated in this unshown storage unit.

[0190] For example, it is assumed that partial business card information having a pair of the same business card identifier and the same item information is already stored. The determination judging unit 107 reads the determination condition stored in the determination condition storage unit 106. Then, the

partial business card character string contained in the partial business card information having the pair of the same business card identifier and the same item information is read from the unshown storage unit, and it is judged whether or not the read determination condition is satisfied by this partial business card character string and the partial business card character string contained in the received partial business card information. It is assumed that the read determination condition is a condition indicating a full match. If the partial business card character string read from the partial business card information stored in the unshown storage unit is "Suzuki", this partial business card character string and the partial business card character string read from the received partial business card information, which is "Suzuki", fully match each other, and, thus, the determination judging unit 107 judges that the determination condition is matched. Accordingly, the business card partial character string accumulating unit 110 accumulates the matching partial business card character string "Suzuki", the received item information "family name", and the business card identifier "0010006" in association with one another in the business card information storage unit 101.

[0191] FIG. 15 is a table showing business card information management information for managing partial business card character strings, item information, and business card identifiers accumulated in the business card information storage unit 101. The business card information management information has items "business card ID", "item", and "character string". In the table, "business card ID" is a business card identifier, "item" is item information, and "character string" is a partial business card character string.

[0192] In this manner, the partial business card character string corresponding to the piece of the business card image is accumulated in the business card information storage unit 101. Accordingly, information on characters shown in the business card image can be converted into character strings, that is, text data and accumulated.

[0193] If the partial business card information receiving unit 105 has received multiple partial business card information from one input terminal 20, the determination judging unit 107 performs similar processing for each set of partial business card information.

[0194] For example, a case will be described in which the determination judging unit 107 judges that the partial business card character strings compared with each other do not match the determination condition, that is, the partial business card character strings compared with each other do not fully match each other. For example, it is assumed that the partial business card character strings compared with each other are "Suzuki" and "Suzumoto". If they do not match each other, the business card image transmitting unit 109 acquires a pair of the item information "family name" and the business card identifier "0010006" contained in the partial business card information received by the partial business card information receiving unit 105, and further reads the business card image "U001NAME12.png" corresponding to this business card identifier "0010006" from the business card information storage unit 101. Note that all of partial business card information that are judged not to match each other may be deleted.

[0195] The business card image transmitting unit 109 transmits input prompting information having the read business card image "U001NAME12.png", and the

pair of the item information "family name" and the business card identifier "0010006", in association with each other, to one privileged input terminal 30. The business card image contained in the input prompting information is an image in which all information shown on the business card is recognizable. For example, the business card image is a business card image in a state of being stored in the business card information storage unit 101. The input prompting information may further have information such as a comment or an instruction for asking the privileged operator to perform input.

[0196] FIG. 16 is a table showing privilege identifier management information for managing privilege identifiers stored in the privilege identifier storage unit 108. The privilege input identifier management information is a list of privilege identifiers of the privileged input terminals 30. The privilege identifiers are input terminal identifiers corresponding to the privileged input terminals 30, among the input terminal identifiers shown in FIG. 12.

[0197] The business card image transmitting unit 109 reads one privilege identifier from among the privilege identifiers managed by the privilege identifier management information shown in FIG. 16, and transmits the business card image and the pair of the item information and the business card identifier to the privileged input terminal 30 indicated by the read privilege identifier. There is no limitation on the procedure in which the business card image transmitting unit 109 reads one privilege identifier. For example, a privilege identifier may be selected at random, or a privilege identifier selected in the previous transmission may be provided with information such as a flag, so that a privilege identifier whose privilege identifier value is sorted to be arranged next the privilege identifier selected in the previous transmission may be selected. The sorting

may be any sorting, and examples thereof include sorting in ascending order or descending order of privilege identifier values. In this example, it is assumed that the business card image transmitting unit 109 selects "OP1001" as one privilege identifier, and transmits the business card image and the pair of the item information and the business card identifier to the privileged input terminal with this privilege identifier.

[0198] The input prompting information receiving unit 206 of the privileged input terminal 30 with the privilege identifier being "OP1001" receives the input prompting information having the business card image "U001NAME12.png", and the pair of the item information "family name" and the business card identifier "0010006", from the business card management server 10.

[0199] The input prompting information output unit 207 in this example displays the received input prompting information on a monitor or the like. In this example, the received item information is also output. Furthermore, the character string input field 141 for a partial business card character string and the like are also displayed as in the piece output unit 203 shown in FIG. 14.

[0200] FIG. 17 is a view showing a display example of input prompting information by the input prompting information output unit 207.

[0201] It is assumed that the privileged operator using the privileged input terminal 30 with the privilege identifier being "OP1001" sees a business card image 171, which is input prompting information, and item information 172 that are displayed on a monitor 207a, searches for a portion in which "family name" is displayed in the business card image, and inputs the character string "Suzuki" to the character string input field 141. Then, the privileged operator clicks on the complete button 144.

[0202] The privileged partial business card information transmitting unit 208 transmits privileged partial business card information that is partial business card information having the pair of the item information "family name" and the business card identifier "0010006" received by the input prompting information receiving unit 206, and the partial business card character string accepted by the privileged accepting unit 205, to the business card management server 10. The privileged partial business card information may further have the privileged terminal identifier of that terminal.

[0203] The partial business card information receiving unit 105 of the business card management server 10 receives the privileged partial business card information from the privileged input terminal 30. The business card partial character string accumulating unit 110 accumulates the partial business card character string, the item information, and the business card identifier contained in the privileged partial business card information received by the partial business card information receiving unit 105, in association with each other in the business card information storage unit 101. In this manner, the partial business card character string input by the privileged operator is accumulated as a reliable partial business card character string, without being subjected to the above-described judgment processing for determination.

[0204] The business card image transmitting unit 109 detects a record with "date" being a predesignated number of days (e.g., 7 days) before the current date, from among the records in the business card image management information shown in FIG. 8, and acquires a value of "business card identifier" of the detected record. For example, if the current date is "2012/02/26", a record at the date "2012/02/19" is searched for. In this example, it is assumed that two records are

detected, and "0020003" and "0230018", which are the values of "business card ID" of the records, are acquired. The detected records may be provided with unshown flag information or the like such that the records are not detected again.

[0205] The business card image transmitting unit 109 searches for a record with "business card ID" matching "0020003", which is one of the acquired values of "business card ID", in the partial business card character string management information shown in FIG. 15. The business card image transmitting unit 109 acquires a value of "item" of the detected record. It is assumed that "family name", "given name", "address 1", "address 2", "mail address", and "telephone number" are acquired. Then, item information not matching any value of "item" of the detected records is detected from among predesignated one or at least two item information. If the predesignated item information is "family name", "given name", "company name", "address 1", "address 2", "telephone number", "facsimile number", and "mail address", the business card image transmitting unit 109 detects "company name" and "facsimile number" as the item information not matching any value. The business card image transmitting unit 109 transmits the detected item information, the business card identifier "0020003", and the input prompting information having the business card image corresponding to this business card identifying information, as described above, to one privileged input terminal 30.

[0206] The business card image transmitting unit 109 performs similar processing also for "0230018", which is the above-detected "business card ID" other than "0020003".

[0207] In the privileged input terminal 30, as described above, if the input prompting information receiving unit 206 receives the input prompting

information, the item information, and the business card identifier, the input prompting information output unit 207 displays the input prompting information and each set of item information. Then, the partial business card character string input by the privileged operator with respect to each set of displayed item information is accepted by the privileged accepting unit 205. The partial business card information transmitting unit 204 transmits privileged partial business card information each having the pair of the partial business card character string accepted for each set of item information and the item information, and the business card identifier, to the business card management server 10.

[0208] The processing by the business card management server 10 that has accepted this privileged partial business card information is as described above, and, thus, a description thereof has been omitted.

[0209] Accordingly, partial business card character strings with respect to items such as essential items that have not been input when a predetermined period of time has passed can be compensated for by a privileged operator.

[0210] As described above, according to this embodiment, the business card management server transmits multiple pieces acquired from one business card image respectively to different multiple input terminals 20, and causes the operators of the input terminals 20 to input partial business card character strings corresponding to the respective piece. Accordingly, one operator is prevented from recognizing the whole of one business card image, so that the privacy of information on the business card can be ensured.

[0211] In the foregoing embodiment, when the piece generating unit 103 generates pieces, character strings indicating characters shown in regions that

are recognizable in the pieces may be acquired using OCR processing or the like, and the piece transmitting unit 104 may transmit piece information further containing the character strings to the input terminals 20. Then, each input terminal 20 may accept the character string acquired from this piece, as a tentative partial business card character string corresponding to the piece, and may be allowed to correct this tentative partial business card character string according to input at the accepting unit. Alternatively, the input terminal 20 may display the character string acquired from this piece, as an exemplary partial business card character string corresponding to the piece. Accordingly, input by the operator can be assisted.

[0212] Furthermore, the business card management server 10 may transmit partial business card information containing the partial business card character string input with respect to one piece by one operator using an input terminal 20, together with the partial business card information, to an input terminal 20 of another operator, and causes the other operator to check and correct the partial business card character string contained in the partial business card information. The input terminal 20 of the other operator outputs the piece received by the piece receiving unit 202 and the partial business card character string of the partial business card information, and prompts the other operator to check the partial business card character string or to input correction thereof. If the accepting unit 201 of the input terminal 20 accepts information indicating the check or correction of the partial business card character string from the other operator, the partial business card information transmitting unit 204 transmits the information indicating the check and the received partial business card information, or the corrected partial business card information and information

indicating completion of the correction, to the business card management server 10.

[0213] If the partial business card information receiving unit 105 receives the partial business card information, and the information indicating the check or the information indicating completion of the correction, the business card partial character string accumulating unit 110 may accumulate this partial business card information as described above. Accordingly, multiple operators can check the partial business card character string input with respect to one piece. The check may be considered as so-called verification or the like. Note that transmission of the business card partial character information from the other input terminal 20 may be considered as also meaning transmission of the information indicating the check or the information indicating completion of the correction.

[0214] In the foregoing embodiment, for example, the determination judging unit 107 determines partial business card information according to whether or not there are matches with a partial business card character string and item information of the partial business card information. However, in the present invention, whether or not there is a match with a partial business card character string contained in the partial business card information and whether or not there is a match with item information may be individually judged. If it is judged that there is a match only with either a partial business card character string or item information, only that matching information may be determined and the remaining undetermined portion of the partial business card information may be input by a next operator such as a privileged operator. For example, if there is a match with item information but not with a partial business card character string,

the partial business card character string may be input by the next operator. The same is applied to embodiments below.

[0215] In this embodiment, a case in which the business card management system 1 includes multiple input terminals 20 and the piece transmitting unit 104 transmits two or more piece information corresponding to one business card image respectively to different input terminals 20 was described as an example. However, in the present invention, the number of input terminals may be one or more, and the piece transmitting unit 104 may transmit two or more piece information corresponding to one business card image respectively to the one or more input terminals 20. Since each piece is an image in which only part of a business card image is recognizable, even if multiple pieces generated from the same business card image are compared by sight or the like, it is difficult to judge whether or not the compared pieces are pieces generated from the same business card image. Accordingly, even if piece information respectively having multiple pieces generated from the same business card image are transmitted to the input terminal 20 used by one operator, the operator cannot judge whether or not the pieces contained in the piece information for which the business card partial character strings are to be input are pieces corresponding to the same business card image. Accordingly, the operator cannot collect information written on one business card, from multiple pieces corresponding to one business card image, so that the privacy of information on the business card can be protected. In this case, it is preferable that, specifically, the piece output unit 203 of the input terminal 20 cannot output the business card identifier contained in the piece information in a manner recognizable to the operator, preferably, cannot output the business card identifier. The reason for this is that, if the business card

[0227] The foreign business card image transmitting unit 114 transmits a business card image to the foreign business card management server 10b, which is one business card management server different from the business card management server 10, according to the language judged by the language judging unit 113. For example, the foreign business card image transmitting unit 114 transmits a business card image whose language has been judged, to one foreign business card management server 10b associated with the judged language. Specifically, the foreign business card image transmitting unit 114 transmits business card information having the business card image. The transmitting to the foreign business card management server 10b according to the language judged by the language judging unit 113 is a concept that includes not transmitting to the foreign business card management server 10b according to the judged language.

[0228] For example, if the judged language is a predesignated language, the foreign business card image transmitting unit 114 does not transmit a business card image in this language to the foreign business card management server 10b, and, if not, the foreign business card image transmitting unit 114 transmits the business card image to the foreign business card management server 10b.

[0229] Note that one business card image may be transmitted to a foreign business card management server as follows. For example, management information for associating one or at least two languages with server identifiers of one or at least two foreign business card management servers in one-to-one or many-to-one association is stored in advance in an unshown storage unit or the like. The foreign business card image transmitting unit 114 may acquire a server identifier corresponding to the language of one business card image judged

same reference numerals as in FIG. 3 denote the same or corresponding steps, and, thus, in this example, a detailed description thereof has been omitted.

[0238] (Step S1901) The language judging unit 112 judges a language in a business card image.

[0239] (Step S1902) The foreign business card image transmitting unit 114 judges whether or not the language judged in step 1901 is a predesignated language. If it is a predesignated language, the procedure advances to step S1903, and, if not, the procedure advances to step S1904.

[0240] (Step S1903) The foreign business card image transmitting unit 114 transmits the business card image to the foreign business card management server 10b. The procedure returns to step S301.

[0241] Note that the procedure is terminated by powering off or an interruption at completion of the process in the flowchart in FIG. 19.

[0242] The processing by the foreign business card management server 10b is similar to that in the flowchart in FIG. 3, except that the business card image receiving unit 111 receives a business card image transmitted from the business card management server 10a.

[0243] With the business card management system 1a according to this embodiment as described above, if the language in a business card image is a predesignated language (or is not a predesignated language), the business card image is transmitted to the foreign business card management server 10b. Accordingly, the business card image is stored in the foreign business card management server 10b, and pieces generated from the business card image are transmitted to the input terminals 20β, which are part of the input terminals 20 corresponding to the foreign business card management server 10b, and business

card partial character strings are input. Accordingly, if operators or the like familiar with reading and the like of the predesignated language are allocated as operators using the input terminals 20β, the business card partial character strings can be efficiently and accurately input.

[0244] In this embodiment, the business card management server 10a judges whether or not to transmit a business card image to the foreign business card management server 10b or the like according to the language. However, in the present invention, a business card information processing server (not shown) may be provided in order to transmit a business card image selectively to a business card management server according to the language of information written on the business card. That is to say, this business card information processing server may be considered as a server for controlling the business card management servers 10 that manage business card images.

[0245] The business card information processing server (not shown) is a server, for example, including the business card information receiving unit 111 the business card information storage unit 101, the language judging unit 113, and the foreign business card image transmitting unit 114. The business card information processing server (not shown) may further include the business card information receiving unit 111. This business card information processing server and multiple business card management servers may be considered to form a business card management system. Alternatively, this business card information processing server, multiple business card management servers, and multiple input terminals may be considered to form a business card management system.

the region obtained by connecting the coordinates of the four corners of the cutout frame 231 is acquired. Alternatively, the cutout may be considered as deleting the image outside the cutout frame.

[0291] Next, the business card image acquiring unit 25 changes the shape of the cut out image, thereby acquiring a business card image with a predesignated resolution, having the same aspect ratio as the business card.

[0292] FIG. 24 shows a view of an image cut out by the business card image acquiring unit 25 from the captured business card image "U101NAME05.png" (FIG. 24(a)), and a view of a business card image obtained by changing the shape of the cut out image (FIG. 24(b)).

[0293] The business card image accumulating unit 26 accumulates the business card image shown in FIG. 24(b), acquired by the business card image acquiring unit 25, in the second business card image storage unit 22. In this example, the captured business card image before being cut out is provided with the same file name, and is accumulated in association with the same user ID "U101".

[0294] The business card image acquiring apparatus 2 performs similar processing also on the other captured business card images stored in the first business card image storage unit 21.

[0295] Accordingly, second business card image management information for managing second business card images stored in the second business card image storage unit 22, for example, similar to the first business card image management information shown in FIG. 22, is obtained.

[0296] The business card image acquiring apparatus 2 may transmit the business card images stored in the second business card image storage unit 22, for example, at a predesignated time or according to an instruction of the operator or the like,

unit, in association with the business card identifier and the item information received by the partial business card information receiving unit, the accepting unit of each of the input terminals accepts one or at least two pairs of a business card partial character string and item information, from the operator, and the partial business card information transmitting unit transmits partial business card information having a pair of the business card partial character string and the item information accepted by the accepting unit and the business card identifier received by the piece receiving unit, to the business card management server.

[0013] With this configuration, it is possible to efficiently input information on a business card for each item, while protecting personal security.

[0014] According to the business card management server of the present invention, the business card management server further includes: a determination condition storage unit in which a determination condition, which is a condition for determining the business card partial character strings and is a condition indicating that business card partial character strings transmitted from the input terminals of at least two or more operators match each other, is stored; and a determination judging unit that, in a case where the partial business card information receiving unit receives two or more business card partial character strings of the same item corresponding to one business card identifier, from two or more input terminals, judges whether or not the two or more business card partial character strings match the determination condition; wherein the business card partial character string accumulating unit determines the business card partial character strings, only in a case where the determination judging unit

[0073] The determination condition storage unit 106 is preferably a non-volatile storage medium, but may be realized also by a volatile storage medium.

[0074] If the partial business card information receiving unit receives two or more business card partial character strings of the same item corresponding to one business card identifier from the two or more input terminals 20, the determination judging unit 107 judges whether or not the two or more business card partial character strings match the determination condition. The business card partial character strings of the same item are business card partial character strings associated with the same item information.

[0075] The determination judging unit 107 may be realized typically by an MPU, a memory, or the like. Typically, the processing procedure of the determination judging unit 107 is realized by software, and the software is stored in a storage medium such as a ROM. Note that the processing procedure may be realized also by hardware (a dedicated circuit).

[0076] In the privilege identifier storage unit 108, a privilege identifier is stored. The privilege identifier is information for communicating with the privileged input terminal 30 of a privileged operator. The privileged operator is an operator who can view a business card image corresponding to a business card identifier contained in the partial business card information. The privileged operator is, for example, an operator specialized or qualified to protect personal information, secrets, and security, an operator who has made a legitimate contract regarding protection of personal information and secrets with a company or the like operating the business card management system 1, an operator who has made a contract for at least a number of years corresponding to a threshold, or the like.

performed as the processing that judges whether or not pixels match each other. The same is applied to other processing that compares pixels of two images. In this example, processing that judges whether or not pixels do not match each other using a mismatch rate is considered to be substantially the same processing. It is also possible that characters contained in two business card images that are to be compared are converted into text by OCR processing or the like, and, if the text match rate is at least a predesignated threshold, the images are judged to match each other.

[0093] If the piece generating unit 103 judges whether or not there is the same business card image,and acquires two or more pieces from a business card image in the case of judging that there is no same business card image, the registration judging unit 112 may be omitted.

[0094] The input terminals 20a to 20c are information processing terminals that input information on a business card. The input terminals 20a to 20c may be considered as information processing terminals that output the input information on a business card or the like. The output is, for example, transmission to the business card management server 10, or accumulation in an unshown storage unit or the like. The input terminals 20a to 20c may be realized, for example, by a computer, a mobile phone, a portable information terminal, a tablet terminal, a smartphone, or the like.

[0095] The accepting unit 201 accepts input of an operator who inputs a business card partial character string. For example, the accepting unit 201 accepts input of a business card partial character string, in each piece output by the piece output unit 203. The accepting unit 201 may further accept item information

[0119] (Step S310) The determination judging unit 107 reads the determination condition stored in the determination condition storage unit 106, and judges whether or not the read determination condition is satisfied by the business card partial character string contained in the partial business card information received in step S307 and the business card partial character string contained in the partial business card information detected in step S308. If the determination condition is satisfied, the procedure advances to step S311, and, if not, the procedure advances to step S312.

[0120] (Step S311) The business card partial character string accumulating unit 110 accumulates the business card partial character string, the business card identifier, and the item information contained in the partial business card information received in step S307, in association with each other, in the business card information storage unit 101. The procedure returns to step S301.

[0121] (Step S312) The business card image transmitting unit 109 acquires one privilege identifier from the privilege identifier storage unit 108, and transmits input prompting information corresponding to the partial business card information received in step S307, and the business card identifier and the item information contained in the partial business card information, to the privileged input terminal 30 indicated by the acquired privilege identifier. The input prompting information is, for example, a business card image corresponding to the business card identifier contained in the partial business card information. If there are multiple privilege identifiers in the privilege identifier storage unit 108, there is no limitation on the procedure in which the determination judging unit 107 selects one privilege identifier. For example, the business card image transmitting unit 109 may sequentially select one privilege identifier in a

predesignated order, or may select a privilege identifier at random. The procedure returns to step S301.

[0122] (Step S313) The business card image transmitting unit 109 judges whether or not a business card image after a predetermined period of time has passed from the time and date when the accumulation was performed is stored in the business card information storage unit 101. If the image is stored, the procedure advances to step S314, and, if not, the procedure returns to step S301. Note that a business card image for which business card partial character strings corresponding to all of predesignated item information have been already accumulated in the business card information storage unit 101 may be provided with a flag or the like when the business card partial character strings of all items were accumulated, so that this business card image can be excluded from the judgment targets in this step.

[0123] (Step S314) The business card image transmitting unit 109 judges whether or not business card partial character strings of all predesignated items are stored with respect to the business card image after the predetermined period of time has passed detected in step S313. If they are not stored, the procedure advances to step S315, and, if they are stored, the procedure returns to step S301.

[0124] (Step S315) The business card image transmitting unit 109 acquires one privilege identifier from the privilege identifier storage unit 108, and transmits input prompting information corresponding to the business card image detected in step S313, missing item information of this business card image, and the business card identifier of this business card image, to the privileged input terminal 30

indicated by the acquired privilege identifier. The procedure returns to step S301.

[0125] (Step S316) The partial business card information receiving unit 105 judges whether or not privileged partial business card information has been received. If it has been received, the procedure advances to step S317, and, if not, the procedure returns to step S301.

[0126] (Step S317) The partial business card information receiving unit 105 accumulates the business card partial character string, the business card identifier, and the item information contained in the received privileged partial business card information, in association with each other, in the business card information storage unit 101. The procedure returns to step S301.

[0127] If the business card image receiving unit 111 receives a business card image containing a portion other than the business card portion (e.g., receives a business card image containing an image of the background portion other than the business card, etc.), the business card image receiving unit 111 may perform processing that acquires a business card image obtained by extracting only the image of the business card portion from the business card image.

[0128] Note that the procedure is terminated by powering off or an interruption at completion of the process in the flowchart in FIG. 3.

[0129] FIG. 4 is a flowchart illustrating the details of the operation in which the business card management server 10 of the business card management system 1 according to this embodiment transmits the pieces generated in step S304. This flowchart shows a step corresponding to step S306 in FIG. 3.

[0130] (Step S401) The piece transmitting unit 104 substitutes 1 for a counter m and a counter n.

[0131] (Step S402) The piece transmitting unit 104 selects an input terminal 20 as a transmission destination of the piece information. In this example, the privileged input terminals 30 are also considered as the input terminals 20. For example, the piece transmitting unit 104 selects one of the input terminal identifiers stored in advance in an unshown storage unit. The input terminal 20 corresponding to this input terminal identifier is the selected input terminal 20. The input terminal identifier is an identifier for identifying an input terminal 20 that can be selected as a transmission destination of the piece information. The input terminal identifier is, for example, access code, a mail address, an IP address, a MAC address, or the like of the input terminal 20. The input terminal identifier may be any information with which communications with an operator of the input terminal 20 eventually become possible, and examples thereof include a user identifier, a mail address, an account of a messaging service, an account of an SNS (social networking service, etc.), and the like of the operator of the input terminal 20. The input terminal identifier may be an account of a messaging service, an account of an SNS (social networking service, etc.), or the like.

[0132] (Step S403) The piece transmitting unit 104 judges whether or not there is piece information having the same business card identifier as any of the business card identifiers associated with the pieces generated in step S304 in FIG. 3, among the piece information previously transmitted to the input terminal 20 indicated by the input terminal identifier selected in step S402. For example, each time the piece transmitting unit 104 transmits piece information, the business card identifier contained in the transmitted piece information and the input terminal identifier of the input terminal functioning as the transmission destination are accumulated in association with each other in an unshown storage

value, the procedure advances to step S408, and, if not, that is, if the value is the predesignated value or less, the procedure returns to step S402.

[0137] (Step S408) The piece transmitting unit 104 increments the counter n by 1.

[0138] (Step S409) The piece transmitting unit 104 judges whether or not there is an n-th piece in the pieces generated in step S304 in FIG. 3. If there is, the procedure advances to step S410, and, if not, the procedure returns to the upper-level processing.

[0139] (Step S410) The piece transmitting unit 104 substitutes 1 for the counter m. The procedure returns to step S402.

[0140] In the piece transmitting processing described with reference to the flowchart in FIG. 4, the piece transmission is ended if a predesignated number of pieces have been transmitted for each piece. However, the piece transmitting unit 104 may repeat the piece transmission until the partial business card information corresponding to the transmitted pieces is determined or for a predesignated period of time. For example, in step S313 in the flowchart in FIG. 3, if it is judged that there is no business card image after a predetermined period of time has passed, the piece transmitting unit 104 or the like may detect a piece whose corresponding partial business card information is undetermined, from among the pieces transmitted by the piece transmitting unit 104, and, if an undetermined piece is detected, the piece transmitting unit 104 may again transmit that piece. After the piece is transmitted or if no undetermined piece is detected, the procedure may return to step S301.

[0141] FIG. 5 is a flowchart illustrating an operation of the input terminal 20 of the business card management system 1 according to this embodiment.

[0142] (Step S501) The piece receiving unit 202 judges whether or not piece information has been received. If it has been received, the procedure advances to step S502, and, if not, the procedure returns to step S501.

[0143] (Step S502) The piece receiving unit 202 outputs the piece contained in the piece information.

[0144] (Step S503) The accepting unit 201 judges whether or not a business card partial character string has been accepted. If it has been accepted, the procedure advances to step S504, and, if not, the procedure returns to step S503.

[0145] (Step S504) The accepting unit 201 judges whether or not item information has been accepted. If it has been accepted, the procedure advances to step S505, and, if not, the procedure returns to step S504.

[0146] (Step S505) The partial business card information transmitting unit 204 transmits partial business card information having the business card partial character string accepted in step S503, the item information accepted in step S504, and the business card identifier contained in the piece information received in step S501, to the business card management server 10. The procedure returns to step S501.

[0147] Note that the procedure is terminated by powering off or an interruption at completion of the process in the flowchart in FIG. 5.

[0148] FIG. 6 is a flowchart illustrating an operation of the privileged input terminal 30 of the business card management system 1 according to this embodiment. In the flowchart, steps S601 to S605 are the same as or correspond

to steps S501 to S505 respectively in the flowchart in FIG. 5, and, thus, in this example, a detailed description thereof has been omitted.

[0149] (Step S606) The input prompting information receiving unit 206 judges whether or not input prompting information and a business card identifier have been received. If they have been received, the procedure advances to step S607, and, if not, the procedure returns to step S601.

[0150] (Step S607) The input prompting information output unit 207 outputs the input prompting information received in step S606.

[0151] (Step S608) The privileged accepting unit 205 judges whether or not a business card partial character string has been accepted. If it has been accepted, the procedure advances to step S609, and, if not, the procedure returns to step S608. The privileged accepting unit 205 may accept multiple business card partial character strings.

[0152] (Step S609) The privileged partial business card information transmitting unit 208 transmits privileged partial business card information having the business card partial character string accepted in step S608, the item information accepted in step S607 with respect to each business card partial character string, and the business card identifier received in step S606, to the business card management server 10. The procedure returns to step S601.

[0153] Note that the procedure is terminated by powering off or an interruption at completion of the process in the flowchart in FIG. 6.

[0154] Hereinafter, a specific operation of the business card management system 1 in this embodiment will be described. A conceptual diagram of the business card management system 1 is shown in FIG. 1.

[0179] The piece output unit 203 outputs the piece contained in the piece information received by the piece receiving unit 202. The output is, for example, displaying on a monitor.

[0180] FIG. 14 is a view showing a display example of a piece by the piece output unit 203. The output is, for example, displaying on a monitor 203a. In this example, the piece output unit 203 displays a piece in a display region 140 for piece display. Furthermore, it is assumed that the piece output unit 203 displays, as an example, multiple input field pairs 143 each having a character string input field 141 for accepting a business card partial character string with respect to the displayed piece and an item input field 142 for accepting item information, and a complete button 144 for inputting completion of the input.

[0181] The operator of the input terminal 20 with the input terminal identifier being "OP0004" sees a piece displayed in the display region 140, and inputs a recognizable character string, that is, a character string in the image of a portion without blurring shown in the piece, to the character string input field 141, by operating an unshown keyboard or the like. The accepting unit 201 accepts the character string input to the character string input field 141, as a business card partial character string corresponding to the piece. In this example, it is assumed that the operator has input a character string "Suzuki", to the character string input field 141 of one of the input field pairs 143.

[0182] Furthermore, if the operator inputs item information of the input text to the item input field 142, the accepting unit 201 accepts the input item information. For example, it is assumed that a master table or the like having multiple item information applicable to business card partial character strings is stored in advance in an unshown storage medium or the like. In response to the operation

table of the item information, for example, the operator may delete the piece information, for example, without inputting a business card partial character string or the like with respect to this piece. Alternatively, the operator inputs a predesignated character string (e.g., a character string "others", "logo", etc.) as a business card partial character string, and further inputs predesignated item information (e.g., "others", "logo", etc.). The business card management server 10 that has received the partial business card information containing the business card partial character string and the item information may delete the information contained in the partial business card information, for example. Note that the piece generating unit 103 may not generate any piece from information that cannot be converted into characters in advance by OCR processing or the like.

[0185] The piece generating unit 103 may not generate any piece from a portion in which information cannot be converted into a character string, such as a logo mark. For example, no piece may be generated from a portion that cannot be recognized in OCR processing or the like, or in which the recognition rate is a threshold or less. Furthermore, no piece may be generated from a portion in which the size of a minimum rectangle surrounding an image or the like is a threshold or more.

[0186] If the operator clicks on the complete button 144 using a mouse or the like, the accepting unit 201 judges whether or not a business card partial character string has been accepted. In this example, the character string "Suzuki" has been accepted, and, thus, it is judged that a business card partial character string has been accepted. The accepting unit 201 judges whether or not item information has been accepted with respect to each accepted business card partial

character string. In this example, the item information "family name" has been accepted as item information corresponding to the character string "Suzuki", and, thus, it is judged that item information has been accepted.

[0187] As described above, in this example, the accepting unit 201 has accepted a business card partial character string and item information corresponding to this business card partial character string. Accordingly, the partial business card information transmitting unit 204 transmits partial business card information having a pair of the partial business card character string "Suzuki" and the item information "family name" corresponding to this partial business card character string accepted by the accepting unit 201, and the business card identifier "0010006" contained in the piece information, to the business card management server 10. If the accepting unit 201 has not accepted at least one of the partial business card information and the item information, information is not transmitted to the business card management server 10, and, for example, the piece output unit 203 displays a message or the like for prompting input of such information, on the monitor 203a or the like. If the accepting unit 201 has accepted multiple pairs of the business card partial character string and the item information, the partial business card information transmitting unit 204 may transmit, for each pair of the business card partial character string and the item information, partial business card information having the business card identifier, to the business card management server 10. The partial business card information transmitting unit 204 may transmit partial business card information further having the input terminal identifier of that terminal, stored in advance in an unshown storage unit or the like.

[0188] The other input terminals 20 that have received piece information also perform similar processing.

[0189] The partial business card information receiving unit 105 of the business card management server 10 receives the partial business card information, from the input terminal 20 with the input terminal identifier being "OP0004". The partial business card information receiving unit 105 judges whether or not at least a predesignated number of partial business card information each having a pair of a business card identifier and item information matching the pair of the business card identifier "0010006" and the item information "family name" contained in the received partial business card information are stored in an unshown storage unit in which received partial business card information is to be stored. The predesignated number is a number obtained by subtracting 1 from the number of transmissions of the same piece information (2, in this example), and, in this example, the predesignated number is 1. In this specific example, the same piece information is transmitted to multiple (two, in this example) different input terminals 20, and, thus, if the item information that is input at the input terminal 20 with respect to this piece is correct, partial business card information having a pair of the same business card identifier and the same item information may be stored. If partial business card information having a pair of the same business card identifier and the same item information is not stored, the received partial business card information is accumulated in this unshown storage unit.

[0190] For example, it is assumed that partial business card information having a pair of the same business card identifier and the same item information is already stored. The determination judging unit 107 reads the determination condition stored in the determination condition storage unit 106. Then, the

business card partial character string contained in the partial business card information having the pair of the same business card identifier and the same item information is read from the unshown storage unit, and it is judged whether or not the read determination condition is satisfied by this business card partial character string and the business card partial character string contained in the received partial business card information. It is assumed that the read determination condition is a condition indicating a full match. If the business card partial character string read from the partial business card information stored in the unshown storage unit is "Suzuki", this business card partial character string and the business card partial_character string read from the received partial business card information, which is "Suzuki", fully match each other, and, thus, the determination judging unit 107 judges that the determination condition is matched. Accordingly, the business card partial character string accumulating unit 110 accumulates the matching business card partial character string "Suzuki", the received item information "family name", and the business card identifier "0010006" in association with one another in the business card information storage unit 101.

[0191] FIG. 15 is a table showing business card information management information for managing business card partial_character string, item information, and business card identifiers accumulated in the business card information storage unit 101. The business card information management information has items "business card ID", "item", and "character string". In the table, "business card ID" is a business card identifier, "item" is item information, and "character string" is a business card partial character string.

[0192] In this manner, the business card partial character string corresponding to the piece of the business card image is accumulated in the business card information storage unit 101. Accordingly, information on characters shown in the business card image can be converted into character strings, that is, text data and accumulated.

[0193] If the partial business card information receiving unit 105 has received multiple partial business card information from one input terminal 20, the determination judging unit 107 performs similar processing for each set of partial business card information.

[0194] For example, a case will be described in which the determination judging unit 107 judges that the business card partial_character strings compared with each other do not match the determination condition, that is, the business card partial character strings compared with each other do not fully match each other. For example, it is assumed that the business card partial_character strings compared with each other are "Suzuki" and "Suzumoto". If they do not match each other, the business card image transmitting unit 109 acquires a pair of the item information "family name" and the business card identifier "0010006" contained in the partial business card information received by the partial business card information receiving unit 105, and further reads the business card image "U001NAME12.png" corresponding to this business card identifier "0010006" from the business card information storage unit 101. Note that all of partial business card information that are judged not to match each other may be deleted.

[0195] The business card image transmitting unit 109 transmits input prompting information having the read business card image "U001NAME12.png", and the

pair of the item information "family name" and the business card identifier "0010006", in association with each other, to one privileged input terminal 30. The business card image contained in the input prompting information is an image in which all information shown on the business card is recognizable. For example, the business card image is a business card image in a state of being stored in the business card information storage unit 101. The input prompting information may further have information such as a comment or an instruction for asking the privileged operator to perform input.

[0196] FIG. 16 is a table showing privilege identifier management information for managing privilege identifiers stored in the privilege identifier storage unit 108. The privilege identifier management information is a list of privilege identifiers of the privileged input terminals 30. The privilege identifiers are input terminal identifiers corresponding to the privileged input terminals 30, among the input terminal identifiers shown in FIG. 12.

[0197] The business card image transmitting unit 109 reads one privilege identifier from among the privilege identifiers managed by the privilege identifier management information shown in FIG. 16, and transmits the business card image and the pair of the item information and the business card identifier to the privileged input terminal 30 indicated by the read privilege identifier. There is no limitation on the procedure in which the business card image transmitting unit 109 reads one privilege identifier. For example, a privilege identifier may be selected at random, or a privilege identifier selected in the previous transmission may be provided with information such as a flag, so that a privilege identifier whose privilege identifier value is sorted to be arranged next the privilege identifier selected in the previous transmission may be selected. The sorting

may be any sorting, and examples thereof include sorting in ascending order or descending order of privilege identifier values. In this example, it is assumed that the business card image transmitting unit 109 selects "OP1001" as one privilege identifier, and transmits the business card image and the pair of the item information and the business card identifier to the privileged input terminal with this privilege identifier.

[0198] The input prompting information receiving unit 206 of the privileged input terminal 30 with the privilege identifier being "OP1001" receives the input prompting information having the business card image "U001NAME12.png", and the pair of the item information "family name" and the business card identifier "0010006", from the business card management server 10.

[0199] The input prompting information output unit 207 in this example displays the received input prompting information on a monitor or the like. In this example, the received item information is also output. Furthermore, the character string input field 141 for a business card partial character string and the like are also displayed as in the piece output unit 203 shown in FIG. 14.

[0200] FIG. 17 is a view showing a display example of input prompting information by the input prompting information output unit 207.

[0201] It is assumed that the privileged operator using the privileged input terminal 30 with the privilege identifier being "OP1001" sees a business card image 171, which is input prompting information, and item information 172 that are displayed on a monitor 207a, searches for a portion in which "family name" is displayed in the business card image, and inputs the character string "Suzuki" to the character string input field 141. Then, the privileged operator clicks on the complete button 144.

[0202] The privileged partial business card information transmitting unit 208 transmits privileged partial business card information that is partial business card information having the pair of the item information "family name" and the business card identifier "0010006" received by the input prompting information receiving unit 206, and the business card partial character string accepted by the privileged accepting unit 205, to the business card management server 10. The privileged partial business card information may further have the privileged terminal identifier of that terminal.

[0203] The partial business card information receiving unit 105 of the business card management server 10 receives the privileged partial business card information from the privileged input terminal 30. The business card partial character string accumulating unit 110 accumulates the business card partial character string, the item information, and the business card identifier contained in the privileged partial business card information received by the partial business card information receiving unit 105, in association with each other in the business card information storage unit 101. In this manner, the business card partial character string input by the privileged operator is accumulated as a reliable business card partial character string, without being subjected to the above-described judgment processing for determination.

[0204] The business card image transmitting unit 109 detects a record with "date" being a predesignated number of days (e.g., 7 days) before the current date, from among the records in the business card image management information shown in FIG. 8, and acquires a value of "business card identifier" of the detected record. For example, if the current date is "2012/02/26", a record at the date "2012/02/19" is searched for. In this example, it is assumed that two records are

detected, and "0020003" and "0230018", which are the values of "business card ID" of the records, are acquired. The detected records may be provided with unshown flag information or the like such that the records are not detected again.

[0205] The business card image transmitting unit 109 searches for a record with "business card ID" matching "0020003", which is one of the acquired values of "business card ID", in the business card partial character string management information shown in FIG. 15. The business card image transmitting unit 109 acquires a value of "item" of the detected record. It is assumed that "family name", "given name", "address 1", "address 2", "mail address", and "telephone number" are acquired. Then, item information not matching any value of "item" of the detected records is detected from among predesignated one or at least two item information. If the predesignated item information is "family name", "given name", "company name", "address 1", "address 2", "telephone number", "facsimile number", and "mail address", the business card image transmitting unit 109 detects "company name" and "facsimile number" as the item information not matching any value. The business card image transmitting unit 109 transmits the detected item information, the business card identifier "0020003", and the input prompting information having the business card image corresponding to this business card identifying information, as described above, to one privileged input terminal 30.

[0206] The business card image transmitting unit 109 performs similar processing also for "0230018", which is the above-detected "business card ID" other than "0020003".

[0207] In the privileged input terminal 30, as described above, if the input prompting information receiving unit 206 receives the input prompting

information, the item information, and the business card identifier, the input prompting information output unit 207 displays the input prompting information and each set of item information. Then, the business card partial_character string input by the privileged operator with respect to each set of displayed item information is accepted by the privileged accepting unit 205. The partial business card information transmitting unit 204 transmits privileged partial business card information each having the pair of the business card partial_character string accepted for each set of item information and the item information, and the business card identifier, to the business card management server 10.

[0208] The processing by the business card management server 10 that has accepted this privileged partial business card information is as described above, and, thus, a description thereof has been omitted.

[0209] Accordingly, business card partial_character strings with respect to items such as essential items that have not been input when a predetermined period of time has passed can be compensated for by a privileged operator.

[0210] As described above, according to this embodiment, the business card management server transmits multiple pieces acquired from one business card image respectively to different multiple input terminals 20, and causes the operators of the input terminals 20 to input business card partial character strings corresponding to the respective piece. Accordingly, one operator is prevented from recognizing the whole of one business card image, so that the privacy of information on the business card can be ensured.

[0211] In the foregoing embodiment, when the piece generating unit 103 generates pieces, character strings indicating characters shown in regions that

are recognizable in the pieces may be acquired using OCR processing or the like, and the piece transmitting unit 104 may transmit piece information further containing the character strings to the input terminals 20. Then, each input terminal 20 may accept the character string acquired from this piece, as a tentative business card partial character string corresponding to the piece, and may be allowed to correct this tentative business card partial_character string according to input at the accepting unit. Alternatively, the input terminal 20 may display the character string acquired from this piece, as an exemplary business card partial_character string corresponding to the piece. Accordingly, input by the operator can be assisted.

[0212] Furthermore, the business card management server 10 may transmit partial business card information containing the business card partial_character string input with respect to one piece by one operator using an input terminal 20, together with the piece, to an input terminal 20 of another operator, and causes the other operator to check and correct the business card partial character string contained in the partial business card information. The input terminal 20 of the other operator outputs the piece received by the piece receiving unit 202 and the business card partial_character string of the partial business card information, and prompts the other operator to check the business card partial character string or to input correction thereof. If the accepting unit 201 of the input terminal 20 accepts information indicating the check or correction of the business card partial character string from the other operator, the partial business card information transmitting unit 204 transmits the information indicating the check and the received partial business card information, or the corrected partial business card information and information

indicating completion of the correction, to the business card management server 10.

[0213] If the partial business card information receiving unit 105 receives the partial business card information, and the information indicating the check or the information indicating completion of the correction, the business card partial character string accumulating unit 110 may accumulate this partial business card information as described above. Accordingly, multiple operators can check the business card partial_character string input with respect to one piece. The check may be considered as so-called verification or the like. Note that transmission of the partial business card_information from the other input terminal 20 may be considered as also meaning transmission of the information indicating the check or the information indicating completion of the correction.

[0214] In the foregoing embodiment, for example, the determination judging unit 107 determines partial business card information according to whether or not there are matches with a business card partial character string and item information of the partial business card information. However, in the present invention, whether or not there is a match with a business card partial character string contained in the partial business card information and whether or not there is a match with item information may be individually judged. If it is judged that there is a match only with either a business card partial character string or item information, only that matching information may be determined and the remaining undetermined portion of the partial business card information may be input by a next operator such as a privileged operator. For example, if there is a match with item information but not with a business card partial character string,

the business card partial character string may be input by the next operator. The same is applied to embodiments below.

[0215] In this embodiment, a case in which the business card management system 1 includes multiple input terminals 20 and the piece transmitting unit 104 transmits two or more piece information corresponding to one business card image respectively to different input terminals 20 was described as an example. However, in the present invention, the number of input terminals may be one or more, and the piece transmitting unit 104 may transmit two or more piece information corresponding to one business card image respectively to the one or more input terminals 20. Since each piece is an image in which only part of a business card image is recognizable, even if multiple pieces generated from the same business card image are compared by sight or the like, it is difficult to judge whether or not the compared pieces are pieces generated from the same business card image. Accordingly, even if piece information respectively having multiple pieces generated from the same business card image are transmitted to the input terminal 20 used by one operator, the operator cannot judge whether or not the pieces contained in the piece information for which the business card partial character strings are to be input are pieces corresponding to the same business card image. Accordingly, the operator cannot collect information written on one business card, from multiple pieces corresponding to one business card image, so that the privacy of information on the business card can be protected. In this case, it is preferable that, specifically, the piece output unit 203 of the input terminal 20 cannot output the business card identifier contained in the piece information in a manner recognizable to the operator, preferably, cannot output the business card identifier. The reason for this is that, if the business card

[0227] The foreign business card image transmitting unit 114 transmits a business card image to the foreign business card management server 10b, which is one business card management server different from the business card management server 10a, according to the language judged by the language judging unit 113. For example, the foreign business card image transmitting unit 114 transmits a business card image whose language has been judged, to one foreign business card management server 10b associated with the judged language. Specifically, the foreign business card image transmitting unit 114 transmits business card information having the business card image. The transmitting to the foreign business card management server 10b according to the language judged by the language judging unit 113 is a concept that includes not transmitting to the foreign business card management server 10b according to the judged language.

[0228] For example, if the judged language is a predesignated language, the foreign business card image transmitting unit 114 does not transmit a business card image in this language to the foreign business card management server 10b, and, if not, the foreign business card image transmitting unit 114 transmits the business card image to the foreign business card management server 10b.

[0229] Note that one business card image may be transmitted to a foreign business card management server as follows. For example, management information for associating one or at least two languages with server identifiers of one or at least two foreign business card management servers in one-to-one or many-to-one association is stored in advance in an unshown storage unit or the like. The foreign business card image transmitting unit 114 may acquire a server identifier corresponding to the language of one business card image judged

same reference numerals as in FIG. 3 denote the same or corresponding steps, and, thus, in this example, a detailed description thereof has been omitted.

[0238] (Step S1901) The language judging unit 113 judges a language in a business card image.

[0239] (Step S1902) The foreign business card image transmitting unit 114 judges whether or not the language judged in step 1901 is a predesignated language. If it is a predesignated language, the procedure advances to step S1903, and, if not, the procedure advances to step S302.

[0240] (Step S1903) The foreign business card image transmitting unit 114 transmits the business card image to the foreign business card management server 10b. The procedure returns to step S301.

[0241] Note that the procedure is terminated by powering off or an interruption at completion of the process in the flowchart in FIG. 19.

[0242] The processing by the foreign business card management server 10b is similar to that in the flowchart in FIG. 3, except that the business card image receiving unit 111 receives a business card image transmitted from the business card management server 10a.

[0243] With the business card management system 1a according to this embodiment as described above, if the language in a business card image is a predesignated language (or is not a predesignated language), the business card image is transmitted to the foreign business card management server 10b. Accordingly, the business card image is stored in the foreign business card management server 10b, and pieces generated from the business card image are transmitted to the input terminals 20β, which are part of the input terminals 20 corresponding to the foreign business card management server 10b, and business

card partial character strings are input. Accordingly, if operators or the like familiar with reading and the like of the predesignated language are allocated as operators using the input terminals 20β, the business card partial character strings can be efficiently and accurately input.

[0244] In this embodiment, the business card management server 10a judges whether or not to transmit a business card image to the foreign business card management server 10b or the like according to the language. However, in the present invention, a business card information processing server (not shown) may be provided in order to transmit a business card image selectively to a business card management server according to the language of information written on the business card. That is to say, this business card information processing server may be considered as a server for controlling the business card management servers 10 that manage business card images.

[0245] The business card information processing server (not shown) is a server, for example, including the

business card information storage unit 101, the language judging unit 113, and the foreign business card image transmitting unit 114. The business card processing server (not shown) may further include the business card image receiving unit 111. This business card information processing server and multiple business card management servers may be considered to form a business card management system. Alternatively, this business card information processing server, multiple business card management servers, and multiple input terminals may be considered to form a business card management system.

the region obtained by connecting the coordinates of the four corners of the cutout frame 231 is acquired. Alternatively, the cutout may be considered as deleting the image outside the cutout frame.

[0291] Next, the business card image acquiring unit 25 changes the shape of the cut out image, thereby acquiring a business card image with a predesignated resolution, having the same aspect ratio as the business card.

[0292] FIG. 24 shows a view of an image cut out by the business card image acquiring unit 25 from the captured business card image "U101NAME05.png" (FIG. 24(a)), and a view of a business card image obtained by changing the shape of the cut out image (FIG. 24(b)).

[0293] The business card image accumulating unit 26 accumulates the business card image shown in FIG. 24(b), acquired by the business card image acquiring unit 25, in the second business card image storage unit 22. In this example, this image is provided with the same file name as the captured business card image before being cut out, and is accumulated in association with the same user ID "U101".

[0294] The business card image acquiring apparatus 2 performs similar processing also on the other captured business card images stored in the first business card image storage unit 21.

[0295] Accordingly, second business card image management information for managing second business card images stored in the second business card image storage unit 22, for example, similar to the first business card image management information shown in FIG. 22, is obtained.

[0296] The business card image acquiring apparatus 2 may transmit the business card images stored in the second business card image storage unit 22, for example, at a predesignated time or according to an instruction of the operator or the like,