DESCRIPTION

INFORMATION PROCESSING DEVICE, INFORMATION PROCESSING METHOD, AND PROGRAM

TECHNICAL FIELD

[0001]

The present invention relates to an information processing device, an information processing method, and a program, and more specifically, to an information processing device, an information processing method, and a program which enable a consumer or a food provider to readily recognize levels of security and safety of food products.

BACKGROUND

[0002]

In recent years, food fraud related to an origin, ingredients, or a use-by date or a best-before date of a food product, suitability of a food product as food, and the like have been uncovered one after another. Accordingly, there is an urgent need to improve levels of security and safety of food products.

[0003]

In order to improve the levels of security and safety of food products, consumers and food providers must be able to readily recognize the levels of security and safety of food products.

[0004]

Conventionally, there is an information display system that calls customers' attention to a food management structure by

measuring environmental characteristics such as temperature, humidity, and illuminance of a selling floor space of food products and displaying distribution information of the environmental characteristics (for example, refer to Patent Document 1).

[0005]

Patent Document 1: Japanese Patent Application Laid-open No. 2009-251811

[0006]

However, since such an information display system only displays distribution information of environmental characteristics, a consumer or a food provider must use his/her own judgment regarding levels of security and safety of food products that result from such environmental characteristics. Therefore, it is not easy for a consumer or a food provider to recognize the levels of security and safety of food products.

DISCLOSURE OF THE INVENTION

[0007]

The present invention has been made in consideration of such circumstances, and an object thereof is to enable a consumer or a food provider to readily recognize the levels of security and safety of food products.

In a first aspect of the present invention, there is provided an information processing device comprising: an acquiring unit that acquires results of a toxicity inspection, an origin inspection, a freshness inspection, a pre-shipment inspection, and an ingredient inspection of a food product handled by a facility that prepares and provides the food product and a sanitary inspection of the facility; a computing unit that computes a security level of the food product provided at the facility, based on results of the toxicity inspection, the freshness inspection, the pre-shipment inspection, and the sanitary inspection of the facility and a safety level of the food product provided at the facility, based on results of the origin inspection, the sanitary inspection of the facility, the ingredient inspection, and the freshness inspection; and a display control unit that causes the levels of security and safety of the food product to be displayed, wherein at least one inspection of coliform bacterium, staphylococcus aureus, salmonella, and vibrio parahaemolyticus and an inspection of stool sample submission rate of personnel at the facility are included in the sanitary inspection of the facility.

[0008]

Herein disclosed is an information processing device comprising: an acquiring unit that acquires results of a plurality

of inspections related to a food product at a predetermined facility; a computing unit that computes levels of security and safety of the food product based on the results of the plurality of inspections; and a display control unit that causes the levels of security and safety of the food product to be displayed.

In a second aspect of the present invention, there is provided an information processing method comprising the steps, performed by an information processing device, of: acquiring results of a toxicity inspection, an origin inspection, a freshness inspection, a pre-shipment inspection, and an ingredient inspection of a food product handled by a facility that prepares and provides the food product and a sanitary inspection of the facility; computing a security level of the food product provided at the facility, based on results of the toxicity inspection, the freshness inspection, the pre-shipment inspection, and the sanitary inspection of the facility and a safety level of the food product provided at the facility, based on results of the origin inspection, the sanitary inspection of the facility, the ingredient inspection, and the freshness inspection ; and causing the levels of security and safety of the food product to be displayed, wherein at least one inspection of coliform bacterium, staphylococcus aureus, salmonella, and vibrio parahaemolyticus and an inspection of stool sample submission rate of personnel at the facility are included in the sanitary inspection of the facility.

In a third aspect of the present invention, a program that causes a computer to execute the method steps of the second aspect of the present invention is disclosed.

[0009]

[0010]

In an embodiment, results of a plurality of inspections related to a food product at a predetermined facility are acquired, levels of security and safety of the food product are computed based on the results of the plurality of inspections, and the levels of security and safety of the food product are displayed.

[0011]

In an embodiment, a consumer or a food provider is able to readily recognize the levels of security and safety of food products.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

FIG. 1 is a block diagram showing a configuration example of an embodiment of an information processing system to which the present invention is applied;

FIG. 2 is a block diagram showing a hardware configuration example of an inspection result managing device shown in FIG. 1;

FIG. 3 is a block diagram showing a functional configuration example of a CPU 21;

FIG. 4 is a diagram showing a security level addition rate and a safety level addition rate;

FIG. 5 is a diagram showing an example of a store list screen;

FIG. 6 is a diagram showing an example of a store screen;

FIG. 7 is a diagram showing an example of a store screen;

FIG. 8 is a diagram showing an example of a store screen;

FIG. 9 is a diagram showing an example of a store screen;

FIG. 10 is a diagram showing an example of a store screen;

FIG. 11 is a diagram showing an example of a store screen;

FIG. 12 is a diagram showing an example of a store screen;

FIG. 13 is a diagram showing an example of an improvement schedule screen;

FIG. 14 is a flow chart for explaining a TSS result store list screen transmitting process performed by a CPU;

FIG. 15 is a flow chart for explaining a certificate screen transmitting process performed by a CPU;

FIG. 16 is a flow chart for explaining a TSS store screen transmitting process performed by a CPU; and

FIG. 17 is a flow chart for explaining an improvement schedule screen transmitting process performed by a CPU.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0013]

<Embodiment>

[Configuration example of embodiment of information processing system]

FIG. 1 is a block diagram showing a configuration example of an embodiment of an information processing system to which the present invention is applied.

[0014]

An information processing system 10 shown in FIG. 1 is constructed by connecting an inspection result managing device 11 and a terminal device 12 to each other via a network or the like.

[0015]

The inspection result managing device 11 is, for example, a server installed at an inspection company which performs food inspection and which provides an objective assessment of a result of the food inspection. On the other hand, the terminal device 12 is, for example, a personal computer used by a food provider or a consumer.

[0016]

While examples of a food provider include a food producer, a distributor, a retailer, a facility that prepares and provides food products (for example, a food service provider or a restaurant), and a food factory that processes and sells food products, the following description will be given on the premise that the food provider is a restaurant.

[0017]

The inspection result managing device 11 manages user-inputted results of inspections related to food products (hereinafter referred to as food-related inspections) which are performed on food products handled by a restaurant such as a toxicity inspection, an origin inspection, a freshness inspection, a pre-shipment inspection, a total sanitation system (hereinafter referred to as a TSS), and an ingredient inspection.

[0018]

A toxicity inspection is an inspection for pesticide residue, antibiotic residue, mold toxicity, food additives, and the like in a food product. An inspection for pesticide residue is an inspection to check whether or not pesticide residue is detected from an object such as an agricultural produce or processed food, and an inspection for antibiotic residue is an inspection to check whether or not antibiotic residue is detected from an object such as a marine product or an agricultural produce. In addition, an inspection for mold toxicity is an inspection to check whether or not aflatoxin is detected from a food product, and an inspection for a food additive is an inspection to check whether or not an additive is detected from a food product in a quantity exceeding a standard specified by the Food Sanitation Act.

[0019]

Furthermore, an origin inspection is an inspection based on a feeding habit analysis of stable isotopes to check whether or not a displayed origin and an actual origin of a food product are consistent with each other. A freshness inspection is an

inspection to check whether or not a K value of a food product is 15 or lower, an inspection to check whether or not a histamine content is 38 or higher, or the like. A pre-shipment inspection is an inspection to check whether or not toxin PCR is detected from a food product prior to shipment.

[0020]

A TSS includes a kitchen facility inspection that is an inspection of a state of control or the like of a kitchen of a restaurant, a kitchen sanitary inspection that is an inspection of cleanliness or the like of the kitchen, a kitchen personnel inspection that is an inspection of a sanitary status or the like of kitchen personnel, a customer service facility inspection that is an inspection of cleanliness or the like of a customer service location, a customer service personnel inspection that is an inspection of a sanitary status or the like of customer service personnel, an sanitary indicator bacteria inspection that is an inspection for sanitary indicator bacteria on inspection equipment used to wipe a facility, a food poisoning-causative bacteria inspection that is an inspection for food poisoning-causative bacteria on inspection equipment used to wipe a facility, a stool sample submission rate inspection that is an inspection of a stool sample submission rate by all personnel, and the like.

[0021]

In addition, an ingredient inspection is an inspection to check whether or not basic ingredients, vitamins, minerals, fatty acids, and the like of a food product are inconsistent with displayed

contents.

[0022]

The inspection result managing device 11 receives requests and information transmitted from the terminal device 12. In response to a request from the terminal device 12, the inspection result managing device 11 generates screen information for displaying various screens based on a result of the food-related inspection, and transmits the screen information to the terminal device 12.

[0023]

The terminal device 12 receives the screen information transmitted from the inspection result managing device 11, and displays various screens based on the screen information. In addition, the terminal device 12 transmits requests and information to the inspection result managing device 11 according to user instructions.

[0024]

[Hardware configuration example of inspection result managing device]

FIG. 2 is a block diagram showing a hardware configuration example of the inspection result managing device 11 shown in FIG. 1.

[0025]

The inspection result managing device 11 shown in FIG. 2 has a built-in CPU (Central Processing Unit) 21, and an input/output interface 25 is connected to the CPU 21 via a bus 24.

[0026]

When a command is inputted via the input/output interface 25 due to an operation of an input section 26 by the user or the like, the CPU 21 executes a program stored in a ROM (Read Only Memory) 22 in accordance with the command. Alternatively, the CPU 21 loads a program stored in a storage section 28 to a RAM (Random Access Memory) 23 and executes the loaded program.

[0027]

Accordingly, the CPU 21 executes various processes. As necessary, for example, the CPU 21 causes results of the processes to be outputted from an output section 27, transmitted from a communication section 29, or stored in a storage section 28 via the input/output interface 25.

[0028]

The input section 16 is constituted by a keyboard, a mouse, a microphone, or the like. In addition, the output section 17 is constituted by an LCD (Liquid Crystal Display), a speaker, or the like.

[0029]

Programs executed by the CPU 21 can be stored (recorded) in a removable medium 31. Such a removable medium 31 can be provided as so-called package software. Examples of the removable medium 31 include a flexible disk, a CD-ROM (Compact Disc Read Only Memory), an MO (Magneto Optical) disk, a DVD (Digital Versatile Disc), a magnetic disk, and a semiconductor memory.

[0030]

Furthermore, besides installing on a computer via a drive 30 from the removable medium 31 described above, programs executed by the CPU 21 may be downloaded to the inspection result managing device 11 via a communication network or a broadcast network and installed into the built-in storage unit 28. In other words, for example, the programs may be wirelessly transferred to the inspection result managing device 11 from a download site via a satellite for satellite digital broadcasting or transferred by a wired transfer to the inspection result managing device 11 via a network such as a LAN (Local Area Network) or the Internet.

[0031]

Moreover, although not shown, a hardware configuration of the terminal device 12 is similar to that of the inspection result managing device 11 shown in FIG. 2.

[0032]

[Functional configuration example of inspection result managing device]

FIG. 3 is a block diagram showing a configuration example of a function for transmitting screen information to the terminal device 12 which is realized by the CPU 21 of the inspection result managing device 11.

[0033]

In FIG. 3, the CPU 21 is constituted by an acquiring section 51, a security level/safety level computing section 52, a storage control section 53, a receiving section 54, a read control section 55, a store list screen generating section 56, a store screen

generating section 57, an improvement schedule screen generating section 58, and a transmitting section 59 (a display control unit).

[0034]

The acquiring section 51 acquires an inspection result or the like of a food-related inspection inputted by an operation of the input section 26 by the user, and supplies the inspection result to the storage control section 53. In addition, the acquiring section 51 supplies the inspection result of the food-related inspection to the security level/safety level computing section 52. An inspection result of a food-related inspection is expressed as a score on a scale in which a predetermined score (for example, 100) is a perfect score.

[0035]

The security level/safety level computing section 52 computes levels of security and safety based on an inspection result supplied from the acquiring section 51.

[0036]

Specifically, from the read control section 55, the security level/safety level computing section 52 acquires information representing a food-related inspection (hereinafter referred to as a food-related inspection for security level) belonging to a group of food-related inspections (hereinafter referred to as a security level group) that is used to compute a security level and an addition rate corresponding to each food-related inspection for security level (hereinafter referred to as a security level addition rate) which are stored in advance in the storage section

28. In addition, the security level/safety level computing section 52 adds a result of each food-related inspection for security level among the inspection results from the acquiring section 51 at a security level addition rate corresponding to the food-related inspection for security level, and sets a value obtained by the addition as a security level.

[0037]

Furthermore, from the read control section 55, the security level/safety level computing section 52 acquires information representing a food-related inspection (hereinafter referred to as a food-related inspection for safety level) belonging to a group of food-related inspections (hereinafter referred to as a safety level group) that is used to compute a safety level and an addition rate corresponding to each food-related inspection for safety level (hereinafter referred to as a safety level addition rate) which are stored in advance in the storage section 28. In addition, the security level/safety level computing section 52 adds a result of each food-related inspection for safety level among the inspection results from the acquiring section 51 at a safety level addition rate corresponding to the food-related inspection for safety level, and sets a value obtained by the addition as a safety level. Subsequently, the security level/safety level computing section 52 supplies the levels of security and safety to the storage control section 53.

[0038]

The storage control section 53 supplies an inspection result

or the like supplied from the acquiring section 51 to the storage section 28, and causes the storage section 28 to store the inspection result. In addition, the storage control section 53 supplies the levels of security and safety stored from the security level/safety level computing section 52 to the storage section 28 in association with the inspection result, and causes the storage section 28 to store the levels of security and safety. Furthermore, the storage control section 53 supplies an achievement rate of an improvement schedule (to be described later) of a predetermined restaurant, which is supplied from the receiving section 54, to the storage section 28, and causes the storage section 28 to store the achievement rate in association with an inspection result of the restaurant.

[0039]

An improvement schedule is a schedule of actions that are taken in order to improve an inspection result, and an improvement schedule is stored in the storage section 28 in association with each inspection result.

[0040]

Transmission requests for various screen information received from the terminal device 12 via the communication section 29 are inputted to the receiving section 54. The receiving section 54 supplies the transmission requests to the read control section 55. In addition, an achievement rate of an improvement schedule received from the terminal device 12 via the communication section 29 is inputted to the receiving section 54. The receiving section

54 supplies the achievement rate to the storage control section 53.

[0041]

The read control section 55 reads information representing a food-related inspection for security level and a security level addition rate, and information representing a food-related inspection for safety level and a safety level addition rate, from the storage section 28. In addition, the read control section 55 supplies the information representing a food-related inspection for security level, the security level addition rate, the information representing a food-related inspection for safety level, and the safety level addition rate to the security level/safety level computing section 52.

[0042]

When a transmission request for screen information of a store list screen which expresses inspection results of a plurality of restaurants as a list is supplied from the receiving section 54, the read control section 55 reads the inspection results and the like of the plurality of restaurants from the storage section 28 and supplies the inspection results to the store list screen generating section 56. The inspection results displayed on a store list screen may be inspection results of all restaurants stored in the storage section 28 or only inspection results of restaurants belonging to a predetermined group (for example, chain stores or stores in the same trade).

[0043]

In addition, when a transmission request for screen information of a store screen which represents an inspection result of a single restaurant is supplied from the receiving section 54, the read control section 55 reads the inspection result of the restaurant as well as the levels of security and safety associated thereto from the storage section 28 and supplies the inspection result, the security level, and the safety level to the store screen generating section 57.

[0044]

Furthermore, when a transmission request for screen information of an improvement schedule screen which represents an improvement schedule of a single restaurant is supplied from the receiving section 54, the read control section 55 searches for and reads an improvement schedule corresponding to a search result of the restaurant from an improvement table, and supplies the improvement schedule to the improvement schedule screen generating section 58.

[0045]

The store list screen generating section 56 generates screen information of a store list screen based on the inspection results and the like supplied from the read control section 55 and supplies the screen information to the transmitting section 59.

[0046]

The store screen generating section 57 generates screen information of a store screen based on the inspection result and the levels of security and safety associated thereto supplied from

the read control section 55, and supplies the screen information to the transmitting section 59.

[0047]

The improvement schedule screen generating section 58 generates screen information of an improvement schedule screen based on the improvement schedule supplied from the read control section 55 and supplies the screen information to the transmitting section 59.

[0048]

The transmitting section 59 supplies screen information of a store list screen from the store list screen generating section 56, screen information of a store screen from the store screen generating section 57, or screen information of an improvement schedule from the improvement schedule screen generating section 58 to the communication section 29, and transmits the screen information to the terminal device 12 that had requested the transmission of the screen information. Accordingly, a store list screen, a store screen, or an improvement schedule screen is displayed on the terminal device 12.

[0049]

In other words, by transmitting screen information of a store list screen, a store screen, or an improvement schedule screen to the terminal device 12, the transmitting section 59 causes the terminal device 12 to display the screen.

[0050]

[Description of computation of levels of security and safety]

FIG. 4 is a diagram showing a security level addition rate and a safety level addition rate.

[0051]

As shown in A of FIG. 4, the security level group consists of origin inspection, TSS, ingredient inspection, and freshness inspection. In addition, in the example shown in FIG. 4, the security level addition rates of origin inspection, TSS, ingredient inspection, and freshness inspection are, respectively, 10%, 50%, 10%, and 30%. Therefore, the security level/safety level computing section 52 calculates a security level as a proportion, to a perfect score, of a score obtained by summing 10% of a result of an origin inspection, 50% of a result of a TSS, 10% of a result of an ingredient inspection, and 30% of a result of a freshness inspection.

[0052]

Moreover, security levels are classified into a plurality of assessed values by the store screen generating section 57. In the example shown in FIG. 4, the security levels are classified into four assessed values. Specifically, when the security level is 60% or less, the security level is classified as an assessed value of zero stars, and when the security level is 60% or more and less than 75%, the security level is classified as an assessed value of one star. In addition, when the security level is 75% or more and less than 95%, the security level is classified as an assessed value of two stars, and when the security level is 95% or more, the security level is classified as an assessed value of three stars. The larger the number of stars, the higher the assessment.

[0053]

Furthermore, as shown in B of FIG. 4, the safety level group consists of toxicity inspection, freshness inspection, pre-shipment inspection, and TSS. In addition, in the example shown in FIG. 4, the safety level addition rates of toxicity inspection, freshness inspection, pre-shipment inspection, and TSS are, respectively, 10%, 30%, 10%, and 50%. Therefore, the security level/safety level computing section 52 calculates a safety level as a proportion, to a perfect score, of a score obtained by summing 10% of a result of a toxicity inspection, 30% of a result of a freshness inspection, 10% of a result of a pre-shipment inspection, and 50% of a result of a TSS.

[0054]

Moreover, in a similar manner to security levels, safety levels are also classified into a plurality of assessed values by the store screen generating section 57. In the example shown in FIG. 4, safety levels are classified into four assessed values in a similar manner to security levels.

[0055]

[Example of store list screen]

FIG. 5 is a diagram showing an example of a store list screen.

[0056]

First, a group selecting section 81, an inspection item selecting section 82, and a period input field 83 shown in FIG. 5 are displayed on the terminal device 12. The group selecting section 81 is operated when selecting a name of a group (for example,

a name of a chain store) which includes a plurality of restaurants corresponding to inspection results displayed on a store list screen. The names of groups selectable with the group selecting section 81 are those inputted by an operation of the input section 26 by the user together with inspection results as names of groups to which restaurants corresponding to the inspection results belong. Moreover, the names of the groups are stored in the storage section 28 in association with inspection results.

[0057]

In addition, the inspection item selecting section 82 is operated when selecting a name of an inspection corresponding to a search result displayed on the store list screen. The period input field 83 is operated when inputting a period of dates on which a food-related inspection corresponding to an inspection result displayed on the store list screen is performed. A date on which a food-related inspection is performed is inputted together with an inspection result by an operation of the input section 26 by the user, and is stored in the storage section 28 in association with the inspection result.

[0058]

When the group selecting section 81 and the inspection item selecting section 82 are operated, a transmission request for screen information of a store list screen that represents inspection results of an inspection, whose name had been selected with the inspection item selecting section 82, of a plurality of restaurants belonging to the group whose name had been selected

with the group selecting section 81 and which had been performed during the period selected with the period input field 83 is transmitted from the terminal device 12 to the inspection result managing device 11.

[0059]

In the example shown in FIG. 5, a name "A" is selected by the group selecting section 81 and a name "TSS" is selected by the inspection item selecting section 82. In addition, a period from December 1 to December 15 is selected in the period input field 83.

[0060]

In this case, in response to the transmission request from the terminal device 12, for example, the inspection result managing device 11 generates screen information of a store list screen 71 which includes a TSS result table 84 in addition to the group selecting section 81, the inspection item selecting section 82, and the period input field 83.

[0061]

The TSS result table 84 is a table describing contents corresponding to the respective items of "name of store/business", "result of overall judgment", "date performed", "date of result report", "kitchen facility", "kitchen sanitation", "kitchen personnel", "customer service facility", "customer service personnel", "sanitary indicator bacteria", "food poisoning-causative bacteria", "stool sample submission rate", and "improvement schedule".

[0062]

As contents of the item "name of store/business", store names of restaurants stored in the storage section 28 in association with the group name "A" are described. In the example shown in FIG. 5, "Tachikawa Empic branch", "Shinjuku Nishiki-cho branch", and "Gotanda Cats branch" are described. Moreover, on the store list screen 71, when the user of the terminal device 12 selects (by double-clicking or the like) a content of the item "name of store/business" using a mouse or the like (not shown), the terminal device 12 transmits a transmission request for screen information of a store screen of the restaurant corresponding to the selected store name to the inspection result managing device 11.

[0063]

As contents of the item "result of overall judgment", an overall judgment assessed value obtained based on inspection results of TSS of the respective restaurants belonging to the group with the group name "A" is described. While an average value of the respective inspection results of TSS is assumed as the overall judgment assessed value in this case, a weighted average value of the respective inspection results of TSS may be used instead. In such a case, for example, weights may be adopted which have the following descending order of magnitude: food poisoning-causative bacteria inspection, sanitary indicator bacteria inspection, kitchen sanitary inspection, customer service personnel inspection, kitchen personnel inspection, kitchen facility inspection, and customer service facility inspection.

[0064]

As contents of the item "date performed", dates on which TSS is performed which are stored in the storage section 28 in association with the inspection results of the respective restaurants belonging to the group with the group name "A" are described. In addition, dates on which the inspection results are reported are described as contents of the item "date of result report". A date of result report of an inspection result is a date on which the inspection result had been inputted by an operation of the input section 26 by the user, and is stored in the storage section 28 in association with the inspection result.

[0065]

As contents of items "kitchen facility", "kitchen sanitation", "kitchen personnel", "customer service facility", "customer service personnel", "sanitary indicator bacteria", "food poisoning-causative bacteria", and "stool sample submission rate", inspection results of kitchen facility inspections, kitchen sanitary inspections, kitchen personnel inspections, customer service facility inspections, customer service personnel inspections, sanitary indicator bacteria inspections, food poisoning-causative bacteria inspections, and stool sample submission rate inspections performed on the respective restaurants belonging to the group with the group name "A" are respectively described.

[0066]

When the user of the terminal device 12 selects the items

"kitchen facility", "kitchen sanitation", "kitchen personnel", "customer service facility", "customer service personnel", "sanitary indicator bacteria", "food poisoning-causative bacteria", and "stool sample submission rate", contents of the TSS result table 84 are sorted in an ascending or descending order of the selected item. Whether the sorting is to be performed in an ascending order or an descending order may be determined in advance or may be switched every time an item is selected.

[0067]

As contents of the item "improvement schedule", an achievement rate of an improvement schedule associated with an inspection result of each restaurant belonging to the group with the group name "A" is described.

[0068]

[Example of store screen]

FIGS. 6 to 12 are diagrams showing examples of a store screen.

[0069]

The store screen shown in FIG. 6 is a certificate screen 121 for certifying the levels of security and safety of a restaurant that is a processing object. A certificate is displayed on the certificate screen 121. The certificate includes a restaurant name, stars that are images representing an assessed value of a safety level, stars that are images representing an assessed value of a security level, and the like.

[0070]

As described above, since levels of security and safety are

displayed by numbers of stars on the certificate screen 121 shown in FIG. 6, a consumer or a food provider viewing the certificate screen 121 using the terminal device 12 can readily recognize the levels of security and safety of a restaurant.

[0071]

The store screens shown in FIGS. 7 to 12 are TSS store screens 122 for displaying a result of a TSS of a restaurant that is a processing object. The TSS store screens 122 shown in FIGS. 7 to 12 need only be displayed as a single screen, and all screens need not be simultaneously displayed. For example, the TSS store screens 122 shown in FIGS. 7 to 12 may be screens that are consecutively displayed when scrolled by the user of the terminal device 12.

[0072]

The TSS store screens 122 shown in FIGS. 7 to 12 display a date on which a TSS inspection had been performed and a date on which a report of an inspection result had been made, contents of the items "overall assessment", "point requiring improvement", "kitchen facility", "kitchen sanitation", "kitchen personnel", "customer service facility", "customer service personnel", "sanitary indicator bacteria", and "food poisoning-causative bacteria", and the like.

[0073]

As shown in FIG. 7, as contents of the item "overall assessment", a name of a restaurant that is a processing object, an overall judgment assessed value, a judgment corresponding to the overall

judgment assessed value, an overall comment, a radar chart representing a TSS result, and the like are displayed.

[0074]

A judgment corresponding to an overall judgment assessed value is decided according to, for example, whether the overall judgment assessed value exceeds a threshold or not. For example, with a threshold of 50 points, a judgment corresponding to the overall judgment assessed value is "caution required" when the overall judgment assessed value does not exceed 50 points, and a judgment corresponding to the overall judgment assessed value is "all clear" when the overall judgment assessed value equals or exceeds 50 points. Moreover, the threshold may alternatively be set in plurality.

[0075]

An overall comment is inputted together with an inspection result by an operation of the input section 26 by a user of the inspection result managing device 11 (for example, an inspector), and is stored in the storage section 28 in association with the inspection result.

[0076]

As described above, since a comment and a judgment are displayed, even a user of the terminal device 12 that is not an expert on sanitary control is able to readily recognize a present state of sanitary control.

[0077]

The radar chart representing a TSS result is a radar chart that represents respective inspection results of the following

seven inspection items of a TSS: kitchen facility inspection, kitchen sanitary inspection, kitchen personnel inspection, customer service facility inspection, customer service personnel inspection, sanitary indicator bacteria inspection, and food poisoning-causative bacteria inspection. Therefore, as shown in FIG. 7, a heptagon that connects points representing the respective inspection results of the inspections is displayed on the radar chart. Displaying such a radar chart enables the user of the terminal device 12 to readily recognize a trend in the TSS result.

[0078]

Moreover, in addition to a heptagon representing a latest inspection result, a heptagon representing an inspection result prior to the latest inspection result may be displayed superimposed on the radar chart. In this case, the user of the terminal device 12 can readily recognize a shift in inspection results.

[0079]

As shown in FIG. 7, as contents of the item "points requiring improvement", an image of a present state of a facility or the like requiring improvement, a remark regarding the facility in its present state, a potential hazard, a reason for occurrence of the hazard, and an item to be improved are displayed. An image of the present state of a facility or the like requiring improvement is, for example, photographed by the user of the inspection result managing device 11 and inputted via the input section 26, and stored in the storage section 28 in association with an inspection result. A remark regarding the facility in its present state, a potential

hazard, a reason for occurrence of the hazard, and an item to be improved are inputted together with an inspection result by an operation of the input section 26 by the user of the inspection result managing device 11, and are stored in the storage section 28 in association with the inspection result.

[0080]

As shown in FIG. 8, as contents of the item "kitchen facility", a result of a kitchen facility inspection is displayed for each detailed inspection item, and as contents of the item "kitchen sanitation", a result of a kitchen sanitary inspection is displayed for each detailed inspection item. In addition, as shown in FIG. 9, as contents of the item "kitchen personnel", a result of a kitchen personnel inspection is displayed for each detailed inspection item, and as shown in FIG. 10, as contents of the item "customer service facility", a result of a customer service facility inspection is displayed for each detailed inspection item. Furthermore, as shown in FIG. 11, as contents of the item "customer service personnel", a result of a customer service personnel inspection is displayed for each detailed inspection item.

[0081]

In addition, when the result of the kitchen facility inspection, the kitchen sanitary inspection, the kitchen personnel inspection, the customer service facility inspection, or the customer service personnel inspection is poor, a remark made with respect to the inspection result is also displayed in correspondence to the inspection result.

[0082]

Moreover, in the examples shown in FIGS. 7 to 12, points are allocated to the detailed inspection items, and an inspection result corresponding to a detailed inspection item is expressed by a score corresponding to the allocated points. In addition, as inspection results of the kitchen facility inspection, the kitchen sanitary inspection, the kitchen personnel inspection, the customer service facility inspection, and the customer service personnel inspection, a proportion of a score representing an inspection result to a total score of all detailed inspection items is respectively used.

[0083]

For example, as shown in FIG. 8, the total score of all detailed inspection items of the kitchen facility inspection is 24 points, and the score as an inspection result is 14 points. Therefore, a proportion of the score as an inspection result to the total score of all detailed inspection items of the kitchen facility inspection is 58%, which yields a kitchen facility inspection result of 58.

[0084]

As shown in FIG. 12, as contents of the items "sanitary indicator bacteria" and "food poisoning-causative bacteria", a result of a sanitary indicator bacteria inspection, a result of a food poisoning-causative bacteria inspection, and the like for each location wiped by inspection equipment or, in other words, for each sampling site are displayed. The inspection results may be expressed as negative or positive, or by bacterial counts. In

addition, as shown in FIG. 12, when an inspection result is poor, a remark regarding the inspection result may be displayed in correspondence to the inspection result.

[0085]

Moreover, while a TSS result is expressed by a radar chart in the TSS store screens 122 shown in FIGS. 7 to 12, a TSS result may be expressed by a graph other than a radar chart such as a bar graph. When a TSS result is expressed by a bar graph, the user of the terminal device 12 is able to readily recognize whatever is dominant in the TSS result.

[0086]

[Example of improvement schedule screen]

FIG. 13 is a diagram showing an example of an improvement schedule screen.

[0087]

As shown in FIG. 13, a store name of a restaurant that is a processing object, an improvement schedule, and the like are displayed on an improvement schedule screen 123.

[0088]

An improvement schedule is constituted by input fields for an improvement task, a person in charge of the improvement task, a schedule of the improvement task, and an achievement rate of the improvement schedule. A name of an employee of a restaurant which is inputted to the terminal device 12 by an employee of the restaurant and to whom is assigned a role of executing the improvement task is displayed in the input field of the person in

charge of the improvement task. An achievement rate of the improvement schedule inputted to the terminal device 12 by an employee of the restaurant is displayed in the input field of the achievement rate of the improvement schedule.

[0089]

[Description of processes performed by inspection result managing device]

FIG. 14 is a flow chart for explaining a TSS result store list screen transmitting process performed by the CPU 21 of the inspection result managing device 11. The TSS result store list screen transmitting process starts when, for example, at the terminal device 12, a predetermined group name in the group selecting section 81 and a TSS in the inspection item selecting section 82 are selected and a predetermined period is inputted to the period input field 83 shown in FIG. 5.

[0090]

In step S10, the receiving section 54 receives a transmission request, which is transmitted from the terminal device 12 in response to a selection and input by the user of the terminal device 12, for screen information of a store list screen that represents a result of a TSS performed within a predetermined period on a restaurant belonging to a predetermined group. The receiving section 54 then supplies the transmission request to the read control section 55.

[0091]

In step S11, in response to the transmission request from the

receiving section 54, the read control section 55 reads a TSS result, an achievement rate of an improvement schedule, and the like corresponding to a group with a predetermined group name selected with the group selecting section 81 from the storage section 28, and supplies the same to the store list screen generating section 56.

[0092]

In step S12, the store list screen generating section 56 calculates an overall judgment value based on the TSS result supplied from the read control section 55.

[0093]

In step S13, the store list screen generating section 56 generates screen information of the store list screen 71 based on the calculated overall judgment value and on the TSS result, the achievement rate of an improvement schedule, and the like from the read control section 55, and supplies the screen information to the transmitting section 59.

[0094]

In step S14, the transmitting section 59 controls the communication section 29 to transmit the screen information of the store list screen 71 to the terminal device 12, and terminates the process.

[0095]

Moreover, while only a store list screen representing a TSS result has been described in detail above, a similar process is performed for store list screens representing results of

food-related inspections other than a TSS.

[0096]

FIG. 15 is a flow chart for explaining a certificate screen transmitting process performed by the CPU 21 of the inspection result managing device 11. The certificate screen transmitting process starts when, for example, at the terminal device 12, an instruction to display a certificate screen of a predetermined restaurant is issued.

[0097]

In step S20, the receiving section 54 receives a transmission request for screen information of a certificate screen of a predetermined restaurant which is transmitted from the terminal device 12 in response to an instruction issued by the user of the terminal device 12. The receiving section 54 then supplies the transmission request to the read control section 55.

[0098]

In step S21, in response to the transmission request from the receiving section 54, the read control section 55 sets a restaurant corresponding to the screen information that is an object of the transmission request as a processing object restaurant, and reads a security level, a safety level, and the like of the processing object restaurant and supplies the same to the store screen generating section 57.

[0099]

In step S22, the store screen generating section 57 calculates respective assessed values of the levels of security and safety

based on the levels of security and safety supplied from the read control section 55. Specifically, as described with reference to FIG. 4, the store screen generating section 57 classifies the levels of security and safety according to numbers of stars as assessed values.

[0100]

In step S23, the store screen generating section 57 generates screen information of the certificate screen 121 based on the assessed values of the levels of security and safety calculated in step S22, and supplies the screen information to the transmitting section 59.

[0101]

In step S24, the transmitting section 59 controls the communication section 29 to transmit the screen information of the certificate screen 121 to the terminal device 12, and terminates the process.

[0102]

FIG. 16 is a flow chart for explaining a TSS store screen transmitting process performed by the CPU 21 of the inspection result managing device 11. The TSS store screen transmitting process starts when, for example, at the terminal device 12, an instruction to display a TSS store screen of a predetermined restaurant is issued.

[0103]

In step S30, the receiving section 54 receives a transmission request for screen information of a TSS store screen of a

predetermined restaurant which is transmitted from the terminal device 12 in response to an instruction issued by the user of the terminal device 12. The receiving section 54 then supplies the transmission request to the read control section 55.

[0104]

In step S31, in response to the transmission request from the receiving section 54, the read control section 55 sets a restaurant corresponding to the screen information that is an object of the transmission request as a processing object restaurant, and reads the TSS result and the like of the processing object restaurant and supplies the TSS result to the store screen generating section 57.

[0105]

In step S32, the store screen generating section 57 calculates an overall judgment value based on the TSS result supplied from the read control section 55.

[0106]

In step S33, the store screen generating section 57 generates screen information of the TSS store screen 122 based on the calculated overall judgment value and on the TSS result and the like from the read control section 55, and supplies the screen information to the transmitting section 59.

[0107]

In step S34, the transmitting section 59 controls the communication section 29 to transmit the screen information of the TSS store screen 122 to the terminal device 12, and terminates the

process.

[0108]

Moreover, while only a store screen representing a TSS result has been described above, a similar process is performed for store screens representing results of food-related inspections other than a TSS.

[0109]

FIG. 17 is a flow chart for explaining an improvement schedule screen transmitting process performed by the CPU 21 of the inspection result managing device 11. The improvement schedule screen transmitting process starts when, for example, at the terminal device 12, an instruction to display an improvement schedule screen 123 of a predetermined restaurant is issued.

[0110]

In step S40, the receiving section 54 receives a transmission request for screen information of an improvement schedule screen of a predetermined restaurant which is transmitted from the terminal device 12 in response to an instruction issued by the user of the terminal device 12. The receiving section 54 then supplies the transmission request to the read control section 55.

[0111]

In step S41, in response to the transmission request from the receiving section 54, the read control section 55 sets a restaurant corresponding to the screen information that is an object of the transmission request as a processing object restaurant, and reads the improvement schedule and the like that correspond to the

inspection result of the processing object restaurant and supplies the same to the improvement schedule screen generating section 58.

[0112]

In step S42, the improvement schedule screen generating section 58 generates screen information of the improvement schedule screen 123 based on the improvement schedule and the like supplied from the read control section 55, and supplies the screen information to the transmitting section 59.

[0113]

In step S43, the transmitting section 59 controls the communication section 29 to transmit the screen information of the improvement schedule screen 123 to the terminal device 12, and terminates the process.

[0114]

As described above, since the inspection result managing device 11 acquires results of a plurality of food-related inspections at a restaurant, computes levels of security and safety of a food product based on the results of the plurality of food-related inspections, and causes the terminal device 12 to display the levels of security and safety, a consumer, a food provider, or the like that uses the terminal device 12 is able to readily recognize the levels of security and safety of the food product.

[0115]

Moreover, in the present specification, steps that describe a program stored in a program recording medium include not only

processes chronologically performed according to a described order but also processes that are not necessarily performed chronologically and are performed in parallel or individually.

[0116]

In addition, in the present specification, the term system refers to an entire apparatus that is constituted by a plurality of devices.

[0117]

Furthermore, it is to be understood that embodiments of the present invention are not limited to the embodiment described above and that various modifications can be made without departing from the spirit and scope of the invention.

EXPLANATION OF REFERENCE NUMERALS

[0118]

11	Inspection result managing device
21	CPU
28	Storage section
51	Acquiring section
52	Security level/safety level computing section
59	Transmitting section

CLAIMS

1. An information processing device comprising:

an acquiring unit that acquires results of a toxicity inspection, an origin inspection, a freshness inspection, a pre-shipment inspection, and an ingredient inspection of a food product handled by a facility that prepares and provides the food product and a sanitary inspection of the facility;

a computing unit that computes a security level of the food product provided at the facility, based on results of the toxicity inspection, the freshness inspection, the pre-shipment inspection, and the sanitary inspection of the facility and a safety level of the food product provided at the facility, based on results of the origin inspection, the sanitary inspection of the facility, the ingredient inspection, and the freshness inspection; and

a display control unit that causes the levels of security and safety of the food product to be displayed,

wherein at least one inspection of coliform bacterium, staphylococcus aureus, salmonella, and vibrio parahaemolyticus and an inspection of stool sample submission rate of personnel at the facility are included in the sanitary inspection of the facility.

2. The information processing device according to claim 1, wherein

the computing unit computes the security level of the food product by adding up, at predetermined proportions, results of the toxicity inspection, the freshness inspection, the pre-shipment inspection, and the sanitary inspection of the facility, and

computes the safety level of the food product by adding up, at predetermined proportions, results of the origin inspection, the sanitary inspection of the facility, the ingredient inspection, and the freshness inspection.

3. The information processing device according to claim 1, wherein

the display control unit respectively obtains assessed values of the levels of security and safety of the food product and causes the assessed values to be displayed.

4. The information processing device according to claim 1, wherein

the acquiring unit acquires results of the toxicity inspection, the origin inspection, the freshness inspection, the pre-shipment inspection, the ingredient inspection, and the sanitary inspection of the facility of a plurality of facilities,

the computing unit computes the levels of security and safety of the food product for each of the facilities, and

the display control unit causes a list of the results of the inspections of the plurality of facilities to be displayed based on the results of the inspections of the plurality of facilities.

5. The information processing device according to claim 4, wherein

the display control unit causes the list of the results of the inspections of the plurality of facilities to be displayed in an ascending order or a descending order.

6. The information processing device according to claim 1,

wherein

the display control unit causes a graph representing the results of the sanitary inspection of the facility to be displayed.

7. The information processing device according to claim 6, wherein

the display control unit causes a radar chart representing the results of the sanitary inspection of the facility to be displayed by setting inspection items of the sanitary inspection of the facility as items of the radar chart.

8. The information processing device according to claim 7, wherein

the display control unit causes, to be displayed, the radar chart representing latest results of the sanitary inspection of the facility and results of the sanitary inspection of the facility prior to the latest results by setting inspection items of the sanitary inspection of the facility as items of the radar chart.

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

a storage unit that stores the results of the inspections and a schedule of actions for improving the results, wherein

the display control unit causes a schedule stored in the storage unit to be displayed in accordance with the result of the inspections acquired by the acquiring unit.

10. An information processing method comprising the steps, performed by an information processing device, of:

acquiring results of a toxicity inspection, an origin

inspection, a freshness inspection, a pre-shipment inspection, and an ingredient inspection of a food product handled by a facility that prepares and provides the food product and a sanitary inspection of the facility;

computing a security level of the food product provided at the facility, based on results of the toxicity inspection, the freshness inspection, the pre-shipment inspection, and the sanitary inspection of the facility and a safety level of the food product provided at the facility, based on results of the origin inspection, the sanitary inspection of the facility, the ingredient inspection, and the freshness inspection ; and

causing the levels of security and safety of the food product to be displayed,

wherein at least one inspection of coliform bacterium, staphylococcus aureus, salmonella, and vibrio parahaemolyticus and an inspection of stool sample submission rate of personnel at the facility are included in the sanitary inspection of the facility.

11. A program that causes a computer to execute processes including the steps of:

acquiring results of a toxicity inspection, an origin inspection, a freshness inspection, a pre-shipment inspection, and an ingredient inspection of a food product handled by a facility that prepares and provides the food product and a sanitary inspection of the facility;

computing a security level of the food product provided at the facility, based on results of the toxicity inspection, the

freshness inspection, the pre-shipment inspection, and the sanitary inspection of the facility and a safety level of the food product provided at the facility, based on results of the origin inspection, the sanitary inspection of the facility, the ingredient inspection, and the freshness inspection; and

causing the levels of security and safety of the food product to be displayed,

wherein at least one inspection of coliform bacterium, staphylococcus aureus, salmonella, and vibrio parahaemolyticus and an inspection of stool sample submission rate of personnel at the facility are included in the sanitary inspection of the facility.

INFORMATION PROCESSING DEVICE, INFORMATION PROCESSING METHOD, AND PROGRAM

ABSTRACT

The present invention relates to an information processing device, an information processing method, and a program which enable a consumer or a food provider to readily recognize levels of security and safety of food products. An inspection result managing device acquires results of a plurality of food-related inspections at a restaurant, computes levels of security and safety of a food product based on the results of the plurality of food-related inspections, and causes a terminal device to display the levels of security and safety. The present invention can be applied to, for example, a server that manages inspection results of food products.

Fig. 1