INFORMATION PROCESSING APPARATUS, INFORMATION PROCESSING SYSTEM, INFORMATION PROCESSING METHOD, AND PROGRAM

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to an information processing apparatus, an information processing system, an information processing method, and a program that are used to register menu information.

2. Description of Related Art

[0002] A system has been used in which menu information is registered in a server when a manager of a restaurant inputs the menu information, such as ingredients or a cooking method of a menu provided in the restaurant, to an information terminal. The user of the restaurant can check the menu information before visit or during visit with reference to the menu information. In particular, in a case where a restaurant is located in a foreign country, it is easy to check ingredients and the like. Accordingly, this is highly convenient.

[0003] For example, PTL 1 discloses a technique in which a server stores cooking information including the ingredients of each dish provided in a restaurant and distributes cooking information, which is changed according to the nationality of the user, to the user terminal. The change of cooking information is performed by highlighting the least favorite ingredients registered for each country.

[0004]

Citation List

Patent Literature

[0005] PTL 1: Japanese Unexamined Patent Application Publication No. 2015-49763

[0006] In the above system, the restaurant manager is requested to register detailed ingredients. However, there are differences in the classification of ingredients

depending on the food culture. For example, in Japan, a detailed classification according to a fish name, such as sea bream, olive flounder, and sea bass, is made. On the other hand, in Europe and the United States, a collective classification, such as white-fleshed fish, is made in many cases.

[0007] For this reason, there is a case in which the detailed names of ingredients used in a menu, in which the names of ingredients are to be registered by the restaurant manager, are unknown. Accordingly, even if an effort to collect menu information between different food cultures is made, it has not been easy to collect the menu information including the detailed ingredients since the restaurant manager cannot register the detailed ingredients.

[0008] In view of the aforementioned situation, it is an object of the present invention to provide an information processing apparatus, an information processing system, an information processing method, and a program capable of easily collecting menu information including the detailed ingredients.

[0009]

SUMMARY OF THE INVENTION

[0010] In order to achieve the aforementioned object, an information processing apparatus according to an aspect of the present invention is an information processing apparatus for receiving the registration of menu information that is information of a menu including ingredients input in a user terminal, and includes storage means, communication means, and control means.

The storage means stores ingredients classification information that is information obtained by classifying ingredients into upper and lower classes.

The communication means receives the menu information from the user terminal.

The control means specifies each low-order ingredient that is an ingredient included in a lower class of each high-order ingredient, which is an ingredient of an upper class, from the ingredients classification information in a case where the high-order ingredient is included in the menu information, controls the communication means to transmit

ingredient information including information of the low-order ingredient to the user terminal, and receives the registration of the menu information when the communication means receives the menu information including the low-order ingredient.

[0011] When the user (store manager) of the user terminal registers menu information that is information, such as a store name, a dish name, and ingredients, detailed ingredient names may be unknown. According to the configuration described above, if the user of the user terminal inputs high-order ingredients when registering menu information, ingredient information (ingredient image or the like) of low-order ingredients included in the lower class of the high-order ingredients is presented. By referring to the ingredient information, the user of the user terminal can check the ingredient names. Therefore, it is possible to include a detailed ingredient name in the menu information.

[0012] The ingredient information may be an image of the low-order ingredient.

[0013] In the case of an ingredient having a feature in its appearance, such as fish or a vegetable, an image (photograph or illustration) of the ingredient can be presented as ingredient information so that the user of the user terminal can easily check the ingredient name.

[0014] The ingredient information may be a detailed description of the low-order ingredient.

[0015] In the case of an ingredient that is difficult to determine with its appearance, such as seasoning, a detailed description, such as the production area, raw materials, and a manufacturing method of the ingredient can be presented as ingredient information so that the user of the user terminal can easily check the ingredient name.

[0016] The communication means may further acquire a location of the user terminal from the user terminal, and the control means may control the communication means to transmit ingredient information of an ingredient selected according to the location, among the low-order ingredients, to the user terminal.

[0017] According to this configuration, the control means can select ingredients excluding ingredients (for example, some of the seafood), which are not edible in the location of the user terminal, among the low-order ingredients, and transmit the ingredient

information of the selected ingredients to the user terminal. Accordingly, since the number of pieces of ingredient information presented to the user of the user terminal is limited, the user can easily select ingredients used in the menu.

[0018] The control means may control the communication means to transmit ingredient information of an ingredient selected according to a language used for an input of the menu information, among the low-order ingredients, to the user terminal.

[0019] According to this configuration, the control means can select ingredients excluding ingredients, which are not edible in a region where the language used for the input of menu information is used, among the low-order ingredients, and transmit the ingredient information of the selected ingredients to the user terminal. Accordingly, since the number of pieces of ingredient information presented to the user of the user terminal is limited, the user can easily select ingredients used in the menu.

[0020] The control means may control the communication means to transmit ingredient information of an ingredient selected according to a time at which the menu information is received, among the low-order ingredients, to the user terminal.

[0021] According to this configuration, the control means can select ingredients excluding ingredients (for example, vegetables whose harvest time is limited), which are not edible at the time at which menu information is received, among the low-order ingredients, and transmit the ingredient information of the selected ingredients to the user terminal. Accordingly, since the number of pieces of ingredient information presented to the user of the user terminal is limited, the user can easily select ingredients used in the menu.

[0022] The storage means may further store multilingual information corresponding to each of upper and lower classes of the ingredient, and menu information transmission means for transmitting an upper or lower class of the ingredient corresponding to a specific language to the display terminal when a request to display menu information written in the specific language is received from the display terminal may be further provided.

[0023] According to this configuration, by inputting a request to display menu

information that is written in a specific language, the user of the display terminal can refer to upper or lower classes of ingredients corresponding to the language in the display terminal.

[0024] The menu information transmission means may transmit an upper class of the ingredient to the display terminal in a case where there is no language information regarding a lower class of the ingredient that is written in the specific language.

[0025] According to this configuration, in a case where there is no language information (translation) regarding a lower class of the ingredient that is written in the specific language, it is possible to check the ingredient with reference to the upper class.

[0026] The menu information transmission means may transmit a lower class of the ingredient to the display terminal in a case where there is no language information regarding a lower class, which is written in a language used for an input of menu information in the user terminal, and there is language information regarding a lower class of the ingredient written in the specific language.

[0027] According to this configuration, in a case where there is language information (translation) regarding a lower class of the ingredient that is written in the specific language, it is possible to check the ingredient with reference to the lower class.

[0028] In order to achieve the aforementioned object, an information processing system according to an aspect of the present invention includes a first information processing apparatus and a second information processing apparatus.

The first information processing apparatus is first information processing apparatus for receiving registration of menu information that is information of a menu including ingredients input in the second information processing apparatus, and storage means, first communication means, and first control means.

The storage means stores ingredients classification information that is information obtained by classifying ingredients into upper and lower classes.

The first communication means receives the menu information from the second information processing apparatus.

The first control means specifies each low-order ingredient that is an ingredient

included in a lower class of each high-order ingredient, which is an ingredient of an upper class, from the ingredients classification information in a case where the high-order ingredient is included in the menu information, controls the communication means to transmit ingredient information including information of the low-order ingredient to the second information processing apparatus, and receives registration of the menu information when the communication means receives the menu information including the low-order ingredient.

The second information processing apparatus includes second communication means and second control means.

The second communication means receives the ingredient information from the first communication means.

The second control means controls the second communication means to transmit the menu information to the first information processing apparatus, and presents the ingredient information to a user when the second communication means receives the ingredient information.

[0029] In order to achieve the aforementioned object, an information processing method according to an aspect of the present invention is an information processing method of receiving registration of menu information that is information of a menu including ingredients input in a user terminal. The information processing method includes: storing ingredients classification information that is information obtained by classifying ingredients into upper and lower classes; receiving the menu information from the user terminal; and specifying each low-order ingredient that is an ingredient included in a lower class of each high-order ingredient, which is an ingredient of an upper class, from the ingredients classification information in a case where the high-order ingredient is included in the menu information, controlling the communication means to transmit ingredient information including information of the low-order ingredient to the user terminal, and receiving registration of the menu information when the communication means receives the menu information including the low-order ingredient.

[0030] In order to achieve the aforementioned object, a program according to an

aspect of the present invention causes an information processing apparatus for receiving registration of menu information, which is information of a menu including ingredients input in a user terminal, to execute: a step of storing ingredients classification information that is information obtained by classifying ingredients into upper and lower classes; a step of receiving the menu information from the user terminal; and a step of specifying each low-order ingredient that is an ingredient included in a lower class of each high-order ingredient, which is an ingredient of an upper class, from the ingredients classification information in a case where the high-order ingredient is included in the menu information, controlling the communication means to transmit ingredient information including information of the low-order ingredient to the user terminal, and receiving registration of the menu information when the communication means receives the menu information including the low-order ingredient.

[0031] As described above, according to the present invention, it is possible to provide an information processing apparatus, an information processing system, an information processing method, and a program capable of easily collecting menu information including the detailed ingredients. However, the effect does not limit the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0032] Features, advantages, and technical and industrial significance of exemplary embodiments of the invention will be described below with reference to the accompanying drawings, in which like numerals denote like elements, and wherein:

FIG. 1 is a schematic diagram of an information processing system according to an embodiment of the present invention;

FIG. 2 is a block diagram showing the functional configuration of the information processing system;

FIG. 3 is an example of ingredients classification information stored in a storage unit provided in a server apparatus of the information processing system;

FIG. 4 is a flowchart showing the operation of the information processing system;

FIG. 5 is an example of a menu information registration site displayed in a user terminal of the information processing system;

FIG. 6 is an example of choices of ingredients in the menu information registration site displayed in the user terminal of the information processing system;

FIG. 7 is an example of ingredient information in the menu information registration site displayed in the user terminal of the information processing system;

FIG. 8 is an example of ingredient information in the menu information registration site displayed in the user terminal of the information processing system;

FIG. 9 is a block diagram showing the hardware configuration of the server apparatus of the information processing system; and

FIG. 10 is a block diagram showing the hardware configuration of the user terminal of the information processing system.

DETAILED DESCRIPTION OF EMBODIMENTS

[0033] An information processing system according to an embodiment of the present invention will be described.

[0034] [Configuration of an information processing system]

FIG. 1 is a schematic diagram showing the configuration of an information processing system 10 according to the present embodiment. As shown in FIG. 1, the information processing system 10 includes a server apparatus 100 and a user terminal 200. The server apparatus 100 and the user terminal 200 are connected to each other through the Internet 300.

[0035] The server apparatus 100 is a web server that provides menu information, and the user terminal 200 is an information processing apparatus that can access the server apparatus 100 through the Internet 300. The user terminal 200 is a terminal that the manager of a restaurant uses, for example, a tablet personal computer (PC), a notebook PC, a smartphone, and the like.

[0036] FIG. 2 is a block diagram showing the functional configuration of the server apparatus 100 and the user terminal 200. As shown in FIG. 2, the server apparatus

100 includes a storage unit 101, a communication unit 102, a control unit 103, and a menu information transmission unit 104, and the user terminal 200 includes a communication unit 201, a control unit 202, and a storage unit 203.

[0037] The storage unit 101 stores ingredients classification information 101a, ingredient information 101b, and menu information 101c. The details thereof will be described later. The communication unit 102 communicates with the communication unit 201 to receive menu information from the communication unit 201 under the control of the control unit 103.

[0038] When the communication unit 102 receives the menu information, the control unit 103 receives the registration of the menu information. In this case, if necessary, the control unit 103 specifies ingredients using the ingredients classification information 101a, and controls the communication unit 102 to transmit the ingredient information of the specified ingredients to the communication unit 201.

[0039] When a request to display menu information written in a specific language is received from a display terminal that the user of the restaurant uses for reference of menu information, the menu information transmission unit 104 transmits upper or lower classes of ingredients corresponding to the specific language to the display terminal.

[0040] The communication unit 201 communicates with the communication unit 102 to transmit the menu information to the communication unit 102 under the control of the control unit 202. The control unit 202 receives the input of the menu information from the user, and controls the communication unit 201 to transmit the menu information to the communication unit 102. The storage unit 203 temporarily stores the input menu information or the like.

[0041] FIG. 3 is an example of the ingredients classification information 101a. As shown in FIG. 3, the ingredients classification information 101a is a database obtained by classifying ingredients. Ingredients are classified into a large class (for example, fish), a middle class (for example, white-fleshed fish), and a small class (for example, olive flounder). In addition, classification is not limited to the three steps of a large class, a middle class, and a small class, and may be two steps or four or more steps. The

ingredients classification information 101a may include ingredients for which ingredient names are present in other languages but ingredient names are not present in a specific language. In addition, ingredients include seasoning.

[0042] The ingredients classification information 102a can be created by the administrator of the server apparatus 100. Although the ingredients classification information 102a shown in FIG. 3 is shown in only one language (Japanese), the ingredients classification information 102a may be a database of ingredient names obtained by translating ingredients to a plurality of languages.

[0043] The ingredient information 101b is information that is registered for each ingredient classified into the small class in the ingredients classification information 101a and that indicates the characteristics of each ingredient. For example, the ingredient information 101b can be made as images, such as photographs or illustrations of ingredients, and the text of a detailed description, such as the production area, raw materials, and a manufacturing method of ingredients. An image can be set as the ingredient information 101b in the case of an ingredient having a feature in its appearance, such as fish, and the text can be set as the ingredient information 101b in the case of an ingredient having no feature in its appearance, such as seasoning. In a case where ingredient information is a text, it is desirable to set the text of each language as the ingredient information.

[0044] The ingredient information 101b may be registered for all ingredients classified into the small class, or may be registered for some ingredients. For example, the ingredient information 101b may be registered only for ingredients whose names are not present among the ingredients classified into the small class. The ingredient information 101b can be created by the administrator of the server apparatus 100 together with the ingredients classification information 101a.

[0045] In addition, all or some of the pieces of ingredient information 101b may be stored in a different server apparatus from the server apparatus 100. In this case, for example, it is possible to assign an identification number to each ingredient in the ingredients classification information 101a and to associate the identification number with

the ingredient information 101b.

[0046] [Operation of the information processing system]

FIG. 4 is a flowchart showing the operation of the information processing system 10. When a user accesses a web site for registration of menu information (hereinafter, referred to as a menu information registration site) using the user terminal 200, the control unit 202 controls the communication unit 201 to transmit a menu information registration site information acquisition request to the communication unit 102 (St201). It is possible to access the menu information registration site using a browser or an application.

[0047] When the communication unit 102 receives the menu information registration site information acquisition request, the control unit 103 generates menu information registration site information that is information forming the menu information registration site (St101). At this time, the control unit 103 can include the ingredient names of each class in the menu information registration site information with reference to the ingredients classification information 101a. The control unit 103 controls the communication unit 102 to transmit the menu information registration site information to the communication unit 201 (St102).

[0048] When the communication unit 201 receives the menu information registration site information (St202), the control unit 202 generates the menu information registration site, and receives the input of the menu information of the user in the menu information registration site (St203). FIG. 5 is an example of a menu information registration screen of a menu information registration site displayed in the user terminal 200. As shown in FIG. 5, the menu information is information regarding a menu, such as a store name, dish type, dish name, and ingredients, and the user can input the menu information of a menu that the user desires to register. The content of the menu information is not particularly limited, and at least ingredients may be included in the menu information.

[0049] FIG. 6 is an example of the choices of ingredients displayed at the time of selection of ingredients. As shown in FIG. 6, the choices of ingredients can be presented to the input field of ingredients. The choices can be set by arranging the ingredients

included in the ingredients classification information 101a according to the classification of the ingredients classification information 101a.

[0050] The user can select the ingredients of a menu, which needs to be registered, from the choices in the user terminal 200. In addition, the user may directly input the character string of each ingredient name. The user can input one or more ingredients in the menu information registration site.

[0051] When the menu information is input, the control unit 202 controls the communication unit 201 to transmit the menu information to the communication unit 102 (St204).

[0052] When the communication unit 102 receives the menu information (St103), the control unit 103 determines in which class in the ingredients classification information each ingredient included in the menu information is included (St104). In a case where each ingredient included in the menu information is included in the lowest class (for example, "small class" in FIG. 3) (St104: Yes), the control unit 103 registers the menu information (St108).

[0053] On the other hand, in a case where each ingredient included in the menu information is included in a class (for example, "middle class" in FIG. 3) other than the lowest class (St103: No), the control unit 103 specifies ingredients (hereinafter, referred to as low-order ingredients) included in the lower class of ingredients (hereinafter, referred to as high-order ingredients) included in the menu information (St105). For example, in a case where the ingredients included in the menu information are "white-fleshed fish", "sea bream", "olive flounder", and "sea bass" included in the lower class are specified as low-order ingredients.

[0054] Then, the control unit 103 reads the ingredient information 101b associated with the specified low-order ingredients from the storage unit 101, and controls the communication unit 102 to transmit the ingredient information to the communication unit 201 (St106). In the example described above, ingredient information, such as "sea bream", "olive flounder", and "sea bass", is transmitted to the communication unit 201.

[0055] When the communication unit 201 receives the ingredient information

(St205), the control unit 202 presents the ingredient information received in the menu information registration site (St206). FIG. 7 is an example of a menu information registration site displayed in the user terminal 200. As shown in FIG. 7, in a case where ingredients are fish, fish images that are the ingredient information transmitted from the server apparatus 100 together with the ingredient names are presented.

[0056] FIG. 8 is another example of the menu information registration site displayed in the user terminal 200. As shown in this drawing, in a case where ingredients are vinegar, raw materials, a manufacturing method, and the like of the vinegar that are the ingredient information transmitted from the server apparatus 100 together with the ingredient names can be presented.

[0057] The user can specify ingredients, which are used for the menu to be registered, with reference to the presented ingredient information. For example, even in a country in which sea bream, olive flounder, and sea bass are expressed in the same ingredient names, it is possible to specify low-order ingredients, which are used in the menu to be registered, with reference to the ingredient information.

[0058] When the user inputs the low-order ingredients specified using the ingredient information, the control unit 202 controls the communication unit 201 to transmit the menu information including the ingredients to the communication unit 102 (St207).

[0059] When the communication unit 102 receives the menu information (St107), the control unit 103 registers the menu information (St108), and stores the menu information in the storage unit 101. The menu information 101c is registered in the server apparatus 100 as described above.

[0060] A number of user terminals 200 are connected to the server apparatus 100 through the Internet 300, and the menu information of each menu is registered into the server apparatus 100 from each user terminal 200 as described above.

[0061] By accessing the server apparatus 100 using a display terminal, such as a smart phone or a PC, the user of a store can refer to menu information. Therefore, it is possible to select a store or to check ingredients.

[0062] As described above, the user can refer to the ingredient information of low-order ingredients by inputting the high-order ingredients. Accordingly, even if the names of low-order ingredients are unknown, it becomes easy to specify the ingredients of the lower class. Therefore, it is also possible to use the ingredients classification information 101a between food cultures in which the classifications of ingredients are different.

[0063] [For selection of ingredients]

In the above description, in a case where high-order ingredients are included in the menu information, the control unit specifies the low-order ingredients, and transmits the ingredient information to the user terminal 200. In this case, however, the control unit 103 may select some of the low-order ingredients, and transmit only the ingredient information of the selected ingredients to the user terminal 200.

[0064] The control unit 103 can select low-order ingredients according to the location of the user terminal 200. Specifically, the control unit 103 can select ingredients excluding ingredients (for example, specific seafood), which are not edible in regions including the location of the user terminal 200, among the low-order ingredients of ingredients included in the menu information. The location of the user terminal 200 can be acquired using the IP address or the like included in the menu information.

[0065] The control unit 103 can transmit only the ingredient information of the selected ingredients, among the low-order ingredients, to the user terminal 200. Accordingly, since the number of pieces of ingredient information presented to the user is limited, the user can easily select ingredients used in the menu.

[0066] The control unit 103 can also specify low-order ingredients according to the language used for the input of the menu information. Specifically, the control unit 103 can also select ingredients excluding ingredients, which are not edible in regions where the language used for the input of the menu information is used, among the low-order ingredients of ingredients included in the menu information.

[0067] In addition, the control unit 103 can also select low-order ingredients according to the menu information receiving time. Specifically, the control unit 103 can

also select ingredients excluding ingredients (for example, vegetables whose harvest time is limited), which are not edible at the time at which menu information is received, among the low-order ingredients of ingredients included in the menu information.

[0068] In addition, the control unit 103 can also select low-order ingredients according to the location of the user terminal 200 and the time at which menu information is received. Specifically, the control unit 103 can also select ingredients excluding ingredients, which are not edible at the time at which menu information is received in the location of the user terminal 200, among the low-order ingredients of ingredients included in the menu information.

[0069] In addition, the control unit 103 can also select low-order ingredients according to the language used for the input of menu information and the time at which the menu information is received. Specifically, the control unit 103 can also select ingredients excluding ingredients, which are not edible at the time at which the menu information is received in regions where the language used for the input of the menu information is used, among the low-order ingredients of ingredients included in the menu information.

[0070] Information that the control unit 103 uses for the selection of ingredients, for example, regions where ingredients are edible, time at which ingredients are edible, and the like are stored in the storage unit 101 so as to be associated with each ingredient included in the ingredients classification information 101a. Accordingly, the control unit 103 can select ingredients with reference to the information.

[0071] [For transmission of menu information to the display terminal]

When the user of a store accesses the server apparatus 100 using a display terminal, the server apparatus 100 transmits the menu information to the display terminal. In this case, the server apparatus 100 can select information to be transmitted to the display terminal using the ingredients classification information 101a.

[0072] Specifically, the storage unit 101 stores multilingual information corresponding to each of the upper and lower classes of ingredients. The multilingual information is ingredient names written in respective languages, and the administrator of

the server apparatus 100 can generate multilingual information and associate the multilingual information with each ingredient.

[0073] When a request to display menu information written in a specific language is received from the display terminal, the menu information transmission unit 104 transmits, for ingredients included in the menu information, upper or lower classes of the ingredients corresponding to the language to the display terminal.

[0074] Specifically, in a case where there is no language information regarding lower classes of ingredients that is written in the specific language, the menu information transmission unit 104 transmits only upper classes of the ingredients to the display terminal. For example, in a case where "sea bream" is included in menu information that is requested to be displayed in a specific language from the display terminal, "white-fleshed fish" which is an upper class of "sea bream" and for which language information written in a specific language is present is transmitted to the display terminal in a case where there is no ingredient name corresponding to "sea bream" that is written in the specific language. In a case where there is no ingredient name corresponding to "white-fleshed fish" that is written in the specific language, "fish" that is the upper class of "white-fleshed fish" is transmitted to the display terminal.

[0075] In addition, in a case where there is no language information regarding lower classes that is written in a language used for the input of menu information from the user terminal 200 and there is language information regarding lower classes of ingredients written in the specific language, the menu information transmission unit 104 transmits the lower classes of the ingredients to the display terminal. For example, in a case where there is no ingredient name corresponding to "sea bream" that is written in a language used for the input of menu information from the user terminal 200 and "sea bream" is included in menu information that is requested to be displayed in a specific language from the display terminal, "sea bream" is transmitted to the display terminal in a case where there is an ingredient name corresponding to "sea bream" that is written in the language.

[0076] Therefore, by sending a request to display menu information written in a specific language, the user of a store can refer to upper or lower classes of ingredients

according to ingredient names present in the language.

[0077] In addition, the menu information transmission unit 104 can also select ingredient names to be transmitted according to the time at which a menu information display request is received. For example, even in the case of the same ingredient, regardless of the season of the input of menu information from the user terminal 200, a term "winter" is transmitted to the display terminal in a case where the time at which a menu information display request is received is winter.

[0078] [Hardware configuration]

FIG. 9 is a block diagram showing the hardware configuration of the server apparatus 100. As shown in FIG. 9, the server apparatus 100 includes a central processing unit (CPU) 121, a memory 122, a storage 123, and an input/output unit (I/O) 124 as a hardware configuration. These are connected to each other by a bus 125.

[0079] The CPU 121 controls other configurations according to a program stored in the memory 122, and performs data processing according to the program and stores the processing result in the memory 122. The CPU 121 functions as the control unit 103 in the functional configuration of the server apparatus 100.

[0080] The memory 122 temporarily stores data and programs executed by the CPU 121. The memory 122 can be a random access memory (RAM). The memory 122 functions as the storage unit 101 in the functional configuration of the server apparatus 100 together with the storage 123.

[0081] The storage 123 stores a program or data. The storage 123 can be a hard disk drive (HDD), a solid state drive (SSD), or the like. The storage 123 functions as the storage unit 101 in the functional configuration of the server apparatus 100 together with the memory 122.

[0082] The input/output unit 124 receives an input to the server apparatus 100, and supplies the output of the server apparatus 100 to the outside. The input/output unit 124 includes a connection interface, such as a network. The input/output unit 124 functions as the communication unit 102 in the functional configuration of the server apparatus 100.

[0083] The hardware configuration of the server apparatus 100 is not limited to that shown herein, and any configuration capable of realizing the functional configuration of the server apparatus 100 may be adopted. The entire hardware configuration described above or a part of the hardware configuration may be present on a network.

[0084] FIG. 10 is a block diagram showing the hardware configuration of the user terminal 200. As shown in FIG. 10, the user terminal 200 includes a CPU 221, a graphic processing unit (GPU) 222, a memory 223, a storage 224, and an input/output unit (I/O) 225 as a hardware configuration. These are connected to each other by a bus 226.

[0085] The CPU 221 controls other configurations according to a program stored in the memory 223, and performs data processing according to the program and stores the processing result in the memory 223. The CPU 221 functions as the control unit 202 in the functional configuration of the user terminal 200 together with the GPU 222.

[0086] The GPU 222 generates an image under the control of the CPU 221. The GPU 222 can be a microprocessor. The GPU 222 functions as the control unit 202 in the functional configuration of the user terminal 200 together with the CPU 221.

[0087] The memory 223 stores data and programs executed by the CPU 221. The memory 223 can be a RAM. The memory 223 functions as the storage unit 203 in the functional configuration of the user terminal 200 together with the storage 224.

[0088] The storage 224 stores a program or data. The storage 224 can be an HDD, an SSD, or the like. The storage 224 functions as the storage unit 203 in the functional configuration of the user terminal 200 together with the memory 223.

[0089] The input/output unit 225 receives an input to the user terminal 200, and supplies the output of the user terminal 200 to the outside. The input/output unit 225 includes an input device such as a keyboard or a mouse, an output device such as a display, and a connection interface such as a network. The input/output unit 225 functions as the communication unit 201 in the functional configuration of the user terminal 200.

[0090] The hardware configuration of the user terminal 200 is not limited to that shown herein, and any configuration capable of realizing the functional configuration of the user terminal 200 may be adopted. The entire hardware configuration described

above or a part of the hardware configuration may be present on a network.

[0091] 10: information processing system

100: server apparatus

200: user terminal

101, 203: storage unit

102, 201: communication unit

103, 202: control unit

CLAIMS:

1. An information processing apparatus for receiving registration of menu information that is information of a menu including ingredients input in a user terminal, comprising:

storage means for storing ingredients classification information that is information obtained by classifying ingredients into upper and lower classes;

communication means for receiving the menu information from the user terminal; and

control means for specifying each low-order ingredient that is an ingredient included in a lower class of each high-order ingredient, which is an ingredient of an upper class, from the ingredients classification information in a case where the high-order ingredient is included in the menu information, controlling the communication means to transmit ingredient information including information of the low-order ingredient to the user terminal, and receiving registration of the menu information when the communication means receives the menu information including the low-order ingredient.

2. The information processing apparatus according to claim 1,

wherein the ingredient information is an image of the low-order ingredient.

3. The information processing apparatus according to claim 1,

wherein the ingredient information is a detailed description of the low-order ingredient.

4. The information processing apparatus according to any one of claims 1 to 3,

wherein the communication means further acquires a location of the user terminal from the user terminal, and

the control means controls the communication means to transmit ingredient information of an ingredient selected according to the location, among the low-order

ingredients, to the user terminal.

5. The information processing apparatus according to any one of claims 1 to 4,

wherein the control means controls the communication means to transmit ingredient information of an ingredient selected according to a language used for an input of the menu information, among the low-order ingredients, to the user terminal.

6. The information processing apparatus according to any one of claims 1 to 5,

wherein the control means controls the communication means to transmit ingredient information of an ingredient selected according to a time at which the menu information is received, among the low-order ingredients, to the user terminal.

7. The information processing apparatus according to any one of claims 1 to 6,

wherein the storage means further stores multilingual information corresponding to each of upper and lower classes of the ingredient, and

menu information transmission means for transmitting an upper or lower class of the ingredient corresponding to a specific language to the display terminal when a request to display menu information written in the specific language is received from the display terminal is further provided.

8. The information processing apparatus according to claim 7,

wherein the menu information transmission means transmits an upper class of the ingredient to the display terminal in a case where there is no language information regarding a lower class of the ingredient that is written in the specific language.

9. The information processing apparatus according to claim 7,

wherein the menu information transmission means transmits a lower class of the ingredient to the display terminal in a case where there is no language information regarding a lower class, which is written in a language used for an input of menu

information in the user terminal, and there is language information regarding a lower class of the ingredient written in the specific language.

10. An information processing system, comprising:

a first information processing apparatus; and

a second information processing apparatus,

wherein the first information processing apparatus receives registration of menu information that is information of a menu including ingredients input in the second information processing apparatus, and includes:

storage means for storing ingredients classification information that is information obtained by classifying ingredients into upper and lower classes;

first communication means for receiving the menu information from the second information processing apparatus; and

first control means for specifying each low-order ingredient that is an ingredient included in a lower class of each high-order ingredient, which is an ingredient of an upper class, from the ingredients classification information in a case where the high-order ingredient is included in the menu information, controlling the communication means to transmit ingredient information including information of the low-order ingredient to the second information processing apparatus, and receiving registration of the menu information when the communication means receives the menu information including the low-order ingredient, and

the second information processing apparatus includes:

second communication means for receiving the ingredient information from the first communication means; and

second control means for controlling the second communication means to transmit the menu information to the first information processing apparatus and presenting the ingredient information to a user when the second communication means receives the ingredient information.

11. An information processing method of receiving registration of menu information that is information of a menu including ingredients input in a user terminal, comprising:

storing ingredients classification information that is information obtained by classifying ingredients into upper and lower classes;

receiving the menu information from the user terminal; and

specifying each low-order ingredient that is an ingredient included in a lower class of each high-order ingredient, which is an ingredient of an upper class, from the ingredients classification information in a case where the high-order ingredient is included in the menu information, controlling the communication means to transmit ingredient information including information of the low-order ingredient to the user terminal, and receiving registration of the menu information when the communication means receives the menu information including the low-order ingredient.

12. A program causing an information processing apparatus for receiving registration of menu information, which is information of a menu including ingredients input in a user terminal, to execute:

a step of storing ingredients classification information that is information obtained by classifying ingredients into upper and lower classes;

a step of receiving the menu information from the user terminal; and

a step of specifying each low-order ingredient that is an ingredient included in a lower class of each high-order ingredient, which is an ingredient of an upper class, from the ingredients classification information in a case where the high-order ingredient is included in the menu information, controlling the communication means to transmit ingredient information including information of the low-order ingredient to the user terminal, and receiving registration of the menu information when the communication means receives the menu information including the low-order ingredient.