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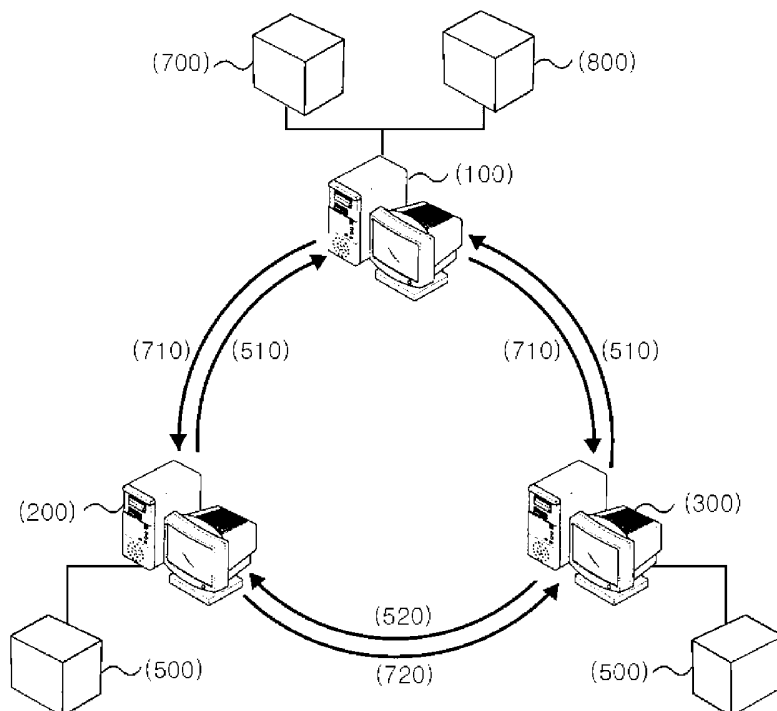
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(54) Title: ON-LINE APPARATUS FOR CURING BODY STATUS AND METHOD



(57) Abstract: The present invention can provide a service to on-line and off-line users, thereby providing an effective curing chance to a busy modern person.

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Description

ON-LINE APPARATUS FOR CURING BODY STATUS AND METHOD

Technical Field

- [1] The present invention relates to an on-line apparatus and method for curing a status of a human body.

Background Art

- [2] There have been some conventional Internet sites providing diet and curing information through Internet. However, since they one-sidedly merely transmit fragmentary information, and do not provide fitting information to a user, an effect of curing cannot be expected.
- [3] Conventional curing has a drawback in that since a curing object is mainly limited to a user visiting a shop in off-line, time and space are greatly limited and the curing cannot be guided in real time. In this case, due to high costs of user's visit and manager's management, a cost of a curing operation finally increases. Since the user should visit corresponding shops respectively due to many fields of curing, there has been an inefficient aspect in that check, cost, and time are invested in multiplicity and data are generated in multiplicity.

Disclosure of Invention

Technical Problem

- [4] The present invention can be applied to all normal and abnormal persons, and can maintain or improve a status of a human body according to a corresponding purpose.
- [5] An object of the present invention is to provide a curing program for diagnosing a user body, providing a stepwise learning content to a user so that weight can be supported on feet according to a corresponding purpose, and allowing user's learning. The curing program is prepared in full consideration of a characteristic of a corresponding organism and an environmental factor according to a corresponding purpose. The corresponding purpose is to help a normal person to maintain a state where weight is rightly supported on feet, thereby preventing lesion and deformity. Further, the corresponding purpose is to learn a abnormal person so that weight of a state and a degree conforming to a need can be supported on the basis of a rightly position where weight should be supported on feet and a position selected according to a need of curing, thereby curing the feet and a posture, and curing and remedying physical figure, constitution, lesion, and deformity. In addition, it is positively utilized for improvement of exercise capability, improvement of walking, improvement of learning capability, and beauty, thereby improving the status of the human body.

- [6] Further, the curing program according to the present invention can include an exercise method such as aerobics and gymnastics according to the corresponding purpose.

Technical Solution

- [7] The present invention can provide a service to on-line and off-line users, and can provide a curing program through on-line Internet, and can provide the same curing program since corresponding data is shared through Internet at any shop.

[8]

Advantageous Effects

- [9] Accordingly, the present invention provides an effective curing chance to a busy modern person.

Brief Description of the Drawings

- [10] FIG. 1 illustrates an operation of an apparatus including a main server, a sub server, and a personal communication unit according to the present invention.

Best Mode for Carrying Out the Invention

- [11] In the present invention, a main server, a sub server, and a personal communication unit are wire and wireless connected to Internet, and operate while sharing and exchanging information. The main server has curing data, and data received from the sub server and the personal communication unit. A shop has the sub server, and a user has the personal communication unit. The personal communication unit employs various devices being capable of performing wire and wireless communications using Internet, and the following operations, such as a personal computer (PC), a portable digital assistant (PDA), and a cellular phone.

- [12] Before an operation of the present invention, the user and the shop includes a video device for converting a status of a user body into image and character data such as a digital camera, a video camera, a scanner, and a camcorder, and various exercise measurement devices for measuring user's status and exercise and converting the measured status and exercise into image and character data, such as a foot bottom pressure detector and a weight shift detector (Hereinafter, the video device and the exercise measurement device are referred to as "measurement device", and various image and character data provided from the above device are referred to as "measurement data").

- [13] The present invention uses a status of user's foot as important data in diagnosing the user body. The status of the foot supporting ground has an important relation to the status of an upper fragment of the foot. In case where the weight is biased to a specific portion of the foot, the human body is compensated for balance. In case where this state is repeated and maintained for a long time, the human body is optimized to a cor-

responding status and is built up. Optimization includes a variation of a musculo-skeletal system including the foot. The varied foot requests continuation and maintenance of a corresponding posture. This acts as an important cause of forming various physical figures and constitutions. Accordingly, the foot status has a correlation with the posture, the physical figure, and the constitution. Accordingly, the foot status can be analyzed to check the physical figure, and on the contrary, the physical figure can be analyzed to check the foot status.

- [14] Accordingly, the measurement data importantly treated in the present invention is foot bottom pressure data, and physical figure data. In addition, it includes data on a position variation of each fragment, a variation of a muscle, a shift of the weight, and exercise characteristic, pattern, and capability when a user stands upright and exercises.
- [15] The foot bottom pressure data can be provided using the digital camera, the camcorder, the scanner, and the foot bottom pressure detector (it is a device for measuring a pressure loaded on the foot in relation with the ground when the user stands upright and exercises). The foot bottom pressure detector easily converts statuses of a foot bottom and the foot bottom pressure into image and character data. In addition, firstly, a user using the digital camera, the camcorder, the scanner and the like prepares a footprint. The prepared footprint (obtained by imprinting a footprint of a foot bottom surface) is photographed and scanned using the digital camera, the camcorder and the scanner, and converted into image data. In case where the scanner is used, the foot bottom surface can be directly converted into scan and image data.
- [16] Physical figure data can be converted into the image and character data through the digital camera, the camcorder, and the scanner. The physical figure data can correspond to all or some of the human body.
- [17] The user's measurement data converted through the measurement device is inputted to the personal communication unit and the sub server, and is outputted to the main server. The main server includes a measurement data analysis device, such as a foot bottom pressure data analyzing and processing device and a physical figure data analyzing and processing device, for analyzing and processing the measurement data received from the user personal communication unit and the shop sub server. For one example, the foot bottom pressure data analyzing and processing device is a device for analyzing and processing the received foot bottom pressure data, and analyzes the received foot bottom pressure data and diagnoses the status of the corresponding foot and physical figure. The physical figure data analyzing and processing device analyzes and processes the received physical figure data, and diagnoses the statuses of the foot and the physical figure. Before the operation of the present invention, the personal communication unit, the main server, and the sub server are connected to the Internet

through a modem and a network adapter, and a domain name is set to the main server and the sub server.

[18] The personal communication unit includes an operation system; an input unit and an output unit such as a liquid crystal display and a monitor; the input unit such as a keyboard, a mouse, a touch pad, and the measurement device; the modem and the network adapter; an Internet protocol unit; and a browser.

[19] The sub server includes an operation system; an output unit such as the monitor; an input unit such as the keyboard, the mouse, the touch pad, and the measurement device; the modem and the network adapter; an Internet protocol unit; and a browser.

[20] The main server is connected with the sub server and the personal communication unit through the Internet, and processes data requested by the sub server and the personal communication unit, and has necessary units. The main server includes an operation system; an output unit such as the monitor; an input unit such as the keyboard, the mouse, the touch pad, and the measurement device; the modem and the network adapter; an Internet protocol unit; a WWW server; the measurement data processing device for receiving the measurement data from the sub server and the personal communication unit, and analyzing and processing the received measurement data; a common gateway interface (CGI) program unit connected between the WWW server and a database management unit, and providing the curing program so that the user can learn on the basis of a CGI function, analyzing and processing a learning content, analyzing and processing the data received from the personal communication unit and the sub server, and requesting a corresponding device for analysis and process, providing a moving picture, and allowing a communication between the user and the server through the browser; a database unit; and a database management unit commanding the database unit to input and output the data.

[21] FIG. 1 illustrates an operation of the present invention.

[22] A user requests a WWW server for connection through a browser of a personal communication unit. The WWW server outputs a main page (including a diagnosis unit, a learning unit, a guidance unit, and an information unit) of a curing program to the personal communication unit (Step 100). When the diagnosis unit is selected (Step M100), the WWW server requests the user to input a name and a password (Step 200). When the name and the password are inputted and outputted to the WWW server, the WWW server requests a CGI (Common gateway Interface) program unit to confirm whether or not the user is registered, and the CGI program unit requests a database management unit for this and searches a database unit (Step 201). If there is not registration information as a search result (Step 210), the CGI program unit prepares and outputs a user registration page to the WWW server and the browser of the personal communication unit for registration. The user registration page can allow input of

personal information and a kind of the personal communication unit automatically receiving a curing program. If the user registration page is prepared and outputted to the WWW server, the WWW server outputs the user registration page to the CGI program unit. The CGI program unit requests the database management unit to store corresponding data, and stores the corresponding data (Step 211), and Step 300 and its subsequent Steps are performed. If there is the registration information (Step 220) as the search result (Step 201), the CGI program unit requests the database management unit to check whether or not there are the user's curing program and a learning record (Step 230).

[23] If there are the curing program and the learning record (Step 250, if there is not the learning record, a next process can be performed without related data), the CGI program unit requests the database management unit for and receives the curing program and learning result data. Step 400 and its subsequent steps are performed. If there are not the curing program and the learning record in the database management unit (Step 240) as the check result (Step 230), they are outputted to the CGI program unit. In case where Step 410 is performed, the CGI program unit prepares a diagnosis page modified using input data (Step 301), and otherwise, it prepares a diagnosis page (Step 300), and outputs the prepared diagnosis page to the WWW server and the browser of the personal communication unit. The diagnosis page is to diagnose a user status, and includes an input unit, a selection unit, and a shop data use unit. In case where the Step 410 is performed, earlier edited data and its corresponding curing program data are included. The input unit is a device on a browser for receiving data from a measurement device and transmitting the received data to a main server. The received data through the measurement device is used to diagnose a user's status of body. The selection unit has a model allowing to select an inquiry provided from the main server to diagnose the user's status of body, and a type corresponding to the user's status of body. The model is formed using a character and image data, and classifies various statuses of the human body in each type.

[24] The user having experience of visiting to a shop can be provided with the curing program, using various measurement and diagnosis data provided from the shop such as data secured through a shop measurement device and diagnosis data secured through a curing operation process. When the data secured in the shop is used, the shop data use unit is selected, thereby performing Step 321 and its subsequent steps are performed (Step 320).

[25] The user not having experience of visiting to the shop prepares various measurement data, such as foot bottom pressure data and body type data using the measurement device, and inputs the prepared measurement data to the personal communication unit. In case where there is not the measurement device, the user can

prepare data requested by the selection unit of the diagnosis page and be provided with a diagnosis service. The user receives measurement data from the measurement device, provides the received measurement data to the input unit, answers a question of the selection unit, and selects a model corresponding to the user status among provided models (Step 301).

[26] The browser outputs the data inputted and selected by the user, to the WWW server. The WWW server outputs the received data to the CGI program unit. The CGI program unit analyzes and processes the received data. In this case, in case where there is measurement data, the CGI program unit requests a corresponding measurement data processing device for analysis and process. The measurement data processing device analyzes and processes the received data, and outputs the processed data to the CGI program unit.

[27] When the Step 320 is performed, the CGI program unit requests the database management unit for data corresponding to a user data provided from the shop (Step 321). Otherwise, the CGI program unit requests the database management unit for data corresponding to the analyzed and processed data, and receives the requested data. The CGI program unit performs diagnosis on the basis of the received data, and prepares and outputs its corresponding curing program page to the WWW server. The WWW server outputs the curing program page to the browser of the personal communication unit (Step 400).

[28] The curing program page includes the diagnosis result, its corresponding curing program, a confirmation unit, a correction unit, a guidance request unit, a learning result input unit, an information modification unit, and in case where there is an earlier learning record, it includes learning result data and its learning test data. The correction unit is a device on the browser, for preparing a correction request item when there is a need to correct a curing program page, and outputs the prepared correction request item to the main server.

[29] When there is the need to correct the curing program page, the user prepares the correction request item in the correction unit, and outputs the prepared correction request item to the WWW server (Step 410). The WWW server outputs the correction request item to the CGI program unit. The CGI program unit analyzes and processes the received data, and requests the database management unit for corresponding data and receives the corresponding data to again prepare the diagnosis page. The CGI program unit again performs the Step 301 and its subsequent steps.

[30] In case where there is not the need to correct the Step 400, the confirmation unit is selected. The confirmation unit outputs the corresponding curing program to the WWW server, and the WWW server inputs the corresponding curing program to the CGI program unit. The CGI program unit requests the database management unit to

store the corresponding curing program, and stores the corresponding curing program. Meantime, the user views the curing program page while beginning to learn (Step 500).

[31] Upon completion of the learning, the learning result (it can include a learning content, a progress rate, a learning result, and measurement data) is prepared, and outputted to the WWW server through a learning result input unit (Step 501), and the WWW server outputs the learning result to the CGI program unit. The CGI program unit analyzes, processes, and tests the received data, requests the database management unit to store the data, stores the requested data (at the time of next connection, it is provided together with the curing program), and prepares and outputs the storage result page to the WWW server. The WWW server outputs the storage result page to the personal communication unit. The user views a content of the storage result page outputted to the browser, and finishes the learning (Step 502).

[32] If the learning unit is selected in the Step 100 (Step M200), Step 200 and its subsequent steps are performed.

[33] If the guidance unit is selected in the Step 100 (Step M300), the Steps 200 to 400 are performed. If a manager of the sub server is requested for guidance through the guidance request unit (Step 600), the sub server informs the manager of the guidance request through a manager guidance page (having a guidance response unit and a user information confirmation unit). The manager responds through the guidance response unit. The guidance request unit and the guidance response unit provide a corresponding service so that the user and the manager can communicate through the character and the image data. The manager requests (has corresponding authorization) the main server for the user's curing program through the user information confirmation unit to confirm the user's curing program. The CGI program unit requests the database management unit for the corresponding curing program, receives the requested curing program, and outputs the received curing program to the WWW server. The WWW server outputs the curing program to the manager guidance page. The manager views the manager guidance page, and requests the WWW server of the main server for data corresponding to guidance (Step 601). The WWW server outputs the data to the CGI program unit. The CGI program unit requests the database management unit for the corresponding data, receives the requested data, and outputs the received data to the WWW server. The WWW server outputs the data to the manager guidance page. The manager outputs the corresponding data to the personal communication unit through the guidance response unit. The user views the data outputted to the guidance request unit (Step 610), and in case where there is not the need of correction, Step 500 and its subsequent steps are performed (Step 611).

[34] In case where there is the need of correction, the Step 400 and its subsequent steps

are performed or the manager is requested for correction through the guidance request unit. The manager performs the Step 610 and its subsequent steps. In case where the Step 611 is performed, the manager outputs the user curing program and the data used for the guidance, to the WWW server of the main server (Step 620). The WWW server outputs them to the CGI program unit. The CGI program unit analyzes whether or not the curing program is the same as the data used for the guidance (Step 630). In case where the data are different as the analysis result, the CGI program unit corrects the curing program with reference to the data used for the guidance, and requests the database management unit to store the corrected curing program, and stores the curing program. In case where the data are the same in the Step 630, the CGI program unit requests the database management unit to store guidance content, and stores the guidance content. The CGI program unit prepares and outputs a guidance result storage page to the WWW server. The WWW server output the guidance result storage page to the sub server. The manager confirms the guidance result storage page, and ends a process.

[35] The CGI program unit can be programmed to process the corresponding curing program into the character and the image data depending on each user's learning step, and automatically cyclically output the processed curing program to the personal communication unit (Step 700). In this case, the CGI program unit requests the database management unit for a stepwise curing program with reference to the user's learning result, receives the stepwise curing program, prepares the received stepwise curing program as the curing program page, and outputs the prepared curing program page to the WWW server. The WWW server outputs the curing program page to the corresponding personal communication unit (its kind can be selected in the registration or corrected in Step M400). The personal communication unit informs the user through vibration and a signal sound. The user can view the curing program page, and proceed with the Step 400 and its subsequent steps.

[36] When the user visits the shop, the shop manager confirms whether or not the user has ever provided with the curing program in on-line or has ever provided with curing operation in off-line (Step 800). In case where there is not a corresponding item (Step 810), the manager measures the user status using the measurement device, and receives the measured user status through the sub server. The manager outputs the measurement data and the user information to the WWW server of the main server. The WWW server outputs the measurement data and the user information to the CGI program unit. The CGI program unit requests a corresponding measurement data analysis unit to analyze and process the measurement data, receives the analyzed and processed measurement data to create the curing program, requests the database management unit to store the created curing program together with the user information, stores the

curing program together the user information, and prepares and outputs the manager guidance page to the WWW server. The WWW server outputs the manager guidance page to the sub server. The manager views the manager guidance page, and performs the curing operation.

[37] In case where there is an experience of receiving the curing program in the on-line or an experience of receiving the curing operation in the off-line in the Step 800 (Step 820), the shop manager requests the WWW server for the user curing program through the sub server. The WWW server outputs the user curing program to the CGI program unit. The CGI program unit requests the database management unit for corresponding data, receives the requested data, and prepares and outputs the manager guidance page (it can include the learning result data in case where there is the learning record of an earlier curing program), to the WWW server. The WWW server outputs the manager guidance page to the sub server. The manager views the manager guidance page, and performs the curing operation. The user can be provided with the same curing program and curing operation in any shop.

[38] In case where there is the need to correct the manager guidance page (Step 830), the WWW server is requested for the user's manager guidance correction page through the sub server (it is a manager page provided to allow the correction of the curing program and the input of data, and the manager has corresponding authorization). The WWW server requests the CGI program unit for the manager guidance correction page. The CGI program unit prepares and outputs the user's manager guidance correction page to the WWW server. The WWW server outputs the manager guidance correction page to the sub server. The manager corrects a corresponding content through the user's manager guidance correction page, adds data to the manager guidance correction page, and outputs the manager guidance correction page to the WWW server. The WWW server outputs the manager guidance correction page to the CGI program unit. The CGI program unit requests the database management unit for corresponding data, receives the corresponding data, and prepares and outputs a correction result page to the WWW server. The WWW server outputs the correction result page to the sub server. The manager views the correction result page, and ends a process.

[39] In order to correct user information (Step 900), the information unit is selected in the Step 100 (Step M400). The Steps 200 to 400 are performed. The user requests corresponding correction in the curing program page through the information modification unit (Step 910). The WWW server outputs the correction to the CGI program unit. The CGI program unit requests the database management unit for corresponding data, receives the requested data, and prepares and outputs personal information correction page to the WWW server. The WWW server outputs the personal information

correction page to the personal communication unit. The user corrects corresponding data in the personal information correction page, and outputs the corrected data to the WWW server. The WWW server outputs the corrected data to the CGI program unit. The CGI program unit requests the database management unit to store the corrected data, stores the corrected data, and prepares and outputs a correction completion page (including information modification unit) to the WWW server. The WWW server outputs the correction completion page to the WWW server. The WWW server outputs the correction completion page to the personal communication unit. The user views the correction completion page, and in case where there is a need of correction, again performs the Step 910, and otherwise, ends a process (Step 920).

- [40] In the above, the present invention can be associated with a curing apparatus operating such that the user recognizes a preferable position where weight should be supported on feet, its preferable fragment state, a muscle strength, and a corresponding content when the learning is not rightly performed according to the curing program, through sound and vibration. In this case, the curing apparatus processes data on a process and a result using them as the learning result data, and outputs the processed learning result data to the main server in real time. The main server analyzes and processes the received curing program, correspondingly corrects the curing program, and outputs the corrected curing program to the curing apparatus. In this case, the curing apparatus can have a corresponding apparatus allowing an operation on the basis of the received curing program.

[41]

Industrial Applicability

- [42] The present invention provides an effective curing change to a busy modern person.

- [43] While the present invention has been described and illustrated herein with reference to the preferred embodiments thereof, it will be apparent to those skilled in the art that various modifications and variations can be made therein without departing from the spirit and scope of the invention. Thus, it is intended that the present invention covers the modifications and variations of this invention that come within the scope of the appended claims and their equivalents.

Claims

- [1] An on-line apparatus and method for curing a status of a human body, the method comprising the steps of:
on the basis of Internet WWW (world wide web), converting a status of a user body into image and character data, and outputting the converted data to a main server;
in the main server, analyzing and processing the data, preparing a curing program, and outputting the prepared curing program to a personal communication unit and a sub server;
learning the curing program;
converting a learning result into the image and character data, and outputting the converted data to the main server; and
in the main server, storing the data, and outputting a result to the personal communication unit and the sub server.
- [2] The on-line apparatus and method according to claim 1, comprising the steps of:
registering user information to the main server;
outputting a diagnosis page to the sub server and the personal communication unit;
converting the status of the user body into the image and character data, and inputting the converted data to the sub server and the personal communication unit;
answering a question provided by the main server;
outputting the data to the main server;
analyzing and processing the received data;
preparing the curing program on the basis of the data;
outputting the curing program to the sub server and the personal communication unit;
viewing the outputted curing program, and in case where there is a need of correction, requesting the main server to correct a corresponding content;
preparing a curing program corresponding to the requested data in the main server;
outputting the curing program to the sub server and the personal communication unit; and
learning according to the curing program.
- [3] The on-line apparatus and method according to claim 1, comprising the steps of:
when a user visits a shop, manager's confirming whether or not there are user's curing program and learning result in the main server;

in case where there are the curing program and the learning result, requesting the corresponding curing program and learning result;

outputting the corresponding curing program and learning result to the sub server;

in case where there is a need to correct the curing program, outputting a corresponding content to the main server;

analyzing and processing the received data, and correcting the curing program;

outputting the corrected curing program to the sub server; and

user's learning the curing program.

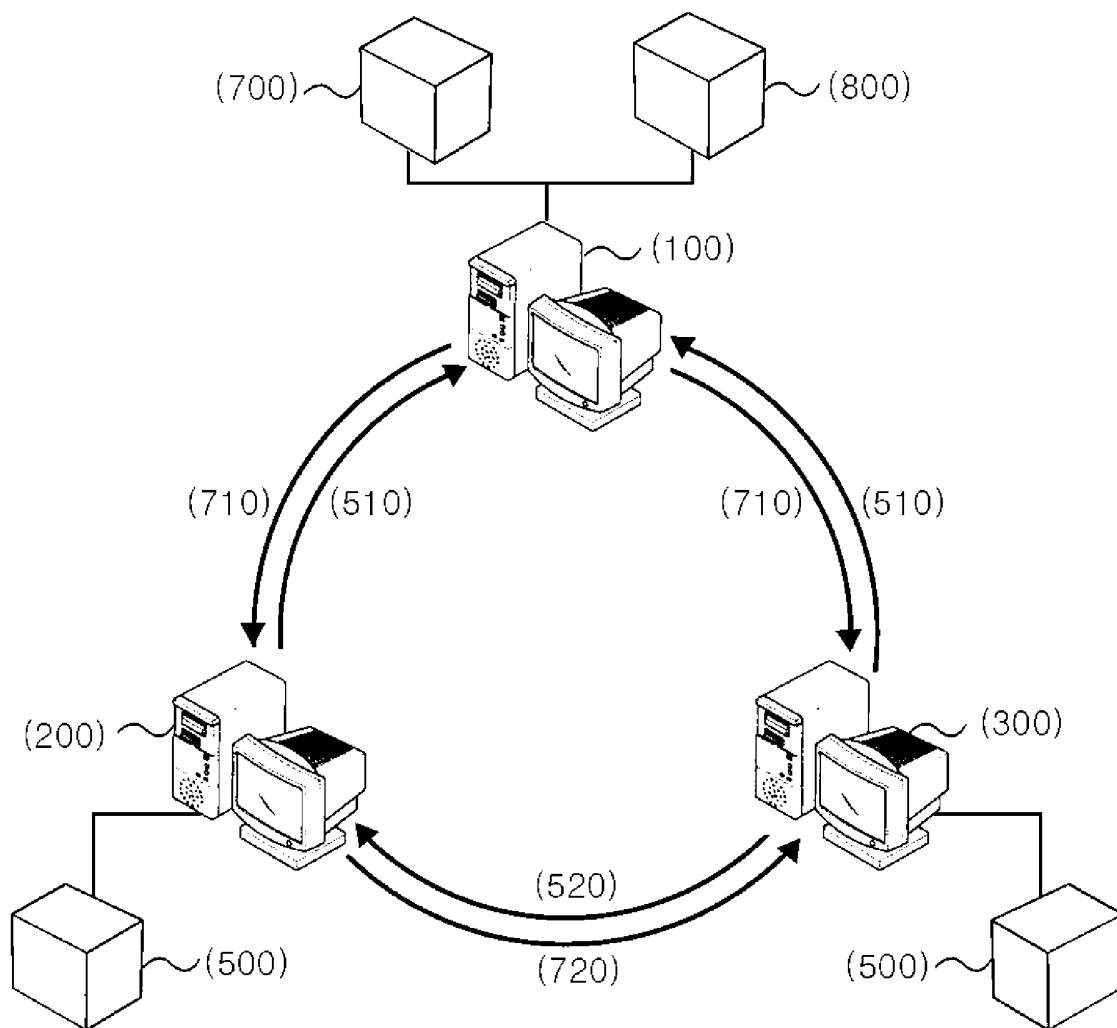
- [4] The on-line apparatus and method according to claim 3, comprising the steps of: in case where there are not the corresponding curing program and learning result, converting the status of the user body into the image and character data through the sub server, and inputting the converted data to the main server; in the main server, analyzing and processing the received data, and preparing the curing program; outputting the curing program to the sub server; in case where there is the need to correct the curing program, requesting the main server for correction; correcting the curing program in the main server; outputting the corrected curing program to the sub server; and user's learning the curing program.

- [5] The on-line apparatus and method according to claim 1, comprising the steps of: user's requesting a sub server manager for guidance of the curing program through a guidance request unit; manager's requesting the main server for user's curing program and corresponding data; in the main server, outputting the corresponding data to the sub server; in case where there is a need to test and correct the received data, manager's requesting the main server for correction; in the main server, outputting the corresponding data to the sub server; in case where there is not a need to correct the received data, manager's outputting the data to the personal communication unit through a guidance response unit; in case where there is a need to test and correct the received data, user's requesting the manager for correction; manager's requesting the main server for corresponding data; in the main server, outputting the corresponding data to the sub server; manager's requesting the main server to correct the corresponding data;

in the main server, outputting the corresponding data to the sub server; manager's outputting the received data to the personal communication unit; and user's learning the received data.

- [6] The on-line apparatus and method according to claim 1, wherein the personal communication unit can receive the corresponding curing program in real time.
- [7] The on-line apparatus and method according to claim 1, wherein though visiting any shop, the user can connect to the main server through the personal communication unit and the sub server, and receive the same curing program.
- [8] The on-line apparatus and method according to claim 1, wherein it can be associated with a curing apparatus for informing the user of a preferable position where weight should be supported on feet, its preferable fragment state, a degree of muscle strength, and a corresponding content when the learning is not rightly performed according to the curing program, through sound and vibration, and wherein the main server can output the curing program based on the corresponding purpose to the curing apparatus.
- [9] The on-line apparatus and method according to claim 8, wherein the curing apparatus can have a device for processing process and result data using them as the learning result data, and outputting the processed learning result data to the main server in real time, wherein the main server can analyze, process, and test the learning result data, and output a corresponding curing program to the curing apparatus, and wherein the curing apparatus can operate on the basis of the received curing program.

[Fig. 1]



A. CLASSIFICATION OF SUBJECT MATTER**IPC7 G06F 17/00**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 G06F17/00, G06F17/60, G06F19/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

KR, JP as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PAJ, FPD, USPAT, eKIPASS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 2002-63079 A (MACOM INFORMATION & TECHNOLOGY CO., LTD.) 01 AUGUST 2002 See the whole document	1-9
Y	KR 2002-11198 A (PRIMOGENE CO., LTD.) 08 FEBRUARY 2002 See the whole document	1-9
A	US 6,341,265 B1 (P5 E HEALTH SERVICES INC) 22 JANUARY 2002 See the whole document	1-9
A	US 6,067,523 A (PSYCHOLOGICAL CORP) 23 MAY 2000 See the whole document	1-9

 Further documents are listed in the continuation of Box C. See patent family annex.

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Information on patent family members

International application No.

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