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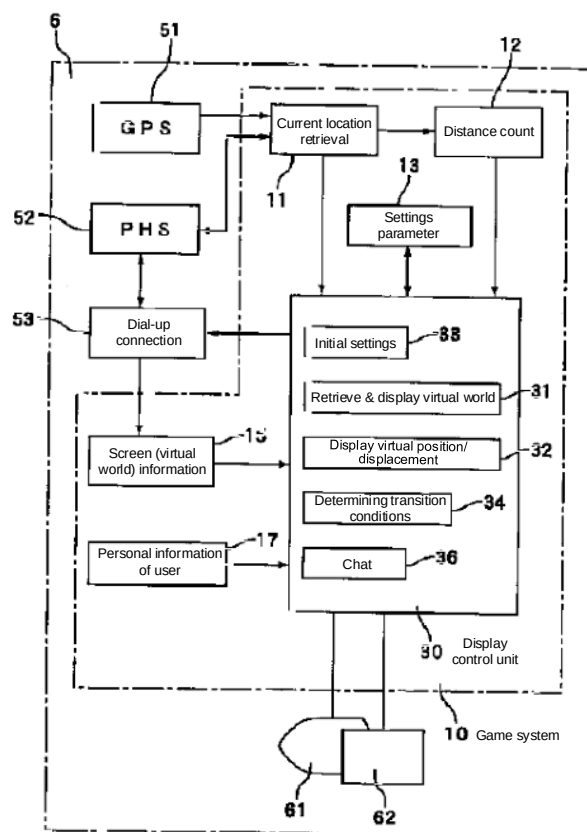
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(54) [Title of the Invention] System and Method for Displaying a Virtual World

(57) [Abstract]

[Problem to Be Solved by the Invention] To implement a system capable of providing a game that offers enjoyment different from conventional systems.

[Solution] A game system (10) is provided that displays and controls the current location and displacement in the real world—obtained from GPS, PHS, CDMA-based mobile phones, or similar sources—as the virtual position and virtual displacement on the screen (virtual world) presented in a role-playing game. Additionally, when the position overlaps with an event icon, the next screen (second virtual world) is displayed. As a result, it becomes possible to provide a system that, using location information, actualizes new entertainment by combining real location information with conventional game methods, while also enabling enjoyable physical activity as pedestrians physically move around.



[Scope of Claims for Patent]

[Claim 1] A system for displaying a virtual world, comprising: a first display means configured to display a first virtual world; a conversion and display means configured to acquire a current location or displacement of a terminal in the real world, wherein the terminal is capable of determining its own current location; a second display means configured to display a second virtual world when the position in the first virtual world reaches a predetermined destination or target area; an initialization means configured to display the current location in the real world at the time of transitioning to the second virtual world as a predetermined initial position in the second virtual world; and a conversion and display means configured to convert and display the current location or displacement in the real world as the corresponding current location or displacement in the second virtual world.

[Claim 2] The system for displaying a virtual world according to Claim 1, wherein the second virtual world includes a plurality of said initial positions, and the means for displaying the initial position is configured to select one of the plurality of initial positions based on conditions at the time of transitioning from the first virtual world to the second virtual world and to display the selected initial position corresponding to the current location in the real world.

[Claim 3] The system for displaying a virtual world according to Claim 1, further comprising: means for displaying the first virtual world when predetermined conditions are satisfied in the second virtual world, and means for associating the position in the first virtual world at the time of transitioning from the second virtual world back to the first virtual world with the current location in the real world at the time of said transition.

[Claim 4] The system for displaying a virtual world according to Claim 1, further comprising means for acquiring information of the first or second virtual world via communication with a server system.

[Claim 5] The system for displaying a virtual world according to Claim 4, wherein the means for acquiring information of the virtual world transmits the current location information to the server system and acquires information of the second virtual world, including information related to the current location, from the server system.

[Claim 6] The system for displaying a virtual world according to Claim 4, wherein the first virtual world includes a plurality of said destinations or target areas, and the means for acquiring information of the virtual world transmits the current location information to the server system when a destination or target area, for which information related to the current location can be obtained, is reached, and acquires information of the second virtual world, including information related to the current location, from the server system.

[Claim 7] The system for displaying a virtual world according to Claim 5 or Claim 6, wherein the means for acquiring information of the virtual world transmits, in addition to the current location information, user-related information of the terminal to the server system.

[Claim 8] The system for displaying a virtual world according to Claim 5 or Claim 6, wherein the information related to the current location is accessed through the server system from the first virtual world or a virtual world related thereto, and includes information of users of other terminals whose current locations are within a predetermined range from the current location.

[Claim 9] The system for displaying a virtual world, wherein the first virtual world is a map corresponding to the real world, and the map displays the destination or target area.

[Claim 10] A mobile terminal comprising: a system for displaying a virtual world according to Claim 1; and means for acquiring the terminal's current location.

[Claim 11] A mobile terminal comprising: a system for displaying a virtual world according to Claim 4; means for acquiring the terminal's current location; and further comprising means for enabling communication with a server system via a connection.

[Claim 12] A method for displaying a virtual world, comprising the steps of:

displaying a first virtual world; converting and displaying the current location or displacement in the real world, which can be acquired by a terminal, as a corresponding position or displacement in the first virtual world; displaying a second virtual world when the position in the first virtual world reaches a destination or target area; displaying the current location in the real world at that time as a predetermined initial position in the second virtual world;

and converting and displaying the current location or displacement in the real world as a corresponding position or displacement in the second virtual world.

[Claim 13] The method for displaying a virtual world according to Claim 12, wherein the second virtual world includes a plurality of said initial positions, and in the step of displaying the initial position, one of the plurality of initial positions is selected based on the conditions at the time of transitioning from the first virtual world to the second virtual world, and the selected initial position is displayed corresponding to the current location in the real world.

[Claim 14] The method for displaying a virtual world according to Claim 12, further comprising the steps of: displaying the first virtual world when predetermined conditions are satisfied in the second virtual world; and associating the position in the first virtual world at the time of transitioning to the second virtual world with the current location in the real world at the time of the transition back to the first virtual world.

[Claim 15] The method for displaying a virtual world according to Claim 12, further comprising the step of acquiring information of the first or second virtual world via

communication with a server system.

[Claim 16] The method for displaying a virtual world according to Claim 15, wherein in the step of acquiring information of the virtual world, the current location information is transmitted to the server system, and information of the second virtual world, including information related to the current location, is acquired from the server system.

[Claim 17] The method for displaying a virtual world according to Claim 15, wherein the first virtual world includes a plurality of said destinations or target areas, and in the step of acquiring information of the virtual world, when a destination or target area is reached, for which information related to the current location can be obtained, the current location information is transmitted to the server system, and information of the second virtual world, including information related to the current location, is acquired from the server system.

[Claim 18] The method for displaying a virtual world according to Claim 16 or Claim 17, wherein in the step of acquiring information of the virtual world, in addition to the current location information, user-related information of the terminal is transmitted to the server system.

[Claim 19] The method for displaying a virtual world according to Claim 16 or Claim 17, wherein the information related to the current location is accessed through the server system from the first virtual world or a virtual world related thereto, and includes information of users of other terminals whose current locations are within a predetermined range from the current location.

[Claim 20] A computer-readable recording medium having recorded thereon a program for displaying a virtual world, the program executing the steps of:

displaying a first virtual world; converting and displaying the current location or displacement in the real world, which can be acquired by a terminal, as a corresponding position or displacement in the first virtual world;

displaying a second virtual world when the position in the first virtual world reaches a destination or target area;

displaying the current location in the real world at that time as a predetermined initial position in the second virtual world;

and converting and displaying the current location or displacement in the real world as a corresponding position or displacement in the second virtual world.

[Claim 21] A computer-readable recording medium having recorded thereon a program for displaying a virtual world according to Claim 20, wherein the second virtual world includes a plurality of said initial positions, and in the step of displaying the initial position, one of the plurality of initial positions is selected based on the conditions at the time of transitioning from the first virtual world to the second virtual world, and the selected initial position is displayed corresponding to the current location in the real world.

[Claim 22] A computer-readable recording medium having recorded thereon a program for displaying a virtual world

according to Claim 20, further executing the steps of: displaying the first virtual world when predetermined conditions are satisfied in the second virtual world; and associating the position in the first virtual world at the time of transitioning to the second virtual world with the current location in the real world at the time of the transition back to the first virtual world.

[Claim 23] A computer-readable recording medium having recorded thereon a program for displaying a virtual world according to Claim 20, further executing the step of acquiring information of the first or second virtual world via communication with a server system.

[Claim 24] A computer-readable recording medium having recorded thereon a program for displaying a virtual world according to Claim 23, wherein in the step of acquiring information of the virtual world, the current location information is transmitted to the server system, and information of the second virtual world, including information related to the current location, is acquired from the server system.

[Claim 25] A computer-readable recording medium having recorded thereon a program for displaying a virtual world according to Claim 23, wherein the first virtual world includes a plurality of said destinations or target areas, and in the step of acquiring information of the virtual world, when a destination or target area is reached, for which information related to the current location can be obtained, the current location information is transmitted to the server system, and information of the second virtual world, including information related to the current location, is acquired from the server system.

[Claim 26] A transmission medium capable of transmitting a program between computers for displaying a virtual world, or data converted from the program, the program executing the steps of:

displaying a first virtual world; converting and displaying the current location or displacement in the real world, which can be acquired by a terminal, as a corresponding position or displacement in the first virtual world;

displaying a second virtual world when the position in the first virtual world reaches a destination or target area;

displaying the current location in the real world at that time as a predetermined initial position in the second virtual world;

and converting and displaying the current location or displacement in the real world as a corresponding position or displacement in the second virtual world.

[Detailed Description of the Invention]

[0001]

[Relevant Technical Field of the Invention] The present invention relates to a system for controlling a computer based on location information.

[0002]

[Prior Art] As methods or means for acquiring information about one's current location, satellite positioning systems such as GPS, which perform radio wave positioning by

receiving signals from multiple satellites, and systems that identify base stations of mobile communication networks such as PHS to obtain information about one's current location from the position of the base station are known. Furthermore, by equipping mobile information terminals with these systems for acquiring such current location information, several systems have been disclosed that send information about one's current location to a server via a computer network. For example, JP-H-8-322091 discloses a system for transferring information, including the current location of a reporting terminal, to an electronic newspaper server via a network as part of a field reporting support system. Additionally, JP-H-10-336238 discloses a system in which information indicating the current location is sent from a mobile terminal to a server, and based on the sent information that has been received, map data and related information of the surrounding area of that location are sent back to the mobile terminal.

[0003] Additionally, a navigation device that uses means for detecting the current location to run a game is disclosed in JP-H-9-114370. This navigation device displays a map including the current location and is designed to execute an event when the current location arrives at a designated event occurrence point on the map.

[0004]

[Problem To Be Solved By The Invention] Currently, information indicating one's own location is easily accessible in this manner, and it is conceivable to provide various services or entertainment using this information. Therefore, the present invention aims to provide a new form of recreation that utilizes one's own location information, i.e., one's current location. Games in which the player can advance forward using location information include, as mentioned above, those where one follows along on the map of a navigation device, or orienteering using a personal navigation device. However, such games are limited to simply following a map or utilizing the actual terrain or roads as they are. Such methods offer limited potential for creating engaging games. Therefore, the present invention aims to provide a system or application that offers a completely new form of entertainment, distinct from the existing methods mentioned above.

[0005]

[Means to Solve the Problem] Currently, various types of portable gaming devices are commercially available. These games include role-playing games or shooting games, where new scenes or worlds automatically open depending on certain conditions. In these new worlds, players progress in the game by moving through the virtual world using directional buttons, joysticks, or other pointing devices. In the present invention, by utilizing current location information, which can be obtained through technologies such as GPS, a new virtual world is opened. This allows users to progress and enjoy the game in a completely new and engaging way using portable devices,

creating an entirely new gaming experience. In other words, in the system for displaying a virtual world according to the present invention, the system comprises: means for displaying a first virtual world (hereinafter referred to as the "virtual world"); means for converting and displaying the current location in the real world (hereinafter referred to as the "current location" or "real position") of a terminal capable of obtaining its own current location, or the displacement thereof (hereinafter referred to as "real displacement"), into a position (hereinafter referred to as the "virtual position") or displacement (hereinafter referred to as "virtual displacement") within the first virtual world; means for displaying a second virtual world when the position within the first virtual world reaches a destination or target area; means for displaying the current location in the real world at that time as a predetermined initial position in the second virtual world; and means for converting and displaying the displacement of the current location in the real world into displacement within the second virtual world. The method for displaying a virtual world according to the present invention is characterized by including: a step of displaying a first virtual world; a step of converting and displaying the current location or real displacement into a virtual position or virtual displacement within the first virtual world; a step of displaying a second virtual world when the position within the first virtual world reaches a destination or target area; a step of displaying the current location at that time as a preset initial position in the second virtual world; and a step of converting and displaying the current location or real displacement into a virtual position or virtual displacement within the second virtual world.

[0006] There are systems that progress role-playing games by reflecting the relative movement of a finger or part of the body on the screen. For example, a mouse, which is a pointing device, can be considered one such system. However, there is no system that opens a new virtual world based on the current location obtained from a terminal held by the user, such as coordinates on a map, and allows the user to control the virtual world only after physically moving their actual location. Therefore, in the system and method for displaying a virtual world according to the present invention, a new virtual world cannot be opened unless the user physically moves to a degree sufficient to produce a significant difference in the current location obtained via means such as GPS. Furthermore, the user's own intentions cannot be reflected within the opened virtual world. As a result, even though the user is playing a role-playing game displayed on a terminal, it is possible to experience a similar sensation to actually moving through the virtual world displayed in the game. Furthermore, such physical movement is required by the game. Therefore, this approach allows for the provision of a game with a different flavor compared to conventional games that can be played without moving a single step. Additionally, since the user physically moves, it enables

the creation of a new type of game where one can utilize or enjoy various elements at their destination.

[0007] For example, with the current standalone GPS positioning, movement of approximately several tens of meters may be required as actual displacement, depending on the circumstances. On the other hand, with relative positioning (DGPS), which uses correction values measured at base stations, movement of about several meters may suffice as actual displacement. Thus, by reflecting a certain degree of actual movement by the user, there is the added benefit of allowing the user to exercise while enjoying the experience, as well as the opportunity to discover interesting aspects of their destination. Of course, there are also positioning systems that use methods such as carrier phase shift measurement, capable of detecting displacement of the current location at levels ranging from a few centimeters to a few millimeters. Consequently, it is also possible to enjoy the game with minimal movement.

[0008] The first virtual world may simply be a world represented by a map corresponding to the real world (including deformed or stylized maps) that shows a destination or target area. When the user reaches the destination on the map, a virtual world opens, allowing the user to move further within this new world as part of the game. However, in the system and method for displaying a virtual world according to the present invention, the user's movements are not limited to representations reflecting the real world, such as maps. Instead, they can be reflected in virtual worlds that are further removed from reality. This enables the user to enjoy their movements within a freely customizable world, not restricted to real-world conditions, and tailored to their preferences. Moreover, in at least the second virtual world, the initial position is fixed, meaning the user's movements and the controllable range in the virtual world may not align with their real-world range of movement. This introduces an element of force majeure-like restriction, providing an additional way to enjoy the game.

[0009] It is also possible to allow initial settings to be configured to reflect movements in the real world within the virtual world. For example, in a role-playing game, it is desirable to set the current location in the real world as a predetermined position (the initial value of the virtual position) within the first virtual world. This position could be the starting point of the game or, if the game was interrupted, the point where it was paused. Additionally, it is possible to enable the adjustment of the ratio between real-world displacement and the corresponding virtual displacement displayed in the game. If the ratio of virtual displacement to real displacement is small, the user must move a considerable distance in the real world to traverse the virtual world, increasing physical activity. This flexibility supports various purposes and use cases. Different settings can also be applied to users with varying physical abilities, enabling competitive gameplay tailored to their

capabilities.

[0010] In the second virtual world, multiple initial positions can be provided. In the means or process for displaying an initial position, one of these initial positions may be selected based on the conditions under which the transition is made from the first virtual world to the second virtual world, and this position can then be displayed corresponding to the current location in the real world. For example, the second virtual world may have multiple entry points, allowing for a configuration where the entry point varies depending on the direction in which the target position or area is reached. This design allows the movements in the first virtual world to influence the second virtual world, enhancing the game's overall enjoyment.

[0011] In a game where the player returns from the second virtual world to the first virtual world, as in a role-playing game, it is desirable to include means or steps for displaying the first virtual world when certain conditions are met in the second virtual world—such as reaching a predetermined location or achieving a specific objective. Additionally, it is preferable to provide means or steps for displaying the position in the first virtual world, corresponding to the current location, when transitioning back from the second virtual world. The relationship between the current location and the position in the first virtual world can be maintained, and it is certainly possible to require the player to retrace their movements in the second virtual world to return to their original position in the first virtual world. However, since the second virtual world is also controlled by reflecting the current location and real displacement, it is possible for the current location to deviate significantly from the original position in the first virtual world while the player is in the second virtual world. Furthermore, the present invention also encompasses scenarios where the transition extends beyond the second virtual world to a third or fourth virtual world, or even additional virtual worlds. In such cases, the virtual position in the first virtual world and the current location in the real world often differ significantly. Therefore, it is more effective for smooth gameplay to update the relationship between the position in the first virtual world and the current location in the real world. This can be achieved by aligning the position in the first virtual world at the time of transition to the second virtual world with the current location when returning from the second virtual world to the first virtual world.

[0012] The information for these virtual worlds may be prepared in advance on the system side, i.e., the terminal. However, as the number of virtual worlds increases or as individual worlds involve large virtual displacements, the amount of information grows significantly. Therefore, it is desirable to include means or steps for obtaining virtual world information via communication with a server system through wireless or computer networks. Enabling communication with a server system to retrieve virtual world information allows the transmission of the current

location information to the server system and the retrieval of virtual world information relevant to that location from the server system.

[0013] Furthermore, when the user reaches a destination or target area in the first virtual world, where information relevant to their current location is available, the system may send the current location information to the server system. In response, the server system can provide information about the second virtual world that is relevant to the user's current location. By providing means or steps to access such a server, the user can actively obtain location-related information while playing the game. Additionally, the server may use DGPS to calculate a more accurate current location and return this information to the terminal, or base the information selection on the more accurate location. Moreover, in addition to the current location information, the terminal can send user-related information to the server system, allowing the server to display a virtual world containing information that matches the user's interests, thereby enhancing the game's enjoyment.

[0014] Additionally, information related to the current location can include information about other users' terminals within a designated range from the user's current location, accessed through the server system, within the first virtual world. In current email terminals and other internet-connected devices, data communication methods such as two-way chats are available for communication. However, traditionally, such communication has been limited to situations where one already knows the email address of friends or group members, and there has been no means to initiate simple communication that could occur in the real world, such as a chance encounter. In contrast, in the system and method for displaying a virtual world according to the present invention, by combining the virtual world with real location information obtained from GPS, it becomes easy to create opportunities for meeting others who are both virtually and physically nearby, thus facilitating spontaneous interactions.

[0015] In this way, in the system and method for displaying a virtual world according to the present invention, the current location or real displacement is reflected in the virtual world, allowing the game to progress. Therefore, the user must physically move by walking, running, or using a bicycle, for example. To support this, means or steps for displaying the distance traveled by the user can be provided, and additional health-oriented features such as a pedometer function or calorie calculations can be incorporated. This thus allows the user to enjoy a role-playing game while exercising and also track their physical activity.

[0016] A system for displaying such a virtual world can be provided on a computer-readable recording medium, which contains a program with instructions to implement each step of the method. The system can be installed on a mobile terminal equipped with positioning systems such

as a GPS unit, methods for acquiring the user's current location (e.g., through PHS units, mobile phones, etc. that utilize location information from base stations), and communication means for connecting to a server system via wireless, PHS, mobile phones, dial-up Internet, or other computer networks. By installing this program on the mobile terminal, the virtual world display system and method according to the present invention can be utilized. Additionally, the program can be supplied via transmission media such as computer networks, either by converting it into a suitable format or embedding it for delivery.

[0017] Furthermore, if the installed terminal is a device equipped with a direction sensor, it is possible to rotate the display of the virtual world so that the direction of real displacement aligns with the direction of virtual displacement. Additionally, if the game is a role-playing game set in the virtual world, after the game ends, it is also possible to provide means for connecting to the server to register rankings or perform other actions.

[0018]

[Mode for Carrying Out the Invention] The present invention will be described with reference to the drawings below. Figure 1 shows an example of the environment in which the mobile terminal 6, on which the virtual world (described here with a role-playing game as an example) according to the present invention is displayed, operates. In this example, the mobile terminal 6 is capable of connecting to a server system 20 that provides the role-playing game through the general internet 1 as the computer network. The mobile terminal 6, in many cases, is equipped with a PHS unit or a mobile phone unit. Through these units, it connects to the public telephone network 7 via PHS base station 7a or mobile phone base station 7b, and further connects to the server system 20 via dial-up server 25. Of course, it is also possible to connect to the server system 20 of the service provider via the Internet 1 from the server 5 of another provider.

[0019] Furthermore, the mobile terminal 6 in this example is equipped with a system for obtaining data indicating its current location (typically coordinates including latitude and longitude information). There are several such systems, and the one currently considered to have the highest accuracy uses a GPS unit, which receives signals from GPS satellites 9 to perform positioning and determine the coordinates of the current location through radio signal measurements. In the case of standalone positioning, where coordinates are determined solely from information received from GPS satellites 9, the error, depending on the circumstances, can typically range from tens of meters to around 100 meters. A method called Differential GPS (DGPS), which uses information from DGPS base stations 2 to correct and improve the accuracy, can also be employed. With this method, the error can be reduced to a few meters. To determine coordinates using DGPS, differential information is required, which can be obtained from the information provider server 22 of the server

system 20. Alternatively, it is also possible to obtain the current location with differential corrections applied by the server system 20. Furthermore, using a method called Carrier Phase Differential, which corrects using the carrier phase of the signal, it is possible to achieve accuracy on the order of a few centimeters to millimeters.

[0020] As shown in Figure 1, the server system 20 of the service provider, which provides services over the internet, is equipped with several functions. A mail server 21 for sending and receiving email is included in most server systems. In the case of the server system 20 in this example, in addition to the mail server, there is also an information provider server 22. Along with the differential information from the GPS base stations mentioned earlier, map data is provided from a map data server 23. Furthermore, position-related information for the role-playing game, as well as other location-related data required for playing the game mentioned later, is provided from a position-related information data server 24. Additionally, the service provider's user information is stored in a personal data server 27, and is used for selecting the grade of the games and the location-related information provided. Of course, it is also possible to provide information from another database server 4, connected to the internet, 1 to the user through the information provider server 22.

[0021] As another method of determining the current location, if a mobile terminal 6 can connect to the public telephone network 7 via PHS, the method involves receiving the identification information (CSID) from the nearest base station 7a and determining the current location of the mobile terminal 6 by using the base station's location based on the CSID. Once the CSID is obtained from the PHS connected to the mobile terminal, the coordinates of the base station can be easily acquired from the base station's location information server (CSID server) 29. Additionally, if the mobile terminal 6 is equipped with the functionality of a mobile phone, the location of the mobile terminal 6 can be determined based on the coordinates of the mobile phone's base station 7b. However, compared to PHS, the accuracy is not as high. However, with the adoption of future communication methods such as CDMA, the accuracy of location determination is expected to significantly improve.

[0022] Figure 2 shows an example of the environment in which the mobile terminal 6 running the game system 10 according to the present invention operates. First, the mobile terminal 6 in this example is equipped with a GPS unit 51 that acquires the terminal's current location. In addition, the mobile terminal 6 is equipped with a PHS unit 52 and a dial-up connection function 53 to connect to the service provider via the public telephone network 7 or the internet 1. Furthermore, as an input/output mechanism, the terminal is equipped with an LCD61 and an operation panel 62 consisting of a touch panel or pointing device and switches. Of course, in addition to these, the terminal may

also include peripheral devices such as hard disk drives, floppy disk drives, digital cameras, printers, or be a terminal that integrates or can integrate such devices.

[0023] The game system 10 installed on the mobile terminal 6 in this example is configured to allow a role-playing game to be played using location information. Therefore, the game system 10 is equipped with a function 11 that acquires the current location using the GPS unit 51, and, if necessary, it can also acquire the CSID of the PHS to obtain information related to the current location. The obtained current location is summed up by the distance counter 12, provided to the display control unit 30, and displayed as the position (virtual position) and displacement (virtual displacement) in the virtual world of the role-playing game on the LCD61.

[0024] The game system 10 is equipped with a display control unit 30 for displaying the virtual world, and this display control unit 30 has several functions. First, it has a function 31 to acquire and display screen information for the role-playing game from the server system 20. This function 31, when the game system 10 is launched, checks if the information for the initial screen has already been downloaded. If not, it first uses the dial-up connection function 53 to connect to the server and downloads the information 15 of the virtual world that constitutes the role-playing game. This function 31 also has the capability to acquire information for the next screen (virtual world) from the server 20 when the conditions for displaying the next screen (virtual world) are met, as described below. Additionally, it is possible to add a feature that rotates and displays the virtual world so that virtual displacement always points upwards, based on the direction of movement (actual displacement) obtained from the GPS unit 51. Of course, a new orientation unit could also be incorporated.

[0025] The display control unit 30 further includes a function 32 that converts the acquired current location and its displacement (actual displacement) into virtual positions and virtual displacements in the virtual world for display. Through this function 32, the movement of the terminal 6 or the user carrying the terminal 6 is reflected on the role-playing game screen displayed on the LCD61. Therefore, it is desirable to perform an initial setup that defines the correspondence between the current location and the virtual position, as well as the ratio for converting actual displacement into virtual displacement, prior to starting the role-playing game. Therefore, a function 33 for performing the initial setup is provided as one of the features of the display control unit 30, and the settings defined there are stored in a memory such as ROM or RAM. Of course, it is also possible to use the parameters that are set by default.

[0026] In the role-playing game screen, a position or area is set for transitioning to the next screen, and the destination or target area is displayed using icons or similar indicators. Therefore, in the following, examples of

such destinations or target areas displayed as icons will be shown, and these icons will be referred to as event icons. To this end, the display control unit 30 is equipped with a function 34 to determine whether the converted virtual position of the current location or the converted virtual displacement of the actual displacement matches the event icon or falls within a predefined range; in other words, it is to determine the transition conditions for the virtual world. When the virtual position overlaps with the event icon (indicating a match or entry into the predefined range), the next screen is obtained and displayed by the function 31 that retrieves and displays the virtual world.

[0027] The function 31 for retrieving the virtual world information, as described above, further includes the ability to send the current location to the server system 20 and retrieve information related to the current location, which may include either a virtual world or simply content in areas without any movement. In this case, in addition to the current location, the user's personal information 17 stored in the system 10 can be sent to the server system 20, or personal information from the server system 20 can be used to obtain more user-appropriate information related to the current location.

[0028] When the next screen is displayed based on the event icon, the function 32 for displaying the virtual position and displacement automatically sets the current location to the position (initial position) corresponding to the entrance of the screen (virtual world). If there is only one initial position on the next screen, there is no particular issue. However, it is also possible to provide multiple initial positions on the screen. In this case, the function 34, which determines the conditions for transitioning to the next screen based on the event icon, selects an appropriate position from the multiple initial positions. For example, when transitioning to a virtual world with multiple entrances, the direction of the virtual displacement when the event icon overlaps is determined, and the entrance (gate) corresponding to that direction can be set as the initial position in the next virtual world.

[0029] Additionally, by accessing the server system 20, it becomes possible to obtain information about the virtual world with event icons representing other users who are accessing the same role-playing game, using the function 31 for acquiring and displaying the virtual world. Then, a connection can be established with that user, allowing for communication (chat) through the screen. Therefore, a chat function 36 is provided as part of the features of the display control unit 30. Since the current locations of other users can be determined through the server system 20, it is possible to select other users who are within a range where it would be feasible to meet in the real world and display them as event icons. This allows for the experience of actually meeting other people through the role-playing game.

[0030] The functions of this game system 10 can be provided as an application program that operates under

an appropriate operating system, and recorded on a suitable readable medium such as FD, CD, or DVD. Alternatively, the application program itself, or data converted from it, can be embedded in a transmission medium and provided via computer networks such as the internet or other communication methods. Furthermore, this role-playing game can be provided by pre-recording the software onto the ROM of the mobile terminal 6 as a dedicated gaming device. In either case, such software (application program) can be executed on an information processing terminal, as shown in Figure 3, which includes a CPU 63, ROM 64, and RAM 65 connected via an internal bus 66. The information processing terminal 6 also includes, as needed, features such as GPS 51, PHS 52, LCD 61, and an operation panel 62.

[0031] Below, the movements at each stage of the game system 10 in this example will be explained in more detail, referring to flowcharts and other diagrams. In the role-playing game executed by the game system 10, a position icon (such as an illustration resembling a human figure) displayed on the screen moves in response to the movements of the user holding terminal 6. As a result, the user feels as one who is entering and moving through the virtual world of the role-playing game screen.

[0032] In Figure 4, the main processes of the game system 10 for the role-playing game are shown in a flowchart. Additionally, Figures 5 to 8 present more detailed flowcharts for several processes. Furthermore, Figures 9 to 13 show various screens that are displayed on the LCD 61 of terminal 6 when the role-playing game is executed on the game system 10 installed on terminal 6. As shown in the flowchart in Figure 4, when the program, i.e., the game system 10, is started at step 71, the initialization process is performed at step 72 before the game begins. The details of this process are shown in Figure 5.

[0033] First, in step 81, the dial-up connection function 53 is used to establish a connection with the server system 20. Then, the information for the first screen of the role-playing game is received from the server system 20, and the connection is disconnected. For example, as shown in Figure 9(a), when the connection is made to the server system 20, a screen to select the role-playing game is displayed. The user selects one of the games, and the information for the selected role-playing game is sent from the server system 20.

[0034] Next, in step 82, the current location is obtained using the location acquisition function 11. As mentioned earlier, information indicating the current location can be obtained from the GPS unit 51 or the PHS unit 52. Of course, if the terminal is equipped with a mobile phone unit, information indicating the current location can also be obtained from the mobile phone unit. If the current location cannot be obtained, an error message such as "Unable to obtain current location" will be displayed.

[0035] Next, in step 83, as shown in Figure 9(b), the function 31 for displaying the virtual world displays the first

screen (the first virtual world) 111 of the role-playing game. In step 84, the function 32 for displaying the virtual position and virtual displacement displays the position icon 113 corresponding to the current location at the initial position 112 of the screen 111. This position icon 113, or position display icon, can be arranged according to the user's preference. It could be an icon in the shape of a human figure or even an icon representing the user's face.

[0036] If the position icon 113 is displayed at a virtual position that is appropriate to be set as the initial position, the user can perform a suitable operation, and the initial setting function 33 will set that current location as the initial position 112 on the screen 111 and store it as the parameter 13. When the selected role-playing game is first executed, the starting position of the game will be the initial position 112. If the selected role-playing game is in a paused state, the system 10 or server system 20 will store the location where the game was interrupted, and that interrupted position can be set as the initial position 112. Of course, it is also possible to select a starting position.

[0037] It is also possible, in conjunction with associating the initial position 112 with the current location, to use the initial setting function 33 to set a ratio that converts the actual movement distance (real displacement) of the current location into the movement distance (virtual displacement) corresponding to the virtual position. This allows setting the distance the user must physically move in order to move the virtual position on screen 111. The ratio can be set not only for screen 111 but also for other screens, or the initial value set can be applied to other screens as well.

[0038] As shown in Figure 9(b), the screen 111 includes event icons 115 representing a castle as a destination, and event icons 116 and 117 representing two street corners. Therefore, when the virtual position 113 overlaps with any of these event icons 115, 116, or 117, the next screen (the second virtual world) will be displayed. As a result, the user moves the position icon 113 toward these event icons 115, 116, or 117 by physically moving in the real world, thus advancing in the role-playing game.

[0039] Once the initial processing in step 72 is completed, the role-playing game will in effect start. When the game starts, in step 73, the current location is acquired using the location acquisition function 11. This location is then converted, and the function 32 for displaying virtual positions and virtual displacements will show them on the screen. As a result, the user's movement with the terminal 6 will be displayed as virtual positions and virtual displacements on the screen of the first screen of the role-playing game. In other words, based on the initial settings or the default pre-set values (for example, 1 dot = 1 meter on the screen), the position icon 113 on the screen moves in accordance with the changes in the actual location or movement (actual displacement) provided by the GPS unit 51. In practice, when the position information obtained by the GPS (e.g., N36°9'3.41", E137°57'20.73") changes, the

actual displacement is calculated using the initial setting parameters 13, converting the horizontal and vertical distances on the screen (virtual displacement, such as H90 dot, V90 dot). Then, the position is displayed accordingly.

[0040] In step 73, the movement of the current location (actual displacement) obtained is displayed as a virtual displacement on the screen and is also added to the distance counter 12. The current location or actual displacement can be obtained from the server system 20 by receiving differential data at an appropriate timing via DGPS. However, this method can result in communication delays and computation time. Therefore, in this example, the current location and actual displacement are determined using standalone GPS measurements. In standalone measurements, there is an inherent error of about tens of meters as mentioned above. Additionally, selective availability (SA) may introduce random errors, causing the current location to include random fluctuations. Therefore, in the actual role-playing game, if the position icon 113 and event icons like 115 are not aligned at the right timing, they may be misaligned or separated in subsequent updates. Thus, the sense of gameplay as a role-playing game is enhanced, allowing for a more engaging and enjoyable game experience.

[0041] According to the current location and actual displacement, the virtual position or virtual displacement moves, and when, in step 74, as shown in Figure 10(a), the position icon 113 overlaps with the event icon 115, the transition condition determination function 34 determines that a transition is required. Then, in step 75, it is confirmed whether the event icon represents another user or not. If the icon does not represent another user, in step 76, the function for obtaining and displaying the virtual world information 31 retrieves and displays the next screen, i.e., the second virtual world screen, which follows the previous screen's virtual world.

[0042] As shown in Figure 6, a more detailed flowchart for the process of obtaining the next screen is provided. Additionally, Figure 10 shows the screen displayed during this process. As shown in Figure 10(a), when the position icon 113 overlaps with the event icon 115, which represents a castle, step 85 involves connecting to the server system. During this process, the server connection screen, as shown in Figure 10(b), is displayed. If the user selects "YES," the dial-up connection function 53 establishes communication with the server system 20, and the function for obtaining and displaying the virtual world information 31 retrieves the next screen. If the user selects "NO" on the screen shown in Figure 10(b), the following steps will not be executed, and the game will return to the original screen, i.e., the screen shown in Figure 10(a), allowing the user to continue the role-playing game. Alternatively, instead of displaying the server connection screen, the system can be set to automatically connect to the server system and retrieve the next screen's

information whenever the position icon overlaps with the event icon. This setting can be configured during the initial setup phase of the game.

[0043] Once the dial-up connection is established, first, in step 86, the data of the event icon 115 that overlapped with the position icon 113 is sent to the server system 20. Next, in step 87, it is determined whether the event icon is requesting information related to the current location. If the event icon is requesting information related to the current location, in Step 88, the current location information corresponding to the position icon 113 that overlapped with the event icon is sent to the server system 20. Next, in step 89, it is determined whether the system 10 holds the user's personal information 17. If personal information 17 is available, in step 90, that personal information is sent to the server system 20. In this example, the castle icon 115 is an event icon for displaying the next virtual world, which is unrelated to the current location, while the street corner (town corner) icons 116 and 117 are event icons that display the next virtual world, which are related to the current location.

[0044] When the castle icon 115 is selected, step 88 is not executed, and the server system 20 prepares and sends the information for the next screen based on the data of the castle icon 115. Therefore, the terminal 6, or game system 10, retrieves the information for the next display screen in step 91 and disconnects the line in step 92. Then, the next screen that has been retrieved is displayed as the new virtual world in step 93. In this example, as shown in Figure 10(c), the layout inside the castle gate is displayed as the next virtual world (screen) 121. Along with this, in step 94, the position display icon 113 is placed at the initial position of the screen 121.

[0045] This virtual world 121 has three entrances, 122, 123, and 124, and the function 32 for displaying the virtual position and virtual displacement sets the position icon 113 at the designated entrance based on the result of the transition condition determined by the function 34 for judging the transition conditions. In this example, three paths are connected to the castle icon 115, and it is possible to determine which path the position icon 113 takes to overlap with the castle icon 115. In the example shown in Figure 10(c), the position icon 113 overlaps with the castle icon 115 via the middle path, so in the next screen 121 representing the interior of the castle, the middle entrance 122 is selected as the initial position, and the position icon 113 is set there. How the results from the previous screen are reflected in the initial position of the next screen is up to the programmer and is not limited to the example provided. Additionally, if the next screen has only one initial position, meaning there is only one entrance, there is no need to reflect the result from the previous screen. Furthermore, the initial position does not have to be limited to entrances located around the screen; it is also possible for the virtual world to be displayed next with the initial position set at the center of the screen.

[0046] When the next screen is displayed, the process returns to step 73 in Figure 4, where the current location information obtained via the GPS unit 51, etc., is displayed as the virtual position and virtual displacement for the second screen 121. This second screen 121 includes event icons for the tool shop 125 and the inn 126. Therefore, as the user moves with the terminal 6, when the position icon 113 overlaps with one of the event icons 125 or 126, the next screen (virtual world) is displayed. Figure 11 illustrates this situation. As shown in Figure 11(a), when the position icon 113 overlaps with the tool shop icon 125, the server connection screen shown in Figure 10(b) is opened, and a dial-up connection is established with the server system 20. By sending the data of the tool shop event icon 125 to the server system 20, the information for the next screen can be obtained. In this case, the next screen is the interior of the tool shop (virtual world) 127, as shown in Figure 11(b), where the user can select weapons they possess in the role-playing game.

[0047] This virtual world 127 has an exit icon 128, and when the user moves and overlaps the position icon 113 with the exit icon 128, they return to the original screen 121. In other words, at step 78 in the flow shown in Figure 4, the exit condition for the tool shop screen 127 is determined to be satisfied, and at step 79, the previous screen, i.e., the previous virtual world, is displayed. The details of this process are shown in Figure 8. At step 105, the server connection screen is displayed, and a dial-up connection with the server system 20 is established to retrieve the information of the previous screen 125. Of course, if the terminal 6 has sufficient memory capacity, a cache area can be set in the RAM or other memory of terminal 6 to store the information of the previous screen. In this case, instead of connecting to the server, the previous screen 125 can be displayed using the cached information.

[0048] When the information for the previous screen is retrieved, as shown in Figure 11(c), the previous screen, namely the castle interior screen 121, is displayed at step 106. Simultaneously, at step 107, the function 32 for displaying virtual positions and displacements places the position icon 113 at the virtual position it occupied before transitioning to the tool shop screen 127. This ensures that when the user returns to the previous screen, their current position corresponds to the virtual position at the point of transition from the previous screen to the next screen, with the placement parameters 13 being updated accordingly.

[0049] When transitioning back from the tool shop screen 127 to the castle interior screen 121, it is possible to restore the relationship between the current location and the virtual position in the castle interior screen 121 to the state prior to entering the tool shop screen 127. However, such processing would cause the actual displacement that the user performed to progress the game in the tool shop screen 127 to be directly reflected as virtual displacement

on the castle interior screen 121. Consequently, upon returning to the castle interior screen 121, the position icon 113 could appear at a location unrelated and distant from the tool shop icon 125. As a result, the user would need to move again to bring the position icon 113 back to the vicinity of the tool shop icon 125, which could delay progress in the game and disrupt the gameplay experience by making it cumbersome. In contrast, as in the present invention, when returning to the previous screen 121, regardless of the relationship between the current location and the virtual position before transitioning, if the current location upon returning is associated with the virtual position at the time of transitioning to the next screen, the user can immediately continue progressing the game on the castle interior screen 125 from the state they were in when they transitioned to the next screen. As a result, unnecessary time and movement are eliminated, allowing the role-playing game to proceed seamlessly.

[0050] The same applies when returning from the castle's virtual world 121 to the previous screen 111. As shown in Figure 11(c), when the position icon 113 is moved to the exit 122 on the castle interior screen 121, the transition condition evaluation function 34 determines that the exit condition for the castle interior screen 121 is satisfied. As a result, following the same procedure as described above, the previous screen (the initial screen of the role-playing game) 111, as shown in Figure 11(d), is displayed. The position icon 113 is displayed in front of the castle icon 115, that is, at the position it occupied when transitioning to the castle interior screen 121 or at the immediately preceding virtual position. At the same time, when returning to the initial screen 111, the current location at that moment is associated with the position in front of the castle icon 115, and the parameters 13 are updated accordingly.

[0051] The town corner icons 116 and 117 displayed on the first screen 111, unlike the castle icon 115, are event icons capable of providing information related to the current location. Therefore, when the user moves with the terminal 6 and the position icon 113 overlaps with the town corner icon 116, the system connects to the server system 20, as explained with reference to Figure 6. Additionally, in step 88, the current location information is transmitted to the server system 20. Furthermore, if the user's personal information is available, it is sent to the server system 20 in step 90. As a result, the server system 20 selects data related to the current location that matches the user's preferences, constructs a virtual world, and sends it back to the terminal 6. The game system 10 retrieves and displays this data. In Figure 12(a), the displayed virtual world 131 includes icons for the AB Hotel (icon 135) and the ABC Store (icon 136), which correspond to actual existing hotels and stores. Therefore, these icons can be referred to as "real-world icons."

[0052] As with each of the aforementioned worlds or

screens, the user can move the location icon 113 by physically moving, allowing it to overlap with any of the displayed icons. For example, if the user moves the location icon 113 to overlap with the ABC Store icon 136, the system will connect to the server system 20 via the connection screen, as previously described. Subsequently, the current location is sent to the server system 20, where a highly accurate position is calculated using DGPS. The server system 20 prepares map information 139, which includes the highly accurate current location 137 and the actual location 138 of the ABC Store, and sends it back to the terminal 6. When this information is received and displayed, as shown in Figure 12(b), the user can identify the locations of preferred stores around their current position. Notably, by defining "ABC Store" as a generic name for chain stores such as convenience stores or gas stations, and displaying the closest one nationwide, it is possible to achieve an advertising effect. Furthermore, by including special offers 132 along with the map information 139, prepared by the server system 20 and distributed to the terminal 6, an advertising system that benefits both users and advertisers can be realized.

[0053] In this way, the game system 10 in this example retrieves the user's current location and uses it as a control element to progress the game, allowing information related to the current location to be embedded directly within the game system 10. Moreover, by enabling communication with the server system 20, it becomes possible to retrieve location-related information from the server system 20 and incorporate it dynamically as game events.

[0054] Additionally, it is also possible to introduce event icons, especially real-world icons representing other users. When the user moves and the position icon 113 overlaps with a street corner icon 117 placed on the first screen 111, as shown in Figure 11(d), the next screen 141, as shown in Figure 13(a), is retrieved from the server system 20 and displayed. The detailed process for this is the same as previously explained, so it will be omitted here. Once the new virtual world 141 is displayed, the position icon 113 is set at the entrance, and the user can move toward the event icons prepared within this virtual world 141. This virtual world 141 is a world in which the server system 20 selects and embeds information related to the current location based on the location information sent by the device. At this point, the server searches for other users who are also playing the same role-playing game. For instance, if there are other users (let's assume user A) who are within an appropriate range, such as about 1 km, from the user of this device (device 6), their information is included in the search. Once such a device is found, the data of that user (let's assume user J) is embedded into the screen 141, in the form of an icon, such as the user's contact information (e.g., email address) or access information. As a result, this virtual world 141

includes three real-world icons: an icon 142 representing a restaurant, an icon 143 representing a convenience store, and an icon 144 representing the nearby user J.

[0055] When the screen 141 is displayed on the LCD61 of terminal 6, and the user holding terminal 6 moves and overlaps with user J's icon 144, in step 74 shown in Fig. 4, the transition condition judgment function 34 determines that the position icon overlaps with an event icon. Furthermore, in step 75, it is determined that the event icon represents another user. Therefore, in step 77, the process for starting a chat is executed.

[0056] In Figure 7, the detailed process for the chat is shown. First, in step 95, a server connection screen, as explained previously, is displayed and a dial-up connection to the server system 20 is established. Next, information about the access target, that is, user J, is sent from terminal 6 (game system 10) to the server system 20. In the server system 20, in step 101, a screen as shown in Figure 13(b) is displayed on user J's terminal, informing him/her that user A, who is playing the same role-playing game nearby, has made a chat request. In step 102, if user J grants permission for the connection, step 97 notifies user A's terminal 6 that the connection has been authorized. Then, in step 98, a network connection between user A and user J is established, allowing data exchange (sending and receiving) via the internet. Once the environment for connecting both parties is set up, in step 99, user A and user J can engage in a chat, as shown in Figure 13(c).

[0057] In this way, it is possible to engage in a chat by displaying the icons of users who are playing the same game. Furthermore, using the game system in this example, since both users' location information is known, it is possible to not only introduce users who are near each other in the virtual world (on the screen) but also those who are geographically close to each other in the real world. Therefore, if both parties wish, they can meet in person at a street corner. As a result, this role-playing game can facilitate simple real-world communications, such as a chance encounter, and create opportunities for users to meet others they would not have encountered otherwise.

[0058] As explained above, unlike traditional role-playing games where the player moves the protagonist or characters using direction keys, selection buttons, cancel buttons, etc., in the case of this example of a role-playing game, the protagonist actually moves in the real world, and the game progresses in the virtual world based on their location information. Therefore, even though the game progresses on the screen in the same way as traditional role-playing games, the actual location information and the position indicator icon (such as the protagonist's illustration) 113 on the screen are synchronized. As a result, to progress in the game, the user must move in the real world, adding a level of difficulty or appeal to the experience. For example, since the user

needs to move in the real world to progress in the game, it is possible to display the distance the user has actually traveled when the game ends (or even when it is paused). For instance, the data displayed can include the distance traveled, the corresponding number of steps, and even the calories burned. By aligning the game with physical exercise, it is possible to create a pedometer that goes a step further than conventional electronic pedometers, making walking for health more engaging and preventing it from becoming boring. Additionally, there is the potential for secondary use, such as use of electronic information for filling in a virtual map of Japan as part of the game. Furthermore, by utilizing GPS, other information such as precise time, distance traveled, speed derived from the distance and time, and calories burned can be added and displayed, further enhancing the functionality of the pedometer with known electronic pedometer data.

[0059] Furthermore, as the user moves to progress in the game and their current location information is retrieved in real-time, it becomes possible to provide location-based information through the game based on that current location. In a role-playing game, data such as enemies, events, and treasure information may be stored in advance within the device.

However, as mentioned earlier, a system where information is downloaded via communication can also be adopted. When the user encounters an actual treasure (event icon) (i.e., by moving to the real-world location corresponding to the treasure's position), they can select the treasure using a button on the device, and as a result, information related to the current location will be displayed. This information can be used to add new experiences during the game, such as making a detour for shopping, taking a break, or even engaging in conversation with a stranger they meet along the way—creating a type of enjoyment that traditional role-playing games cannot provide. Furthermore, by transmitting location-related information via communication, and receiving pre-prepared content from the server system in response, the user can access new content each time, thereby enhancing the enjoyment of the game.

[0060] Furthermore, the role-playing game in this example progresses in sync with actual location data, but it does not display real-world maps. Instead, it allows the user to experience moving through a virtual world in the game in a simulated manner. This enables the user to enjoy a sense of strolling in a world shaped by personal preference, rather than in the real world. Furthermore, in this role-playing game, new virtual worlds unfold as the user visits specific locations. By walking in the real world, the user can enjoy these newly revealed virtual worlds. This allows the player to enjoy the game without getting bored while moving across a wide area, all while simultaneously engaging in physical exercise.

[0061] The example given above illustrates a role-playing game where new virtual worlds unfold, but this concept is

not limited to that genre. It can also be applied to currently popular games, such as shooting games where the player moves to the next level after clearing a screen. By controlling these games through physical movement in the real world, a new level of enjoyment can be provided. Of course, this invention's system and method for displaying virtual worlds can also be used to create entirely new types of games, free from the constraints of traditional gaming formats.

[0062]

[Effect of the Invention] As explained above, the system and method for displaying virtual worlds according to this invention allows the use of location information obtained from GPS, PHS, CDMA cell phones, and other sources. By combining traditional or novel game mechanics with real-world location data, and further enabling the continuous opening of new virtual worlds, it becomes possible to realize a new form of entertainment. Additionally, by having pedestrians move in the real world, it provides a system that allows for enjoyable exercise.

[Brief Description of Figures]

[Fig. 1] A diagram showing an example of a mobile terminal capable of acquiring location information and its surrounding environment.

[Fig. 2] A diagram showing an outline of the system of the mobile terminal shown in Fig. 1.

[Fig. 3] A diagram showing the general configuration of the mobile terminal shown in Fig. 1

[Fig. 4] A flowchart showing the overall movement of the game system in this example.

[Fig. 5] A flowchart showing the initial processing.

[Fig. 6] A flowchart showing the process of displaying the next screen.

[Fig. 7] A flowchart showing the process of the chat function.

[Fig. 8] A flowchart showing the process of displaying the previous screen.

[Fig. 9] A diagram showing the screen for the initial processing.

[Fig. 10] A diagram showing the display of the next screen.

[Fig. 11] A diagram showing the display of the subsequent screen.

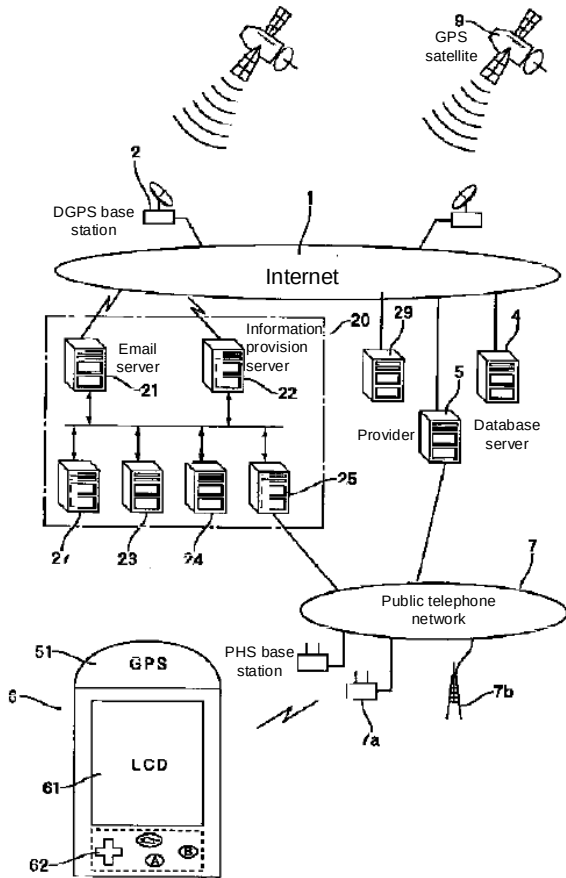
[Fig. 12] A diagram showing the display of the screen related to the current location.

[Fig. 13] A diagram showing the display of the screen related to chat.

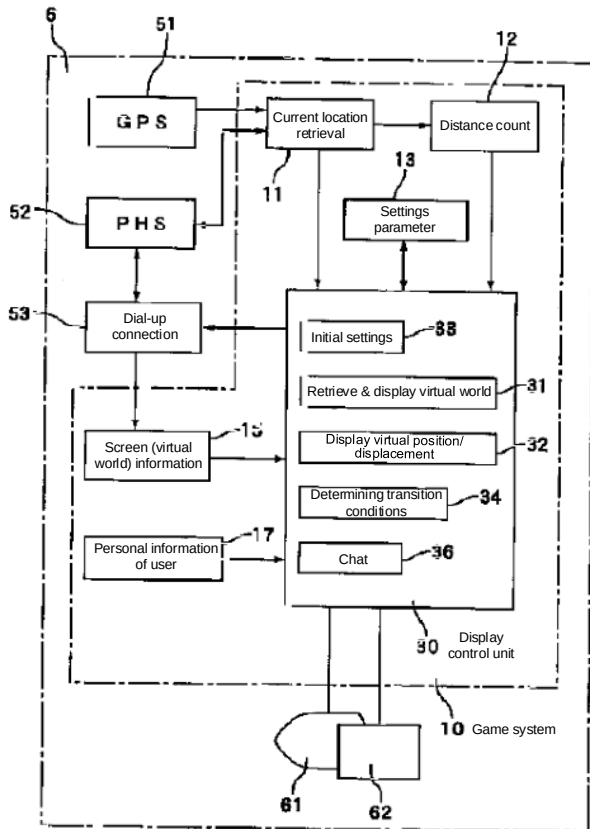
[Description of Symbols]

- 1 Internet
- 6 Mobile terminal
- 7 Public telephone network
- 10 Game system
- 11 Position retrieval function
- 12 Distance counter
- 13 Initial parameters
- 15 Screen (virtual world) information
- 17 Personal information of user
- 20 Provider's server system
- 21 Email server
- 22 Information provision server
- 23 Position-related database server
- 24 Map server
- 25 Dial-up server
- 27 User profile server
- 29 CSID server
- 30 Display control unit
- 51 GPS unit
- 52 PHS unit
- 53 Dial-up connection function

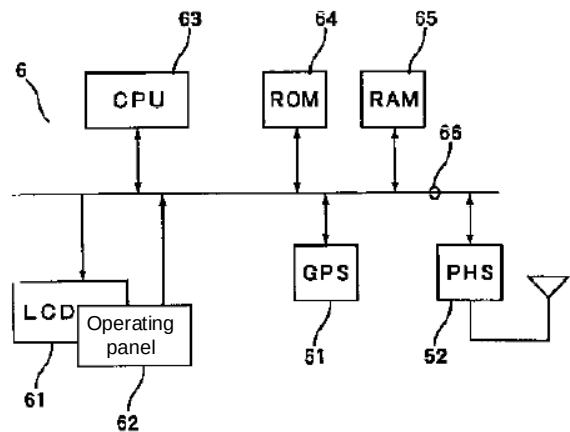
[Fig. 1]



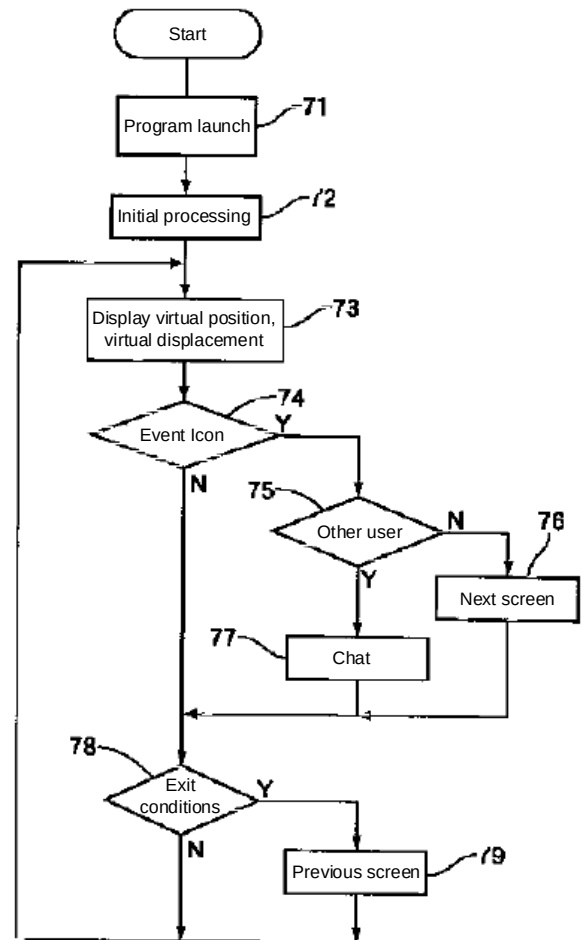
[Fig. 2]



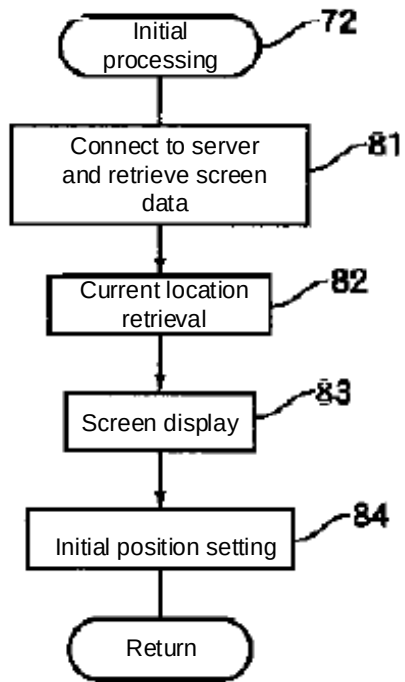
[Fig. 3]



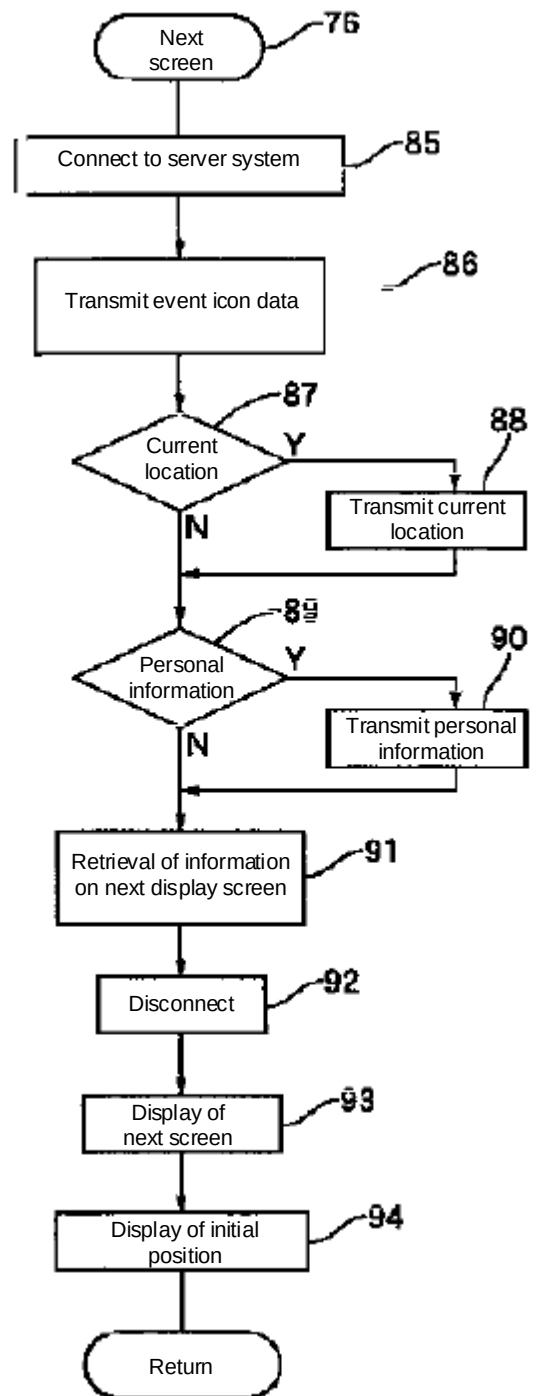
[Fig. 4]



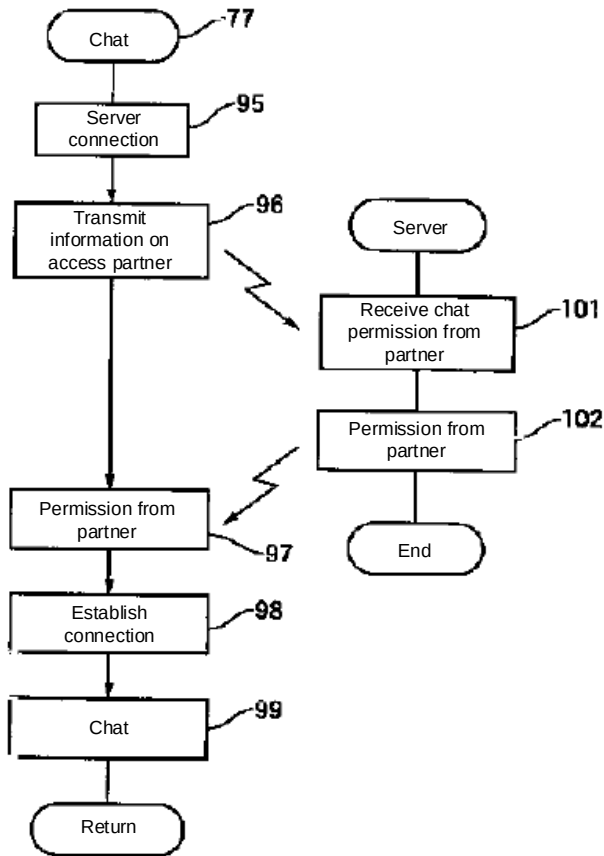
[Fig. 5]



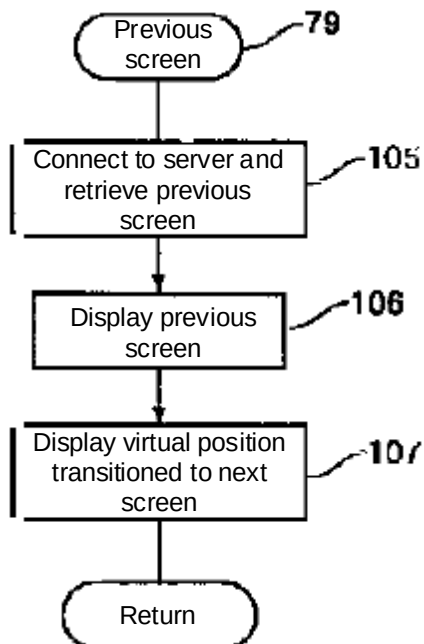
[Fig. 6]



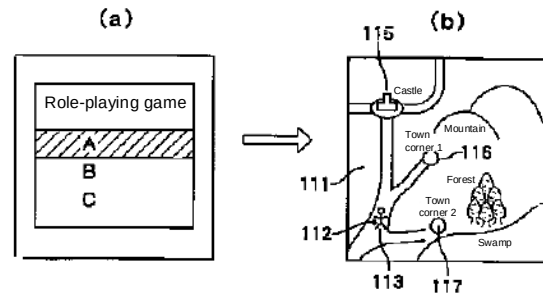
[Fig. 7]



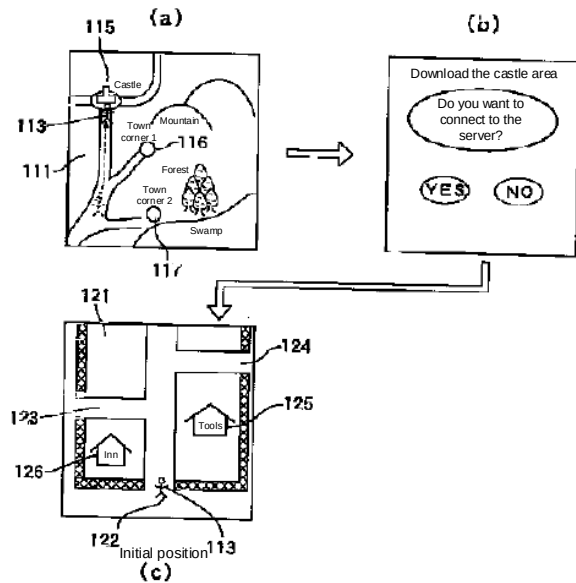
[Fig. 8]



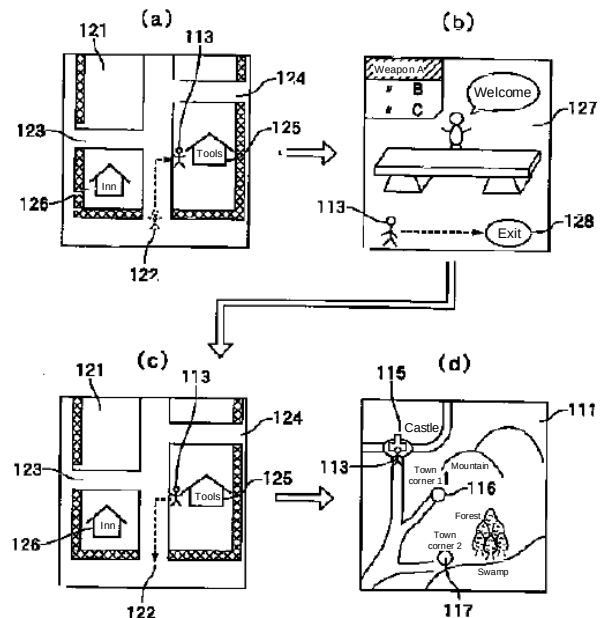
[Fig. 9]



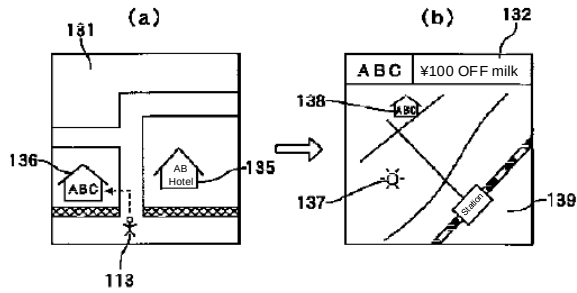
[Fig. 10]



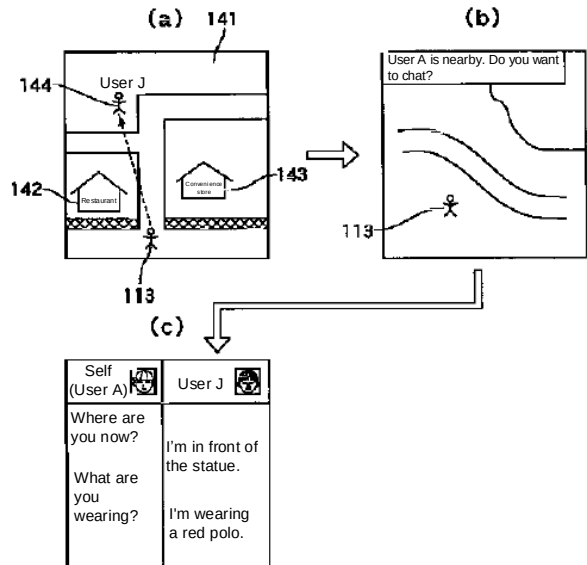
[Fig. 11]



[Fig. 12]



[Fig. 13]



Continued from Front Page

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	5K067	AA21	EE02 FF03 HH11 JJ56
	9A001	BB04	BB06 CC02 CC05 DD12
		JJ01	JJ12 JJ25 JJ27 JJ76
		JJ78	KK37 KK45

TRANSLATION CERTIFICATION

Date: December 11, 2024

To whom it may concern:

I, [Ayman K], a translator fluent in the [Japanese] and [English] languages, on behalf of Morningside, do solemnly and sincerely declare that the following is, to the best of my knowledge and belief, a true and correct translation of the document(s) listed below in a form that best reflects the intention and meaning of the original text.

The document is designated as:

- Nakamura - JP_2001070658_A - original



Signature

Ayman K

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