LINEN INFORMATION PROCESSING METHOD AND APPARATUS, COMPUTER DEVICE, AND STORAGE MEDIUM

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This patent application claims priority to Chinese Patent Application No. 2018101520919, filed on February 14, 2018 and entitled "Linen Information Processing Method and Apparatus, Computer Device, and Storage Medium", the entire contents of which are incorporated herein by reference.

TECHNICAL FIELD

[0002] This application relates to a linen information processing method and apparatus, a computer device, and a non-transitory computer-readable storage medium.

BACKGROUND

[0003] At present, linens are required to be laid for every room in a hotel in advance for users to use after staying in the rooms. In order to provide a user with a clean living environment, the hotel needs to ensure that a linen laid in a room has not been used by other people during the period from time at which the linen is washed by a washing plant to time at which the user stays in the room. That is, the user is a first user after the linen laid in the room has been washed by the washing plant.

[0004] However, after the user stays in the room, the user cannot know whether the linen laid in the room has been used by other people during the period from time at which the linen is washed by the washing plant to time at which the user stays in the room, thereby reducing the staying experience of the user.

SUMMARY

[0005] In order to solve the foregoing technical problem, this application provides a linen information processing method and apparatus, a computer device, and a non-transitory computer-readable storage medium.

[0006] In a first aspect, this application provides a linen information sending method. The method includes:

[0007] receiving, by a cloud server, an acquisition request sent by a mobile terminal for

linen information, the acquisition request including a linen identifier of a target linen, and the linen identifier being obtained by scanning a visible code image on the target linen via the mobile terminal;

[0008] extracting, by the cloud server, the linen identifier from the acquisition request;

[0009] searching, by the cloud server, for the linen information according to the linen identifier; and

[0010] sending, by the cloud server, the linen information to the mobile terminal.

[0011] In a second aspect, this application provides a linen information acquiring method. The method includes:

[0012] scanning, by a mobile terminal, a visible code image on a target linen;

[0013] acquiring, by the mobile terminal according to the visible code image, a linen identifier of the target linen and a server address of a cloud server that stores linen information corresponding to the linen identifier;

[0014] sending, by the mobile terminal, an acquisition request for the linen information to the cloud server corresponding to the server address, the acquisition request including the linen identifier;

[0015] receiving, by the mobile terminal, the linen information corresponding to the linen identifier fed back by the cloud server according to the acquisition request; and

[0016] prompting, by the mobile terminal, the linen information.

[0017] In a third aspect, this application provides a linen information sending apparatus. The apparatus includes:

[0018] a first receiving module, configured to receive an acquisition request sent by a mobile terminal for linen information, the acquisition request including a linen identifier of a target linen, and the linen identifier being obtained by scanning a visible code image on the target linen via the mobile terminal;

[0019] a first extraction module, configured to extract the linen identifier from the acquisition request;

[0020] a search module, configured to search for the linen information according to the linen identifier; and

[0021] a first sending module, configured to send the linen information to the mobile terminal.

[0022] In a fourth aspect, this application provides a linen information acquiring apparatus. The apparatus includes:

[0023] a scanning module, configured to scan a visible code image on a target linen;

[0024] a third acquisition module, configured to acquire, according to the visible code image,

a linen identifier of the target linen and a server address of a cloud server that stores linen information corresponding to the linen identifier;

[0025] a third sending module, configured to send an acquisition request for the linen information to the cloud server corresponding to the server address, the acquisition request including the linen identifier;

[0026] a third receiving module, configured to receive the linen information fed back by the cloud server according to the acquisition request; and

[0027] a first prompt module, configured to prompt the linen information.

[0028] In a fifth aspect, this application provides a non-transitory computer-readable storage medium, which stores a computer program that, when executed by a processor, implements the method described in the first aspect.

[0029] In a sixth aspect, this application provides a non-transitory computer-readable storage medium, which stores a computer program that, when executed by a processor, implements the method described in the second aspect.

[0030] In a seventh aspect, this application provides a computer device, which includes a memory, a processor, and a computer program stored on the memory and executable on the processor. When the processor executes the program, the method described in the first aspect is implemented.

[0031] In an eighth aspect, this application provides a computer device, which includes a memory, a processor, and a computer program stored on the memory and executable on the processor. When the processor executes the program, the method described in the second aspect is implemented.

[0032] In embodiments of this application, after a user stays in a room of a hotel, if the user needs to query linen information corresponding to a target linen laid in the room, the user may scan a visible code image on the target linen using a mobile terminal, acquire a linen identifier of the target linen according to the visible code image, and then send a query request for the linen information including the linen identifier to a cloud server, such that the cloud server searches for the linen information corresponding to the linen identifier and returns the linen information to the mobile terminal. Then, the mobile terminal prompts the linen information. Thereafter, the user may obtain the linen information. Therefore, by means of the method according to an embodiment of this application, after a user stays in a room, the user may obtain linen information corresponding to a linen laid in the room, so that it can be determined whether the linen laid in the room has been used by other people previously, thereby improving the staying experience of the user.

BRIEF DESCRIPTION OF THE DRAWINGS

[0033] FIG. 1 is a structural block diagram of an embodiment of a linen information processing system according to this application.

[0034] FIG. 2 is a step flowchart of an embodiment of a linen information processing method according to this application.

[0035] FIG. 3 is a step flowchart of an embodiment of a linen information sending method according to this application.

[0036] FIG. 4 is a step flowchart of an embodiment of a linen information acquiring method according to this application.

[0037] FIG. 5 is a structural block diagram of an embodiment of a linen information sending apparatus according to this application.

[0038] FIG. 6 is a structural block diagram of an embodiment of a linen information acquiring apparatus according to this application.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0039] To enable the foregoing objective, characteristic, and advantage of this application to be clearer and easier to understand, the following further describes this application in detail with reference to accompanying drawings and specific implementations.

[0040] Referring to FIG. 1, a structural block diagram of an embodiment of a linen information processing system according to this application is shown. The system includes a cloud server 01 and a mobile terminal 02. The cloud server 01 and the mobile terminal 02 communicate with each other. The mobile terminal 02 may be a device such as a mobile phone or a tablet computer.

[0041] Referring to FIG. 2, a step flowchart of an embodiment of a linen information processing method according to this application is shown. The method is applied to the system shown in FIG. 1. The method may include the following steps.

[0042] In step S101, a mobile terminal scans a visible code image on a target linen.

[0043] The visible code image includes a barcode image and/or a QR code image.

[0044] In an embodiment, after a user stays in a room of a hotel, if the user needs to query linen information of a target linen laid in the room, the user may scan a visible code image on the target linen using a mobile terminal, and then obtain the linen information of the target linen through a flow including the following steps S102 to S109.

[0045] The linen information of a linen includes: washing information about the linen being washed in a washing plant, usage information of the linen used after being delivered to the

hotel, an owner of the linen, and/or advertising information about the linen, and the like.

[0046] However, in an embodiment, after a customer stays in a room of a hotel, the customer may not know that linen information of a target linen can be obtained by scanning a visible code image on the target linen. In order to make the customer know that the linen information of the target linen can be obtained, prompt information may be sent to a mobile terminal of the customer. The prompt information is used to prompt the customer to acquire, by scanning a visible code image on a linen, linen information of the linen.

[0047] For example, the cloud server sends prompt information to the mobile terminal. The prompt information is used to prompt a user to acquire, by scanning a visible code image on a linen, linen information of the linen. The mobile terminal receives the prompt information sent by the cloud server, and prompts the prompt information, for example, displaying or playing the prompt information. When the user perceives the prompt information prompted by the mobile terminal, the user may scan the visible code image on the linen using the mobile terminal to obtain the linen information of the linen. If the user needs to acquire the linen information of the target linen, the user may control the mobile terminal to perform step S101, and then obtain the linen information of the target linen through a flow including the following steps S102 to S109.

[0048] However, if the user using the mobile terminal does not need to stay in the hotel, after the cloud server sends the prompt information to the mobile terminal, although the mobile terminal will prompt the prompt information, the user does not need to and cannot scan acquire the linen information of the linen by scanning the visible code image on the linen. The prompt information is prompt information invalid for the user. If the cloud server sends the prompt information invalid for the user to the mobile terminal, network resources between the cloud server and the mobile terminal will be wasted.

[0049] Therefore, in order to avoid wasting network resources between the cloud server and the mobile terminal, in an embodiment, the cloud server needs to determine whether the user needs to stay in the hotel. If it is determined that the user needs to stay in the hotel, the cloud server sends prompt information to the mobile terminal after determining that the user needs to acquire, by scanning a visible code image on a linen, linen information of the linen. In this way, the prompt information is prompt information valid for the user.

[0050] In an embodiment, if a user needs to stay in a hotel, the user needs to be allocated with a room in the hotel in advance. Otherwise, the user does not need to be allocated with a room in the hotel in advance.

[0051] In one scenario, when a user submits an order for a room of a hotel to the hotel through a cloud server, the hotel needs to allocate a room for the user, or when the user checks

in at a hotel reception desk, the hotel needs to allocate a room for the user.

[0052] After the user is allocated with a room in the hotel, it indicates that the user needs to stay in the hotel. If the user needs to stay in the hotel, it indicates that the user may need to acquire, by scanning a visible code image on a linen, linen information of the linen.

[0053] Therefore, after the user is allocated with the room in the hotel, a hotel device in the hotel may send notification information to the cloud server. The notification information includes an account identifier of a user. The notification information is used to notify that a room has been allocated for the user corresponding to the account identifier in the hotel.

[0054] When the cloud server receives the notification information, the room already allocated for the user corresponding to the account identifier in the hotel may be known, so as to determine that the user may need to acquire, by scanning a visible code image on a linen, linen information of the linen, and the prompt information is sent to the mobile terminal. In this way, the prompt information is prompt information valid for the user, thereby avoiding wasting network resources between the cloud server and the mobile terminal.

[0055] In another embodiment of this application, in actual situations, there are multiple hotels selectable for users. Linen information of linens in some hotels can be acquired by scanning visible code images on the linens. However, linen information of linens in other hotels cannot be acquired by scanning visible code images on the linens.

[0056] For example, in one-star hotels to five-star hotels, linen information of linens in one-star hotels, two-star hotels and three-star hotels cannot be obtained by scanning visible code images on the linens. In order to improve the staying experience of users staying in four-star hotels and five-star hotels, linen information of linens in four-star hotels and five-star hotels can be obtained by scanning visible code images on the linens.

[0057] If linen information of a linen in a hotel where a user is staying cannot be obtained by scanning a visible code image on the linen, for example, there is no visible code image on the linen in the hotel where the user is staying, after the cloud server sends the prompt information to the mobile terminal and the mobile terminal prompts the prompt information, the user may search for a visible code image on the target linen laid in the room where the user stays and try to acquire linen information of the target linen by scanning the visible code image. However, the user cannot find a visible code image on the target linen, and thus cannot obtain the linen information of the target linen. Secondly, the user may think that the target linen is not clean because the user cannot find the visible code image on the target linen, thereby bringing a lower staying experience to the user.

[0058] Therefore, in order to improve the staying experience of the user, before a hotel device (for example, a computer) sends notification information to the cloud server, it is also

necessary to add a hotel identifier of the hotel where the user stays to the notification information. Different hotels have different hotel identifiers.

[0059] Therefore, the notification information received by the cloud server further includes a hotel identifier of the hotel where the user stays. Therefore, the cloud server also needs to determine whether a linen in the hotel corresponding to the hotel identifier supports acquiring, by scanning a visible code image on the linen, linen information of the linen. If the linen in the hotel corresponding to the hotel identifier supports acquiring, by scanning the visible code image on the linen, the linen information of the linen, the prompt information is sent to the mobile terminal. If the linen in the hotel corresponding to the hotel identifier does not support acquiring, by scanning the visible code image on the linen, the linen information of the linen, the prompt information is not sent to the mobile terminal.

[0060] In yet another embodiment of this application, a hotel may include multiple rooms. Linen information of linens laid in some rooms can be acquired by scanning visible code images on the linens. However, linen information of linens laid in other rooms cannot be acquired by scanning visible code images on the linens.

[0061] For example, the hotel includes ordinary rooms and superior rooms. Linen information of linens laid in the ordinary rooms cannot be acquired by scanning visible code images on the linens. In order to improve the staying experience of users who stay in the superior rooms, linen information of linens laid in the superior rooms can be acquired by scanning visible code images on the linens.

[0062] If linen information of a linen laid in a room where a user stays cannot be acquired by scanning a visible code image on the linen, for example, there is no visible code image on the linen laid in the room where the user stays, after the cloud server sends the prompt information to the mobile terminal and the mobile terminal prompts the prompt information, the user may search for a visible code image on a target linen and try to acquire linen information of the target linen by scanning the visible code image. However, the user cannot find the visible code image on the target linen, and thus cannot obtain the linen information of the target linen. Secondly, the user may think that the target linen is not clean because the user cannot find the visible code image on the target linen, thereby bringing a lower staying experience to the user.

[0063] Therefore, in order to improve the staying experience of the user, on the basis of the foregoing embodiment, before the hotel device sends notification information to the cloud server, while adding a hotel identifier of the hotel where the user stays to the notification information, it is also necessary to add a room identifier of a room allocated for the user in the hotel where the user stays.

[0064] Therefore, the notification information received by the cloud server further includes a room identifier of a room allocated for the user in the hotel. The cloud server also needs to determine whether a linen in the room corresponding to the room identifier supports acquiring, by scanning a visible code image on the linen, linen information of the linen. If the linen in the room corresponding to the room identifier supports acquiring, by scanning the visible code image on the linen, the linen information of the linen, the prompt information is sent to the mobile terminal. If the linen in the room corresponding to the room identifier does not support acquiring, by scanning the visible code image on the linen, the linen information of the linen, the prompt information is not sent to the mobile terminal.

[0065] In step S102, the mobile terminal acquires, according to the visible code image, a linen identifier of the target linen and a server address of a cloud server that stores linen information corresponding to the linen identifier.

[0066] In an embodiment, the mobile terminal may parse the visible code image to obtain a linen identifier of the target linen and a server address of a cloud server that stores linen information corresponding to the linen identifier.

[0067] In step S103, the mobile terminal sends an acquisition request for the linen information to the cloud server corresponding to the server address. The acquisition request includes the linen identifier.

[0068] In step S104, the cloud server receives the acquisition request.

[0069] In step S105, the cloud server extracts the linen identifier from the acquisition request.

[0070] In an embodiment, a specified data bit of a specific field of a data frame of the acquisition request is used to store the linen identifier of the linen. Therefore, in this step, the linen identifier may be acquired from the specified data bit of the specific field in the acquisition request.

[0071] In step S106, the cloud server searches for the corresponding linen information according to the linen identifier.

[0072] In an embodiment, the corresponding linen information includes linen information of a target linen corresponding to the linen identifier, or the corresponding linen information includes linen information of a target linen corresponding to the linen identifier, and linen information of a linen belonging to the same set as the target linen, laid in the same room or laid in the room corresponding to the same order.

[0073] For example, the linen includes quilts, bed sheets, pillow towels, pillow cases, etc. In a room in a hotel, it is assumed that a set of linens needs to be laid in the room, such as a quilt, a bed sheet, a pillow towel, and a pillow case. The quilt is a linen, the bed sheet is a linen, the

pillow towel is a linen, and the pillow case is also a linen. And the four linens have different linen identifiers. The user scans a visible code image on one of the four linens using the mobile terminal, thereby not only obtaining linen information of the linen, but also obtaining linen information of other linens belonging to the same set of linens as the linen.

[0074] In an embodiment, the linen information includes: a count of acquiring the linen information by a user within a time period from time at which the target linen was last washed by a washing plant and allocated to a hotel to time at which the cloud server receives the acquisition request.

[0075] When the target linen was last washed by a washing plant and allocated to the hotel, the cloud server will clear a count of acquiring the linen information of the target linen by the user.

[0076] When the cloud server receives an acquisition request for the linen information and sends out the linen information of the target linen according to the acquisition request, the count of acquiring the linen information of the target linen by the user will be updated.

[0077] In an embodiment, for a user, after the user stays in a hotel, the user can contact a target linen in a room, and then use a mobile terminal to acquire linen information of the target linen by scanning a visible code image on the target linen.

[0078] Therefore, after the user stays in the hotel, if a count of acquiring, by scanning the visible code image on the target linen, the linen information by the user is greater than zero, it indicates that the target linen has been laid in the room and used by other people within a period of time from time at which the target linen was last washed by a washing plant and allocated to the hotel to time at which the user stays in the hotel. If a count of acquiring, by scanning the visible code image on the target linen, the linen information by the user is equal to zero, it indicates that the target linen has never been used by other people within a period of time from time at which the target linen was last washed by a washing plant and allocated to the hotel to time at which the user stays in the hotel.

[0079] However, after the target linen was last washed by the washing plant and allocated to the hotel, sometimes merchants also need to query the linen information of the target linen. For example, before laying a target linen in a room, hotel staff need to query linen information of the target linen to determine whether the target linen has been used. If it has not been used, the target linen is then laid in the room. In this way, within a period of time from time at which the target linen was last washed by the washing plant and allocated to the hotel to time at which the user stays in the hotel, the hotel staff may use the mobile terminal to acquire the linen information of the target linen by scanning a visible code image on the target linen.

[0080] Within a period of time from time at which the target linen was last washed by the

washing plant and allocated to the hotel to time at which the target linen is laid in the room, if the hotel staff use the mobile terminal to scan the visible code image on the target linen to acquire the linen information of the target linen, since the cloud server cannot determine who needs to acquire the linen information of the target linen, the cloud server may determine by default that the user is acquiring the linen information of the target linen, and then the cloud server will update a count of acquiring the linen information of the target linen by the user. After the user stays in the room, if the user uses the mobile terminal to scan the visible code image on the target linen to acquire the linen information of the target linen, a count of acquiring the linen information of the target linen by the user included in the linen information of the target linen obtained by the user is greater than zero, the user will think that the target linen was laid in the room and used by other people previously, that is, the target linen is not a clean linen, thereby reducing the staying experience of the user.

[0081] However, in fact, the target linen has not been laid in the room and used by other people previously, that is, the target linen is actually a clean linen. The count of acquiring the linen information of the target linen by the user is greater than zero because the linen information of the target linen has been obtained by a merchant. However, the merchant acquires the linen information of the target linen only because the target linen needs to be laid in the room, not because the target linen needs to be used.

[0082] Therefore, in order to eliminate user misunderstandings and improve the staying experience of the user, whenever the cloud server receives an acquisition request for the linen information of the target linen, it may be determined whether the user needs to acquire the linen information of the target linen or the merchant needs to acquire the linen information of the target linen. If the user needs to acquire the linen information of the target linen, after the linen information of the target linen is sent to the mobile terminal used by the user, the count of acquiring the linen information of the target linen by the user needs to be updated. If the merchant needs to acquire the linen information of the target linen, after the linen information of the target linen is sent to the mobile terminal used by the merchant, the count of acquiring the linen information of the target linen by the user is not updated.

[0083] In an embodiment, the acquisition request for the linen information, which is sent to the cloud server by the mobile terminal, further includes an account identifier logged in the mobile terminal. The account identifier includes an account identifier of a user or a merchant identifier of a merchant. The merchant may include the hotel and the washing plant.

[0084] If the logged-in account identifier is an account identifier of a user, when the linen information is sent to the mobile terminal, a count of acquiring the linen information corresponding to the linen identifier by the user is updated. When the linen information is not

sent to the mobile terminal, the count of acquiring the linen information corresponding to the linen identifier by the user is not updated. If the logged-in account identifier is a merchant identifier of a merchant, the count of acquiring the linen information corresponding to the linen identifier by the user is not updated.

[0085] In this way, even if the target linen was last washed by the washing plant and allocated to the hotel, the merchant has obtained the linen information of the target linen, the cloud server will not update the count of acquiring the linen information of the target linen by the user. That is, the count of acquiring the linen information of the target linen by the user is still zero, so that the user misunderstandings can be eliminated, and the staying experience of the user can be improved.

[0086] In another embodiment, the target linen is laid in the room before the user is about to stay in the hotel. Therefore, the user cannot contact the target linen before staying in the hotel, and the user can use the mobile terminal to acquire the linen information of the target linen by scanning the visible code image on the target linen only after staying in the hotel. That is, the user can use the mobile terminal to acquire the linen information of the target linen by scanning the visible code image on the target linen only when the user is in the room of the hotel.

[0087] If a mobile terminal scans the visible code image on the target linen outside an area where the hotel is located, it indicates that other people, instead of the user staying in the hotel, are using the mobile terminal to acquire the linen information of the target linen by scanning the visible code image on the target linen.

[0088] For example, in order to damage the reputation of the hotel, a competitor of the hotel sneaks into the washing plant or the hotel to capture the visible code image on the target linen, or captures the visible code image on the target linen during the delivery of the target linen from the washing plant to the hotel or during the returning from the hotel to the washing plant and then makes the visible code image on the target linen public; or, after the user checks out of the hotel, the scanned visible code image still remains, thereafter, some people will continue to use the mobile terminal to scan the visible code image on the target linen to see what information can be obtained, but these people do not have actual needs for acquiring the linen information of the target linen.

[0089] In an embodiment, the cloud server only needs to send the linen information of the target linen to people who have actual needs for acquiring the linen information of the target linen. For example, the cloud server only needs to send the linen information of the target linen to a user who needs to stay in the hotel, so that the user who needs to stay in the hotel can obtain the linen information of the target linen. There is no need to send the linen

information of the target linen to other people except the user who needs to stay in the hotel. Otherwise, the cloud server will waste network resources and system resources of the cloud server.

[0090] Therefore, in order to save network resources and system resources of the cloud server, the cloud server needs to determine whether the received acquisition request for the linen information is sent by the user who needs to stay in the hotel using the mobile terminal. If the request is sent by the user who needs to stay in the hotel using the mobile terminal, it is determined that the user has an actual need for acquiring the linen information of the target linen, and the linen information of the target linen is sent to the mobile terminal used by the user who needs to stay in the hotel. If the request is not sent by the user who needs to stay in the hotel using the mobile terminal, it is determined that the user does not have an actual need for acquiring the linen information of the target linen, and the linen information of the target linen is not sent.

[0091] In an embodiment, in order to enable the cloud server to determine whether the received acquisition request for the linen information is sent by the user who needs to stay in the hotel using the mobile terminal, the acquisition request that is sent to the cloud server by the mobile terminal further includes a current location of the mobile terminal.

[0092] Therefore, from the acquisition request, in addition to extracting the linen identifier, the cloud server will also extract current location information of the mobile terminal, and identify a hotel where the target linen is currently located according to the linen identifier. A location area where the hotel is located is identified. If the current location of the mobile terminal is inside the location area where the hotel is located, the linen information of the target linen is sent to the mobile terminal. If the current location of the mobile terminal is outside the location area where the hotel is located, the linen information of the target linen is not sent to the mobile terminal.

[0093] The location area where the hotel is located includes a circular area centering on the location of the hotel, or a geographical block around the hotel that is defined by a road network.

[0094] In yet another embodiment, the target linen is laid in the room before the user is about to stay in the hotel. Therefore, the user cannot contact the target linen before staying in the hotel, and the user can use the mobile terminal to acquire the linen information of the target linen by scanning the visible code image on the target linen only after staying in the hotel.

[0095] In an embodiment, a user may not stay in a room of a hotel at any time. If a user needs to stay in a room of a hotel, the hotel needs to allocate a room for the user, and set an

allowable staying time period of the room allocated for the user. The user can stay in the room of the hotel within the allowable staying time period, and cannot stay in the room of the hotel beyond the allowable staying time period.

[0096] If a mobile terminal scans a visible code image on a target linen beyond the allowable staying time period, it indicates that other people, instead of the user staying in the hotel, are using the mobile terminal to acquire the linen information of the target linen by scanning the visible code image on the target linen.

[0097] For example, in order to damage the reputation of the hotel, a competitor of the hotel sneaks into the washing plant or the hotel to capture the visible code image on the target linen, or captures the visible code image on the target linen during the delivery of the target linen from the washing plant to the hotel or during the returning from the hotel to the washing plant and then makes the visible code image on the target linen public. Thereafter, if some people, such as children, see the visible code image on the target linen beyond the allowable staying time period, they will, sometimes, try to use the mobile terminal to scan the visible code image on the target linen to see what information can be obtained, but these people do not have actual needs for acquiring the linen information of the target linen.

[0098] In an embodiment, the cloud server only needs to send the linen information of the target linen to people who have actual needs for acquiring the linen information of the target linen. For example, the cloud server only needs to send the linen information of the target linen to a user who needs to stay in the hotel, so that the user who needs to stay in the hotel can obtain the linen information of the target linen. There is no need to send the linen information of the target linen to other people except the user who needs to stay in the hotel. Otherwise, the cloud server will waste network resources and system resources of the cloud server.

[0099] Therefore, in order to save network resources and system resources of the cloud server, it may be determined whether the received acquisition request for the linen information is sent by the user who needs to stay in the hotel using the mobile terminal. If so, it is determined that the user has an actual need for acquiring the linen information of the target linen, and the linen information of the target linen is sent to the mobile terminal used by the user who needs to stay in the hotel. If not, it is determined that the user does not have an actual need for acquiring the linen information of the target linen, and the linen information of the target linen is not sent.

[0100] In an embodiment, in order to enable the cloud server to determine whether the received acquisition request for the linen information is sent by the user who needs to stay in the hotel using the mobile terminal, the acquisition request that is sent to the cloud server by

the mobile terminal further needs to include an account identifier of a user logged in the mobile terminal, and an initiation time of the acquisition request.

[0101] Therefore, from the acquisition request, in addition to extracting the linen identifier, the cloud server will also extract the account identifier of the user logged in the mobile terminal, and the initiation time of the acquisition request, and identify a hotel where the target linen is currently located according to the linen identifier. According to the account identifier, an allowable staying time period of a room allocated for the user in the hotel where the target linen is currently located is acquired. If the initiation time is within the allowable staying time period, the linen information of the target linen is sent to the mobile terminal. If the initiation time is not within the allowable staying time period or if there is no allowable staying time period for the user corresponding to the account identifier in the hotel where the target linen is currently located, the linen information of the target linen is not sent to the mobile terminal.

[0102] In step S107, the cloud server sends the linen information to the mobile terminal.

[0103] In step S108, the mobile terminal receives the linen information.

[0104] In step S109, the mobile terminal prompts the linen information.

[0105] The mobile terminal may display the linen information on a screen, and/or play the prompt information using voice, prompt sound, and the like.

[0106] Further, when the user finishes using the target linen, the hotel staff need to return the target linen to the washing plant for washing. When the target linen is washed by the washing plant, the cloud server will clear a count of acquiring the linen information of the target linen by the user.

[0107] In an embodiment, after a user stays in a room of a hotel, if the user needs to query linen information corresponding to a target linen laid in the room, the user may scan a visible code image on the target linen using a mobile terminal, acquire a linen identifier of the target linen according to the visible code image, and then send a query request for the linen information including the linen identifier to a cloud server, such that the cloud server searches for the linen information corresponding to the linen identifier and returns the linen information to the mobile terminal. Then, the mobile terminal prompts the linen information. Thereafter, the user may obtain the linen information. Therefore, by means of the method according to an embodiment of this application, after a user stays in a room, the user may obtain linen information corresponding to a linen laid in the room, so that it can be determined whether the linen laid in the room has been used by other people previously, thereby improving the staying experience of the user.

[0108] Referring to FIG. 3, a step flowchart of an embodiment of a linen information

sending method according to this application is shown. The method is applied to the cloud server 01 shown in FIG. 1. The method may include the following steps.

[0109] In step S201, an acquisition request sent by a mobile terminal for linen information is received. The acquisition request includes a linen identifier of a target linen. The linen identifier is obtained by scanning a visible code image on the target linen via the mobile terminal.

[0110] In step S202, the linen identifier is extracted from the acquisition request.

[0111] In step S203, the linen information is searched according to the linen identifier.

[0112] In step S204, the linen information is sent to the mobile terminal.

[0113] In an embodiment, after a user stays in a room of a hotel, if the user needs to query linen information corresponding to a target linen laid in the room, the user may scan a visible code image on the target linen using a mobile terminal, acquire a linen identifier of the target linen according to the visible code image, and then send a query request for the linen information including the linen identifier to a cloud server, such that the cloud server searches for the linen information corresponding to the linen identifier and returns the linen information to the mobile terminal. Then, the mobile terminal prompts the linen information. Thereafter, the user may obtain the linen information. Therefore, by means of the method according to an embodiment of this application, after a user stays in a room, the user may obtain linen information corresponding to a linen laid in the room, so that it can be determined whether the linen laid in the room has been used by other people previously, thereby improving the staying experience of the user.

[0114] Referring to FIG. 4, a step flowchart of an embodiment of a linen information acquiring method according to this application is shown. The method is applied to the mobile terminal 02 shown in FIG. 1. The method may specifically include the following steps.

[0115] In step S301, a visible code image on a target linen is scanned.

[0116] In step S302, a linen identifier of the target linen and a server address of a cloud server that stores linen information corresponding to the linen identifier are acquired according to the visible code image.

[0117] In step S303, an acquisition request for the linen information is sent to the cloud server corresponding to the server address. The acquisition request includes the linen identifier.

[0118] In step S304, the linen information fed back by the cloud server according to the acquisition request is received.

[0119] In step S305, the linen information is prompted.

[0120] In an embodiment, after a user stays in a room of a hotel, if the user needs to query

linen information corresponding to a target linen laid in the room, the user may scan a visible code image on the target linen using a mobile terminal, acquire a linen identifier of the target linen according to the visible code image, and then send a query request for the linen information including the linen identifier to a cloud server, such that the cloud server searches for the linen information corresponding to the linen identifier and returns the linen information to the mobile terminal. Then, the mobile terminal prompts the linen information. Thereafter, the user may obtain the linen information. Therefore, by means of the method according to an embodiment of this application, after a user stays in a room, the user may obtain linen information corresponding to a linen laid in the room, so that it can be determined whether the linen laid in the room has been used by other people previously, thereby improving the staying experience of the user.

[0121] It should be noted that for the sake of simple description, the method embodiments are all described as a series of action combinations. However, those skilled in the art should know that the embodiments of this application are not limited by the described action sequence because some steps may be performed in other sequences or simultaneously according to the embodiments of this application. Secondly, those skilled in the art should also know that the embodiments described in the specification are all preferred embodiments, and the actions involved are not necessarily required by the embodiments of this application.

[0122] Referring to FIG. 5, a structural block diagram of an embodiment of a linen information sending apparatus according to this application is shown. The apparatus may specifically include the following modules.

[0123] A first receiving module 11 is configured to receive an acquisition request sent by a mobile terminal for linen information. The acquisition request includes a linen identifier of a target linen. The linen identifier is obtained by scanning a visible code image on the target linen via the mobile terminal.

[0124] A first extraction module 12 is configured to extract the linen identifier from the acquisition request.

[0125] A search module 13 is configured to search for the linen information according to the linen identifier.

[0126] A first sending module 14 is configured to send the linen information to the mobile terminal.

[0127] In an embodiment, the apparatus further includes a second sending module.

[0128] The second sending module is configured to send prompt information to the mobile terminal. The prompt information is used to prompt a user to acquire, by scanning a visible code image on a linen, linen information of the linen.

[0129] In an embodiment, the apparatus further includes a second receiving module.

[0130] The second receiving module is configured to receive notification information. The notification information includes an account identifier of the user and is used to notify that a room is allocated for the user in a hotel.

[0131] In an embodiment, the notification information further includes a hotel identifier of the hotel. The apparatus further includes a first determination module.

[0132] The first determination module is configured to determine whether a linen in the hotel supports acquiring, by scanning a visible code image on a linen, linen information of the linen.

[0133] The second sending module is further configured to: send, if so, the prompt information to the mobile terminal; and not send, if not, the prompt information to the mobile terminal.

[0134] In an embodiment, the notification information further includes a room identifier of the room. The apparatus further includes a second determination module.

[0135] The second determination module is configured to determine whether a linen in the room supports acquiring, by scanning a visible code image on a linen, linen information of the linen.

[0136] The second sending module is further configured to: send, if so, the prompt information to the mobile terminal; and not send, if not, the prompt information to the mobile terminal.

[0137] In an embodiment, the linen information includes:

[0138] a count of acquiring the linen information by a user within a time period from time at which the target linen was last washed by a washing plant and allocated to a hotel to time at which the cloud server receives the acquisition request.

[0139] In an embodiment, the acquisition request further includes an account identifier logged in the mobile terminal. The account identifier includes an account identifier of a user or a merchant identifier of a merchant.

[0140] The apparatus further includes a first update module and a second update module.

[0141] The first update module is configured to perform, if the logged-in account identifier is an account identifier of a user, the following operations: when the linen information is sent to the mobile terminal, updating a count of acquiring the linen information by a user; and when the linen information is not sent to the mobile terminal, not updating a count of acquiring the linen information by a user.

[0142] If the logged-in account identifier is a merchant identifier of a merchant, the second update module does not update a count of acquiring the linen information by a user.

[0143] In an embodiment, the apparatus further includes a first acquisition module, a first identification module, and a second acquisition module.

[0144] The first acquisition module is configured to acquire, if the logged-in account identifier is an account identifier of a user, an initiation time of the acquisition request.

[0145] The first identification module is configured to identify, according to the linen identifier, a hotel where the target linen is currently located.

[0146] The second acquisition module is configured to acquire, according to the account identifier of the user, an allowable staying time period of a room allocated for the user in the hotel where the target linen is currently located.

[0147] The first sending module is further configured to perform the following operations: if the initiation time is within the allowable staying time period, sending the linen information to the mobile terminal; and if the initiation time is not within the allowable staying time period or if there is no allowable staying time period for the user in the hotel where the target linen is currently located, not sending the linen information to the mobile terminal.

[0148] In an embodiment, the apparatus further includes a clearing module.

[0149] The clearing module is configured to clear, when the target linen is washed by the washing plant, the count of acquiring the linen information by a user.

[0150] In an embodiment, the acquisition request further includes a current location of the mobile terminal.

[0151] The apparatus further includes a second identification module, a third identification module, and a second extraction module.

[0152] The second identification module is configured to identify, according to the linen identifier, a hotel where the target linen is currently located.

[0153] The third identification module is configured to identify a location area where the hotel is located.

[0154] The second extraction module is configured to extract the current location of the mobile terminal from the acquisition request.

[0155] The first sending module is further configured to send, if the current location is inside the location area, the linen information to the mobile terminal.

[0156] In an embodiment, after a user stays in a room of a hotel, if the user needs to query linen information corresponding to a target linen laid in the room, the user may scan a visible code image on the target linen using a mobile terminal, acquire a linen identifier of the target linen according to the visible code image, and then send a query request for the linen information including the linen identifier to a cloud server, such that the cloud server searches for the linen information corresponding to the linen identifier and returns the linen

information to the mobile terminal. Then, the mobile terminal prompts the linen information. Thereafter, the user may obtain the linen information. Therefore, by means of the method according to an embodiment of this application, after a user stays in a room, the user may obtain linen information corresponding to a linen laid in the room, so that it can be determined whether the linen laid in the room has been used by other people previously, thereby improving the staying experience of the user.

[0157] Referring to FIG. 6, a structural block diagram of an embodiment of a linen information acquiring apparatus according to this application is shown. The apparatus may specifically include the following modules.

[0158] A scanning module 21 is configured to scan a visible code image on a target linen.

[0159] A third acquisition module 22 is configured to acquire, according to the visible code image, a linen identifier of the target linen and a server address of a cloud server that stores linen information corresponding to the linen identifier.

[0160] A third sending module 23 is configured to send an acquisition request for the linen information to the cloud server corresponding to the server address. The acquisition request includes the linen identifier.

[0161] A third receiving module 24 is configured to receive the linen information fed back by the cloud server according to the acquisition request.

[0162] A first prompt module 25 is configured to prompt the linen information.

[0163] In an embodiment, the apparatus further includes a fourth receiving module and a second prompt module.

[0164] The fourth receiving module is configured to receive the prompt information sent by the cloud server. The prompt information is used to prompt a user to acquire, by scanning a visible code image on a linen, linen information of the linen.

[0165] The second prompt module is configured to prompt the prompt information.

[0166] In an embodiment, the linen information includes:

[0167] a count of acquiring the linen information by a user within a time period from time at which the target linen was last washed by a washing plant and allocated to a hotel to time at which the cloud server receives the acquisition request.

[0168] In an embodiment, the acquisition request further includes an account identifier logged in the mobile terminal. The account identifier includes an account identifier of a user or a merchant identifier of a merchant.

[0169] In an embodiment, the acquisition request further includes a current location of the mobile terminal.

[0170] In an embodiment, after a user stays in a room of a hotel, if the user needs to query

linen information corresponding to a target linen laid in the room, the user may scan a visible code image on the target linen using a mobile terminal, acquire a linen identifier of the target linen according to the visible code image, and then send a query request for the linen information including the linen identifier to a cloud server, such that the cloud server searches for the linen information corresponding to the linen identifier and returns the linen information to the mobile terminal. Then, the mobile terminal prompts the linen information. Thereafter, the user may obtain the linen information. Therefore, by means of the method according to an embodiment of this application, after a user stays in a room, the user may obtain linen information corresponding to a linen laid in the room, so that it can be determined whether the linen laid in the room has been used by other people previously, thereby improving the staying experience of the user.

[0171] As for the apparatus embodiment, since it is basically similar to the method embodiment, the description is relatively simple. For the related parts, reference is made to the description of the method embodiment.

[0172] Although the hotel has been described above as an example, it should be understood that the hotel here includes standard hotels, non-standard hotels, inns, apartments, short-term rental houses, homestays and other scenarios that may provide accommodation services.

[0173] The embodiments in this specification are all described in a progressive manner. Descriptions of each embodiment focus on differences from other embodiments, and same or similar parts among respective embodiments may be mutually referenced.

[0174] Persons skilled in the art should understand that, the embodiments of this application may be provided as methods, apparatuses, or computer program products. Therefore, the embodiments of this application may use a form of hardware only embodiments, software only embodiments, or embodiments with a combination of software and hardware. Moreover, the embodiments of this application may use a form of a computer program product that is implemented on one or more non-transitory computer-usable storage media (including but not limited to a disk memory, a CD-ROM, an optical memory, and the like) that include computer-usable program code.

[0175] The embodiments of this application is described with reference to flowcharts and/or block diagrams of the method, the terminal device (the system), and the computer program product in the embodiments of this application. It should be understood that computer program instructions can implement each procedure and/or block in the flowcharts and/or block diagrams and a combination of procedures and/or blocks in the flowcharts and/or block diagrams. These computer program instructions may be provided to a general-purpose computer, a special-purpose computer, an embedded processor, or a processor of another

programmable data processing terminal device to generate a machine, so that an apparatus configured to implement functions specified in one or more procedures in the flowcharts and/or one or more blocks in the block diagrams is generated by using instructions executed by the general-purpose computer or the processor of another programmable data processing terminal device.

[0176] These computer program instructions may also be stored in a computer readable memory that can instruct the computer or any other programmable data processing terminal device to work in a specific manner, so that the instructions stored in the computer readable memory generate an artifact that includes an instruction apparatus. The instruction apparatus implements a specific function in one or more processes in the flowcharts and/or in one or more blocks in the block diagrams.

[0177] These computer program instructions may further be loaded onto a computer or another programmable data processing terminal device, so that a series of operations and steps are performed on the computer or the another programmable terminal device, thereby generating computer-implemented processing. Therefore, the instructions executed on the computer or the another programmable terminal device provide steps for implementing a specific function in one or more processes in the flowcharts and/or in one or more blocks in the block diagrams.

[0178] Although preferable embodiments of the embodiments of this application have been described, once persons skilled in the technology know a basic creative concept, they can make other changes and modifications to these embodiments. Therefore, the following claims are intended to cover the preferable embodiments and all changes and modifications falling within the scope of the embodiments of this application.

[0179] At last, it should be noted that the relational terms herein such as first and second are used only to differentiate an entity or operation from another entity or operation, and do not require or imply any actual relationship or sequence between these entities or operations. Moreover, the terms "include", "comprise", and any variants thereof are intended to cover a non-exclusive inclusion. Therefore, in the context of a process, a method, an object, or an apparatus that includes a series of elements, the process, method, object, or terminal device not only includes such elements, but also includes other elements not specified expressly, or may include inherent elements of the process, method, object, or terminal device. Unless otherwise specified, an element limited by "include a/an..." does not exclude other same elements existing in the process, the method, the article, or the terminal device that includes the element.

[0180] The linen information processing method and apparatus, the computer device, and

the non-transitory computer-readable storage medium provided in the embodiments of this application are described in detail above. Although the principles and implementations of this application are described by using specific examples in this specification, the descriptions of the foregoing embodiments are merely intended to help understand the method and the core idea of the method in this application. Meanwhile, a person of ordinary skill in the art may make modifications to the specific implementations and application range according to the idea of this application. In conclusion, the content of this specification should not be construed as a limitation to this application.

CLAIMS

1. A linen information sending method, comprising:

receiving, by a cloud server, an acquisition request sent by a mobile terminal for linen information, the acquisition request comprising a linen identifier of a target linen, and the linen identifier being obtained by scanning a visible code image on the target linen via the mobile terminal;

extracting, by the cloud server, the linen identifier from the acquisition request;

searching, by the cloud server, for the linen information according to the linen identifier; and

sending, by the cloud server, the linen information to the mobile terminal.

2. The method according to claim 1, wherein before receiving an acquisition request sent by a mobile terminal for linen information, the method further comprises:

sending, by the cloud server, prompt information to the mobile terminal, the prompt information being used to prompt a user to acquire, by scanning a visible code image on a linen, linen information of the linen.

3. The method according to claim 2, wherein before sending prompt information to the mobile terminal, the method further comprises:

receiving, by the cloud server, notification information, the notification information comprising an account identifier of the user and being used to notify that a room has been allocated for the user in a hotel.

4. The method according to claim 3, wherein the notification information further comprises a hotel identifier of the hotel, the method further comprising:

determining, by the cloud server, whether a linen in the hotel supports acquiring, by scanning a visible code image on a linen, linen information of the linen;

if so, sending, by the cloud server, the prompt information to the mobile terminal; and

if not, not sending, by the cloud server, the prompt information to the mobile terminal.

5. The method according to claim 4, wherein the notification information further comprises a room identifier of the room, the method further comprising:

determining, by the cloud server, whether a linen in the room supports acquiring, by scanning a visible code image on a linen, linen information of the linen;

if so, sending, by the cloud server, the prompt information to the mobile terminal; and

if not, not sending, by the cloud server, the prompt information to the mobile terminal.

6. The method according to claim 1, wherein the linen information comprises:

a count of acquiring the linen information by a user within a time period from time at which the target linen was last washed by a washing plant and allocated to a hotel to time at which the cloud server receives the acquisition request.

7. The method according to claim 6, wherein the acquisition request further comprises an account identifier logged in the mobile terminal, and the account identifier comprises an account identifier of a user or a merchant identifier of a merchant;

if the logged-in account identifier is an account identifier of a user, when the linen information is sent to the mobile terminal, the cloud server updates a count of acquiring the linen information by a user, and when the linen information is not sent to the mobile terminal, the cloud server does not update a count of acquiring the linen information by a user; and

if the logged-in account identifier is a merchant identifier of a merchant, the cloud server does not update a count of acquiring the linen information by a user.

8. The method according to claim 7, further comprising:

if the logged-in account identifier is an account identifier of a user, acquiring, by the cloud server, an initiation time of the acquisition request;

identifying, by the cloud server according to the linen identifier, a hotel where the target linen is currently located;

acquiring, by the cloud server according to the account identifier of the user, an allowable staying time period of a room allocated for the user in the hotel where the target linen is currently located; and

if the initiation time is within the allowable staying time period, sending, by the cloud server, the linen information to the mobile terminal, and if the initiation time is not within the allowable staying time period or if there is no allowable staying time period for the user in the hotel where the target linen is currently located, not sending, by the cloud server, the linen information to the mobile terminal.

9. The method according to any one of claims 6 to 8, wherein when the target linen is washed by the washing plant, the cloud server clears the count of acquiring the linen information by a user.

10. The method according to any one of claims 1 to 8, wherein the acquisition request further comprises a current location of the mobile terminal,

the method further comprising:

identifying, by the cloud server according to the linen identifier, a hotel where the target linen is currently located;

identifying, by the cloud server, a location area where the hotel is located;

extracting, by the cloud server, the current location of the mobile terminal from the acquisition request; and

if the current location is inside the location area, sending, by the cloud server, the linen information to the mobile terminal.

11. A linen information acquiring method, comprising:

scanning, by a mobile terminal, a visible code image on a target linen;

acquiring, by the mobile terminal according to the visible code image, a linen identifier of the target linen and a server address of a cloud server that stores linen information corresponding to the linen identifier;

sending, by the mobile terminal, an acquisition request for the linen information to the cloud server corresponding to the server address, the acquisition request comprising the linen identifier;

receiving, by the mobile terminal, the linen information fed back by the cloud server according to the acquisition request; and

prompting, by the mobile terminal, the linen information.

12. The method according to claim 11, further comprising:

receiving, by the mobile terminal, the prompt information sent by the cloud server, the prompt information being used to prompt a user to acquire, by scanning a visible code image on a linen, linen information of the linen; and

prompting, by the mobile terminal, the prompt information.

13. The method according to claim 11, wherein the linen information comprises:

a count of acquiring the linen information by a user within a time period from time at which the target linen was last washed by a washing plant and allocated to a hotel to time at which the cloud server receives the acquisition request.

14. The method according to claim 13, wherein the acquisition request further comprises an account identifier logged in the mobile terminal, and the account identifier comprises an account identifier of a user or a merchant identifier of a merchant.

15. The method according to claim 11, wherein the acquisition request further comprises a current location of the mobile terminal.

16. A linen information sending apparatus, comprising:

a first receiving module, configured to receive an acquisition request sent by a mobile terminal for linen information, the acquisition request comprising a linen identifier of a target linen, and the linen identifier being obtained by scanning a visible code image on the target linen via the mobile terminal;

a first extraction module, configured to extract the linen identifier from the acquisition request;

a search module, configured to search for the linen information according to the linen identifier; and

a first sending module, configured to send the linen information to the mobile terminal.

17. A linen information acquiring apparatus, comprising:

a scanning module, configured to scan a visible code image on a target linen;

a third acquisition module, configured to acquire, according to the visible code image, a linen identifier of the target linen and a server address of a cloud server that stores linen information corresponding to the linen identifier;

a third sending module, configured to send an acquisition request for the linen information to the cloud server corresponding to the server address, the acquisition request comprising the linen identifier;

a third receiving module, configured to receive the linen information fed back by the cloud server according to the acquisition request; and

a first prompt module, configured to prompt the linen information.

18. A non-transitory computer-readable storage medium, storing a computer program that, when executed by a processor, implements the method according to any one of claims 1 to 15.

19. A computer device, comprising a memory, a processor, and a computer program stored on the memory and executable on the processor, wherein when the processor executes the program, the method according to any one of claims 1 to 15 is implemented.