

SERVICE NUMBER ASSIGNING METHOD AND DEVICE, COMPUTER APPARATUS, AND STORAGE MEDIUM

This application claims priority to the Chinese Patent Application submitted to the National
5 Intellectual Property Administration, PRC on July 24, 2017, Application No. 2017106085172, and
entitled “Service Number Assigning Method and Device, Computer Apparatus, and Storage
Medium”, which is incorporated herein by reference in its entirety..

TECHNICAL FIELD

10 This application relates to the technical field of data processing, and particularly relates to a
service number assigning method and device, a terminal apparatus, and a storage medium.

BACKGROUND

With the development of the Internet technology, more and more services can be handled on the
Internet, and in the process of handling some services, it is required to assign service numbers to
15 users.

According to the traditional service number assigning technology, service numbers are
randomly generated to be sent to users. The growth of the service quantity has led to more and more
service numbers in demand, and in this case, service numbers are randomly generated and are then
assigned, which may result in a high probability of repeated assignment of the service numbers.

SUMMARY

20 The embodiments of this application provide a service number assigning method and device, a
computer apparatus, and a nonvolatile computer-readable storage medium.

A service number assigning method comprises:

Obtaining a service number generation quantity;

Generating service numbers according to the service number generation quantity;

Adding the generated service numbers to a number assignment queue;

Obtaining a service number assignment request;

5 Extracting a requested assignment quantity and a user account in the service number assignment request;

Extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and

Assigning the extracted service numbers to the user account.

10 A service number assigning device comprises:

A quantity obtaining module used for obtaining a service number generation quantity;

A number generation module used for generating service numbers according to the service number generation quantity;

15 A queue addition module used for adding the generated service numbers to a number assignment queue;

A request obtaining module used for obtaining a service number assignment request;

A quantity extraction module used for extracting a requested assignment quantity and a user account in the service number assignment request;

20 A number extraction module used for extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and

A number assignment module used for assigning the extracted service numbers to the user account.

A computer apparatus comprises a memory, a processor, and a computer instruction which is

stored in the memory and is able to run in the processor, wherein the processor executes the computer instruction to implement the following steps:

Obtaining a service number generation quantity;

Generating service numbers according to the service number generation quantity;

5 Adding the generated service numbers to a number assignment queue;

Obtaining a service number assignment request;

Extracting a requested assignment quantity and a user account in the service number assignment request;

10 Extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and

Assigning the extracted service numbers to the user account.

A nonvolatile computer-readable storage medium has a computer instruction stored therein, wherein the computer instruction is executed by a processor to implement the following steps:

Obtaining a service number generation quantity;

15 Generating service numbers according to the service number generation quantity;

Adding the generated service numbers to a number assignment queue;

Obtaining a service number assignment request;

Extracting a requested assignment quantity and a user account in the service number assignment request;

20 Extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and

Assigning the extracted service numbers to the user account.

The details of one or more embodiments of this application are given in the following accompanying drawings and descriptions. With reference to the specification, accompanying drawings and claims, other characteristics, objectives and advantages of this application can be better understood.

BRIEF DESCRIPTION OF DRAWINGS

To illustrate the technical solutions according to the embodiments of the present invention or in the prior art more clearly, the accompanying drawings used for describing the embodiments or the prior art are briefly introduced below. Clearly, the drawings in the following description are only used for illustrating some embodiments of this application, and those ordinarily skilled in the art can obtain other drawings according to the following ones without creative labor.

Fig. 1 is an application environment diagram of a service number assigning method in one or more embodiments;

Fig. 2 is a structural block diagram of a server in a service number assigning system in one or more embodiments;

Fig. 3 is a flow diagram of the service number assigning method in one or more embodiments;

Fig. 4 is a flow diagram of a step of generating a selection notification in one or more embodiments;

Fig. 5 is a flow diagram of a step of generating a service finish notification in one or more embodiments;

Fig. 6 is a flow diagram of a step of extracting selected service numbers in one or more embodiments;

Fig. 7 is a structural block diagram of a service number assigning device in one or more embodiments;

Fig. 8 is a structural block diagram of the service number assigning device in another

embodiment.

DESCRIPTION OF EMBODIMENTS

For a better understanding of the technical solutions and advantages of this application, this application is further expounded below with reference to the accompanying drawings and
5 embodiments. It should be appreciated that the embodiments described herein are only used for explaining this application, and are not for the purpose of limiting this application.

Fig. 1 shows an application environment diagram of a service number assigning method in one embodiment. Referring to Fig. 1, the service number assigning method is applied to a service number assigning system. The service number assigning system comprises a terminal 110, a terminal 120,
10 and a server 130, wherein the terminal 110 and the terminal 120 are connected with the server 130 through a network, and the terminal 110 and the terminal 120 are fixed terminals which are at least one selected from printers, scanners and monitors, or mobile terminals which are at least one selected from tablet computers, smart phones, personal data assistants and digital cameras.

Fig. 2 shows an internal structural diagram of the server 130 in the service number assigning
15 system in Fig. 1 in one embodiment. As shown in Fig. 2, the server 130 includes a processor, a memory, and a network interface which are connected through a system bus. The processor of the server 130 is used for providing a computation and control capability to support the operation of the whole server 130, the memory is used for storing data, code instructions, and so on, and the network interface is used for network communication with the terminal 110 and the terminal 120. At least one
20 computer instruction is stored in the memory and is to be executed by the processor to implement the service number assigning method suitable for the server 120 in the embodiments of this application. The memory includes a nonvolatile computer-readable storage medium such as a disk, a CD, and a read-only memory (ROM), a random access memory (RAM), or the like. For instance, in some
25 embodiments, the memory includes a nonvolatile computer-readable storage medium and an internal memory, wherein the nonvolatile computer-readable storage medium has an operation system and a computer instruction stored therein, and the computer instruction is executed by the processor to

implement the service number assigning method; and the internal memory provides a caching operation environment for the operation system and computer instruction in the nonvolatile computer-readable storage medium.

Those skilled in the art would appreciate that the diagram in Fig. 2 only shows parts relating to this application, is not intended to limit the server to which this application is applied, and particularly, the server may include more or less components than those shown in Fig. 2, or certain components are combined, or these components are configured in different manners.

As shown in Fig. 3, in some embodiments, a service number assigning method is provided. In this embodiment, the method is explained, for example, in the case where the method is applied to the server 130. The method particularly comprises the following steps:

S302: a service number generation quantity is obtained.

In some embodiments, a servicer inputs a servicer account and a password to log into a service information input page of the terminal 110 and inputs the service number generation quantity to the service information input page, the terminal 110 obtains the input service number generation quantity and sends the obtained service number generation quantity to the server 130, and the server 130 receives the service number generation quantity sent from the terminal 110.

In some embodiments, the servicer inputs service information to the service information input page of the terminal 110, wherein the service information includes a subject matter price and at least one of a service name, a subject matter name and a valid service time; the terminal 110 obtains the input service information and sends the service information to the server 130; and the server 130 receives the service information sent from the terminal 110, extracts the subject matter price in the service information, and determines the service number generation quantity according to the extracted subject matter price.

In another embodiment, the server 130 extracts the subject matter price and a number quantity determination mode from the service information and determines the service number generation quantity according to the extracted subject matter price and number quantity determination mode.

For instance, in the case where a subject matter is a mobile phone which is worth 5000 yuan, if a figure obtained by dividing the subject matter price by 2 is determined as the service number generation quantity, namely 5000 divided by 2 is 2500, the service number generation quantity is 2500; and if the subject matter price is determined as the service number generation quantity, the
5 determined service number generation quantity is 5000.

S304: service numbers are generated according to the service number generation quantity.

In some embodiments, the server 130 sequentially generates the service numbers matching the service number generation quantity, wherein the number of digits of the service numbers generated by the server 130 may be the same. For instance, if the service number generation quantity is 10, 10
10 two-digit service numbers including “00, 01, 02, 03, 04, 05, 06, 07, 08, and 09” are generated.

In some embodiments, the server 130 obtains a corresponding service number random generation algorithm and generates non-repetitive service numbers matching the service number generation quantity according to the random generation algorithm.

S306: the generated service numbers are added to a number assignment queue.

15 Particularly, after generating the service numbers matching the service number generation quantity, the server 130 randomly extracts one service number from the generated service numbers and adds the extracted service number to the number assignment queue, and then extracts another service number from the remaining service numbers and adds the extracted service number to the number assignment queue till all the generated service numbers are added to the number assignment
20 queue.

In some embodiments, S306 particularly further comprises the following steps: the generated service numbers are converted into unordered service numbers, and the unordered service numbers are added to the number assignment queue.

In some embodiments, after generating the service numbers matching the service number
25 generation quantity, the server 130 calls a data scattering algorithm to perform data scattering on all

the generated service numbers to obtain the unordered service numbers and adds the unordered service numbers to the number assignment queue.

S308: a service number assignment request is obtained.

In some embodiments, a user inputs a user account to the terminal 120 to log into a service number obtaining page and inputs a requested assignment quantity of the service numbers to the service number obtaining page, the terminal 120 obtains the requested assignment quantity input to the service number obtaining page and the logged-into user account, generates the service number assignment request according to the requested assignment quantity and the logged-into user account, and sends the generated service number assignment request to the server 130, and the server 130 receives the service number assignment request sent from the terminal 120. The requested assignment quantity is the quantity of the service numbers requested to be assigned to the user corresponding to the user account.

S310: a requested assignment quantity and a user account in the service number assignment request are extracted.

In some embodiments, after receiving the service number assignment request sent from the terminal 120, the server 130 analyzes the service number assignment request to extract the requested assignment quantity and user account in the service number assignment request.

S312: service numbers are extracted in sequence from the number assignment queue according to the requested assignment quantity.

In some embodiments, the server 130 extracts the same quantity of service numbers as the requested assignment quantity from the number assignment queue in an array sequence of the service numbers in the number assignment queue according to the requested assignment quantity extracted from the service number assignment request.

S314: the extracted service numbers are assigned to the user account.

In some embodiments, the server 130 generates a number assignment success notification

according to the service numbers extracted from the number assignment queue, sends the number assignment success notification to the terminal 120 which is logged into by means of the user account, and correspondingly stores the extracted service numbers and the user account to generate a number assignment record.

5 In this embodiment, the service numbers are generated according to the service number generation quantity, so that sufficient assignable service numbers are guaranteed; the generated service numbers are added to the number assignment queue and are extracted, after the service number assignment request is obtained, from the number assignment queue according to the requested assignment quantity in the service number assignment request, and the extracted service
10 numbers are assigned to the user account in the service number assignment request; and in the service number assignment process, the service numbers are extracted in sequence from the number assignment queue to guarantee that the extracted service numbers are non-repetitive, so that the probability of repeated assignment of the service numbers is reduced, and the assignment accuracy of the service numbers is improved.

15 As shown in Fig. 4, in some embodiments, the method particularly further comprises a step, to be performed after S314, of generating a selection notification, and this step particularly comprises the following steps:

S402: whether or not the service numbers in the number assignment queue are completely assigned is detected.

20 In some embodiments, after assigning the extracted service numbers to the user account, the server 130 detects whether there are, in the number assignment queue, service numbers to be assigned; and if yes, the service numbers in the number assignment queue are not completely assigned; or if not, the service numbers in the number assignment queue are completely assigned.

25 In some embodiments, after assigning the extracted service numbers to the user account, the server 130 cumulatively counts the quantity of the assigned service numbers and compares the counted quantity with the service number generation quantity every time counting is completed; and

when the counted quantity is equal to the service number generation quantity, the service numbers in the number assignment queue are completely assigned; and when the counted quantity is less than the service number generation quantity, the service numbers in the number assignment queue are not completely assigned.

5 In another embodiment, the server 130 sets an unassigned number quantity in the number assignment queue, the initial value of the unassigned number quantity is the service number generation quantity, and the server 130 subtracts a service number extraction quantity from the unassigned number quantity after extracting the service numbers from the number assignment queue. When the server 130 detects that the value of the unassigned number quantity is equal to 0, the service
10 numbers in the number assignment queue are completely assigned; and when the server 130 detects that the value of the unassigned number quantity is not equal to 0, the service numbers in the number assignment queue are not completely assigned.

In some embodiments, S402 particularly comprises the following steps: whether or not the service numbers in the number assignment queue are completely assigned within a preset time is
15 detected.

In some embodiments, the server 130 starts timing when adding the generated service numbers to the number assignment queue and detects whether or not the service numbers in the number assignment queue are completely assigned when the time reaches the preset time.

S404: if it is detected that the service numbers in the number assignment queue are completely
20 assigned, selected service numbers are extracted from the generated service numbers.

In some embodiments, when detecting that the service numbers in the number assignment queue are completely assigned, the server 130 extracts a preset quantity of service numbers from the generated service numbers and uses the extracted service numbers as selected service numbers, wherein the preset quantity of service numbers are extracted randomly or are extracted according to a
25 preset rule.

S406: a user account to which the selected service number are assigned is queried.

In some embodiments, the server 130 queries the selected service numbers according to the number assignment record of the service numbers and obtains the user account corresponding to the selected service numbers from the number assignment record, and the obtained user account is a user account to which the selected service numbers are assigned.

5 S408: the selection notification is generated according to the selected service numbers and the queried user account.

In some embodiments, the server 130 packages the selected service numbers and the queried user account to generate a selection notification. The selection notification may further include at least one of a service name, subject matter information, and a selection expiration time.

10 S410: the selection notification is sent to a terminal which is logged into by means of the queried user account.

In some embodiments, the server 130 determines a terminal address corresponding to the terminal which is logged into by means of the queried user account and sends the selection notification to the terminal which is logged into by means of the queried user account according to the
15 determined terminal address.

In this embodiment, after it is detected that the service numbers in the number assignment queue are completely assigned, selected service numbers are extracted from the generated service numbers, the selection notification is generated according to the selected service numbers and the user account to which the selected service numbers are assigned, and the selection notification is sent to the
20 terminal which is logged into by means of the user account to which the selected service numbers are assigned to guarantee that a selected user is notified in time after the selected service numbers are extracted, so that the selection notification efficiency is improved.

As shown in Fig. 5, in some embodiments, the method particularly further comprises a step, to be performed after S314, of generating a service finish notification, and this step particularly
25 comprises the following steps:

S502: whether or not the service numbers in the number assignment queue are completely assigned within a preset time is detected.

In some embodiments, the server 130 starts timing when adding the generated service numbers to the number assignment queue and detects whether or not the service numbers in the number assignment queue are completely assigned when the time reaches preset time.

S504: If it is detected that the service numbers in the number assignment queue are not completely assigned, a user account corresponding to assigned service numbers is obtained.

In some embodiments, when it is detected that the service numbers in the number assignment queue are completely assigned within the preset time, this service is finished. The server 130 obtains the assigned service numbers and the user account corresponding to the assigned service numbers from the number assignment record, wherein the obtained user account is a user account to which the service numbers are assigned.

S506: the service finish notification is generated according to the obtained user account and the assigned service numbers corresponding to the obtained user account.

In some embodiments, the server 130 generates the service finish notification according to the obtained assigned service numbers and the user account corresponding to the assigned service numbers, and the service finish notification includes a service finish reason.

In some embodiments, the server 130 queries a plurality of service numbers corresponding to the obtained user account from the number assignment record and generates the service finish notification according to the obtained user account and the plurality of queried service numbers.

S508: the service finish notification is sent to a terminal which is logged into by means of the user account.

In some embodiments, the server 130 queries a terminal address corresponding to the terminal which is logged into by means of the obtained user account and sends the service finish notification to the terminal which is logged into by means of the obtained user account according to the queried

terminal address.

In this embodiment, when it is detected that the service numbers in the number assignment queue are not completely assigned within the preset time, the service corresponding to the service numbers is finished, so that computing resources will not be excessively occupied by the service
5 corresponding to the service numbers which are not completely assigned within the preset time; and the user account corresponding to the assigned service numbers is obtained, and the service finish notification is generated according to the obtained user account and the assigned service numbers corresponding to the obtained user account and is sent to the terminal which is logged into by means of the obtained user account, so that the user corresponding to the assigned service numbers is
10 notified in time while the service is finished.

As shown in Fig. 6, in some embodiments, S404 particularly comprises a step of extracting the selected service numbers, and this step particularly comprises the following steps:

S602: a preset quantity of user accounts to which the service numbers are assigned.

In some embodiments, the server 130 selects a preset quantity of user accounts to which the
15 service numbers are assigned from the number assignment record, wherein the preset quantity of user accounts are randomly selected by the server 130.

In some embodiments, the server 130 records service number assignment times when the service numbers are assigned to each selected user account in the number assignment record, arrays the user accounts according to the service number assignment times, and selects the preset quantity of user
20 accounts from the first one or the last one. For instance, the server 130 arrays the user accounts according to the service number assignment times and selects the last 50 user accounts.

S604: the service number assignment time and assigned service numbers which correspond to each selected user account are obtained.

In some embodiments, the server 130 obtains the service number assignment time and assigned
25 service numbers which correspond to each selected user account from the number assignment record,

wherein the service number assignment time is expressed by a numeric string having the same number of digits. For instance, the service number assignment time is 14:23:39 on May 11, 2017, and the service number assignment time is expressed as a 14-digit numeric string 20170511142339.

5 S606: the selected service numbers are obtained according to the obtained service number assignment times and assigned service numbers.

In some embodiments, the server 130 adds all the obtained service number assignment times and assigned service numbers, divides the sum by the service number generation quantity to obtain a remainder, and determines the selected service numbers according to the obtained remainder, wherein a plurality of selected service numbers can be determined according to the obtained
10 remainder.

In this embodiment, the preset quantity of user accounts are selected, and the selected service numbers are determined by calculation according to the service number assignment times and assigned service numbers which correspond to the user accounts, so that the extraction fairness of the selected service numbers is guaranteed; and when a plurality of selected service numbers are to be
15 determined, repetition of determined selected service numbers is avoided, so that the determination accuracy of the selected service numbers is improved.

For instance, the servicer logs into the terminal 110 by means of the servicer account and inputs the service information through the terminal 110, wherein the service information includes subject matter information including at least one of a subject matter name, a subject matter price, and a
20 detailed subject matter parameter. For instance, the subject matter name is mobile phone, the subject matter price is 5000 yuan, and the detailed subject matter parameter includes a memory capacity, a screen size, a processor model, and the like. The terminal 110 sends the input service information to the server 130.

The server 130 determines the service number generation quantity, namely 5000, according to
25 the subject matter price of 5000 yuan, and a user pays 1 yuan for each service number. The server 130 converts the 5000 generated service numbers into unordered service numbers and adds the unordered

service numbers to the number assignment queue. The user logs into the terminal 120 by means of a user account and inputs a purchase quantity of the service numbers through the terminal 120. After the user completes payment through the terminal 120 according to the purchase quantity of the service numbers, the server 130 obtains the service number assignment request which includes the user account and the purchase quantity, corresponding to the user account, of the service numbers, extracts the service numbers from the number assignment queue according to the purchase quantity of the service numbers, and assigns the extracted service numbers to the user account in the service number assignment request.

After it is detected that the service numbers in the number assignment queue are completely assigned, the server 130 extracts the selected service numbers from all the generated service numbers, queries the user account to which the selected service numbers are assigned, and sends the selection notification to the terminal which is logged into by means of the user account. The user exchanges the received selection notification as a voucher for a mobile phone which is worth 5000 yuan.

It should be appreciated that although the steps shown in flow diagrams of Fig. 3 to Fig. 6 are sequentially displayed under the indication of arrows, it is not necessary to sequentially perform these steps according to a sequence indicated by the arrows. Unless otherwise clearly specified in this article, there is no strict limitation on the implementation sequence on these steps, and these steps can also be performed according to other sequences. Besides, at least part of the steps shown in Fig. 3 to Fig. 6 each include a plurality of sub-steps or stages, these sub-steps or stages do not need to be completely performed at the same time and can be performed at different times; and these sub-steps or stages performed in sequence, and can also be performed in turns or alternately with other steps or sub-steps or stages of these steps.

As shown in Fig. 7, in some embodiments, a service number assigning device 700 is provided and particularly comprises a quantity obtaining module 702, a number generation module 704, a queue addition module 706, a request obtaining module 708, a quantity extraction module 710, a number extraction module 712, and a number assignment module 714, wherein:

The quantity obtaining module 702 is used for obtaining a service number generation quantity;

The number generation module 704 is used for generating service numbers according to the service number generation quantity;

5 The queue addition module 706 is used for adding the generated service numbers to a number assignment queue;

The request obtaining module 708 is used for obtaining a service number assignment request;

The quantity extraction module 710 is used for extracting a requested assignment quantity and a user account in the service number assignment request;

10 The number extraction module 712 is used for extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and

The number assignment module 714 is used for assigning the extracted service numbers to the user account.

15 In some embodiments, the queue addition module is also used for converting the generated service numbers into unordered service numbers and adding the unordered service numbers to the number assignment queue.

20 In this embodiment, the service numbers are generated according to the service number generation quantity, so that sufficient assignable service numbers are guaranteed; the generated service numbers are added to the number assignment queue and are extracted, after the service number assignment request is obtained, from the number assignment queue according to the requested assignment quantity in the service number assignment request, and the extracted service numbers are assigned to the user account in the service number assignment request; and in the service number assignment process, the service numbers are extracted in sequence from the number assignment queue to guarantee that the extracted service numbers are non-repetitive, so that the probability of repeated assignment of the service numbers is reduced, and the assignment accuracy of
25 the service numbers is improved.

As shown in Fig. 8, in some embodiments, the service number assigning device 700 particularly further comprises a queue detection module 716, a selection extraction module 718, an account query module 720, a notification generation module 722, and a notification sending module 724, wherein:

5 The queue detection module 716 is used for detecting whether or not the service numbers in the number assignment queue are completely assigned;

The selection extraction module 718 is used for extracting selected service numbers from the generated service numbers if it is detected that the service numbers in the number assignment queue are completely assigned;

10 The account query module 720 is used for querying a user account to which the selected service numbers are assigned;

The notification generation module 722 is used for generating a selection notification according to the selected service numbers and the queried user account; and

The notification sending module 724 is used for sending the selection notification to a terminal which is logged into by means of the queried user account.

15 The queue detection module 716 is also used for detecting whether or not the service numbers in the number assignment queue are completely assigned within a preset time;

The account query module 720 is also used for obtaining a user account corresponding to assigned service numbers if it is detected that the service numbers in the number assignment queue are not completely assigned;

20 The notification generation module 722 is also used for generating a service finish notification according to the obtained user account and the assigned service numbers corresponding to the obtained user account; and

The notification sending module 724 is also used for sending the service finish notification to a terminal which is logged into by means of the obtained user account.

In this embodiment, after it is detected that the service numbers in the number assignment queue are completely assigned, selected service numbers are extracted from the generated service numbers, the selection notification is generated according to the selected service numbers and the user account to which the selected service numbers are assigned, and the selection notification is sent to the terminal which is logged into by means of the user account to which the selected service numbers are assigned to guarantee that a selected user is notified in time after the selected service numbers are extracted, so that the selection notification efficiency is improved; when it is detected that the service numbers in the number assignment queue are not completely assigned within the preset time, the service corresponding to the service numbers is finished, so that computing resources will not be excessively occupied by the service corresponding to the service numbers which are not completely assigned within the preset time; and the user account corresponding to the assigned service numbers is obtained, and the service finish notification is generated according to the obtained user account and the assigned service numbers corresponding to the obtained user account and is sent to the terminal which is logged into by means of the obtained user account, so that the user corresponding to the assigned service numbers is notified in time while the service is finished.

In some embodiments, the selection extraction module 718 is also used for selecting a preset quantity of user accounts to which the service numbers are assigned, obtaining a service number assignment time and assigned service numbers which correspond to each selected user account, and determining the selected service numbers according to the obtained service number assignment times and assigned service numbers.

In this embodiment, the preset quantity of user accounts are selected, and the selected service numbers are determined by calculation according to the service number assignment times and the assigned service numbers which correspond to the user accounts, so that the extraction fairness of the selected service numbers is guaranteed; and when a plurality of selected service numbers need to be determined, the repetition of the determined selected service numbers is avoided, so that the determination accuracy of the selected service numbers is improved.

All or part of the modules in the service number assigning device can be implemented by

software, hardware, or a combination of the software and the hardware, wherein a network interface is a Ethernet card, a wireless network card, or the like. The modules are embedded into or independent of a processor of a terminal in a hardware form, or are stored in a memory of the terminal in a software form, so that the processor conveniently calls and executes the operations corresponding to the modules. The processor is a central processing unit (CPU), a microprocessor, a single-chip microcomputer, or the like.

A computer apparatus comprises a memory, a processor, and a computer instruction which is stored in the memory and is able to run in the processor, wherein the processor executes the computer instruction to implement the following steps: obtaining a service number generation quantity; generating service numbers according to the service number generation quantity; adding the generated service numbers to a number assignment queue; obtaining a service number assignment request; extracting a requested assignment quantity and a user account in the service number assignment request; extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and assigning the extracted service numbers to the user account.

In some embodiments, the step of adding the generated service numbers to a number assignment queue comprises: converting the generated service numbers into unordered service numbers, and adding the unordered service numbers to the number assignment queue.

In some embodiment, after the step of assigning the extracted service numbers to the user account, the processor executes the computer instruction to further implement the following steps: detecting whether or not the service numbers in the number assignment queue are completely assigned; if yes,, extracting selected service numbers from the generated service numbers, querying the user account to which the selected service numbers are assigned, and generating a selection notification according to the selected service numbers and the queried user account; or if not, sending the selection notification to a terminal which is logged into by means of the queried user account.

In some embodiment, after the step of assigning the extracted service numbers to the user

account, the processor executes the computer instruction to further implement the following steps: detecting whether or not the service numbers in the number assignment queue are completely assigned within a preset time; if not, obtaining the user account corresponding to the assigned service numbers, generating a service finish notification according to the obtained user account and the assigned service numbers corresponding to the obtained user account, and sending the service finish notification to a terminal which is logged into by means of the obtained user account.

In some embodiments, the step of extracting selected service numbers from the generated service numbers comprises: selecting a preset quantity of user accounts to which the service numbers are assigned; obtaining a service number assignment time and assigned service numbers which correspond to each selected user account; and determining the selected service numbers according to the obtained service number assignment times and assigned service numbers.

In this embodiment, the service numbers are generated according to the service number generation quantity, so that sufficient assignable service numbers are guaranteed; the generated service numbers are added to the number assignment queue and are extracted, after the service number assignment request is obtained, from the number assignment queue according to the requested assignment quantity in the service number assignment request, and the extracted service numbers are assigned to the user account in the service number assignment request; and in the service number assignment process, the service numbers are extracted in sequence from the number assignment queue to guarantee that the extracted service numbers are non-repetitive, so that the probability of repeated assignment of the service numbers is reduced, and the assignment accuracy of the service numbers is improved.

A nonvolatile computer-readable storage medium has a computer instruction stored therein, wherein the computer instruction is executed by a processor to implement the following steps: obtaining a service number generation quantity; generating service numbers according to the service number generation quantity; adding the generated service numbers to a number assignment queue; obtaining a service number assignment request; extracting a requested assignment quantity and a user account in the service number assignment request; extracting service numbers in sequence from the

number assignment queue according to the requested assignment quantity; and assigning the extracted service numbers to the user account.

In some embodiments, the step of adding the generated service numbers to a number assignment queue comprises: converting the generated service numbers are into unordered service numbers, and
5 adding the unordered service numbers to the number assignment queue.

In some embodiment, after the step of assigning the extracted service numbers to the user account, the processor further performs the following steps: detecting whether or not the service numbers in the number assignment queue are completely assigned; if it is detected that the service numbers in the number assignment queue are completely assigned, extracting selected service
10 numbers from the generated service numbers; querying the user account to which the selected service numbers are assigned; generating a selection notification according to the selected service numbers and the queried user account; and sending the selection notification to a terminal which is logged into by means of the queried user account.

In some embodiment, after the step of assigning the extracted service numbers to the user
15 account, the processor further performs the following steps: detecting whether or not the service numbers in the number assignment queue are completely assigned within preset time; if it is detected that the service numbers in the number assignment queue are not completely assigned, obtaining the user account corresponding to the assigned service numbers; generating a service finish notification according to the obtained user account and the assigned service numbers corresponding to the
20 obtained user account; and sending the service finish notification to a terminal which is logged into by means of the obtained user account.

In some embodiments, the step of extracting selected service numbers from the generated service numbers comprises: selecting a preset quantity of user accounts to which the service numbers are assigned; obtaining the service number assignment time and the assigned service numbers which
25 correspond to each selected user account; and determining the selected service numbers according to the obtained service number assignment time and assigned service numbers.

In this embodiment, the service numbers are generated according to the service number generation quantity, so that sufficient assignable service numbers are guaranteed; the generated service numbers are added to the number assignment queue and are extracted, after the service number assignment request is obtained, from the number assignment queue according to the requested assignment quantity in the service number assignment request, and the extracted service numbers are assigned to the user account in the service number assignment request; and in the service number assignment process, the service numbers are extracted in sequence from the number assignment queue to guarantee that the extracted service numbers are non-repetitive, so that the probability of repeated assignment of the service numbers is reduced, and the assignment accuracy of the service numbers is improved.

Those ordinarily skilled in the art would appreciate that all or part of the procedures of the method in the above embodiments can be implemented by relevant hardware instructed by the computer instruction, wherein a program is stored in the nonvolatile computer-readable storage medium, and when the program runs, the procedures of the method in the above embodiments can be performed. Wherein, the storage medium is a disk, a CD, a read-only memory (ROM), or the like.

The technical characteristics of the above embodiments can be arbitrarily combined, and for the sake of a brief description, not all possible combinations of the technical characteristics of the above embodiments are described. All combinations of the technical characteristics obtained without causing contradictions should fall within the scope recorded in this specification.

The above embodiments are specifically described in details to show several implementations of this application, but should not be understood as limitations on the scope of the patent of this application. It should be noted that those ordinarily skilled in the art are permitted to make several transformations and improvements without deviating from the concept of this application, and all these transformations and improvements should also fall within the protection scope of this application. Thus, the protection scope of the patent of this application should be subject to the appended claims.

CLAIMS

1. A service number assigning method, comprising:

obtaining a service number generation quantity;

generating service numbers according to the service number generation quantity;

5 adding the generated service numbers to a number assignment queue;

obtaining a service number assignment request;

extracting a requested assignment quantity and a user account in the service number assignment request;

10 extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and

assigning the extracted service numbers to the user account.

2. The method according to Claim 1, wherein the step of adding the generated service numbers to a number assignment queue comprises:

converting the generated service numbers into unordered service numbers; and

15 adding the unordered service numbers to the number assignment queue.

3. The method according to Claim 2, wherein the method further comprises the following steps to be performed after the step of assigning the extracted service numbers to the user account:

detecting whether or not the service numbers in the number assignment queue are completely assigned;

20 if it is detected that the service numbers in the number assignment queue are completely assigned, extracting selected service numbers from the generated service numbers;

querying a user account having the selected service numbers assigned thereto;

generating a selection notification according to the selected service numbers and the queried user account; and

sending the selection notification to a terminal which is logged into by means of the queried user account.

5 4. The method according to Claim 3, wherein the step of detecting whether or not the service numbers in the number assignment queue are completely assigned comprises:

detecting whether or not the service numbers in the number assignment queue are completely assigned within a preset time;

10 the step of detecting whether or not the service numbers in the number assignment queue are completely assigned further comprises the following steps to be performed after the step of detecting whether or not the service numbers in the number assignment queue are completely assigned within a preset time:

if it is detected that the service numbers in the number assignment queue are not completely assigned, obtaining a user account corresponding to the assigned service numbers;

15 generating a service finish notification according to the obtained user account and assigned service numbers corresponding to the obtained user account; and

sending the service finish notification to a terminal which is logged into by means of the queried user account.

20 5. The method according to Claim 3, wherein the step of extracting selected service numbers from the generated service numbers comprises:

selecting a preset quantity of user accounts to which the service numbers are assigned;

obtaining a service number assignment time and assigned service numbers which correspond to each said selected user account; and

determining the selected service numbers according to the obtained service number assignment

times and assigned service numbers.

6. A service number assigning device, comprising:

a quantity obtaining module used for obtaining a service number generation quantity;

5 a number generation module used for generating service numbers according to the service number generation quantity;

a queue addition module used for adding the generated service numbers to a number assignment queue;

a request obtaining module used for obtaining a service number assignment request;

10 a quantity extraction module used for extracting a requested assignment quantity and a user account in the service number assignment request;

a number extraction module used for extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and

a number assignment module used for assigning the extracted service numbers to the user account.

15 7. The device according to Claim 6, wherein the queue addition module is also used for converting the generated service numbers into unordered service numbers and adding the unordered service numbers to the number assignment queue.

8. The device according to claim 6, wherein the device further comprises:

20 a queue detection module used for detecting whether or not the service numbers in the number assignment queue are completely assigned;

a selection extraction module used for extracting selected service numbers from the generated service numbers if it is detected that the service numbers in the number assignment queue are completely assigned;

an account query module used for querying a user account to which the selected service numbers are assigned;

a notification generation module used for generating a selection notification according to the selected service numbers and the queried user account; and

5 a notification sending module used for sending the selection notification to a terminal which is logged into by means of the queried user account.

9. The device according to Claim 8, wherein the queue detection module is also used for detecting whether or not the service numbers in the number assignment queue are completely assigned within a present time;

10 the device further comprises:

the account query module used for obtaining a user account corresponding to assigned service numbers if it is detected that the service numbers in the number assignment queue are not completely assigned;

15 the notification generation module used for generating a service finish notification according to the obtained user account and the assigned service numbers corresponding to the obtained user account; and

the notification sending module used for sending the service finish notification to a terminal which is logged into by means of the obtained user account.

20 10. The device according to Claim 8, wherein the selection extraction module is also used for selecting a preset quantity of user accounts to which the service numbers are assigned, obtaining a service number assignment time and assigned service numbers which correspond to each said selected user account, and determining the selected service numbers according to the obtained service number assignment times and assigned service numbers.

25 11. A computer apparatus, comprising a memory, a processor, and a computer instruction which is stored in the memory and is able to run in the processor, wherein the processor executes the

computer instruction to implement the following steps:

obtaining a service number generation quantity;

generating service numbers according to the service number generation quantity;

adding the generated service numbers to a number assignment queue;

5 obtaining a service number assignment request;

extracting a requested assignment quantity and a user account in the service number assignment request;

extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and

10 assigning the extracted service numbers to the user account.

12. The computer apparatus according to Claim 11, wherein the step of adding the generated service numbers to a number assignment queue comprises:

converting the generated service numbers into unordered service numbers; and

adding the unordered service numbers to the number assignment queue.

15 13. The computer apparatus according to Claim 12, wherein after the step of assigning the extracted service numbers to the user account, the processor executes the computer instruction to further implement the following steps:

detecting whether or not the service numbers in the number assignment queue are completely assigned;

20 if it is detected that the service numbers in the number assignment queue are completely assigned, extracting selected service numbers from the generated service numbers;

querying a user account to which the selected service numbers are assigned;

generating a selection notification according to the selected service numbers and the queried

user account; and

sending the selection notification to a terminal which is logged into by means of the queried user account.

14. The computer apparatus according to any one of Claims 11-13, wherein the step of
5 detecting whether or not the service numbers in the number assignment queue are completely assigned comprises:

detecting whether or not the service numbers in the number assignment queue are completely assigned within a preset time;

the step of detecting whether or not the service numbers in the number assignment queue are
10 completely assigned further comprises the following steps to be performed after the step of detecting whether or not the service numbers in the number assignment queue are completely assigned within preset time:

if it is detected that the service numbers in the number assignment queue are not completely assigned, obtaining a user account corresponding to assigned service numbers;

15 generating a service finish notification according to the obtained user account and the assigned service numbers corresponding to the obtained user account; and

sending the service finish notification to a terminal which is logged into by means of the obtained user account.

15. The computer apparatus according to Claims 11-13, wherein the step of extracting selected
20 service numbers from the generated service numbers comprises:

selecting a preset quantity of user accounts to which the service numbers are assigned;

obtaining a service number assignment time and assigned service numbers which correspond to each said selected user account; and

determining the selected service numbers according to the obtained service number assignment

times and assigned service numbers.

16. A nonvolatile computer-readable storage medium having a computer instruction stored therein, wherein the computer instruction is executed by a processor to implement the following steps:

- 5 obtaining a service number generation quantity;
- generating service numbers according to the service number generation quantity;
- adding the generated service numbers to a number assignment queue;
- obtaining a service number assignment request;
- extracting a requested assignment quantity and a user account in the service number assignment
- 10 request;
- extracting service numbers in sequence from the number assignment queue according to the requested assignment quantity; and
- assigning the extracted service numbers to the user account.

17. The storage medium according to Claim 16, wherein the step of adding the generated

15 service numbers to a number assignment queue comprises:

- converting the generated service numbers into unordered service numbers; and
- adding the unordered service numbers to the number assignment queue.

18. The storage medium according to Claim 17, wherein the computer instruction is executed by the processor to implement the following steps to be performed after the step of assigning the

20 extracted service numbers to the user account:

 detecting whether or not the service numbers in the number assignment queue are completely assigned;

 if it is detected that the service numbers in the number assignment queue are completely

assigned, extracting selected service numbers from the generated service numbers;

querying a user account to which the selected service numbers are assigned;

generating a selection notification according to the selected service numbers and the queried user account; and

5 sending the selection notification to a terminal which is logged into by means of the queried user account.

19. The storage medium according to any one of Claims 16-18, wherein the step of detecting whether or not the service numbers in the number assignment queue are completely assigned comprises:

10 detecting whether or not the service numbers in the number assignment queue are completely assigned within preset time;

the step of detecting whether or not the service numbers in the number assignment queue are completely assigned further comprises the following steps to be performed after the step of detecting whether or not the service numbers in the number assignment queue are completely assigned within
15 preset time:

if it is detected that the service numbers in the number assignment queue are not completely assigned, obtaining a user account corresponding to assigned service numbers;

generating a service finish notification according to the obtained user account and the assigned service numbers corresponding to the obtained user account; and

20 sending the service finish notification to a terminal which is logged into by means of the obtained user account.

20. The storage medium according to Claims 16-18, wherein the step of extracting selected service numbers from the generated service numbers comprises:

selecting a preset quantity of user accounts to which the service numbers are assigned;

obtaining service number assignment time and assigned service numbers which correspond to each said selected user account; and

determining the selected service numbers according to the obtained service number assignment time and assigned service numbers.