

METHOD, DEVICE, ELECTRONIC DEVICE AND STORAGE MEDIUM FOR AUTHENTICATING BANK SELF-SERVICE DEVICE

5 TECHNICAL FIELD

The present disclosure relates to the field of a financial electronic device, in particular to a method, a device, an electronic device and a storage medium for authenticating a bank self-service device.

10 BACKGROUND

With the in-depth development of financial electronic construction in China, a bank self-service device is widely used in the financial industry, which plays an irreplaceable role in narrowing the distance between customers and banks, expanding business outlets, improving the card use environment, providing all-weather and all-round financial services, reducing
15 operating costs, and improving the service quality and comprehensive competitiveness of the financial industry, and has become an indispensable part of life of people.

At the same time, criminals also aim at the bank self-service device. There is the criminal activity of stealing the track information and password of the bank card of users by installing a card reading device and a camera on the ATM machine and making fake cards for trading. In
20 recent years, there has been a counterfeit ATM machine. After the user inserts the card, the user password and the track information of the card are directly acquired by the counterfeit ATM machine.

Chinese invention patent No. 2011102776314 discloses a method and a system for authenticating a bank self-service device, in which the bank self-service device sends a verification code generated by the self-service device to a bank server through a terminal, and
25 the bank server performs image recognition and decryption on the verification code, authenticates the self-service device number, and sends the authentication result to the terminal, thus completing the authentication process of the self-service device. However, this technical scheme cannot completely solve the problems of counterfeiting ATM machines and installing a
30 card reading device and a camera on the ATM machines. Assuming that the self-service device is counterfeit, the verification code cannot be generated. It is naturally impossible to authenticate the self-service device number, and it is also impossible to authenticate the situation where a card reading device and a camera are installed on the ATM machines.

SUMMARY

In view of the above problems, the present disclosure provides a method, a device, an electronic device and a storage medium for authenticating a bank self-service device.

5 To solve the above technical problems, the technical scheme adopted by the present disclosure is as follows.

In a first aspect, the present disclosure provides a method for authenticating a bank self-service device, comprising the steps of: acquiring geographic coordinates of a user terminal; according to the geographic coordinates, judging whether the current bank self-service device is registered, and if so, proceeding to the next step; acquiring image information of the
10 bank self-service device uploaded by the user terminal; comparing the image information with preset image information to acquire a similar value; judging whether the similar value is within a set threshold range, if so, the bank self-service device is true, and outputting the result.

As a preferred scheme, acquiring geographic coordinates of a user terminal comprises sending the current geographic coordinates to a bank terminal through a GPS positioning
15 module of the user terminal after the user logs in to the bank APP.

As a preferred scheme, judging whether the current bank self-service device is registered according to the geographic coordinates comprises:

inquiring whether a bank self-service device exists in the geographic coordinates, and if so, proceeding to the next step; acquiring the device number of the current bank self-service device;
20 verifying whether the device number is consistent with the number of the current bank self-service device in the system, if so, the bank self-service device has been registered.

As a preferred scheme, acquiring the image information of the bank self-service device uploaded by the user terminal comprises:

displaying the inquired QR code on the screen of the current bank self-service device;
25 scanning the inquired QR code to start the bank APP; controlling the camera module of the user terminal to photograph the designated position of the current bank self-service device, and acquiring the image information of the current bank self-service device.

As a preferred scheme, the designated position of the current bank self-service device comprises a card reading area, a keyboard area and a head area of the bank self-service device.

30 In a second aspect, the present disclosure provides a device for authenticating a bank self-service device, comprising: a coordinate acquiring module, which is configured to acquire geographic coordinates of a user terminal; a registration judging module, which is configured to judge whether the current bank self-service device is registered according to the geographic coordinates; an image acquiring module, which is configured to acquire image information of
35 the bank self-service device uploaded by the user terminal; an image comparing module, which

is configured to compare the image information with preset image information to acquire a similar value; a result judging module, which is configured to judge whether the similar value is within a set threshold range, if so, the bank self-service device is true, and output the result.

As a preferred scheme, the registration judging module comprises: an inquiring unit, which is configured to inquire whether a bank self-service device exists in the geographic coordinates; a code acquiring unit, which is configured to acquire the device number of the current bank self-service device; a code verifying unit, which is configured to verify whether the device number is consistent with the number of the current bank self-service device in the system, if so, the bank self-service device has been registered.

As a preferred scheme, the image acquiring module comprises: a QR code display unit, which is configured to display the inquired QR code on the screen of the current bank self-service device; a program starting unit, which is configured to scan the inquired QR code to start the bank APP; a photographing unit, which is configured to control the camera module of the user terminal to photograph the designated position of the current bank self-service device, and acquire the image information of the current bank self-service device.

In a third aspect, the present disclosure provides an electronic device, wherein the electronic device comprises a memory and a processor, wherein the memory stores a computer program, which implements the steps of the method according to any one of the above when the processor executes the computer program.

In a fourth aspect, the present disclosure provides a computer-readable storage medium, in which a computer program is stored, wherein the computer program implements the steps of the method according to any one of the above when executed by a processor.

Compared with the prior art, the present disclosure has the beneficial effects that it is inquired whether a bank self-service device exists near the geographic coordinates in a bank server by acquiring the geographic coordinates of a user terminal, and it is judged whether the bank self-service device is counterfeit by combining device numbers. The designated position of the bank self-service device is photographed by the user terminal, and the acquired image information is compared with the bank self-service device information stored in the bank server to judge whether the bank self-service device has hidden card reading devices and cameras. The present disclosure realizes authenticity identification of the bank self-service device, prevents bank card holders from trading on a counterfeit self-service device and leaking the bank card and password information, reduces the possibility of using the counterfeit bank self-service device to commit crimes, improves the safety of the bank self-service device, and effectively improves the service quality of the bank.

BRIEF DESCRIPTION OF THE DRAWINGS

The present disclosure will be explained with reference to the drawings. It should be understood that the drawings are for illustrative purposes only, rather than limit the scope of protection of the present disclosure. In the drawings, the same reference numerals are used to refer to the same components, in which:

FIG. 1 is a schematic flow diagram of a method for authenticating a bank self-service device according to an embodiment of the present disclosure;

FIG. 2 is a schematic flow diagram of judging whether the current bank self-service device is registered according to an embodiment of the present disclosure;

FIG. 3 is a schematic flow diagram of acquiring image information of a bank self-service device uploaded by a user terminal according to an embodiment of the present disclosure;

FIG. 4 is a schematic structural diagram of a device for authenticating a bank self-service device according to an embodiment of the present disclosure;

FIG. 5 is a schematic structural diagram of a registration judging module according to an embodiment of the present disclosure;

FIG. 6 is a schematic structural diagram of an image acquiring module according to an embodiment of the present disclosure.

DETAILED DESCRIPTION

It is understandable that, according to the technical scheme of the present disclosure, those skilled in the art can propose a variety of mutually replaceable structural modes and implementation modes without changing the essence and spirit of the present disclosure. Therefore, the following detailed description and drawings are only exemplary descriptions of the technical scheme of the present disclosure, and should not be regarded as the whole of the present disclosure or as the limitation or restriction of the technical scheme of the present disclosure.

It should be understood that the user terminal involved in the present disclosure is a mobile phone with a photographing function and a similar device, and has the following functions: sending short messages, having a photographing function and sending pictures. A bank self-service device refers to a self-service terminal device set up by banks at outlets, including Automatic Teller Machines (ATM), automatic deposit machines, Cyclic Automatic Teller Machines (CRS), self-service inquiry machines, self-service payment machines, etc. Bank terminals can be large computers or medium and small computers. The bank terminal is connected to the bank self-service device through the private network, and is connected to the user terminal through the external network. The external network can be ordinary telephone

communication network, wireless communication network, Internet interconnection network, etc.

An embodiment according to the present disclosure is shown in conjunction with FIG. 1. The present disclosure provides a method for authenticating a bank self-service device,
5 comprising the following steps.

S101: Geographic coordinates of a user terminal are acquired. In a specific embodiment, acquiring geographic coordinates of a user terminal comprises sending the current geographic coordinates to a bank terminal through a GPS positioning module of the user terminal after the user logs in to the bank APP.

10 S102: According to the geographic coordinates, it is judged whether the current bank self-service device is registered, and if so, proceed to the next step.

Referring to FIG. 2, in an embodiment of the present disclosure, judging whether the current bank self-service device is registered according to the geographic coordinates comprises the following steps.

15 S1021: It is inquired whether a bank self-service device exists in the geographic coordinates, and if so, proceed to the next step. It is inquired whether a bank self-service device exists within a certain range of geographic coordinates in the system of the bank terminal. For example, it can be set whether a bank self-service device exists within a radius of 5m of the geographic coordinates. If there is bank self-service device, it is preliminarily judged that the
20 bank self-service device is true, otherwise, it is judged that the bank self-service device is counterfeit.

S1022: The device number of the current bank self-service device is acquired. The shell of each bank self-service device is provided with the factory device number, and the device number corresponds to the bank self-service device on the geographic coordinates in the system.

25 S1023: It is verified whether the device number is consistent with the number of the current bank self-service device in the system, if so, the bank self-service device has been registered. By inputting the device number in the bank APP, if the device number is consistent with the device number of the bank self-service device in the geographic coordinates in the system, it proves that the current bank self-service device has been registered, which is true.

30 Step S103: Image information of the bank self-service device uploaded by the user terminal is acquired.

Referring to FIG. 3, in the embodiment of the present disclosure, acquiring the image information of the bank self-service device uploaded by the user terminal comprises the following steps.

35 S1031: The inquired QR code is displayed on the screen of the current bank self-service

device. After the above steps verify that the current bank self-service device is true, when using the bank self-service device, the inquired QR code will be displayed on the screen with a text prompt.

5 S1032: The inquired QR code is scanned to start the bank APP. The user scans and inquires the QR code through the user terminal, and triggers the start of the bank APP program. The concrete realization principle of this step is the prior art.

10 S1033: The camera module of the user terminal is controlled to photograph the designated position of the current bank self-service device, and the image information of the current bank self-service device is acquired. After the bank APP program is started, the camera module of the user terminal is turned on, guiding the user to take multiple photos at the designated location. The photos are uploaded to the bank terminal after completing photographing.

15 Specifically, the designated position of the current bank self-service device comprises a card reading area, a keyboard area and a head area of the bank self-service device. It can be understood that in order to improve security, photos can be taken at other positions of the bank self-service device.

20 S104: The image information is compared with preset image information to acquire a similar value. In the specific comparison process, the image recognition algorithm in the prior art is adopted, such as an ORB feature extraction algorithm, an SIFT+SURF image matching algorithm, etc.

25 S105: It is judged whether the similar value is within a set threshold range, if so, the bank self-service device is true, and the result is output. For example, the threshold value is set to 95%. When the similar value between the image information and the preset image information in the system is less than 95%, it will prompt the bank self-service device to have transaction risk, and inform the bank staff to check on site.

30 Referring to FIG. 4, the present disclosure provides a device for authenticating a bank self-service device, comprising:

a coordinate acquiring module 101, which is configured to acquire geographic coordinates of a user terminal;

35 a registration judging module 102, which is configured to judge whether the current bank self-service device is registered according to the geographic coordinates.

Referring to FIG. 5, in the embodiment of the present disclosure, the above registration judging module 102 comprises:

an inquiring unit 1021, which is configured to inquire whether a bank self-service device exists in the geographic coordinates;

35 a code acquiring unit 1022, which is configured to acquire the device number of the current

bank self-service device;

a code verifying unit 1023, which is configured to verify whether the device number is consistent with the number of the current bank self-service device in the system, if so, the bank self-service device has been registered.

5 The device further comprises an image acquiring module 103, which is configured to acquire image information of the bank self-service device uploaded by the user terminal;

Referring to FIG. 6, in the embodiment of the present disclosure, the image acquiring module 103 comprises:

10 a QR code display unit 1031, which is configured to display the inquired QR code on the screen of the current bank self-service device;

a program starting unit 1032, which is configured to scan the inquired QR code to start the bank APP;

15 a photographing unit 1033, which is configured to control the camera module of the user terminal to photograph the designated position of the current bank self-service device, and acquire the image information of the current bank self-service device.

The device further comprises an image comparing module 104, which is configured to compare the image information with preset image information to acquire a similar value;

a result judging module 105, which is configured to judge whether the similar value is within a set threshold range, if so, the bank self-service device is true, and output the result.

20 It can be clearly understood by those skilled in the art that for the convenience and conciseness of description, the specific working processes of the system, device and unit described above can refer to the corresponding processes in the aforementioned method embodiments, which will not be described in detail here.

25 The present disclosure further provides an electronic device, wherein the electronic device comprises a memory and a processor, wherein the memory stores a computer program, which implements the steps of the method according to any one of the above when the processor executes the computer program.

30 The present disclosure further provides a computer-readable storage medium, in which a computer program is stored, wherein the computer program implements the steps of the method according to any one of the above when executed by a processor.

35 To sum up, the present disclosure has the beneficial effects that it is inquired whether a bank self-service device exists near the geographic coordinates in a bank server by acquiring the geographic coordinates of a user terminal, and it is judged whether the bank self-service device is counterfeit by combining device numbers. The designated position of the bank self-service device is photographed by the user terminal, and the acquired image information is compared

with the bank self-service device information stored in the bank server to judge whether the bank self-service device has hidden card reading devices and cameras. The present disclosure realizes authenticity identification of the bank self-service device, prevents bank card holders from trading on a counterfeit self-service device and leaking the bank card and password information, reduces the possibility of using the counterfeit bank self-service device to commit crimes, improves the safety of the bank self-service device, and effectively improves the service quality of the bank.

It should be understood that the integrated unit can be stored in a computer readable storage medium if it is implemented in the form of a software functional unit and sold or used as an independent product. Based on this understanding, the technical scheme of the present disclosure essentially, or a part that contributes to the prior art, or all or part of the technical scheme, can be embodied in the form of a software product. The computer software product is stored in a storage medium and includes several instructions to make a computer device (which can be a personal computer, a server, or a network device, etc.) execute all or part of the steps of the method described in each embodiment of the present disclosure. The aforementioned storage media comprise a U disk, a mobile hard disk, a Read-Only Memory (ROM), a Random Access Memory (RAM), a magnetic disk or an optical disk, and other media that can store program codes.

The technical scope of the present disclosure is not only limited to the contents in the above description. Those skilled in the art can make various variations and modifications to the above embodiments without departing from the technical idea of the present disclosure, and these variations and modifications should all fall within the protection scope of the present disclosure.

Claims

WHAT IS CLAIMED IS:

1. A method for authenticating a bank self-service device, comprising the steps of:
acquiring geographic coordinates of a user terminal;
5 according to the geographic coordinates, judging whether the current bank self-service device is registered, and if so, proceeding to the next step;
acquiring image information of the bank self-service device uploaded by the user terminal;
comparing the image information with preset image information to acquire a similar value;
judging whether the similar value is within a set threshold range, if so, the bank self-service
10 device is true, and outputting the result.
2. The method for authenticating a bank self-service device according to claim 1, wherein acquiring geographic coordinates of a user terminal comprises sending the current geographic coordinates to a bank terminal through a GPS positioning module of the user terminal after the user logs in to the bank APP.
- 15 3. The method for authenticating a bank self-service device according to claim 1, wherein judging whether the current bank self-service device is registered according to the geographic coordinates comprises:
inquiring whether a bank self-service device exists in the geographic coordinates, and if so, proceeding to the next step;
20 acquiring the device number of the current bank self-service device;
verifying whether the device number is consistent with the number of the current bank self-service device in the system, if so, the bank self-service device has been registered.
4. The method for authenticating a bank self-service device according to claim 1, wherein acquiring the image information of the bank self-service device uploaded by the user terminal
25 comprises:
displaying the inquired QR code on the screen of the current bank self-service device;
scanning the inquired QR code to start the bank APP;
controlling the camera module of the user terminal to photograph the designated position of the current bank self-service device, and acquiring the image information of the current bank
30 self-service device.

5. The method for authenticating a bank self-service device according to claim 4, wherein the designated position of the current bank self-service device comprises a card reading area, a keyboard area and a head area of the bank self-service device.

6. A device for authenticating a bank self-service device, comprising:

5 a coordinate acquiring module, which is configured to acquire geographic coordinates of a user terminal;

a registration judging module, which is configured to judge whether the current bank self-service device is registered according to the geographic coordinates;

10 an image acquiring module, which is configured to acquire image information of the bank self-service device uploaded by the user terminal;

an image comparing module, which is configured to compare the image information with preset image information to acquire a similar value;

a result judging module, which is configured to judge whether the similar value is within a set threshold range, if so, the bank self-service device is true, and output the result.

15 7. The device for authenticating a bank self-service device according to claim 6, wherein the registration judging module comprises:

an inquiring unit, which is configured to inquire whether a bank self-service device exists in the geographic coordinates;

20 a code acquiring unit, which is configured to acquire the device number of the current bank self-service device;

a code verifying unit, which is configured to verify whether the device number is consistent with the number of the current bank self-service device in the system, if so, the bank self-service device has been registered.

25 8. The device for authenticating a bank self-service device according to claim 6, wherein the image acquiring module comprises:

a QR code display unit, which is configured to display the inquired QR code on the screen of the current bank self-service device;

a program starting unit, which is configured to scan the inquired QR code to start the bank APP;

30 a photographing unit, which is configured to control the camera module of the user terminal to photograph the designated position of the current bank self-service device, and acquire the image information of the current bank self-service device.

9. An electronic device, wherein the electronic device comprises a memory and a processor, wherein the memory stores a computer program, which implements the steps of the method according to any one of claims 1-5 when the processor executes the computer program.
10. A computer-readable storage medium, in which a computer program is stored, wherein the computer program implements the steps of the method according to any one of claims 1-5 when executed by a processor.