PAYMENT METHOD, APPARATUS AND DEVICE

TECHNICAL FIELD

[0001] This application relates to the field of computer technologies, and in particular, to a payment method, apparatus, and device.

BACKGROUND

[0002] With the popularization of mobile payment, payment through code scanning is increasingly widely used.

[0003] In the current technology, a payment system is often combined with some local third-party payment institutes to complete a payment. However, many third-party payment institutes (for example, a foreign credit card payment institute) are old and complex and cannot identify contents included in a digital object identifier (DOI) provided by a user, and it is virtually impossible to modify an existing architecture of the third-party payment institute, which is inconvenient for user payment.

[0004] Based on this, a more convenient payment solution is required.

SUMMARY

[0005] Embodiments of this specification provide a payment method, apparatus, and device to resolve problems below, so as to provide a more convenient payment solution.

[0006] Based on this, an embodiment of this specification provides a payment method, including: determining a third-party payment institute; initiating, to a server, a request for acquiring a payment account, the payment account being related to the third-party payment institute, and the request including information about the third-party payment institute; and receiving a payment account returned by the server, the payment account being assigned to the server by the third-party payment institute.

[0007] In addition, an embodiment of this specification further provides a payment method, including: receiving a request for acquiring a payment account sent by a client, the payment account being related to a third-party payment institute, and the request including a user identity and information about the third-party payment institute; sending, to the third-party payment institute, the request for acquiring the payment account; receiving a payment account returned by the third-party payment institute; establishing a correspondence between the payment account and the user identity, and storing the correspondence; and sending the payment account

to the client.

[0008] In addition, an embodiment of this specification further provides a payment method, including: acquiring a payment account, the payment account being related to a third-party payment institute; generating a digital object identifier (DOI) including payment account information; and presenting the DOI, for a merchant to perform scanning to acquire the payment account information.

[0009] In addition, an embodiment of this specification further provides a payment method, including: scanning a digital object identifier (DOI) including payment account information, a payment account being related to a third-party payment institute; acquiring the payment account information; and generating, for the third-party payment institute, a payment request including the payment account information and order information, for the third-party payment institute to identify the payment account and forward the payment request to a server.

[0010] In addition, an embodiment of this specification further provides a payment method, including: receiving a payment request including payment account information and order information and sent by a third-party payment institute, the payment account being related to the third-party payment institute; determining a corresponding user identity according to the payment account information; and performing payment processing on the order information according to the user identity.

[0011] In addition, an embodiment of this specification further provides a payment apparatus, including: a determining module configured to determine a third-party payment institute; a request initiating module configured to initiate, to a server, a request for acquiring a payment account, the payment account being related to the third-party payment institute, and the request including information about the third-party payment institute; and a receiving module configured to receive a payment account returned by the server, the payment account being assigned to the server by the third-party payment institute.

[0012] In addition, an embodiment of this specification further provides another payment apparatus, including: a receiving module configured to receive a request for acquiring a payment account sent by a client, the payment account being related to a third-party payment institute, and the request including a user identity and information about the third-party payment institute; a sending module configured to send, to the third-party payment institute, the request for acquiring the payment account; the receiving module being further configured to receive a payment account returned by the third-party payment institute; and an establishing and storage module configured to establish a correspondence between the payment account and the user identity, and store the correspondence; the sending module being further configured

to send the payment account to the client.

[0013] In addition, an embodiment of this specification further provides still another payment apparatus, including: an acquiring module configured to acquire a payment account, the payment account being related to a third-party payment institute; a generating module configured to generate a digital object identifier (DOI) including the payment account information; and a presenting module configured to present the DOI, for a merchant to perform scanning to acquire the payment account information.

[0014] In addition, an embodiment of this specification further provides a fourth payment apparatus, including: a scanning module configured to scan a digital object identifier (DOI) including payment account information, the payment account being related to a third-party payment institute; an acquiring module configured to acquire the payment account information; and a generating module configured to generate, for the third-party payment institute, a payment request including the payment account information and order information, for the third-party payment institute to verify the payment account and forward the payment request to a server.

[0015] In addition, an embodiment of this specification further provides a fifth payment apparatus, including: a receiving module configured to receive a payment request including payment account information and order information and sent by a third-party payment institute, the payment account being related to the third-party payment institute; a determining module configured to determine a corresponding user identity according to the payment account information; and a payment processing module configured to perform payment processing according to the user identity.

[0016] Correspondingly, an embodiment of this specification further provides a payment device, including: a memory configured to store a payment program; a processor configured to invoke the payment program in the memory and perform the following: determining a third-party payment institute; initiating, to a server, a request for acquiring a payment account, the payment account being related to the third-party payment institute, and the request including information about the third-party payment institute; and receiving a payment account returned by the server, the payment account being assigned to the server by the third-party payment institute.

[0017] Correspondingly, an embodiment of this specification further provides another payment device, including: a memory configured to store a payment program; a processor configured to invoke the payment program in the memory and perform the following: receiving a request for acquiring a payment account sent by a client, the payment account being related

to a third-party payment institute, and the request including a user identity and information about the third-party payment institute; sending, to the third-party payment institute, the request for acquiring the payment account; receiving a payment account returned by the third-party payment institute; establishing a correspondence between the payment account and the user identity, and storing the correspondence; and sending the payment account to the client.

[0018] Correspondingly, an embodiment of this specification further provides still another payment device, including: a memory configured to store a payment program; a processor configured to invoke the payment program in the memory and perform the following: acquiring a payment account, the payment account being related to a third-party payment institute; generating a digital object identifier (DOI) including payment account information; and presenting the DOI, for a merchant to perform scanning to acquire the payment account information.

[0019] Correspondingly, an embodiment of this specification further provides a fourth payment device, including: a memory configured to store a payment program; a processor configured to invoke the payment program in the memory and perform the following: scanning a digital object identifier (DOI) including payment account information, a payment account being related to a third-party payment institute; acquiring the payment account information; and generating, for the third-party payment institute, a payment request including the payment account information and order information, for the third-party payment institute to identify the payment account and forward the payment request to a server.

[0020] Correspondingly, an embodiment of this specification further provides a fifth payment device, including: a memory configured to store a payment program; a processor configured to invoke the payment program in the memory and perform the following: receiving a payment request including payment account information and order information and sent by a third-party payment institute, the payment account being related to the third-party payment institute; determining a corresponding user identity according to the payment account information; and performing payment processing according to the user identity.

[0021] Correspondingly, an embodiment of this specification further provides a non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following: determining a third-party payment institute; initiating, to a server, a request for acquiring a payment account, the payment account being related to the third-party payment institute, and the request including information about the third-party payment institute; and receiving a payment account returned by the server, the payment account being assigned to the server by the third-party payment institute.

[0022] Correspondingly, an embodiment of this specification further provides another non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following: receiving a request for acquiring a payment account sent by a client, the payment account being related to a third-party payment institute, and the request including a user identity and information about the third-party payment institute; sending, to the third-party payment institute, the request for acquiring the payment account; receiving a payment account returned by the third-party payment institute; establishing a correspondence between the payment account and the user identity, and storing the correspondence; and sending the payment account to the client.

[0023] Correspondingly, an embodiment of this specification further provides still another non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following: acquiring a payment account, the payment account being related to a third-party payment institute; generating a digital object identifier (DOI) including payment account information; and presenting the DOI, for a merchant to perform scanning to acquire the payment account information.

[0024] Correspondingly, an embodiment of this specification further provides a fourth non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following: scanning a digital object identifier (DOI) including payment account information, a payment account being related to a third-party payment institute; acquiring the payment account information; and generating, for the third-party payment institute, a payment request including the payment account information and order information, for the third-party payment institute to identify the payment account and forward the payment request to a server.

[0025] Correspondingly, an embodiment of this specification further provides a fifth non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following: receiving a payment request including payment account information and order information and sent by a third-party payment institute, the payment account being related to the third-party payment institute; determining a corresponding user identity according to the payment account information; and performing payment processing according to the user identity.

[0026] At least one of the foregoing technical solutions adopted in the embodiments of this description can achieve the following beneficial effects:

[0027] A user determines, according to geographical location information of the user, a third-party payment institute corresponding to the user’s location, then obtains, through a

payment server, a payment account of the third-party payment institute that is compatible with a local situation, and completes a payment by scanning a barcode using the payment account provided by the third-party payment institute. During the payment process, a DOI including the payment account information is presented to a merchant, and the merchant identifies the payment account therein, and forwards order information and the payment account to the third-party payment institute. The third-party payment institute forwards the account to the payment server after the account is verified. The payment server identifies a user identity corresponding to the payment account, and then processes the payment. Therefore, user information is combined with card information that may be identified by an existing third-party payment institute in other countries and regions, so as to implement payment through code scanning in other countries and regions, improving user experience.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] FIG. 1 is a process of acquiring a payment account of a third-party payment institute by a client, according to an embodiment of this specification.

[0029] FIG. 2 is a process of acquiring a payment account of a third-party payment institute by a server, according to an embodiment of this specification.

[0030] FIG. 3 is a schematic diagram of a service process of acquiring a payment account related to a third-party payment institute by a user, according to an embodiment of this specification.

[0031] FIG. 4 is a schematic flowchart of a payment process for a client, according to an embodiment of this specification.

[0032] FIG. 5 is a schematic flowchart of a payment process for a merchant, according to an embodiment of this specification.

[0033] FIG. 6 is a schematic flowchart of a payment process for a server, according to an embodiment of this specification.

[0034] FIG. 7 is a schematic diagram of a service process of a payment by using a payment account of a third-party payment institute, according to an embodiment of this specification.

[0035] FIG. 8 is a schematic diagram of a payment apparatus, according to an embodiment of this specification.

[0036] FIG. 9 is a schematic diagram of another payment apparatus, according to an embodiment of this specification.

[0037] FIG. 10 is a schematic diagram of still another payment apparatus, according to an

embodiment of this specification.

[0038] FIG. 11 is a schematic diagram of a fourth payment apparatus, according to an embodiment of this specification.

[0039] FIG. 12 is a schematic diagram of a fifth payment apparatus, according to an embodiment of this specification.

DETAILED DESCRIPTION OF THE INVENTION

[0040] To make the objectives, technical solutions, and advantages of this specification clearer, the following clearly and completely describes the technical solutions of this specification with reference to specific embodiments of this specification and the corresponding accompanying drawings. Apparently, the described embodiments are only some embodiments rather than all the embodiments of this specification. All other embodiments obtained by a person of ordinary skill in the art based on the embodiments in this specification without creative effects shall fall within the protection scope of this specification.

[0041] At present, it is very common in the payment field to make a payment by sing a digital object identifier (DOI) including user information, for example, making a payment by using various payment barcodes and payment QR codes. The QR code may also be referred to as a quick response code (QR Code) and has a plurality of standards, such as Code 16K, Code 49, PDF417, and MicroPDF417, etc.

[0042] However, in some regions (such as most foreign regions), other payment institutes cannot recognize a meaning of the QR code. In other words, even if a merchant scans and parses the QR code by using a code scanning device and obtains contents in the QR code, a third-party payment institute (possibly a credit card payment institute) cannot recognize a meaning of the contents, so that payment cannot be made, causing an inconvenience for many users who stay abroad for short periods of time (for example, users for travel, academic visits, and transit, etc.).

[0043] Based on this, embodiments of this specification provide a payment solution. According to the payment solution, user information is combined with card information that may be identified by an existing third-party payment institute in other countries and regions, to implement payment through code scanning.

[0044] In the embodiments of this specification, the provided payment solution includes two parts. The first part is a process in which a user obtains a relevant payment account of a third-party payment institute, and the second part is a process in which the user makes a payment by

using the payment account. Definitely, the two parts are not completely separated. In some scenarios, the two parts may also be jointly implemented to complete a payment.

[0045] A process of the first part of the payment solution provided according to an embodiment of this specification is described in detail below. The process specifically includes a client and a server. A performing process of the client is shown in FIG. 1. FIG. 1 is a process of acquiring a payment account of a third-party payment institute by a client, according to an embodiment of this specification, including:

[0046] S101, determine a third-party payment institute.

[0047] A method for determining the third-party payment institute herein may be explicit, that is, the client directly provides several third-party payment institutes to a customer for selection. The method may also be implicit, that is, the method is automatically performed in the background. The third-party payment institute herein may include an acquirer, a payment network, and a bank related to the payment network, etc.

[0048] S103, initiate, to a server, a request for acquiring a payment account, the payment account being related to the third-party payment institute, and the request including information about the third-party payment institute.

[0049] The payment account herein is usually a card number, which may also be referred to as a primary account number (PAN). The PAN may belong to the third-party payment institute itself. For example, the third-party payment institute itself is a bank for performing a bank card payment service, or also be assigned by a partner of the third-party payment institute. For example, the third-party payment institute includes an acquirer that forwards, according to a card number, a receipt after being received to a corresponding bank for payment, that is, the payment account (PAN) is distributed by a bank in the third-party payment institute. In addition, because a card issuer has a cooperative relationship with a payment system, the card issuer may identify that the payment account (PAN) corresponds to the payment system. A specific situation is determined based on a service of the third-party mechanism, which is not limited herein. When a request is sent, a user identity should be included for the server to identify a corresponding account.

[0050] S105, receive a payment account returned by the server, the payment account being assigned to the server by the third-party payment institute.

[0051] Under a normal circumstance, the server by itself has no authority to assign the payment account of the third-party payment institute. The server performs a corresponding application to the third-party payment institute according to the request, and after receiving the payment account assigned by the third-party payment institute, returns the payment account to

the client. However, there is another application scenario in which the server has previously assigned, through the third-party payment institute, a batch of payment accounts stored in the server, so as to directly and locally invoke a corresponding payment account to be returned to the client.

[0052] As a specific implementation, for step S101, the determining a third-party payment institute includes: acquiring a geographical location of a user; determining a payment institute related to the geographical location of the user; and using, as the third-party payment institute, the payment institute related to the geographical location of the user.

[0053] In particular, a client may pre-store corresponding information of the third-party payment institute and the geographical location on a local terminal. After the user arrives at the geographical location, the corresponding third-party payment institute may be determined accordingly, and a corresponding application may be performed to the server. In this process, the client performs a determination by acquiring the location of the terminal in real time without manual operation by the user. The user is not aware of the entire determination and application process, improving user experience.

[0054] As a specific implementation, for step S101, the determining a third-party payment institute may be further implemented in a manner below: receiving a user instruction, and determining the third-party payment institute according to the user instruction.

[0055] In other words, the client provides an explicit list of third-party payment institutes to the user for selection. For example, USA/Japan/Malaysia, etc., that is, a country, is provided to the user for selection, and then a third-party payment institute A/B/C is further provided to the user for selection. This process may be performed by the user in advance, without a real-time determination. For example, if the user may travel to the United States in one week, the user may determine a corresponding third-party payment institute in the United States in advance before arriving in the United States and send a payment account application to a server for payment.

[0056] As a specific implementation, after the client acquires a payment account through the foregoing solution, the method further includes: storing the payment account locally.

[0057] In particularly, when the client acquires a payment account request for a to-be-required payment, an application is temporarily initiated and the payment account is obtained from a third-party payment institute to complete one corresponding payment. More conveniently, the client may further store the payment account for making another payment by using the payment account through the third-party payment institute in the future.

[0058] A performing process of a server is shown in FIG. 2. FIG. 2 is a process of acquiring

a payment account of a third-party payment institute by a server, according to an embodiment of this specification, including:

S201, receive a request for acquiring a payment account sent by a client, the payment account being related to a third-party payment institute, and the request including a user identity and information about the third-party payment institute.

S203, send the request for acquiring the payment account to the third-party payment institute;

S205, receive a payment account returned by the third-party payment institute;

S207, establish a correspondence between the payment account and the user identity, and store the correspondence;

S209, send the payment account to the client.

[0059] A specific service process is shown in FIG. 3. FIG. 3 is a schematic diagram of a service process of acquiring a payment account related to a third-party payment institute by a user, according to an embodiment of this specification. In the schematic diagram, a gift card PAN provided by a third-party payment institute B in country A is used as an example, and steps thereof include below:

S301, a user opens a client in country A;

S303, the client detects that a geographical location is in country A, and determines that a corresponding third-party payment institute is B;

S305, the client applies to a server for a gift card PAN of the payment institute B;

S307, the server applies for one gift card PAN to the payment institute B;

S309, the payment institute B assigns one gift card PAN to the server;

S311, the server performs binding and storage on the gift card PAN and a user account;

S313, the server sends the gift card PAN to the client; and

S315, the client receives and stores the gift card PAN.

[0060] It should be noted that in the foregoing solution, it is determined that the third-party payment institute is determined at the client according to the location.

[0061] The client determines a geographical location of a terminal, sends, to the server, a request for applying for a third-party payment account with the geographical location, and the server determines a corresponding third-party payment institute according to the geographical location, and then applies for a payment account to the third-party payment institute, and binds a user identity to the obtained payment account through application and forwards the payment account to the client.

[0062] A process of payment by the user by using the payment account specifically includes

three aspects, that is, client of the user, a merchant, and the server. A performing process of the client of the user is shown in FIG. 4. FIG. 4 is a schematic flowchart of a payment process for a client, according to an embodiment of this specification:

[0063] S401, acquire a payment account, the payment account being related to a third-party payment institute.

[0064] The payment account related to the third-party payment institute may be acquired from a local terminal, or may be obtained by temporary initiation of an application to the server. The payment account obtained from the local terminal is generally obtained by the user through a pre-application based on the geographical location.

[0065] S403, generate a digital object identifier (DOI) including the payment account information.

[0066] In this step, the payment account information may be expressed in an extensible markup language (xml) format or other formats, and then a character string of the xml format or other formats is converted into DOI.

[0067] S405, present the DOI, for a merchant to perform scanning to acquire the payment account information.

[0068] As previously described, as a specific implementation, for step S401, the acquiring a payment account through a temporary application to the server according to a geographical location of the user specifically includes: acquiring a geographical location of a user; determining a third-party payment institute related to the geographical location of the user; initiating, to the server, a request for acquiring the payment account, for the server to send, to the third-party payment institute, a request for applying for the payment account; and receiving a payment account returned by the server and assigned by the third-party payment institute.

[0069] A performing process of a merchant is shown in FIG. 5. FIG. 5 is a schematic flowchart of a payment process for a merchant, according to an embodiment of this specification, including:

S501, scan a digital object identifier (DOI) including payment account information, the payment account being related to a third-party payment institute;

S503, acquire the payment account information; and

S505, generate, for the third-party payment institute, a payment request including the payment account information and order information, for the third-party payment institute to identify the payment account and forward the payment request to the server.

[0070] In particular, the merchant may still acquire contents in DOI through a scanning device, but a third-party may only identify the payment account information (because only the

payment account information is related to the third-party) in DOI. Therefore, during the payment, after identifying the payment account, the third-party payment institute forwards the payment request for payment processing to the server. The order information may include specific information such as an ID, an order amount, time, and an order number, etc. of the merchant.

[0071] It should be noted that, during forwarding of the payment request to the server by the third-party payment institute, some other service processes related to the third-party payment institute may be further included, for example, forwarding the payment account to a corresponding opening bank for identification. Upon identification, the opening bank forwards the payment request to the server for payment. A specific flow is closely related to system architecture of the third-party payment institute, and is not listed herein one by one. However, finally, the third-party payment institute identifies that the payment account is related to the server, and forwards the payment account and order information to the server.

[0072] A performing process of a server is shown in FIG. 6. FIG. 6 is a schematic flowchart of a payment process for a server, according to an embodiment of this specification, including:

S601, receive a payment request including payment account information and order information and sent by the third-party payment institute, the payment account being related to the third-party payment institute;

S603, determine a corresponding user identity according to the payment account information; and

S605, perform payment processing on the order information according to the user identity.

[0073] The payment processing generally refers to deduction from an account corresponding to the user identity to an account of a merchant. After the payment processing is completed, it is usually necessary to send a notification message to the third-party payment institute, to feed the notification message to the merchant level by level. For the payment process, an acquirer C, a gift card payment network D, and an opening bank E are used as an example. In the example, a third-party payment institute may include the acquirer C, the gift card payment network D, and the opening bank E shown in FIG. 7. FIG. 7 is a schematic diagram of a service process of a payment by using a payment account of a third-party payment institute, according to an embodiment of this specification, including:

S701, a user presents a to-be-purchased commodity to a merchant;

S703, a cashier scans the commodity;

S705, the cashier presents a price of the commodity to the user;

S707, the user opens the client;

S709, the client generates a QR code including gift card information;

S711, the cashier scans the QR code;

S713, a cash register reads the QR code and extracts a gift card PAN in the QR code;

S715, the cash register sends order information and the gift card PAN to an acquirer C;

a, the acquirer c determines that it is a gift card, and forwards the request to a payment network D;

b, the payment network D contacts a card issuer E;

c, the card issuer E determines that the card belongs to the server and forwards the request to the server;

S717, the server obtains a corresponding user account according to the gift card PAN;

S719, the server processes the payment;

S721, the server returns a result to a third-party payment institute until the cash register of the merchant; and

S723, the transaction ends.

[0074] Based on a same idea, this specification further provides a payment apparatus as shown in FIG. 8. FIG. 8 is a schematic diagram of a payment apparatus, according to an embodiment of this specification, including:

a determining module 801 configured to determine a third-party payment institute;

a request initiating module 803 configured to initiate, to a server, a request for acquiring a payment account, the payment account being related to the third-party payment institute, and the request including information about the third-party payment institute; and

a receiving module 805 configured to receive a payment account returned by the server, the payment account being assigned to the server by the third-party payment institute.

[0075] Further, the determining module 801 is configured to acquire a geographical location of a user; determine a payment institute related to the geographical location of the user; and use, as the third-party payment institute, the payment institute related to the geographical location of the user.

[0076] Further, the determining module 801 is configured to receive a user instruction, and determine the third-party payment institute according to the user instruction.

[0077] Further, the apparatus further includes a storage module 807 configured to store the payment account locally.

[0078] In addition, this specification further provides another payment apparatus as shown in FIG. 9. FIG. 9 is a schematic diagram of another payment apparatus, according to an embodiment of this specification, including:

a receiving module 901 configured to receive a request for acquiring a payment account sent by a client, the payment account being related to a third-party payment institute, and the request including a user identity and information about the third-party payment institute;

a sending module 903 configured to send, to the third-party payment institute, the request for acquiring the payment account;

the receiving module 901 being further configured to receive a payment account returned by the third-party payment institute; and

an establishing and storage module 905 configured to establish a correspondence between the payment account and the user identity, and store the correspondence, and

the sending module 903 being further configured to send the payment account to the client.

[0079] What's more, this specification further provides still another payment apparatus as shown in FIG. 10. FIG. 10 is a schematic diagram of still another payment apparatus, according to an embodiment of this specification, including:

an acquiring module 1001 configured to acquire a payment account, the payment account being related to a third-party payment institute;

a generating module 1002 configured to generate a digital object identifier (DOI) including the payment account information; and

a presenting module 1003 configured to present the DOI, for a merchant to perform scanning to acquire the payment account information.

[0080] Further, the acquiring module 1001 is configured to acquire a geographical location of a user; determine a third-party payment institute related to the geographical location of the user; initiate, to the server, a request for acquiring the payment account, for the server to send, to the third-party payment institute, a request for applying for the payment account; and receive a payment account returned by the server and assigned by the third-party payment institute.

[0081] Further, the acquiring module 1001 is configured to acquire a payment account pre-stored locally and related to the third-party payment institute.

[0082] Besides, this specification further provides a fourth payment apparatus as shown in FIG. 11. FIG. 11 is a schematic diagram of a fourth payment apparatus, according to an embodiment of this specification, including:

a scanning module 1101 configured to scan a digital object identifier (DOI) including payment account information, the payment account being related to a third-party payment institute;

an acquiring module 1103 configured to acquire the payment account information; and

a generating module 1105 configured to generate, for the third-party payment institute, a

payment request including the payment account information and order information, for the third-party payment institute to verify the payment account and forward the payment request to the server.

[0083] Moreover, this specification further provides a fifth payment apparatus as shown in FIG. 12. FIG. 12 is a schematic diagram of a fifth payment apparatus, according to an embodiment of this specification, including:

a receiving module 1201 configured to receive a payment request including payment account information and order information and sent by the third-party payment institute, the payment account being related to the third-party payment institute;

a determining module 1203 configured to determine a corresponding user identity according to the payment account information; and

a payment processing module 1205 configured to perform payment processing according to the user identity.

[0084] Correspondingly, an embodiment of this specification further provides a payment device, including:

a memory configured to store a payment program;

a processor configured to invoke the payment program in the memory and perform the following:

determining a third-party payment institute;

initiating, to a server, a request for acquiring a payment account, the payment account being related to the third-party payment institute, and the request including information about the third-party payment institute; and

receiving a payment account returned by the server, the payment account being assigned to the server by the third-party payment institute.

[0085] Correspondingly, an embodiment of this specification further provides another payment device, including:

a memory configured to store a payment program;

a processor configured to invoke the payment program in the memory and perform the following:

receiving a request for acquiring a payment account sent by a client, the payment account being related to a third-party payment institute, and the request including a user identity and information about the third-party payment institute;

sending, to the third-party payment institute, the request for acquiring the payment account;

receiving a payment account returned by the third-party payment institute;

establishing a correspondence between the payment account and the user identity, and storing the correspondence; and

sending the payment account to the client.

[0086] Correspondingly, an embodiment of this specification further provides still another payment device, including:

a memory configured to store a payment program;

a processor configured to invoke the payment program in the memory and perform the following:

acquiring a payment account, the payment account being related to a third-party payment institute;

generating a digital object identifier (DOI) including payment account information; and

presenting the DOI, for a merchant to perform scanning to acquire the payment account information.

[0087] Correspondingly, an embodiment of this specification further provides a fourth payment device, including:

a memory configured to store a payment program;

a processor configured to invoke the payment program in the memory and perform the following:

scanning a digital object identifier (DOI) including payment account information, a payment account being related to a third-party payment institute;

acquiring the payment account information; and

generating, for the third-party payment institute, a payment request including the payment account information and order information, for the third-party payment institute to identify the payment account and forward the payment request to a server.

[0088] Correspondingly, an embodiment of this specification further provides a fifth payment device, including:

a memory configured to store a payment program;

a processor configured to invoke the payment program in the memory and perform the following:

receiving a payment request including payment account information and order information and sent by a third-party payment institute, the payment account being related to the third-party payment institute;

determining a corresponding user identity according to the payment account information;

and

performing payment processing according to the user identity.

[0089] Correspondingly, an embodiment of this specification further provides a non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following:

determining a third-party payment institute;

initiating, to a server, a request for acquiring a payment account, the payment account being related to the third-party payment institute, and the request including information about the third-party payment institute; and

receiving a payment account returned by the server, the payment account being assigned to the server by the third-party payment institute.

[0090] Correspondingly, an embodiment of this specification further provides another non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following:

receiving a request for acquiring a payment account sent by a client, the payment account being related to a third-party payment institute, and the request including a user identity and information about the third-party payment institute;

sending, to the third-party payment institute, the request for acquiring the payment account;

receiving a payment account returned by the third-party payment institute;

establishing a correspondence between the payment account and the user identity, and storing the correspondence; and

sending the payment account to the client.

[0091] Correspondingly, an embodiment of this specification further provides still another non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following:

acquiring a payment account, the payment account being related to a third-party payment institute;

generating a digital object identifier (DOI) including payment account information; and

presenting the DOI, for a merchant to perform scanning to acquire the payment account information.

[0092] Correspondingly, an embodiment of this specification further provides a fourth non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following:

scanning a digital object identifier (DOI) including payment account information, a payment account being related to a third-party payment institute;

acquiring the payment account information; and

generating, for the third-party payment institute, a payment request including the payment account information and order information, for the third-party payment institute to identify the payment account and forward the payment request to a server.

[0093] Correspondingly, an embodiment of this specification further provides a fifth non-transitory computer storage medium storing computer-executable instructions, the computer-executable instructions being set to perform the following:

receiving a payment request including payment account information and order information and sent by a third-party payment institute, the payment account being related to the third-party payment institute;

determining a corresponding user identity according to the payment account information; and

performing payment processing according to the user identity.

[0094] The embodiments in this specification are all described in a progressive manner, for same or similar parts in the embodiments, refer to these embodiments, and descriptions of each embodiment focus on a difference from other embodiments. Especially, apparatus, device, and medium embodiments are basically similar to a method embodiment, and therefore are described briefly; for related parts, refer to partial descriptions in the method embodiment, and details are not described herein again.

[0095] Embodiments of this specification are described above. Other embodiments fall within the scope of the appended claims. In some embodiments, the actions, steps, or modules recorded in the claims may be performed in sequences different from those in the embodiments and an expected result may still be achieved. In addition, the processes depicted in the accompanying drawings do not necessarily require specific sequences or consecutive sequences to achieve an expected result. In some implementations, multitasking and parallel processing may be feasible or beneficial.

[0096] In the 1990s, improvements of a technology can be clearly distinguished between hardware improvements (for example, improvements to a circuit structure such as a diode, a transistor, a switch, etc.) and software improvements (improvements to a method procedure). However, with the development of technology, improvements of many method procedures can be considered as direct improvements of hardware circuit structures. Designers generally program an improved method procedure to a hardware circuit, to obtain a corresponding

hardware circuit structure. Therefore, it does not mean that the improvement of a method procedure cannot be implemented by using a hardware entity module. For example, a programmable logic device (PLD) such as a field programmable gate array (FPGA) is a type of integrated circuit whose logic function is determined by a user by programming the device. The designers perform voluntary programming to integrate a digital system into a single PLD without requiring a chip manufacturer to design and prepare a dedicated integrated circuit chip. Moreover, nowadays, instead of manually making integrated circuit chips, this programming is mostly implemented by using "logic compiler" software, which is similar to the software compiler used in program development and writing. The original code is written in a specific programming language before compiling, and this language is referred to as a hardware description language (HDL). There are various kinds of HDLs, for example, advanced boolean expression language (ABEL), altera hardware description language (AHDL), Confluence, Cornell University programming language (CUPL), HDCal, Java hardware description language (JHDL), Lava, Lola, MyHDL, PALASM, Ruby hardware description language (RHDL), and the like. Currently, the most commonly used HDLs are very-high-speed integrated circuit hardware description language (VHDL) and Verilog. A person skilled in the art should also understand that as long as a method procedure is logically programmed and then programmed to an integrated circuit by using the foregoing hardware description languages, a hardware circuit that implements the logical method procedure can be easily obtained.

[0097] The controller can be implemented in any suitable manner, for example, the controller can take the form of, for example, a microprocessor or processor and a computer-readable medium storing computer-readable program code (for example, software or firmware) executable by the processor, a logic gate, a switch, an application-specific integrated circuit (ASIC), a programmable logic controller and an embedded microcontroller. Examples of the controller include, but are not limited to, the following microcontrollers: ARC 625D, Atmel AT91SAM, Microchip PIC18F26K20 and Silicone Labs C8051F320. The memory controller can also be implemented as part of the memory control logic. A person skilled in the art will also appreciate that, in addition to implementing the controller in the form of pure computer-readable program code, it is also possible to implement the controller in the form of a logic gate, switch, application-specific integrated circuit, programmable logic controller, and embedded microcontroller and other forms to achieve the same function. Such a controller can thus be considered as a hardware component and apparatuses included therein for implementing various functions can also be considered as structures inside the hardware component. Alternatively, apparatuses configured to implement various functions can be

considered as both software modules implementing the method and structures inside the hardware component.

[0098] The system, the apparatus, the module or the unit described in the foregoing embodiments can be specifically implemented by a computer chip or an entity or implemented by a product having a certain function. A typical implementation device is a computer. Specifically, the computer can be, for example, a personal computer, a laptop computer, a cellular phone, a camera phone, a smartphone, a personal digital assistant, a media player, a navigation device, an email device, a game console, a tablet computer, a wearable device, or a combination of any of these devices.

[0099] For ease of description, when the apparatus is described, the apparatus is divided into units according to functions, which are separately described. Certainly, during implementation of the embodiments of this specification, the function of the units may be implemented in a same piece of or multiple pieces of software and/or hardware.

[0100] A person skilled in the art should understand that the embodiments of this specification may be provided as a method, a system, or a computer program product. Therefore, this specification may use a form of hardware only embodiments, software only embodiments, or embodiments with a combination of software and hardware. Moreover, this specification may use a form of a computer program product that is implemented on one or more 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.

[0101] This specification is described with reference to the flowchart and/or block diagram of the method, device (system), and computer program product of the embodiments of this specification. 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 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 device.

[0102] These computer program instructions may also be stored in a computer readable memory that can guide a computer or another programmable data processing device to work in a specific manner, so that the instructions stored in the computer readable memory generate

a product including an instruction apparatus, where the instruction apparatus implements functions specified in one or more procedures in the flowcharts and/or one or more blocks in the block diagrams.

[0103] These computer program instructions may also be loaded into a computer or another programmable data processing device, so that a series of operation steps are performed on the computer or another programmable data processing device to generate processing implemented by a computer, and instructions executed on the computer or another programmable data processing device provide steps for implementing functions specified in one or more procedures in the flowcharts and/or one or more blocks in the block diagrams.

[0104] In a typical configuration, the computer device includes one or more processors (CPUs), an input/output interface, a network interface, and a memory.

[0105] The memory may include a form such as a persistent memory, a random-access memory (RAM) and/or a non-transitory memory of computer readable media, for example, a read-only memory (ROM) or a flash memory (RAM). The memory is an example of the computer readable medium.

[0106] The computer readable medium includes a persistent medium and a non-persistent medium, a removable medium and a non-removable medium, which may implement storage of information by using any method or technology. The information may be a computer readable instruction, a data structure, a module of a program or other data. Examples of computer storage media include but are not limited to a phase change memory (PRAM), a static random access memory (SRAM), a dynamic random access memory (DRAM), other type of random access memory (RAM), a read-only memory (ROM), an electrically erasable programmable read-only memory (EEPROM), a flash memory or other memory technology, a compact disc read-only memory (CD-ROM), a digital versatile disc (DVD) or other optical storage, a cassette magnetic tape, tape and disk storage or other magnetic storage device or any other non-transmission media that may be configured to store information that a computing device can access. Based on the definition in this disclosure, the computer-readable medium does not include transitory computer readable media (transitory media), such as a modulated data signal and a carrier.

[0107] It should also be noted that the terms "include," "comprise" and any other variants mean to cover the non-exclusive inclusion. Thereby, the process, method, article, or device which include a series of elements not only include those elements, but also include other elements which are not clearly listed, or include the inherent elements of the process, method, article and device. Without further limitation, the element defined by a phrase "include one"

does not exclude other same elements in the process, method, article or device which include the element.

[0108] The embodiments of this specification can be described in the general context of computer-executable instructions executed by a computer, for example, a program module. Generally, the program module includes a routine, a program, an object, a component, a data structure, and the like for executing a particular task or implementing a particular abstract data type. The embodiments of this specification may also be practiced in distributed computing environments in which tasks are performed by remote processing devices that are connected by using a communications network. In a distributed computing environment, the program module may be located in both local and remote computer storage media including storage devices.

[0109] The embodiments in this specification are all described in a progressive manner, for same or similar parts in the embodiments, refer to these embodiments, and descriptions of each embodiment focus on a difference from other embodiments. Especially, a system embodiment is basically similar to a method embodiment, and therefore is described briefly; for related parts, reference may be made to partial descriptions in the method embodiment.

[0110] The foregoing descriptions are merely embodiments in this specification and are not intended to limit this specification. For a person skilled in the art, various modifications and changes may be made to the embodiments of this specification. Any modification, equivalent replacement, or improvement made without departing from the spirit and principle of the embodiments of this specification shall fall within the scope of the claims of this specification.

CLAIMS

What is claimed is:

1. A payment method, comprising:

obtaining, by a client terminal of a user, a geographical location of the user;

determining, by the client terminal, based on the geographical location and without an input from the user, a third-party payment institute related to the geographical location;

receiving, by a server, from the client terminal of the user, a request for acquiring a payment account for a transaction on a merchant terminal, the payment account being associated and compatible with the third-party payment institute, and the request including identity information of the user and information about the third-party payment institute, the payment account associated with a digital object identifier (DOI) extractable by the merchant terminal performing code scanning using a scanning device;

identifying, by the server and based on the identity information of the user, a corresponding account of the user different from the payment account, the corresponding account incompatible with the third-party payment institute;

sending, by the server, to the third-party payment institute, the request for acquiring the payment account;

receiving, by the server, from the third-party payment institute, the payment account;

establishing, by the server, a correspondence between the payment account and the identity information of the user, and storing the correspondence;

sending, by the server, the payment account to the client terminal;

generating, by the client terminal, a payment DOI extractable by the merchant terminal by encoding information of the payment account via an extensible markup language (xml) format;

scanning, by the merchant terminal, the payment DOI using the scanning device to extract the information of the payment account from the payment DOI;

generating, based on the extracted information and by the merchant terminal, a payment request to be sent to the third-party payment institute, the payment request containing the information of the payment account and order information of the transaction, the order

information including an order amount of the transaction;

receiving, by the server and from the third-party payment institute, the payment request;

determining, by the server and based on the information of the payment account in the payment request, the corresponding account of the user; and

completing, by the server and based on the order information of the transaction in the payment request, the transaction on the corresponding account of the user, wherein the transaction includes transferring of a monetary balance of the order amount from the corresponding account of the user to a merchant account associated with the merchant terminal.

2. The method of claim 1, wherein the DOI is a 2-dimensional Quick Response (2-D QR) code, and the 2-D QR code uses one of Code 16K standard, Code 49 standard, PDF417 standard, and MicroPDF417 standard.

3. The method of claim 1, further comprising:

sending, by the merchant terminal, the payment request to the third-party payment institute for the third-party payment institute to identify the payment account; and

receiving, by the server, from the third-party payment institute and after the payment account is successfully identified by the third-party payment institute, the payment request.

4. The method of claim 3, wherein the payment account is a gift card account.

5. A payment apparatus comprising a processor and a non-transitory computer-readable memory coupled to the processor and configured with instructions executable by the processor to:

receive, from a client terminal of a user, a request for acquiring a payment account for a transaction on a merchant terminal, the payment account being associated and compatible with a third-party payment institute determined based on a geographical location of the client terminal, and the request including identity information of the user and information about the third-party payment institute, the payment account associated with a digital object identifier (DOI) extractable by the merchant terminal performing code scanning using a scanning device;

identify, based on the identity information of the user, a corresponding account of the user different from the payment account, the corresponding account incompatible with the

third-party payment institute;

send, to the third-party payment institute, the request for acquiring the payment account;

receive, from the third-party payment institute, the payment account;

establish a correspondence between the payment account and the identity information of the user, and store the correspondence;

send the payment account to the client terminal for the client terminal to generate a payment DOI extractable by the merchant terminal by encoding information of the payment account via an extensible markup language (xml) format; and

receive, from the third-party payment institute, a payment request generated by the merchant terminal, the payment request containing the information of the payment account and order information of the transaction, the order information including an order amount of the transaction;

determine, based on the information of the payment account in the payment request, the corresponding account of the user; and

complete, based on the order information of the transaction in the payment request, the transaction on the corresponding account of the user, wherein the transaction includes transferring of a monetary balance of the order amount from the corresponding account of the user to a merchant account associated with the merchant terminal.

6. The apparatus of claim 5, wherein the DOI is a 2-dimensional Quick Response (2-D QR) code, the 2-D QR code uses one of Code 16K standard, Code 49 standard, PDF417 standard, and MicroPDF417 standard.

7. The apparatus of claim 5, wherein the non-transitory computer-readable memory is further configured with instructions executable by the processor to, after the client terminal generating a digital object identifier (DOI) including information of the payment account:

receive, from the third-party payment institute and after the payment account is successfully identified by the third-party payment institute, a payment request generated by the merchant terminal.

8. The apparatus of claim 7, wherein the payment account is a gift card account.

9. A non-transitory computer-readable storage medium having instructions stored thereon executable by one or more processors to cause the one or more processors to perform

operations, comprising:

obtaining a geographical location of a user;

determining, based on the geographical location and without an input from the user, a third-party payment institute related to the geographical location;

receiving a request for acquiring a payment account for a transaction on a merchant terminal, the payment account being associated and compatible with the third-party payment institute, and the request including identity information of the user and information about the third-party payment institute, the payment account associated with a digital object identifier (DOI) extractable by the merchant terminal performing code scanning using a scanning device;

identifying, based on the identity information of the user, a corresponding account of the user different from the payment account, the corresponding account incompatible with the third-party payment institute;

sending, to the third-party payment institute, the request for acquiring the payment account;

receiving, from the third-party payment institute, the payment account;

establishing a correspondence between the payment account and the identity information of the user, and storing the correspondence;

sending the payment account to a client terminal;

generating a payment DOI extractable by the merchant terminal by encoding information of the payment account via an extensible markup language (xml) format;

scanning the payment DOI using the scanning device to extract the information of the payment account from the payment DOI;

generating, based on the extracted information of the payment account, a payment request to be sent to the third-party payment institute, the payment request containing the information of the payment account and order information of the transaction, the order information including an order amount of the transaction;

receiving, from the third-party payment institute, the payment request;

determining, based on the information of the payment account in the payment request, the corresponding account of the user; and

completing, based on the order information of the transaction in the payment request, the transaction on the corresponding account of the user, wherein the transaction includes transferring of a monetary balance of the order amount from the corresponding account of the user to a merchant account associated with the merchant terminal.

10. The non-transitory computer-readable storage medium of claim 9, wherein the DOI is a 2-dimensional Quick Response (2-D QR) code, and the 2-D QR code uses one of Code 16K standard, Code 49 standard, PDF417 standard, and MicroPDF417 standard.

11. The non-transitory computer-readable storage medium of claim 9, wherein the operations further comprise, after the client terminal generating a digital object identifier (DOI) including information of the payment account:

receiving, from the third-party payment institute and after the payment account is successfully identified by the third-party payment institute, the payment request generated by the merchant terminal.

12. The non-transitory computer-readable storage medium of claim 11, wherein the payment account is a gift card account.