MOBILE PAYMENT METHOD, DEVICE AND SYSTEM

[0001] The present application claims priority to Chinese Patent Application No. 201610383679.6, filed with the Chinese Patent Office on June 1, 2016 and entitled "MOBILE PAYMENT METHOD, DEVICE AND SYSTEM", which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to the field of electronic financial technologies, and in particular, to a mobile payment method, device, and system.

BACKGROUND

[0003] With the development and popularization of mobile technologies, mobile payment gradually becomes an emerging electronic payment service mode, and mobile payment is also referred to as smartphone payment. Mobile payment is a service method that allows mobile users to use their mobile devices (usually mobile phones) to perform a payment for merchandises or services. Compared with conventional electronic payment based on the Internet, mobile payment is more flexible, timely, customized, convenient, and with many other characteristics. During mobile payment transaction, fund processing systems such as the bank counter and the cashiering platform can be directly pushed to the user, so that the user can trade with various targets anytime anywhere using the mobile device.

[0004] Currently, mobile payment is completed by using a payment application (APP) installed in the mobile device, that is, the user needs to send payment request information to a financial server by using the payment APP in the mobile device when performing financial payment. For example, the payment request information is sent by using ALIPAY or WECHAT in the mobile device, and the financial server performs a corresponding operation on a user account included in the payment request information after receiving the payment request information. Currently, mobile payment cannot be completed without installing the payment APP.

SUMMARY

[0005] In view of the previously described problem, the present disclosure is proposed to provide a mobile payment method, device, and system for resolving the problem or at least partially resolving the problem.

[0006] To achieve the previous objective, the present disclosure mainly provides the technical solutions below.

[0007] According to one aspect, an implementation of the present disclosure provides a mobile payment method, and the method includes the following: receiving payment information sent by a second mobile device, where the payment information includes first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information, the first mobile device identifier information is sent by a first mobile device to the second mobile device, and no payment APP is installed in the first mobile device; and obtaining account information corresponding to the first mobile device identifier information, so that the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0008] According to another aspect, an implementation of the present disclosure further provides a mobile payment method, and the method includes: receiving a payment request sent by a first mobile device, where the payment request includes first mobile device identifier information; and sending payment information to a third-party server, where the payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in a second mobile device, and a payment amount corresponding to the first mobile device identifier information, so that the third-party server obtains account information corresponding to the first mobile device identifier information, and the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0009] According to still another aspect, an implementation of the present disclosure further provides a mobile payment device, and the mobile payment device includes: a receiving unit, configured to receive payment information sent by a second

mobile device, where the payment information includes first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information, the first mobile device identifier information is sent by a first mobile device to the second mobile device, and no payment APP is installed in the first mobile device; and an acquisition unit, configured to obtain account information corresponding to the first mobile device identifier information, so that the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0010] According to yet another aspect, an implementation of the present disclosure further provides a mobile payment device, and the mobile payment device includes: a receiving unit, configured to receive a payment request sent by a first mobile device, where the payment request includes first mobile device identifier information, and no payment APP is installed in the first mobile device; and a sending unit, configured to send payment information to a third-party server, where the payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in a second mobile device, and a payment amount corresponding to the first mobile device identifier information, so that the third-party server obtains account information corresponding to the first mobile device identifier information, and the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0011] An implementation of the present disclosure further provides a mobile payment system, and the mobile payment system includes a first mobile device, a second mobile device, and a third-party server. The first mobile device is configured to send a payment request to the second mobile device, where the payment request includes first mobile device identifier information, and no payment APP is installed in the first mobile device; the second mobile device is configured to send payment information to the third-party server, where the payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information; and the third-party server is

configured to obtain account information corresponding to the first mobile device identifier information, so that the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0012] Based on the previous technical solutions, the technical solutions provided in the implementations of the present disclosure have at least the advantages below.

[0013] According to the mobile payment method, device, and system provided in the implementations of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in the implementations of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in the implementations of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

BRIEF DESCRIPTION OF DRAWINGS

[0014] It becomes clear for a person skilled in the art to learn various other advantages and benefits by reading detailed description of the following preferred

implementations. Accompanying drawings are merely used for showing the preferred implementations, but not considered as a limitation on the present invention. In all accompanying drawings, a same reference symbol is used to indicate a same part. In the accompanying drawings:

[0015] FIG. 1 is a flowchart illustrating a mobile payment method, according to an implementation of the present disclosure;

[0016] FIG. 2 is a flowchart illustrating another mobile payment method, according to an implementation of the present disclosure;

[0017] FIG. 3 is a flowchart illustrating still another mobile payment method, according to an implementation of the present disclosure;

[0018] FIG. 4 is a flowchart illustrating yet another mobile payment method, according to an implementation of the present disclosure;

[0019] FIG. 5 is a block diagram illustrating a mobile payment device, according to an implementation of the present disclosure;

[0020] FIG. 6 is a block diagram illustrating another mobile payment device, according to an implementation of the present disclosure;

[0021] FIG. 7 is a block diagram illustrating still another mobile payment device, according to an implementation of the present disclosure;

[0022] FIG. 8 is a block diagram illustrating yet another mobile payment device, according to an implementation of the present disclosure;

[0023] FIG. 9 is a structural block diagram illustrating a mobile payment system, according to an implementation of the present disclosure; and

[0024] FIG. 10 is a schematic diagram illustrating a mobile payment application scenario, according to an implementation of the present disclosure.

DESCRIPTION OF IMPLEMENTATIONS

[0025] Implementations of the present disclosure that are used as examples are described in more detail with reference to the accompanying drawings. Although the accompanying drawings show the implementations of the present disclosure that are used as examples, it should be understood that the present disclosure can be implemented in various forms, and shall not be limited by the implementations described here. On the contrary, these implementations are provided for clearer understanding of the present disclosure, and to completely convey the scope of the

present disclosure to the person skilled in the art.

[0026] To make the advantages of the technical solutions in the present disclosure clearer, the following describes the present disclosure in detail with reference to the accompanying drawings and the implementations.

[0027] An implementation of the present disclosure provides a mobile payment method, and the method is applied to a third-party server. As shown in FIG. 1, the method includes the following steps.

[0028] 101. Receive payment information sent by a second mobile device.

[0029] The payment information includes first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information. No payment APP is installed in a first mobile device. The account corresponding to the payment APP currently running in the second mobile device can be a registered account entered when a user logs in to the payment APP by using the second mobile device. In this implementation of the present disclosure, the payment APP can be ALIPAY, WECHAT, etc., and is not limited in this implementation of the present disclosure. In this implementation of the present disclosure, the first mobile device and the second mobile device can be a personal computer (PC), a tablet computer, a smartphone, a personal digital assistant (PDA), a portable computer, an in-vehicle computer, etc. The first mobile device and the second mobile device are not limited in this implementation of the present disclosure.

[0030] In this implementation of the present disclosure, the first mobile device and the second mobile device in the present disclosure are devices authenticated by the Internet Finance Authentication Alliance (IFAA) or the Authority by using a public key infrastructure (PKI) system, that is, a certificate authenticated by using the previous method is stored in security zones of the first mobile device and the second mobile device, and the certificate is sent to a third-party server for identity authentication. The first mobile device identifier information is used to uniquely identify the first mobile device. The first mobile device identifier information can be a unique hardware code of the first mobile device, or a certificate of the first mobile device.

[0031] It is worthwhile to note that the first mobile device identifier information is sent by the first mobile device to the second mobile device, and the first mobile device can send the first mobile device identifier information to the second mobile

device through Bluetooth, scanning, near field communication (NFC), or other communications technologies, which is not limited in this implementation of the present disclosure. In this implementation of the present disclosure, the first mobile device sends the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, so that the first mobile device can perform a payment to the second mobile device without network access.

[0032] In this implementation of the present disclosure, the second mobile device is a terminal with a device authorization function that has been authenticated, and identity authentication on the second mobile device is implemented by using the third-party server. The third-party server is a server corresponding to the payment APP currently running in the second mobile device. For example, the second mobile device can send payment information of the first mobile device to an ALIPAY server only after an ALIPAY APP in the second mobile device is authenticated by the ALIPAY server. The third-party server can authenticate the second mobile device by using a device certificate of the second mobile device.

[0033] 102. Obtain account information corresponding to first mobile device identifier information.

[0034] Further, the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. A process of transferring the payment amount from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device can include the following: sending the account information corresponding to the first mobile device identifier information and the payment information to a financial server first, and then using the financial server to transfer an amount corresponding to a first terminal account to the account of the payment application APP currently running in the second mobile device. It is worthwhile to note that if the account corresponding to the first mobile device identifier information and the account corresponding to the payment APP currently running in the second mobile device belong to a same payment APP account such as an ALIPAY account, the ALIPAY server first obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, and then transfers the payment amount from the account

corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. If the account corresponding to the obtained first mobile device identifier information is a bank account, the third-party server sends the payment information and the account information corresponding to the first mobile device identifier information to a corresponding bank after receiving the payment information and obtaining the account information corresponding to the first mobile device identifier information, so that the corresponding bank transfers the payment amount from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0035] In this implementation of the present invention, the third-party server stores multiple pieces of account information, and the account information can be a financial account such as a bank account, an ALIPAY account, or a YU'E BAO account. Each piece of account information corresponds to one piece of first mobile device identifier information. Therefore, after receiving the payment information sent by the second mobile device, the third-party server can search the third-party server for the corresponding account information based on the first mobile device identifier information in the payment information. After the corresponding account information is obtained, the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0036] It is worthwhile to note that the account information stored in the third-party server can be obtained based on historical payment information of the first mobile device, or can be actively provided by the first mobile device for the third-party server, or can be forwarded by the second mobile device, which is not limited in this implementation of the present disclosure. For example, the ALIPAY server automatically stores the account information of the user and the corresponding first mobile device identifier information after the user performs financial payment by using the ALIPAY APP installed in the first mobile device. Therefore, when the user performs mobile payment again, even if the user uninstalls the payment APP in the first mobile device, the third-party server can obtain the corresponding account information based on the first mobile device identifier information.

[0037] For another example, after third-party server receives the payment information sent by the second mobile device, if the account information

corresponding to the first mobile device identifier information is not found in the third-party server, the third-party server sends, to the second mobile device, prompt information indicating that the account corresponding to the first mobile device does not exist, to prompt the user of the first mobile device to provide the corresponding account information. After receiving the prompt information, the user of the first mobile device can actively send the account information to the third-party server, or can send the account information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, and then the second mobile device forwards the account information of the first mobile device to the third-party server. It is worthwhile to note that, regardless of how the third-party server obtains the first mobile device identifier information and the account information, the third-party server correspondingly stores the account information of the first mobile device and the first mobile device identifier information after obtaining the first mobile device identifier information and the account information, so that the third-party server directly obtains the account information corresponding to the first mobile device identifier information from the account information stored in the third-party server when the first mobile device performs mobile payment again.

[0038] In this implementation of the present disclosure, the first mobile device is a terminal with a device authorization function authenticated by the third-party server. Therefore, when the first mobile device performs a payment to the second mobile device, the first mobile device can first send the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, and then the second mobile device sends the payment information to the third-party server. The payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information. The third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. In the previously described process, it can be seen that the first mobile device only needs to send the first mobile device identifier information to the second mobile device when performing a payment to the second mobile device.

Therefore, in this implementation of the present disclosure, the first mobile device can also perform mobile payment when no payment APP is installed in the first mobile device.

[0039] According to the mobile payment method provided in this implementation of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0040] An implementation of the present disclosure provides another mobile payment method, and the method is applied to a third-party server. As shown in FIG. 2, the method includes the following steps.

[0041] 201. Receive device authorization function enabling request information sent by a second mobile device.

[0042] The device authorization function enabling request information includes a device certificate of the second mobile device, and the second mobile device is a device authenticated by the IFAA or the Authority by using a PKI system, that is, a

certificate authenticated by using the previous method is stored in a security zone of the second mobile device, and the certificate is sent to the third-party server for identity authentication. In this implementation of the present disclosure, the device certificate of the second mobile device is a certificate stored in the security zone of the second mobile device.

[0043] 202. Verify whether a device certificate is valid.

[0044] In this implementation of the present disclosure, whether the device certificate is valid can be verified by determining whether a corresponding device certificate exists in the third-party server. If the corresponding device certificate exists in the third-party server, it is verified that the device certificate is valid; or if no corresponding device certificate exists in the third-party server, it is verified that the device certificate is invalid.

[0045] 203. Send verification method information to the second mobile device if the device certificate is valid.

[0046] Further, the second mobile device obtains verification data based on the verification method information. The verification method information can be face verification, certificate verification, handwriting verification, voiceprint verification, eyeprint verification, etc., and is not limited in this implementation of the present disclosure. In this implementation of the present disclosure, the second mobile device outputs verification method prompt information after receiving the verification method information sent by the third-party server, to prompt a user to input the corresponding verification data. For example, if the received verification method information is certificate verification and voiceprint verification, certificate verification prompt information and voiceprint verification prompt information are first output, and then certificate data and voice data that are input by a user of the second mobile device are received.

[0047] In this implementation of the present disclosure, after it is verified that the device certificate is valid, the method further includes the following: obtaining account credit information corresponding to the second mobile device, where the credit information is used to evaluate credit of the second mobile device; and detecting whether the account credit information corresponding to the second mobile device exceeds a predetermined threshold. The sending verification method information to the second mobile device includes the following: sending the verification method information to the second mobile device if the account credit

information corresponding to the second mobile device exceeds the predetermined threshold. The account credit information corresponding to the second mobile device is used to evaluate the credit of the second mobile device. The credit information can be Sesame Credit in ALIPAY, and the predetermined threshold can be set based on an actual requirement. The predetermined threshold can be 700, 800, 900, etc., and is not limited in this implementation of the present disclosure. In this implementation of the present disclosure, because payment information sent by the second mobile device to the third-party server is actually financial payment made by a first mobile device to the second mobile device, the verification method information is sent to the second mobile device when the account credit information corresponding to the second mobile device exceeds the predetermined threshold, to ensure security of payment by the first mobile device.

[0048] 204. Receive verification data sent by the second mobile device.

[0049] 205. Detect whether the verification data is correct.

[0050] 206. Enable a device authorization function of the second mobile device if the verification data is correct.

[0051] It is worthwhile to note that, the second mobile device can send the payment information to the third-party server only after the device authorization function of the second mobile device is enabled. In this implementation of the present disclosure, after step 206, the method further includes the following: sending enabling information of the second mobile device to the second mobile device, so that the second mobile device confirms the enabling information. In this implementation of the present disclosure, the enabling information of the second mobile device is sent to the second mobile device, to notify a user of the second mobile device that the device authorization function of the current device has been enabled. In this case, the second mobile device can send the payment information to the third-party server.

[0052] In this implementation of the present disclosure, after the enabling information of the second mobile device is sent to the second mobile device, the method further includes the following: receiving first mobile device identity authentication information sent by the second mobile device, where the first mobile device identity authentication information includes first mobile device identifier information; generating token information corresponding to the first mobile device identifier information; and sending the token information to the second mobile device. The first mobile device identifier information can be a unique hardware code of the

first mobile device, or a certificate of the first mobile device, and is not limited in this implementation of the present disclosure.

[0053] 207. Receive payment information sent by the second mobile device.

[0054] The payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information. No payment APP is installed in the first mobile device.

[0055] In this implementation of the present disclosure, the first mobile device identifier information is sent by the first mobile device to the second mobile device, and the first mobile device can send the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, which is not limited in this implementation of the present disclosure. In this implementation of the present disclosure, the first mobile device sends the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, so that the first mobile device can perform a payment to the second mobile device without network access.

[0056] 208. Obtain account information corresponding to first mobile device identifier information.

[0057] Further, the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0058] In this implementation of the present disclosure, before step 208, the method further includes the following: separately verifying whether the token information and a device certificate of the first mobile device are correct. The obtaining account information corresponding to the first mobile device identifier information includes the following: obtaining the account information corresponding to the first mobile device identifier information if it is verified that both the token information and the device certificate of the first mobile device are correct. Separately verifying whether the token information and the device certificate of the first mobile device are correct is searching the third-party server to determine whether the corresponding token information and the device certificate of the first mobile device exist. If the corresponding token information and the device certificate of the first mobile device exist in the third-party server, it is verified that both the token

information and the device certificate of the first mobile device are correct.

[0059] It is worthwhile to note that, the third-party server stores the token information only for a short time after generating the token information based on the first mobile device identifier information. For example, if the token information is generated at 14:00, and the token information can be stored in the third-party server for three minutes, token information generated after 14:03 is automatically deleted from the third-party server. In this implementation of the present disclosure, the account information corresponding to the first mobile device identifier information is obtained when it is verified that both the token information and the device certificate of the first mobile device are correct, to ensure security of payment by the first mobile device.

[0060] In this implementation of the present disclosure, after the account information corresponding to the first mobile device identifier information is obtained, the method further includes the following: sending prompt information indicating successful payment by the first mobile device payment to the second mobile device, if the payment amount is successfully transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0061] In this implementation of the present disclosure, as shown in FIG. 10, an application scenario includes but is not limited to the following case: An ALIPAY APP is installed in a supermarket payment device, but no payment APP is installed in a mobile phone. If a user needs to perform a payment by using the mobile phone, the supermarket payment device first needs to send a device authorization function enabling request to an ALIPAY server. The ALIPAY server verifies a certificate of the supermarket payment device after receiving the request. If the verification succeeds, the ALIPAY server detects whether credit corresponding to the supermarket payment device exceeds a predetermined threshold, and sends face authentication method information to the supermarket payment device if the credit exceeds the predetermined threshold. The supermarket payment device sends a face image and the certificate to the ALIPAY server after receiving the face authentication method information. Then the ALIPAY server verifies whether the face image and the certificate are correct, and sends prompt information indicating successful device authorization function enablement to the supermarket payment device if the verification succeeds, to notify a supermarket staff that the current supermarket

payment device can forward a payment request of the mobile phone.

[0062] When the user of the mobile phone needs to perform a payment for merchandises, the user first needs to obtain a token corresponding to the current payment request and send the payment request to the supermarket payment device. The supermarket payment device sends the payment information to the ALIPAY server after receiving the payment request, where the payment information includes identifier information of the mobile phone, a certificate of the mobile phone, the token corresponding to the current payment request, an account corresponding to a payment APP currently running in the supermarket payment device, and a payment amount corresponding to the mobile phone. The ALIPAY server verifies whether the certificate of the mobile phone and the token corresponding to the current payment request are correct after receiving the payment information. If it is verified that both the certificate of the mobile phone and the token corresponding to the current payment request are correct, the ALIPAY server obtains an account corresponding to identifier information of the mobile phone, and send the payment information and the amount corresponding to the mobile phone to a finance server, so that the finance server can transfer the payment amount from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0063] In this application scenario, a process of obtaining the token corresponding to the current payment request is as follows: The identifier information of the mobile phone needs to be obtained first, and then identity authentication information is sent the supermarket payment device, where the identity authentication information includes the identifier information of the mobile phone. The supermarket payment device forwards the information to the ALIPAY server after receiving the identity authentication information, and then the ALIPAY server generates the token corresponding to the identifier information of the mobile phone, and sends the generated token to the supermarket payment device.

[0064] According to the mobile payment method provided in this implementation of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information

corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0065] An implementation of the present disclosure provides still another mobile payment method, and the method is applied to a second mobile device. As shown in FIG. 3, the method includes the following steps.

[0066] 301. Receive a payment request sent by a first mobile device.

[0067] The payment request includes first mobile device identifier information, and no payment APP is installed in the first mobile device. The first mobile device can send the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, which is not limited in this implementation of the present disclosure. In this implementation of the present disclosure, the first mobile device sends the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, so that the first mobile device can perform a payment to the second mobile device without network access.

[0068] It is worthwhile to note that, the first mobile device and the second mobile device in the present disclosure are devices authenticated by the IFAA or the Authority by using a PKI system, that is, a certificate authenticated by using the previous method is stored in security zones of the first mobile device and the second

mobile device, and the certificate is sent to a third-party server for identity authentication. The first mobile device identifier information is used to uniquely identify the first mobile device. The first mobile device identifier information can be a unique hardware code of the first mobile device or a certificate of the first mobile device, and is not limited in this implementation of the present disclosure.

[0069] In this implementation of the present disclosure, the second mobile device is a terminal with a device authorization function that has been authenticated, and identity authentication on the second mobile device is implemented by using the third-party server. The third-party server is a server corresponding to a third-party APP in the second mobile device. For example, an ALIPAY APP in the second mobile device can send payment information of the first mobile device to an ALIPAY server only after the ALIPAY server verifies that the second mobile device has the device authorization function. The third-party server can authenticate the second mobile device by using a device certificate of the second mobile device.

[0070] 302. Send payment information to a third-party server.

[0071] The payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information, so that the third-party server obtains account information corresponding to the first mobile device identifier information, and the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0072] In this implementation of the present disclosure, the first mobile device is a terminal with a device authorization function authenticated by the third-party server. Therefore, when the first mobile device performs a payment to the second mobile device, the first mobile device can first send the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, and then the second mobile device sends the payment information to the third-party server. The payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information. The third-party server obtains the account information corresponding to the first mobile device identifier

information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. In the previously described process, it can be seen that the first mobile device only needs to send the first mobile device identifier information to the second mobile device when performing a payment to the second mobile device. Therefore, in this implementation of the present disclosure, the first mobile device can also perform mobile payment when no payment APP is installed in the first mobile device.

[0073] According to the mobile payment method provided in this implementation of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0074] An implementation of the present disclosure provides yet another mobile payment method, and the method is applied to a second mobile device. As shown in

FIG. 4, the method includes the following steps.

[0075] 401. Send device authorization function enabling request information to a third-party server.

[0076] The device authorization function enabling request information includes a device certificate of the second mobile device, so that the third-party server verifies whether the device certificate is valid. It is worthwhile to note that the second mobile device is a device authenticated by the IFAA or the Authority by using a PKI system, that is, a certificate authenticated by using the previous method is stored in a security zone of the second mobile device, and the certificate is sent to the third-party server for identity authentication. In this implementation of the present disclosure, the device certificate of the second mobile device is a certificate stored in the security zone of the second mobile device.

[0077] 402. Receive verification method information sent by the third-party server, if the third-party server verifies that a device certificate is valid.

[0078] The verification method information can be face verification, certificate verification, handwriting verification, voiceprint verification, eyeprint verification, etc, and is not limited in this implementation of the present disclosure.

[0079] 403. Obtain verification data based on the verification method information.

[0080] For example, if the received verification method information is certificate verification and voiceprint verification, certificate verification prompt information and voiceprint verification prompt information are first output, and then certificate data and voice data input by a user of the second mobile device are received.

[0081] 404. Send the verification data to the third-party server.

[0082] Further, the third-party server detects whether the verification data is correct.

[0083] 405. Receive prompt information sent by the third-party server for indicating successful enabling of a device authorization function of the second mobile device, if the third-party server detects that the verification data is correct.

[0084] It is worthwhile to note that the second mobile device can send payment information to the third-party server only after the device authorization function of the second mobile device is enabled. In this implementation of the present disclosure, the prompt information indicating the successful enabling of the device authorization function of the second mobile device is used to notify the user of the second mobile device that the device authorization function of the current device has been enabled.

In this case, the payment information can be sent to the third-party server by using the second mobile device.

[0085] 406. Receive identity authentication information sent by a first mobile device.

[0086] The identity authentication information includes first mobile device identifier information, and no payment APP is installed in the first mobile device. The first mobile device identifier information can be a unique hardware code of the first mobile device, or a certificate of the first mobile device, and is not limited in this implementation of the present disclosure.

[0087] In this implementation of the present disclosure, the first mobile device can send the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, which is not limited in this implementation of the present disclosure. In this implementation of the present disclosure, the first mobile device sends the first mobile device identifier information to the second mobile device through Bluetooth, scanning, NFC, or other communications technologies, so that the first mobile device can perform a payment to the second mobile device without network access.

[0088] 407. Forward the identity authentication information to the third-party server.

[0089] Further, the third-party server generates token information corresponding to the first mobile device identifier information. It is worthwhile to note that, the third-party server stores the token information only for a short time after generating the token information based on the first mobile device identifier information. For example, if the token information is generated at 14:00, and the token information can be stored in the third-party server for three minutes, token information generated after 14:03 is automatically deleted from the third-party server.

[0090] 408. Receive token information sent by the third-party server.

[0091] 409. Receive a payment request sent by the first mobile device.

[0092] The payment request includes the first mobile device identifier information.

[0093] 410. Send payment information to the third-party server.

[0094] The payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, a payment amount corresponding to the first mobile device

identifier information, the token information, and a device certificate of the first mobile device.

[0095] Further, the third-party server separately verifies whether the token information and the device certificate of the first mobile device are correct. The third-party server obtains account information corresponding to the first mobile device identifier information, if it is verified that both the token information and the device certificate of the first mobile device are correct, so that the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. In this implementation of the present disclosure, the account information corresponding to the first mobile device identifier information is obtained when it is verified that both the token information and the device certificate of the first mobile device are correct, to ensure security of payment by the first mobile device.

[0096] According to the mobile payment method provided in this implementation of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile

device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0097] Further, an implementation of the present disclosure provides a mobile payment device. As shown in FIG. 5, the mobile payment device includes a receiving unit 51 and an acquisition unit 52. The receiving unit 51 is configured to receive payment information sent by a second mobile device, where the payment information includes first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information; the first mobile device identifier information is sent by a first mobile device to the second mobile device, and no payment APP is installed in the first mobile device. The acquisition unit 52 is configured to obtain account information corresponding to the first mobile device identifier information, so that the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0098] It is worthwhile to note that reference can be made to the corresponding descriptions of the method shown in FIG. 1 for other corresponding descriptions of the functional units of the mobile payment device provided in this implementation of the present disclosure. Details are omitted here. However, it is worthwhile to note that the mobile payment device in this implementation can correspondingly implement all content in the previous method implementations.

[0099] According to the mobile payment device provided in this implementation of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the

first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0100] Further, an implementation of the present disclosure provides another mobile payment device. As shown in FIG. 6, the device mobile payment includes a receiving unit 61 and an acquisition unit 62. The receiving unit 61 is configured to receive payment information sent by a second mobile device, where the payment information includes first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information; the first mobile device identifier information is sent by a first mobile device to the second mobile device, and no payment APP is installed in the first mobile device. The acquisition unit 62 is configured to obtain account information corresponding to the first mobile device identifier information, so that the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0101] Further, the mobile payment device further includes a verification unit 64 and a sending unit 63.

[0102] The receiving unit 61 is further configured to receive device authorization function enabling request information sent by the second mobile device, where the device authorization function enabling request information includes a device certificate of the second mobile device.

[0103] The verification unit 64 is configured to verify whether the device certificate is valid.

[0104] The sending unit 63 is configured to send verification method information

to the second mobile device if the device certificate is valid, so that the second mobile device obtains verification data based on the verification method information.

[0105] Further, the mobile payment device further includes a detection unit 65 and an enabling unit 66.

[0106] The receiving unit 61 is further configured to receive the verification data sent by the second mobile device.

[0107] The detection unit 65 is configured to detect whether the verification data is correct.

[0108] The enabling unit 66 is configured to enable a device authorization function of the second mobile device if the verification data is correct.

[0109] The sending unit 63 is further configured to send enabling information of the second mobile device to the second mobile device, so that the second mobile device confirms the enabling information.

[0110] The acquisition unit 62 is further configured to obtain account credit information corresponding to the second mobile device, where the credit information is used to evaluate credit of the second mobile device.

[0111] The detection unit 65 is further configured to detect whether the account credit information corresponding to the second mobile device exceeds a predetermined threshold.

[0112] The sending unit 63 is configured to send the verification method information to the second mobile device, if the account credit information corresponding to the second mobile device exceeds the predetermined threshold.

[0113] The mobile payment device further includes a generation unit 67.

[0114] The receiving unit 61 is further configured to receive first mobile device identity authentication information sent by the second mobile device, where the first mobile device identity authentication information includes the first mobile device identifier information.

[0115] The generation unit 67 is configured to generate token information corresponding to the first mobile device identifier information.

[0116] The sending unit 63 is further configured to send the token information to the second mobile device.

[0117] In this implementation of the present disclosure, the payment information sent by the second mobile device further includes the token information and a device certificate of the first mobile device.

[0118] The verification unit 64 is further configured to separately verify whether the token information and the device certificate of the first mobile device are correct.

[0119] The acquisition unit 62 is configured to obtain the account information corresponding to the first mobile device identifier information, if both the token information and the device certificate of the first mobile device are correct.

[0120] The sending unit 63 is further configured to send identity authentication failure prompt information of the first mobile device to the second mobile device, if it is verified that either the token information or the device certificate of the first mobile device is incorrect.

[0121] It is worthwhile to note that reference can be made to the corresponding descriptions of the method shown in FIG. 2 for other corresponding descriptions of the functional units of the mobile payment device provided in this implementation of the present disclosure. Details are omitted here. However, it is worthwhile to note that the mobile payment device in this implementation can correspondingly implement all content in the previous method implementations.

[0122] According to the mobile payment device provided in this implementation of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the

account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0123] Further, an implementation of the present disclosure provides still another mobile payment device. As shown in FIG. 7, the mobile payment device includes a receiving unit 71 and a sending unit 72.

[0124] The receiving unit 71 is configured to receive a payment request sent by a first mobile device, where the payment request includes first mobile device identifier information, and no payment APP is installed in the first mobile device.

[0125] The sending unit 72 is configured to send payment information to a third-party server, where the payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in a second mobile device, and a payment amount corresponding to the first mobile device identifier information, so that the third-party server obtains account information corresponding to the first mobile device identifier information, and the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0126] It is worthwhile to note that reference can be made to the corresponding descriptions of the method shown in FIG. 3 for other corresponding descriptions of the functional units of the mobile payment device provided in this implementation of the present disclosure. Details are omitted here. However, it is worthwhile to note that the mobile payment device in this implementation can correspondingly implement all content in the previous method implementations.

[0127] According to the mobile payment device provided in this implementation of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP

currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0128] Further, an implementation of the present disclosure provides yet another mobile payment device. As shown in FIG. 8, the mobile payment device includes a receiving unit 81 and a sending unit 82.

[0129] The receiving unit 81 is configured to receive a payment request sent by a first mobile device, where the payment request includes first mobile device identifier information, and no payment APP is installed in the first mobile device.

[0130] The sending unit 82 is configured to send payment information to a third-party server, where the payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in a second mobile device, and a payment amount corresponding to the first mobile device identifier information, so that the third-party server obtains account information corresponding to the first mobile device identifier information, and the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0131] Further, the mobile payment device further includes an acquisition unit 83.

[0132] The sending unit 82 is further configured to send device authorization function enabling request information to the third-party server, where the device authorization function enabling request information includes a device certificate of the second mobile device, so that the third-party server verifies whether the device

certificate is valid.

[0133] The receiving unit 81 is further configured to receive verification method information sent by the third-party server, if the third-party server verifies that the device certificate is valid.

[0134] The acquisition unit 83 is configured to obtain verification data based on the verification method information.

[0135] The sending unit 82 is further configured to send the verification data to the third-party server, so that the third-party server detects whether the verification data is correct.

[0136] The receiving unit 81 is further configured to receive prompt information sent by the third-party server for indicating successful enabling of a device authorization function of the second mobile device, if the third-party server detects that the verification data is correct.

[0137] Further, the mobile payment device further includes a forwarding unit 84.

[0138] The receiving unit 81 is further configured to receive identity authentication information sent by the first mobile device, where the identity authentication information includes the first mobile device identifier information.

[0139] The forwarding unit 84 is configured to forward the identity authentication information to the third-party server, so that the third-party server generates token information corresponding to the first mobile device identifier information.

[0140] The receiving unit 81 is further configured to receive the token information sent by the third-party server.

[0141] In this implementation of the present disclosure, the payment information further includes the token information and a device certificate of the first mobile device, so that the third-party server separately verifies whether the token information and the device certificate of the first mobile device are correct.

[0142] It is worthwhile to note that reference can be made to the corresponding descriptions of the method shown in FIG. 4 for other corresponding descriptions of the functional units of the mobile payment device provided in this implementation of the present disclosure. Details are omitted here. However, it is worthwhile to note that the mobile payment device in this implementation can correspondingly implement all content in the previous method implementations.

[0143] According to the mobile payment device provided in this implementation of the present disclosure, the payment information sent by the second mobile device is

first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0144] Further, an implementation of the present disclosure provides a mobile payment system. As shown in FIG. 9, the mobile payment system includes a first mobile device 91, a second mobile device 92, and a third-party server 93.

[0145] The first mobile device 91 is configured to send a payment request to the second mobile device, where the payment request includes first mobile device identifier information, and no payment APP is installed in the first mobile device.

[0146] The second mobile device 92 is configured to send payment information to the third-party server, where the payment information includes the first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information.

[0147] The third-party server 93 is configured to obtain account information corresponding to the first mobile device identifier information, so that the payment

amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0148] According to the mobile payment system provided in this implementation of the present disclosure, the payment information sent by the second mobile device is first received, where the payment information includes the first mobile device identifier information, the account corresponding to the payment APP currently running in the second mobile device, and the payment amount corresponding to the first mobile device identifier information; and then the account information corresponding to the first mobile device identifier information is obtained, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. Compared with the existing technology in which mobile payment needs to be completed by installing a payment APP in a mobile device, in this implementation of the present disclosure, when the first mobile device needs to perform a payment to the second mobile device, the payment information of the first mobile device can be sent to the third-party server by using the second mobile device, where the payment information includes the first mobile device identifier information; and the third-party server obtains the account information corresponding to the first mobile device identifier information after receiving the payment information, so that the payment amount can be transferred from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device. As such, the first mobile device in this implementation of the present disclosure can also complete mobile payment when no payment APP is installed in the first mobile device.

[0149] The mobile payment device includes a processor and a memory. The previously described receiving unit, the acquisition unit, the sending unit, the verification unit, the detection unit, the enabling unit, the generation unit, etc. are stored in the memory as program units. The processor executes the program units stored in the memory to implement corresponding functions.

[0150] The processor includes a kernel, and the kernel invokes a corresponding program unit from the memory. There can be one or more kernels. The accuracy of displaying mixed views can be improved by adjusting kernel parameters.

[0151] The memory can include a non-persistent storage, a random access memory (RAM), and/or a nonvolatile memory in a computer readable medium, for example, a read-only memory (ROM) or a flash memory (flash RAM). The memory includes at least one storage chip.

[0152] The present application further provides a computer program product. When a data processing device executes the computer program product, program code for initialization includes the following method steps: receiving payment information sent by a second mobile device, where the payment information includes first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information, the first mobile device identifier information is sent by a first mobile device to the second mobile device, and no payment APP is installed in the first mobile device; and obtaining account information corresponding to the first mobile device identifier information, so that the payment amount can be transferred from an account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

[0153] A person skilled in the art should understand that the implementations of the present application can be provided as a method, a system, or a computer program product. Therefore, the present application can use hardware only implementations, software only implementations, or implementations with a combination of software and hardware. In addition, the present application can 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, etc.) that include computer-usable program code.

[0154] The present application is described with reference to the flowcharts and/or block diagrams of the method, the device, and the computer program product based on the implementations of the present application. It should be understood that computer program instructions can be used to implement each process and/or each block in the flowcharts and/or the block diagrams and a combination of a process and/or a block in the flowcharts and/or the block diagrams. These computer program instructions can be provided for a general-purpose computer, a dedicated-purpose computer, an embedded processor, or a processor of another programmable data processing device to generate a machine, so that the instructions executed by the

computer or the processor of the another programmable data processing device generate an apparatus for implementing a specific function in one or more flows in the flowcharts and/or in one or more blocks in the block diagrams.

[0155] These computer program instructions can be stored in a computer readable memory that can instruct the computer or the another programmable data processing device to work in a specific way, so that the instructions stored in the computer readable memory generate an artifact that includes an instruction apparatus. The instruction apparatus implements a specific function in one or more flows in the flowcharts and/or in one or more blocks in the block diagrams.

[0156] These computer program instructions can be loaded onto the computer or the another programmable data processing device, so that a series of operations and steps are performed on the computer or the another programmable device, thereby generating computer-implemented processing. Therefore, the instructions executed on the computer or the another programmable device provide steps for implementing a specific function in one or more flows in the flowcharts and/or in one or more blocks in the block diagrams.

[0157] In a typical configuration, a computing device includes one or more processors (CPU), an input/output interface, a network interface, and a memory.

[0158] The memory can include a non-persistent storage, a random access memory (RAM), and/or a nonvolatile memory in a computer readable medium, for example, a read-only memory (ROM) or a flash memory (flash RAM). The memory is an example of the computer readable medium.

[0159] The computer readable medium includes persistent, non-persistent, movable, and unmovable media that can implement information storage by using any method or technology. Information can be a computer readable instruction, a data structure, a program module, or other data. An example of a computer storage medium includes but is not limited to a phase-change random access memory (PRAM), a static random access memory (SRAM), a dynamic random access memory (DRAM), another type of random access memory (RAM), a read-only memory (ROM), an electrically erasable programmable read-only memory (EEPROM), a flash memory or another memory technology, a compact disc read-only memory (CD-ROM), a digital versatile disc (DVD) or another optical storage, a cassette magnetic tape, a tape and disk storage or another magnetic storage device or any other non-transmission media that can be configured to store information that a computing

device can access. As described in the present application, the computer readable medium does not include computer readable transitory media (transitory media) such as a modulated data signal and a carrier.

[0160] The previous descriptions are merely the implementations of the present application, but are not intended to limit the present application. For a person skilled in the art, the present application can have various modifications and changes. Any modifications, equivalent substitutions, improvements, etc. made in the spirit and principle of the present application shall fall in the scope of the claims in the present application.

CLAIMS

1. A method for a mobile payment, the method comprising:

receiving device authorization function enabling request information sent by a second mobile device, wherein the device authorization function enabling request information comprises a device certificate of the second mobile device;

verifying, whether the device certificate is valid;

sending verification method information to the second mobile device if the device certificate is valid, so that the second mobile device obtains verification data based on the verification method information;

receiving the verification data sent by the second mobile device;

detecting, whether the verification data is correct;

enabling a device authorization function of the second mobile device if the verification data is correct;

sending enabling information of the second mobile device to the second mobile device, so that the second mobile device confirms the enabling information;

receiving first mobile device identity authentication information sent by the second mobile device, wherein the first mobile device identity authentication information comprises first mobile device identifier information uniquely identifying a first mobile device and comprising a unique hardware code of the first mobile device or a certificate of the first mobile device;

receiving payment information sent by the second mobile device, wherein:

the payment information comprises the first mobile device identifier information, an account corresponding to a payment APP currently running in the second mobile device, and a payment amount corresponding to the first mobile device identifier information,

the first mobile device identifier information is sent by the first mobile device to the second mobile device, and

no payment APP is installed in the first mobile device, a payment APP being an APP configured to provide payment request information to a financial server configured to perform a corresponding operation on a user account included in the payment request information;

obtaining account information corresponding to the first mobile device identifier information;

and

transferring the payment amount from the account corresponding to the first mobile device identifier information to the account corresponding to the payment APP currently running in the second mobile device.

2. The method according to claim 1, wherein the first mobile device and/or the second mobile device are devices authenticated by the Internet Finance Authentication Alliance (IFAA) or an authority by using a public key infrastructure (PKI) system.

3. The method according to any one of claims 1 or 2, wherein after it is verified that the device certificate is valid, the method further comprises the following:

obtaining account credit information corresponding to the second mobile device, wherein the credit information is used to evaluate credit of the second mobile device;

detecting whether the account credit information corresponding to the second mobile device exceeds a predetermined threshold; and

the sending verification method information to the second mobile device comprises the following:

sending the verification method information to the second mobile device if the account credit information corresponding to the second mobile device exceeds the predetermined threshold.

4. The method according to any one of claims 1 or 2, wherein after sending enabling information of the second mobile device to the second mobile device, the method further comprises the following:

generating token information corresponding to the first mobile device identifier information; and

sending the token information to the second mobile device.

5. The method according to claim 4, wherein the payment information sent by the second mobile device further comprises the token information and a device certificate of the first mobile device, and before obtaining account information corresponding to the first mobile device

identifier information, the method further comprises the following:

separately verifying whether the token information and the device certificate of the first mobile device are correct; and

obtaining account information corresponding to the first mobile device identifier information comprises the following:

obtaining the account information corresponding to the first mobile device identifier information if both the token information and the device certificate of the first mobile device are correct.

6. The method according to claim 5, wherein after separately verifying whether the token information and the device certificate of the first mobile device are correct, the method further comprises the following:

sending identity authentication failure prompt information of the first mobile device to the second mobile device if it is verified that either the token information or the device certificate of the first mobile device is incorrect.

7. The method according to any one of claims 1 to 6, wherein the token is stored for a set time interval after being generated and is automatically deleted after the set time interval.

8. The method according to any one of claims 1 to 7, wherein the certificate of the first mobile device is stored in security zones of the first mobile device and the second mobile device; and/or wherein the certificate of the first mobile device is sent to a third-party server for identity authentication.

9. The method according to any one of claims 1 to 8, wherein the account information is obtained based on historical payment information of the first mobile device.

10. A device for mobile payment, the device comprising a plurality of modules configured to perform the method of any one of claims 1 to 9.