(12) STANDARD PATENT (11) Application No. **AU 2016358777 B2**
(19) AUSTRALIAN PATENT OFFICE

(54) Title
Method and device for generating, acquiring and processing information, method for payment, and client

(51) International Patent Classification(s)
G06K 19/06 (2006.01)

(21) Application No: **2016358777** (22) Date of Filing: **2016.11.18**

(87) WIPO No: **WO17/088699**

(30) Priority Data

(31) Number	(32) Date	(33) Country
201510849154.2	**2015.11.27**	**CN**

(43) Publication Date: **2017.06.01**
(44) Accepted Journal Date: **2020.04.30**

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(56) Related Art
US 20120084162 A1

(12) 按照专利合作条约所公布的国际申请

(19) 世界知识产权组织
国 际 局

(43) 国际公布日
2017 年 6 月 1 日 (01.06.2017)

WIPO | PCT

(10) 国际公布号
WO 2017/088699 A1

(51) 国际专利分类号:
G06K 19/06 (2006.01)

(21) 国际申请号: PCT/CN2016/106324

(22) 国际申请日: 2016 年 11 月 18 日 (18.11.2016)

(25) 申请语言: 中文

(26) 公布语言: 中文

(30) 优先权:
201510849154.2 2015 年 11 月 27 日 (27.11.2015) CN

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(81) 指定国 (除另有指明，要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW。

(84) 指定国 (除另有指明，要求每一种可提供的地区保护): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), 欧亚 (AM, AZ, BY, KG, KZ, RU, TJ, TM), 欧洲 (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG)。

本国际公布:
— 包括国际检索报告(条约第 21 条(3))。

(54) Title: METHOD AND DEVICE FOR GENERATING, ACQUIRING AND PROCESSING INFORMATION, METHOD FOR PAYMENT, AND CLIENT

(54) 发明名称 : 信息的生成、获取、处理方法及装置、支付方法及客户端

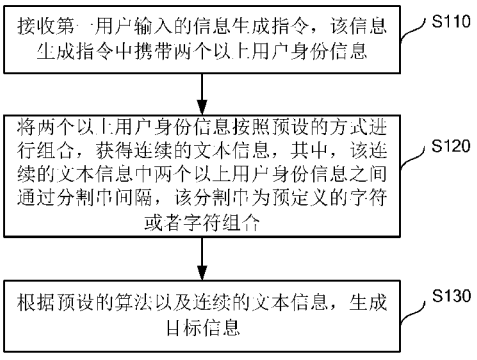

图 1

S110 Receive an information generating command input by a first user, wherein the information generating command carries two or more pieces of user identity information

S120 Combine the two or more pieces of user identity information in a predetermined mode to acquire continuous text information, wherein the two or more pieces of user identity information in the continuous text information are separated by a separator string which is a predefined character or character combination

S130 Generate target information according to a predetermined algorithm and the continuous text information

(57) Abstract: A method and device for generating, acquiring and processing information, method for payment, and client. The generating method comprises: receiving an information generating command input by a first user, wherein the information generating command carries two or more pieces of user identity information (S110); combining the two or more pieces of user identity information in a predetermined mode to acquire continuous text information, wherein the two or more pieces of user identity information in the continuous text information are separated by a separator string which is a predefined character or character combination (S120); and generating target information according to a predetermined algorithm and the continuous text information (S130). In such a way, the present invention achieves the goal of including two or more pieces of user identity information in target information, thereby increasing the efficiency of acquiring two or more pieces of user identity information when identifying target information to acquire user identity information, thus increasing the efficiency of performing service operations with respect to two or more pieces of user identity information.

(57) 摘要:

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一种信息的生成、获取、处理方法及装置、支付方法及客户端，生成方法包括：接收第一用户输入的信息生成指令，所述信息生成指令中携带两个以上用户身份信息（S110）；将所述两个以上用户身份信息按照预设的方式进行组合，获得连续的文本信息，其中，所述连续的文本信息中所述两个以上用户身份信息之间通过分割串间隔，所述分割串为预定义的字符或者字符组合（S120）；根据预设的算法以及所述连续的文本信息，生成目标信息（S130）。由此，可以达到在目标信息中包含两个以上用户身份信息的目的，这可以提高在通过识别目标信息获取用户身份信息的场景下，获取两个以上用户身份信息的效率，从而提高了针对两个以上用户身份信息执行业务操作的效率。

METHOD AND DEVICE FOR GENERATING, ACQUIRING AND PROCESSING INFORMATION, METHOD FOR PAYMENT, AND CLIENT

[0001] The present application claims priority to Chinese Patent Application No. 201510849154.2, filed on November 27, 2015 and entitled "INFORMATION GENERATION METHOD AND APPARATUS, INFORMATION ACQUISITION METHOD AND APPARATUS, INFORMATION PROCESSING METHOD AND APPARATUS, AND PAYMENT METHOD AND CLIENT", which is incorporated here by reference in its entirety.

TECHNICAL FIELD

[0002] The present application relates to the field of computer technologies, and in particular, to an information generation method and apparatus, an information acquisition method and apparatus, an information processing method and apparatus, and a payment method and client.

BACKGROUND

[0003] In conventional technologies, target information (for example, image information or sound information) that includes user identity information can be generated. With rapid development of Internet technologies, higher service operation performing efficiency is needed. For example, when obtaining account information by recognizing target information, a user may want to make payment to two accounts by performing one recognition operation. However, in existing technologies, target information can include information related to one account. That is, the user may need to recognize two pieces of account information by performing two recognition operations, and separately perform two payment operations with the two accounts, which can affect efficiency of service performance.

[0004] Therefore, generation method of target information that includes at least

two pieces of user identity information and recognition method of the target information are needed to improve service performance efficiency.

SUMMARY

[0005] Implementations of the present application provide information generation method and apparatus, an information acquisition method and apparatus, an information processing method and apparatus, and a payment method and client, so as to improve efficiency of performing a service operation.

[0006] According to a first aspect, an information generation method is provided, and the generation method includes: receiving an information generation instruction entered by a first user, where the information generation instruction includes at least two pieces of user identity information; combining the at least two pieces of user identity information in a predetermined method, to obtain continuous text information, where the at least two pieces of user identity information in the continuous text information are separated by a separation string, and the separation string is a predefined character or character combination; and generating target information based on a predetermined algorithm and the continuous text information.

[0007] According to a second aspect, an information acquisition method is provided, and the acquisition method includes: recognizing pre-generated target information to obtain continuous text information, where the continuous text information includes at least two pieces of user identity information, the at least two pieces of user identity information are separated by a separation string, and the separation string is a predefined character or character combination; and parsing the continuous text information to obtain the at least two pieces of user identity information.

[0008] According to a third aspect, an information processing method is provided, and the processing method includes: recognizing pre-generated target information to obtain continuous text information; sending the continuous text information to a server, so that the server parses the continuous text information to obtain at least two pieces of user identity information; receiving the at least two pieces of user identity information sent by the server, and displaying the at least two pieces of user identity information; and performing a corresponding operation on the at least two pieces of user identity information based on information entered by a second user.

[0009] According to a fourth aspect, a payment method is provided, and the payment method includes: recognizing pre-generated target information to obtain continuous text information; sending the continuous text information to a payment server, so that the payment server parses the continuous text information to obtain at least two pieces of account information; receiving the at least two pieces of account information sent by the payment server, and displaying the at least two pieces of account information; determining a payment amount corresponding to each piece of account information based on information entered by a payor; and performing a payment operation based on the payment amount corresponding to each piece of account information.

[0010] According to a fifth aspect, an information generation apparatus is provided, and the generation apparatus includes a receiving unit, a combination unit, and a generation unit, where the receiving unit is configured to receive an information generation instruction entered by a first user, where the information generation instruction includes at least two pieces of user identity information; the combination unit is configured to combine, in a predetermined method, the at least two pieces of user identity information received by the receiving unit, to obtain continuous text information, where the at least two pieces of user identity information in the continuous text information are separated by a separation string, and the separation string is a predefined character or character combination; and the generation unit is configured to generate target information based on a predetermined algorithm and the continuous text information obtained by the combination unit.

[0011] According to a sixth aspect, an information acquisition apparatus is provided, and the acquisition apparatus includes a recognition unit and a parsing unit, where the recognition unit is configured to recognize pre-generated target information to obtain continuous text information, where the continuous text information includes at least two pieces of user identity information, the at least two pieces of user identity information are separated by a separation string, and the separation string is a predefined character or character combination; and the parsing unit is configured to parse the continuous text information obtained by the recognition unit to obtain the at least two pieces of user identity information.

[0012] According to a seventh aspect, an information processing apparatus is provided, and the processing apparatus includes a recognition unit, a sending unit, a receiving unit, and an execution unit, where the recognition unit is configured to

recognize pre-generated target information to obtain continuous text information; the sending unit is configured to send the continuous text information obtained by the recognition unit to a server, so that the server parses the continuous text information to obtain at least two pieces of user identity information; the receiving unit is configured to: receive the at least two pieces of user identity information sent by the server, and display the at least two pieces of user identity information; and the execution unit is configured to perform a corresponding operation on the at least two pieces of user identity information based on information entered by a second user.

[0013] According to an eighth aspect, a payment client is provided, and the payment client includes a recognition unit, a sending unit, a determining unit, and an execution unit, where the recognition unit is configured to recognize pre-generated target information to obtain continuous text information; the sending unit is configured to send the continuous text information obtained by the recognition unit to a payment server, so that the payment server parses the continuous text information to obtain at least two pieces of account information; the determining unit is configured to determine a payment amount corresponding to each piece of account information based on information entered by a payor; and the execution unit is configured to perform a payment operation based on the payment amount that corresponds to each piece of account information and that is determined by the determining unit.

[0014] According to the information generation method and apparatus, the information acquisition method and apparatus, the information processing method and apparatus, and the payment method and client provided in the present application, the generation method includes: receiving the information generation instruction entered by the first user, where the information generation instruction includes at least two pieces of user identity information; combining the at least two pieces of user identity information in the predetermined method, to obtain the continuous text information, where the at least two pieces of user identity information in the continuous text information are separated by the separation string, and the separation string is a predefined character or character combination; and generating the target information based on the predetermined algorithm and the continuous text information. That is, in the present application, the target information includes at least two pieces of user identity information, so that when user identity information is obtained by recognizing the target information, the at least two pieces of user identity information are obtained by performing one recognition operation, and a service operation is simultaneously

performed on the at least two pieces of user identity information, thereby improving efficiency of performing the service operation on the at least two pieces of user identity information.

BRIEF DESCRIPTION OF DRAWINGS

[0015] FIG. 1 is a flowchart illustrating an information generation method, according to an implementation of the present application;

[0016] FIG. 2 is a flowchart illustrating an information acquisition method, according to another implementation of the present application;

[0017] FIG. 3 is a flowchart illustrating an information processing method, according to still another implementation of the present application;

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

[0019] FIG. 5 is a schematic diagram illustrating a page format of a payment client, according to the present application;

[0020] FIG. 6 is a schematic diagram illustrating an information generation apparatus, according to an implementation of the present application;

[0021] FIG. 7 is a schematic diagram illustrating an information acquisition apparatus, according to another implementation of the present application;

[0022] FIG. 8 is a schematic diagram illustrating an information processing apparatus, according to still another implementation of the present application; and

[0023] FIG. 9 is a schematic diagram illustrating a payment client, according to yet another implementation of the present application.

DESCRIPTION OF IMPLEMENTATIONS

[0024] To make the objectives, technical solutions, and advantages of the implementations of the present application clearer, the following clearly and completely describes the technical solutions in the implementations of the present application with reference to the accompanying drawings in the implementations of the present application. Apparently, the described implementations are merely some rather than all of the implementations of the present application. All other implementations obtained by a person of ordinary skill in the art based on the

implementations of the present application without creative efforts shall fall within the protection scope of the present application.

[0025] To facilitate understanding of the present application, the following uses detailed descriptions to provide further explanations with reference to the accompanying drawings, and the implementations constitute no limitation to the implementations of the present application.

[0026] An information generation method and apparatus, an information acquisition method and apparatus, an information processing method and apparatus, and a payment method and client provided in the present application are applicable to scenarios in which target information that includes at least two pieces of user identity information are generated in an Internet system. For example, the information generation method and apparatus, the information acquisition method and apparatus, the information processing method and apparatus, and the payment method and client can be applied to scenarios in which payment information that includes at least two pieces of user identity information is generated in a payment system. Here, the user identity information can include account information, account number information, bank card number information, or other information that can identify a user identity.

[0027] The payment system can include a payment client and a payment server. The payment client can include a display interface, an image recognition apparatus, and/or a sound recognition apparatus. The display interface can display payment processing results by a payment server of a payment request by a payment client server. The image recognition apparatus is used to recognize image information, for example, to recognize a QR code or an encrypted QR code, to obtain continuous text information (or character string information). The sound recognition apparatus is used to recognize sound information, for example, to recognize a sound wave or an encrypted sound wave, and obtain continuous text information (or character string information). Here, when the payment client is configured to recognize the encrypted QR code or the encrypted sound wave, the payment client can further include a corresponding decryption function, for example, it can include a function of decrypting text information encrypted by using an MD5 encryption algorithm. The payment server can be configured to: receive continuous text information sent by the payment client, and decrypt the continuous text information by using a predetermined algorithm, so as to obtain at least two pieces of user identity information. A payment amount corresponding to each piece of user identity information can be determined

based on a payment amount and a payment proportion entered by a payor, or can be determined based on a payment amount or a predetermined proportion in a payment order. In addition, the payment information can be image information, for example, a QR code, or can be sound information, for example, a sound wave.

[0028] FIG. 1 is a flowchart illustrating an information generation method, according to an implementation of the present application. The generation method can be performed by a device that has processing capabilities such as a server, a system, or an apparatus. As shown in FIG. 1, the generation method can include the following steps.

[0029] Step 110: Receive an information generation instruction entered by a first user, where the information generation instruction includes at least two pieces of user identity information.

[0030] Here, in payment transactions, the first user can be a payee or a merchant, and the user identity information can include account information, account number information, bank card number information, or other information that can identify a user identity. For example, the user identity information is the account information, and the generated target information is a QR code. The information generation instruction can be triggered by clicking an option "My QR Code" in "Account Details" of a payment system by the payee. It is worthwhile to note that because a QR code that includes only one piece of account information can be generated in an existing payment system, account information of the payee cannot be edited. When a solution of the present application is implemented, account information in "Account Details" can be set to an editable state. Therefore, the payee can add other account information. Alternatively, an option "Generate a QR code" can be added to the payment system. The payee can add at least two pieces of account information on a page corresponding to the option. After the account information is edited on the page, the information generation instruction is triggered when an "OK" button is clicked.

[0031] It is worthwhile to note that when the user identity information is a bank card number or other information that can identify a user's identity, or when the generated target information includes image or sound information other than the QR code, the information generation instruction is triggered in a similar method. Details are omitted here to avoid duplication.

[0032] Step 120: Combine the at least two pieces of user identity information in a predetermined method, to obtain continuous text information, where the at least two

pieces of user identity information in the continuous text information are separated by a separation string, and the separation string is a predefined character or character combination.

[0033] Here, it is worthwhile to note that the separation string can be the following special characters or a combination of the following special characters: "#", "*", "<>", "(.*)", etc. That is, the special character here can be any character that cannot be used to form the user identity information.

[0034] Combining the at least two pieces of user identity information in a predetermined method to obtain continuous text information can include:

[0035] Step A: Sort the at least two pieces of user identity information based on a predetermined sorting rule.

[0036] When there is primary user identity information and secondary user identity information in the at least two pieces of user identity information, the predetermined sorting rule sorts the primary user identity information before the secondary user identity information. For example, when the received information generation instruction includes two pieces of account information, and the two pieces of account information are merchant account information and waiter account information, the predetermined sorting rule can sort the merchant account information before the waiter account information.

[0037] Step B: Combine the sorted at least two pieces of user identity information in the predetermined method, to obtain the continuous text information.

[0038] For example, step B is to combine the sorted at least two pieces of user identity information by using the separation string to obtain the continuous text information.

[0039] As described in the previous example, assume that the merchant account information is a@163.com, account information of a first waiter is waiter1@163.com, and the separation string is #, continuous text information obtained by combining two sorted pieces of account information by using the separation string is a@163.com#waiter1@163.com.

[0040] It can be understood that as described in the previous example, assume that account information includes a second waiter, waiter2@163.com, and there is no sequential relationship between the account information of the second waiter and the first waiter. Continuous text information obtained by combining three sorted pieces of account information by using the separation string can be

a@163.com#waiter1@163.com#waiter2@163.com or a@163.com#waiter2@163.com#waiter1@163.com. Indeed, in certain applications, priorities can be separately determined for a plurality of waiters. As described in the previous example, when priority of the first waiter is higher than priority of the second waiter, the obtained continuous text information is a@163.com#waiter1@163.com#waiter2@163.com.

[0041] It is worthwhile to note that the at least two pieces of user identity information are sorted to facilitate user account recognition. For example, when the received continuous text information is a@163.com#waiter1@163.com, a@163.com can be directly recognized as the merchant account information, and waiter1@163.com can be recognized as the waiter account information.

[0042] Step 130: Generate target information based on a predetermined algorithm and the continuous text information.

[0043] Here, the target information can be image information or sound information. For example, in the payment system, the target information can be a QR code or a sound wave.

[0044] When the obtained target information is the QR code, the predetermined algorithm can be any algorithm that can generate the QR code as described in the prior art. When the obtained target information is the sound wave, the predetermined algorithm can be any algorithm that can encode the continuous text information based on a predetermined coding rule and convert the encoded continuous text information into a signal on a corresponding sound frequency. For example, an algorithm that converts the continuous text information into octal data, where 0 to 7 in the octal data can be represented by using eight different sound frequencies, and converts the obtained octal data into signals on corresponding sound frequencies.

[0045] It is worthwhile to note that in payment transactions, step 110 to step 130 can be performed by the payment system.

[0046] In sum, according to information generation method provided in the previous implementations, the target information can include at least two pieces of user identity information. This can improve efficiency of obtaining at least two pieces of user identity information when user identity information is obtained by recognizing the target information, thereby improving efficiency of performing a service operation on the at least two pieces of user identity information.

[0047] FIG. 2 is a flowchart illustrating an information acquisition method,

according to another implementation of the present application. The acquisition method can be performed by a device that has a processing capability such as a server, a system, or an apparatus. As shown in FIG. 2, the acquisition method can include the following steps.

[0048] Step 210: Recognize pre-generated target information to obtain continuous text information, where the continuous text information includes at least two pieces of user identity information, the at least two pieces of user identity information are separated by a separation string, and the separation string is a predefined character or character combination.

[0049] Here, the pre-generated target information can be picture information, for example, a QR code, or can be sound information, for example, a sound wave.

[0050] In a payment system, step 210 can be performed by a payment client. For example, when the pre-generated target information is a QR code, the pre-generated QR code can be recognized by enabling a "Scan" function in the payment client. Indeed, in another application scenario, step 210 can alternatively be performed by another system or apparatus that has an image recognition function or a sound recognition function.

[0051] Preferably, the at least two pieces of user identity information in the continuous text information are sorted.

[0052] Here, the separation string can be the following special characters or a combination of the following special characters: "#", "*", "<>", "(.*)", etc. That is, the special character here can be any character that cannot be used to form the user identity information. In addition, when there is primary user identity information and secondary user identity information in the at least two pieces of user identity information, a sequence of the at least two pieces of user identity information can be determined as the primary user identity information before the secondary user identity information. For example, in payment transactions, when the user identity information is account information, and two pieces of account information are merchant account information and waiter account information, a sequence of the two pieces of account information can be determined as the merchant account information before the waiter account information.

[0053] For example, when the continuous text information includes two pieces of user identity information, the obtained continuous text information can be a@163.com#waiter1@163.com. However, when the continuous text information

includes at least two (for example, three) pieces of user identity information, the obtained continuous text information can be a@163.com#waiter2@163.com#waiter1@163.com.

[0054] Step 220: Parse the continuous text information to obtain the at least two pieces of user identity information.

[0055] Parsing of the continuous text information to obtain the at least two pieces of user identity information in step 220 can include:

[0056] Step X: Remove the separation string from the continuous text information, where continuous text information obtained after removing the separation string includes at least two pieces of sub-text information.

[0057] As described in the previous example, when a special character "#" is removed from the continuous text information a@163.com#waiter1@163.com, two pieces of sub-text information a@163.com and waiter1@163.com are obtained. When a special character "#" is removed from the continuous text information a@163.com#waiter2@163.com#waiter1@163.com, three pieces of sub-text information a@163.com, waiter1@163.com, and waiter2@163.com are obtained.

[0058] Step Y: Use the at least two pieces of sub-text information as the at least two pieces of user identity information.

[0059] As described in the previous example, a@163.com and waiter1@163.com can be used as two pieces of account information, or a@163.com, waiter1@163.com, and waiter2@163.com can be used as three pieces of account information.

[0060] In addition, it is worthwhile to note that if the at least two pieces of user identity information are sorted, the at least two pieces of user identity information can be parsed based on a predetermined sorting rule. For example, the sorting rule of the at least two pieces of user identity information in the continuous text information with which separation string is not removed can be that the merchant account information is sorted before the waiter account information. Therefore, a@163.com and waiter1@163.com can be parsed and used as the merchant account information and account information of the first waiter. If there is no priority order, a@163.com, waiter1@163.com, and waiter2@163.com can be parsed and used as merchant account information, account information of a first waiter, account information of a second waiter, or can be parsed and used as the merchant account information, account information of a second waiter, and account information of a first waiter. However, if there is a priority order, and assume that priority of the first waiter is

higher than priority of the second waiter, a@163.com, waiter1@163.com, and waiter2@163.com can be parsed and used as the merchant account information, the account information of the first waiter, and the account information of the second waiter.

[0061] In sum, according to the information acquisition method provided in the previous implementation, at least two pieces of user identity information can be obtained by performing one recognition operation. This can improve efficiency of obtaining at least two pieces of user identity information when user identity information is obtained by recognizing the target information, thereby improving efficiency of performing a service operation on at least two pieces of user identity information.

[0062] FIG. 3 is a flowchart illustrating an information processing method, according to still another implementation of the present application. The processing method can be performed by a device that has processing capabilities such as a server, a system, or an apparatus. As shown in FIG. 3, the payment method can include the following steps.

[0063] Step 310: Recognize pre-generated target information to obtain continuous text information.

[0064] In this implementation, for example, the pre-generated target information is a QR code. The QR code can be generated by a payment system of a payee or peer instant messaging software (for example, WeChat or QQ), so that a payor or a party adding a friend can scan the QR code.

[0065] For example, when the payor pays the payee, a QR code generated by the payee can be recognized by using a "Scan" function in a payment client, so as to obtain the continuous text information.

[0066] For another example, when a party adds another party to the friend list, a QR code generated by the another party can be recognized by using a "Scan" function in a client of an instant messaging software to obtain the continuous text information.

[0067] For example, when the continuous text information includes three pieces of account information combined by using a separation string "#", the continuous text information can be a@163.com#waiter1@163.com#waiter2@163.com.

[0068] Step 320: Send the continuous text information to a server, so that the server parses the continuous text information to obtain at least two pieces of user identity information.

[0069] As described in the previous first example, after obtaining the continuous text information, the payment client can send the continuous text information to a payment server. After receiving the continuous text information, the payment server can parse the continuous text information by using the parsing method in step 220, obtain the following three pieces of account information: a@163.com, waiter1@163.com, and waiter2@163.com, and recognize, based on a predetermined sorting rule and priority, the three pieces of account information are merchant account information, account information of a first waiter, and account information of a second waiter.

[0070] As described in the previous example, after obtaining the continuous text information, the client of the instant messaging software can send the obtained continuous text information to a corresponding server; or after receiving the continuous text information, a server of the instant messaging software can parse the continuous text information by using the parsing method in step 220, and obtain the following three pieces of account number information: XXX123, 12345678001, and 497770066.

[0071] Step 330: Receive the at least two pieces of user identity information sent by the server, and display the at least two pieces of user identity information.

[0072] As described in the previous example, after receiving the three pieces of account information, the payment client can display the merchant account information and related information of the two waiters, for example, an avatar, and can uniquely determine a target waiter and account information of the target waiter based on a selection instruction. Here, the payment server can pres-tore a mapping relationship between a target waiter and account information of a target waiter in a storage unit.

[0073] As described in the previous example, after receiving the three pieces of account number information, the client of the instant messaging software can display the three pieces of account number information, and can further display related information of the three pieces of account number information, for example, an avatar and a located region.

[0074] Step 340: Perform a corresponding operation on the at least two pieces of user identity information based on information entered by a second user.

[0075] As described in the previous example, the second user can be the payor. The payment client can receive a first payment amount corresponding to the merchant account information and a proportion of a second payment amount corresponding to

waiter account information to the first payment amount entered by the payor; or a payment amount corresponding to each piece of account information. After receiving information entered by the payor, the payment client can send the information to the payment server. The payment server determines the payment amount corresponding to each piece of account information based on the received information. After determining the payment amount corresponding to each piece of account information, the payment server performs a payment operation based on the determined payment amount corresponding to each piece of account information or a final payment amount corresponding to each piece of account information. Therefore, when account information is obtained by recognizing the target information, at least two pieces of account information are obtained by performing one recognition operation, and the payment operation is simultaneously performed on the at least two pieces of account information, thereby improving efficiency of performing the payment operation on the at least two pieces of account information.

[0076] As described in the previous example, the second user can be the party adding a friend. The information entered by the second user can be an instruction for adding specific account number information to a friend list, or can be an instruction for giving up adding specific account number information to a friend list.

[0077] FIG. 4 is a flowchart illustrating a payment method, according to yet another implementation of the present application. The payment method can be performed by a device that has processing capabilities, such as a server, a system, or an apparatus, for example, a payment client. As shown in FIG. 4, the payment method can include the following steps.

[0078] Step 410: Recognize pre-generated target information to obtain continuous text information.

[0079] In this implementation, for example, the pre-generated target information is a QR code. The QR code can be generated by a payee by using a payment system. To help a payor to scan the QR code, the payee can print the QR code and attach to a place such as a wall of a shop or a counter near a cashier.

[0080] When the payor pays the payee, the payor can recognize, by using a "Scan" function in the payment client, the QR code printed on the wall of the shop or at the place near the cashier, to obtain the continuous text information.

[0081] For example, when the continuous text information includes three pieces of account information combined by using a separation string "#", the continuous text

information can be a@163.com#waiter1@163.com#waiter2@163.com.

[0082] Step 420: Send the continuous text information to a payment server, so that the payment server parses the continuous text information to obtain at least two pieces of account information.

[0083] After obtaining the continuous text information, the payment client can send the continuous text information to the payment server. After receiving the continuous text information, the payment server can parse the continuous text information by using the parsing method in step 220, obtain the following three pieces of account information: a@163.com, waiter1@163.com, and waiter2@163.com, and recognize, based on a predetermined sorting rule and priority, the three pieces of account information are merchant account information, account information of a first waiter, and account information of a second waiter.

[0084] Step 430: Receive the at least two pieces of account information sent by the payment server, and display the at least two pieces of account information.

[0085] As described in the previous example, after receiving the three pieces of account information, the payment client can display a page shown in FIG. 5. The page can be displayed by using a display interface, and can include two areas, a merchant area and a tip area. The merchant area displays the merchant account information, and the tip area displays related information of the two waiters by using a drop-down box, for example, an avatar. The payment client can receive a selection instruction from the drop-down box, and send the received selection instruction to the payment server. The payment server can uniquely determine a target waiter and account information of the target waiter. In addition, the payment server can pre-store a mapping relationship between a target waiter and account information of a target waiter in a storage unit.

[0086] Step 440: Determine a payment amount corresponding to each piece of account information based on information entered by a payor.

[0087] The information entered by the payor includes: a first payment amount corresponding to a piece of account information and a proportion of a second payment amount corresponding to account information other than the first payment amount; or the payment amount corresponding to each piece of account information.

[0088] In FIG. 5, the payment client can receive a payment amount corresponding to the merchant account information through a text box in the merchant area, and can determine, by using a radio button in the tip area, whether a payment proportion or a payment amount is entered by the payor. When an instruction for entering the

payment amount is received and sent to the payment server, the payment server can directly determine the payment amount corresponding to each piece of account information based on a payment amount received from a text box corresponding to the payment amount. When an instruction for entering the payment proportion is received and sent to the payment server, the payment server can determine the payment amount corresponding to each piece of account information based on a proportion received from a text box corresponding to the payment proportion and the payment amount in the merchant area.

[0089] Indeed, in certain applications, the tip area in FIG. 5 can not include the radio button, and a proportion value is predetermined by the payment server. When receiving the payment amount that corresponds to the merchant account information sent by the payment client, the payment server determines the payment amount corresponding to each piece of account information based on the payment amount corresponding to the merchant account information and the predetermined proportion value. Alternatively, when directly receiving the payment amount that corresponds to each piece of account information entered by the payor, the payment server can preset a share percentage. That is, a share is determined based on a payment amount corresponding to the waiter's account and the share percentage. Afterwards, the share is added to the payment amount corresponding to the merchant's account to obtain a final payment amount corresponding to the merchant's account. The share is deducted from the payment amount corresponding to the waiter's account to obtain a final payment amount corresponding to the waiter's account.

[0090] In addition, it is worthwhile to note that when a tip is paid to a plurality of waiters, one or more drop-down boxes can be further added to a shopping area in FIG. 4. Other waiters and account information of the other waiters are determined based on a selection instruction received from the added drop-down box.

[0091] Step 450: Perform a payment operation based on the payment amount corresponding to each piece of account information.

[0092] After determining the payment amount corresponding to each piece of account information, the payment server performs a payment operation based on the determined payment amount corresponding to each piece of account information or a final payment amount corresponding to each piece of account information. Therefore, when account information is obtained by recognizing the target information, at least two pieces of account information are obtained by performing one recognition

operation, and the payment operation is simultaneously performed on the at least two pieces of account information, thereby improving efficiency of performing the payment operation on the at least two pieces of account information.

[0093] Corresponding to the information generation method, an implementation of the present application further provides an information generation apparatus. As shown in FIG. 6, the generation apparatus includes a receiving unit 601, a combination unit 602, and a generation unit 603.

[0094] The receiving unit 601 is configured to receive an information generation instruction entered by a first user, where the information generation instruction includes at least two pieces of user identity information.

[0095] The combination unit 602 is configured to combine, in a predetermined method, the at least two pieces of user identity information received by the receiving unit 601, to obtain continuous text information, where the at least two pieces of user identity information in the continuous text information are separated by a separation string, and the separation string is a predefined character or character combination.

[0096] The combination unit 602 is configured to: sort the at least two pieces of user identity information based on a predetermined sorting rule; and combine the sorted at least two pieces of user identity information in the predetermined method, to obtain the continuous text information.

[0097] The generation unit 603 is configured to generate target information based on a predetermined algorithm and the continuous text information obtained by the combination unit 602.

[0098] The target information includes image information or sound information.

[0099] Functions of each functional module of the apparatus in this implementation of the present application can be implemented by using steps in the previous method implementations. Therefore, specific working process of the apparatus provided in the present application is omitted here to avoid duplication.

[0100] According to the information generation apparatus provided in this implementation of the present application, the receiving unit 601 receives the information generation instruction entered by the first user, where the information generation instruction includes at least two pieces of user identity information; the combination unit 602 combines the at least two pieces of user identity information in the predetermined method, to obtain the continuous text information, where the at least two pieces of user identity information in the continuous text information are

separated by the separation string, and the separation string is a predefined character or character combination; and the generation unit 603 generates the target information based on the predetermined algorithm and the continuous text information. Therefore, the target information can include at least two pieces of user identity information. This can improve efficiency of obtaining at least two pieces of user identity information when user identity information is obtained by recognizing the target information, thereby improving efficiency of performing a service operation on at least two pieces of user identity information.

[0101] Corresponding to the information acquisition method, an implementation of the present application further provides an information acquisition apparatus. As shown in FIG. 7, the acquisition apparatus includes a recognition unit 701 and a parsing unit 702.

[0102] The recognition unit 701 is configured to recognize pre-generated target information to obtain continuous text information, where the continuous text information includes at least two pieces of user identity information, the at least two pieces of user identity information are separated by a separation string, and the separation string is a predefined character or character combination.

[0103] The parsing unit 702 is configured to parse the continuous text information obtained by the recognition unit 701, to obtain the at least two pieces of user identity information.

[0104] The parsing unit 702 is configured to: remove the separation string from the continuous text information, where continuous text information obtained after the separation string is removed includes at least two pieces of sub-text information; and use the at least two pieces of sub-text information as the at least two pieces of user identity information.

[0105] Functions of each functional module of the apparatus in this implementation of the present application can be implemented by using steps in the previous method implementations. Therefore, specific working process of the apparatus provided in the present application is omitted here to avoid duplication.

[0106] According to the information acquisition apparatus provided in this implementation of the present application, the recognition unit 701 recognizes the pre-generated target information to obtain the continuous text information, where the continuous text information includes at least two pieces of user identity information, the at least two pieces of user identity information are separated by the separation

string, and the separation string is a predefined character or character combination; and the parsing unit 702 parses the continuous text information to obtain the at least two pieces of user identity information. Therefore, at least two pieces of user identity information can be obtained by performing one recognition operation. This can improve efficiency of obtaining at least two pieces of user identity information when user identity information is obtained by recognizing the target information, thereby improving efficiency of performing a service operation on at least two pieces of user identity information.

[0107] Corresponding to the information processing method, an implementation of the present application further provides an information processing apparatus. As shown in FIG. 8, the processing apparatus includes a recognition unit 801, a sending unit 802, a receiving unit 803, and an execution unit 804.

[0108] The recognition unit 801 is configured to recognize pre-generated target information to obtain continuous text information.

[0109] The sending unit 802 is configured to send the continuous text information obtained by the recognition unit 801 to a server, so that the server parses the continuous text information to obtain at least two pieces of user identity information.

[0110] The receiving unit 803 is configured to: receive the at least two pieces of user identity information sent by the server, and display the at least two pieces of user identity information.

[0111] The execution unit 804 is configured to perform a corresponding operation on the at least two pieces of user identity information based on information entered by a second user.

[0112] Functions of each functional module of the apparatus in this implementation of the present application can be implemented by using steps in the previous method implementations. Therefore, specific working process of the apparatus provided in the present application is not described here.

[0113] According to the information processing apparatus provided in this implementation of the present application, the recognition unit 801 recognizes the pre-generated target information to obtain the continuous text information; the sending unit 802 sends the continuous text information to the server, so that the server parses the continuous text information to obtain the at least two pieces of user identity information; the receiving unit 803 receives the at least two pieces of user identity information sent by the server, and displays the at least two pieces of user identity

information; and the execution unit 804 is configured to perform the corresponding operation on the at least two pieces of user identity information based on the information entered by the second user. Therefore, when user identity information is obtained by recognizing the target information, at least two pieces of user identity information are obtained by performing one recognition operation, and a corresponding operation is performed on the at least two pieces of user identity information, thereby improving efficiency of performing a service operation on at least two pieces of user identity information.

[0114] Corresponding to the payment method, an implementation of the present application further provides a payment client. As shown in FIG. 9, the payment client includes a recognition unit 901, a sending unit 902, a receiving unit 903, a determining unit 904, and an execution unit 905.

[0115] The recognition unit 901 is configured to recognize pre-generated target information to obtain continuous text information.

[0116] The sending unit 902 is configured to send the continuous text information obtained by the recognition unit 901 to a payment server, so that the payment server parses the continuous text information to obtain at least two pieces of account information.

[0117] The receiving unit 903 is configured to: receive the at least two pieces of account information sent by the payment server, and display the at least two pieces of account information.

[0118] The determining unit 904 is configured to determine a payment amount corresponding to each piece of account information based on information entered by a payor.

[0119] The information entered by the payor includes: a first payment amount corresponding to a piece of account information and a proportion of a second payment amount corresponding to other account information to the first payment amount; or the payment amount corresponding to each piece of account information.

[0120] The execution unit 905 is configured to perform a payment operation based on the payment amount that corresponds to each piece of account information and that is determined by the determining unit 904.

[0121] Functions of each functional module of the apparatus in this implementation of the present application can be implemented by using steps in the previous method implementations. Therefore, specific working process of the

apparatus provided in the present application is not described here.

[0122] According to the payment client provided in this implementation of the present application, the recognition unit 901 recognizes the pre-generated target information to obtain the continuous text information; the sending unit 902 sends the continuous text information to the payment server, so that the payment server parses the continuous text information to obtain the at least two pieces of account information; the receiving unit 903 receives the at least two pieces of account information sent by the payment server, and displays the at least two pieces of account information; the determining unit 904 determines the payment amount corresponding to each piece of account information based on the information entered by the payor; and the execution unit 905 performs the payment operation based on the payment amount corresponding to each piece of account information. Therefore, when account information is obtained by recognizing the target information, at least two pieces of account information are obtained by performing one recognition operation, and the payment operation is simultaneously performed on the at least two pieces of account information, thereby improving efficiency of performing the payment operation on the at least two pieces of account information.

[0123] A person skilled in the art can be further aware that, in combination with the examples described in the implementations disclosed in the present specification, objects and algorithm steps can be implemented by electronic hardware, computer software, or a combination of the electronic hardware and the computer software. To clearly describe the interchangeability between the hardware and the software, the previous has generally described structure and steps of each example based on functions. Whether the functions are performed by hardware or software depends on particular applications and design constraint conditions of the technical solutions. A person skilled in the art can use different methods to implement the described functions for each particular application, but it should not be considered that the implementation goes beyond the scope of the present application.

[0124] Steps of methods or algorithms described in the implementations disclosed in this specification can be implemented by hardware, a software module executed by a processor, or a combination of the hardware and the software module. The software module can reside in a random access memory (RAM), a memory, a read-only memory (ROM), an electrically programmable ROM, an electrically erasable programmable ROM, a register, a hard disk, a removable disk, a CD-ROM, or any

other form of storage medium known in the art.

[0125] In the previous detailed descriptions, the objective, technical solutions, and benefits of the present application are further described in detail. It should be understood that the previous descriptions are merely implementations of the present application, but are not intended to limit the protection scope of the present application. Any modification, equivalent replacement, or improvement made without departing from the spirit and principle of the present application should fall within the protection scope of the present application.

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CLAIMS

1. A computer-implemented method for generating a QR code encoding user identity information, wherein the method comprises:

receiving an information generation instruction entered by a first user, wherein the information generation instruction comprises at least two pieces of user identity information (S110);

combining the at least two pieces of user identity information using a predetermined method to obtain continuous text information, wherein the at least two pieces of user identity information in the continuous text information are separated by a separation string, and the separation string is a predefined character or character combination (S120); and

generating the QR code by applying a predetermined QR generation algorithm on the continuous text information (S130), wherein the QR code is configured to be scanned by a payment client to obtain the at least two pieces of user identity information such that a payment operation can be made to at least two accounts associated with the at least two pieces of user identity information simultaneously.

2. The method of claim 1, wherein the combining the at least two pieces of user identity information using the predetermined method, to obtain continuous text information includes:

sorting the at least two pieces of user identity information based on a predetermined sorting rule; and

combining the sorted at least two pieces of user identity information using the predetermined method to obtain the continuous text information.

3. A computer-implemented method for decoding a QR code, the method comprising:

scanning a pre-generated QR code to obtain continuous text information, wherein the continuous text information comprises at least two pieces of user identity information such that a payment operation can be made to at least two accounts associated with the at least two pieces of user identity information simultaneously, wherein the at least two pieces of user identity information are separated by a separation string and the separation string is a predefined character or character combination (S210); and

parsing the continuous text information to obtain the at least two pieces of user identity

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information (S220).

4. The method of claim 3, wherein the parsing the continuous text information to obtain the at least two pieces of user identity information comprises:

removing the separation string from the continuous text information, wherein continuous text information obtained after the separation string is removed comprises at least two pieces of sub-text information; and

using the at least two pieces of sub-text information as the at least two pieces of user identity information.

5. The method of claim 3, wherein the continuous text information is sent to a server, so that the server parses the continuous text information to obtain at least two pieces of user identity information, and wherein the method further comprises:

receiving the at least two pieces of user identity information sent by the server, and displaying the at least two pieces of user identity information (S330); and

performing a corresponding operation on the at least two pieces of user identity information based on information entered by a second user (S340).

6. The method of claim 4, wherein the continuous text information is sent to a payment server, so that the payment server parses the continuous text information to obtain at least two pieces of account information, and wherein the method further comprises:

receiving the at least two pieces of account information sent by the payment server, and displaying the at least two pieces of account information (S430);

determining a payment amount corresponding to each piece of account information based on information entered by a payer (S440); and

performing a payment operation based on the payment amount corresponding to each piece of account information (S450).

7. The method of claim 6, wherein the information entered by the payer comprises a first payment amount corresponding to a piece of account information and a proportion of a second payment amount corresponding to other account information to the first payment amount; or a

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payment amount corresponding to each piece of account information.

8. An information generation apparatus, wherein the generation apparatus comprises multiple units configured to perform the method of any one of claims 1 to 7.

9. A system comprising a payment server configured to perform the method of any one of claims 1 to 2, and a payment client configured to perform the method of any of claims 3 to 7.

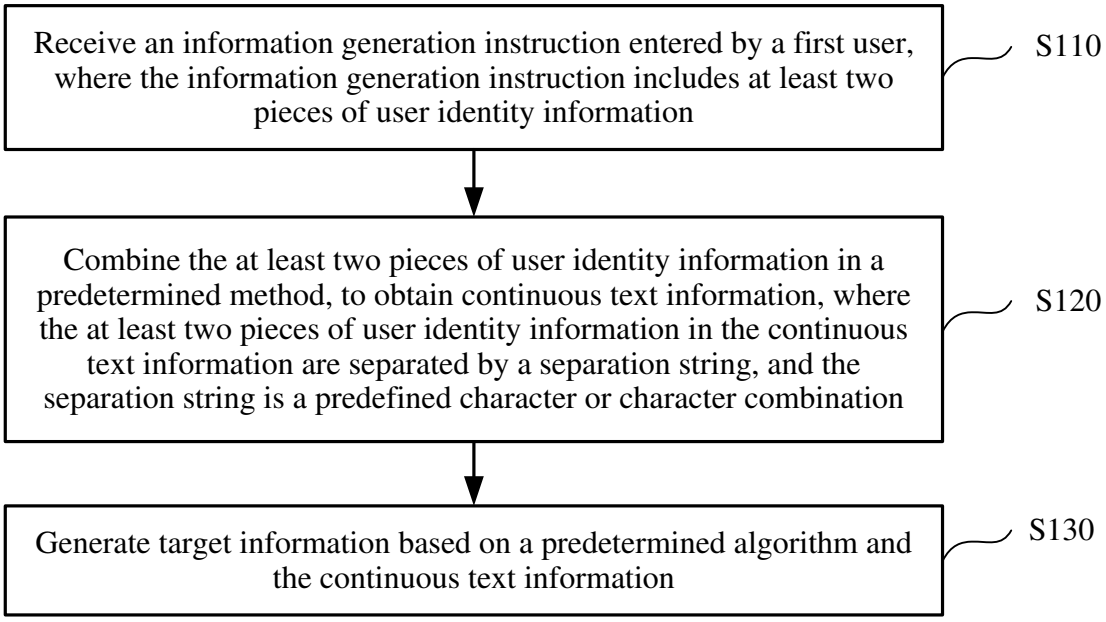
Receive an information generation instruction entered by a first user, where the information generation instruction includes at least two pieces of user identity information
S110
Combine the at least two pieces of user identity information in a predetermined method, to obtain continuous text information, where the at least two pieces of user identity information in the continuous text information are separated by a separation string, and the separation string is a predefined character or character combination
S120
Generate target information based on a predetermined algorithm and the continuous text information
S130

FIG. 1

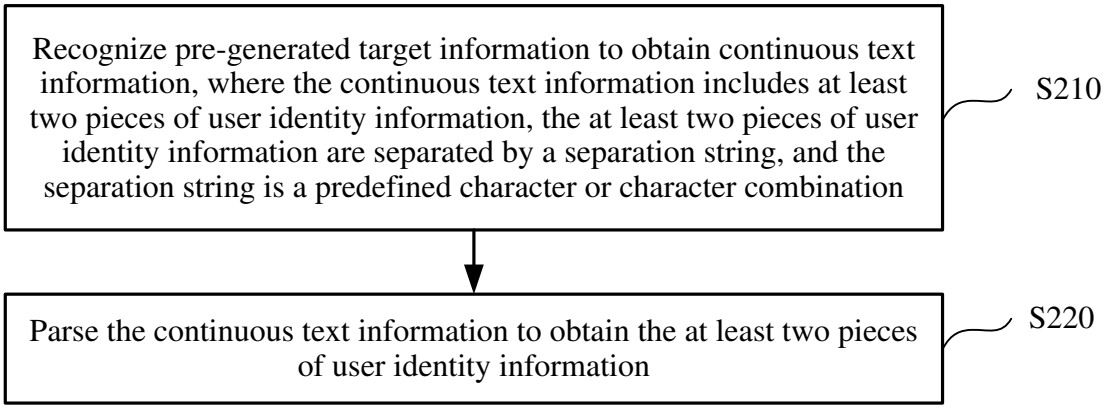
Recognize pre-generated target information to obtain continuous text information, where the continuous text information includes at least two pieces of user identity information, the at least two pieces of user identity information are separated by a separation string, and the separation string is a predefined character or character combination
S210
Parse the continuous text information to obtain the at least two pieces of user identity information
S220

FIG. 2

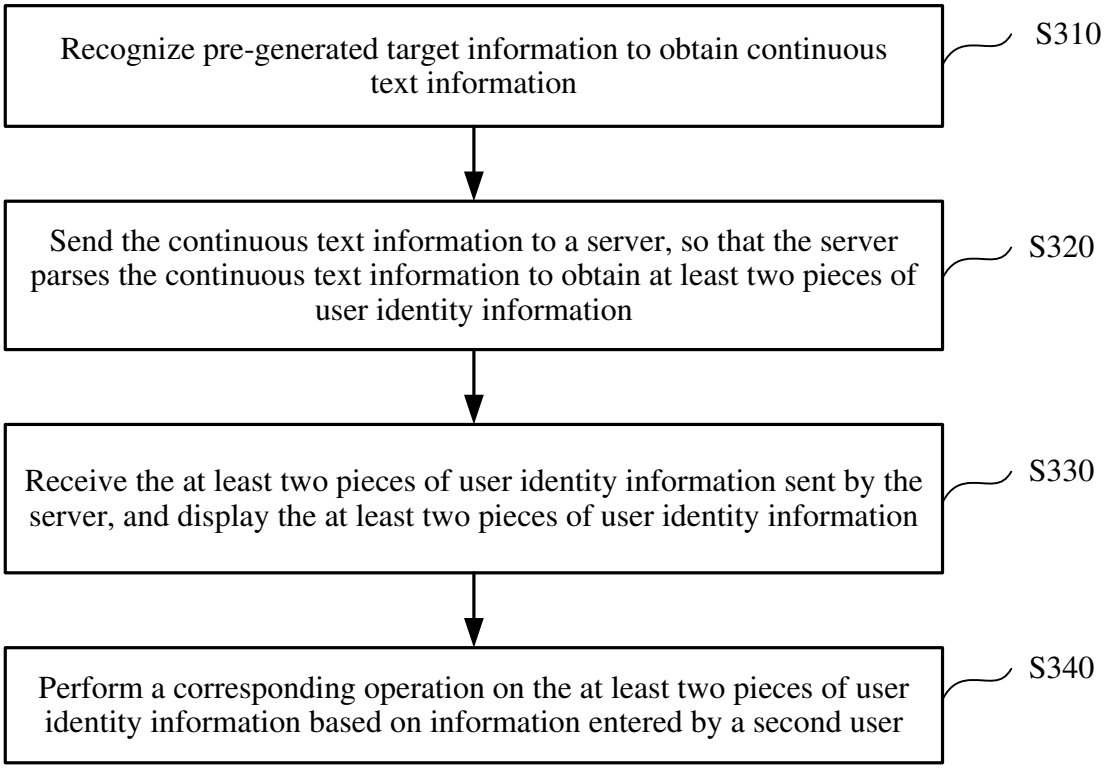
Recognize pre-generated target information to obtain continuous text information
S310
Send the continuous text information to a server, so that the server parses the continuous text information to obtain at least two pieces of user identity information
S320
Receive the at least two pieces of user identity information sent by the server, and display the at least two pieces of user identity information
S330
Perform a corresponding operation on the at least two pieces of user identity information based on information entered by a second user
S340

FIG. 3

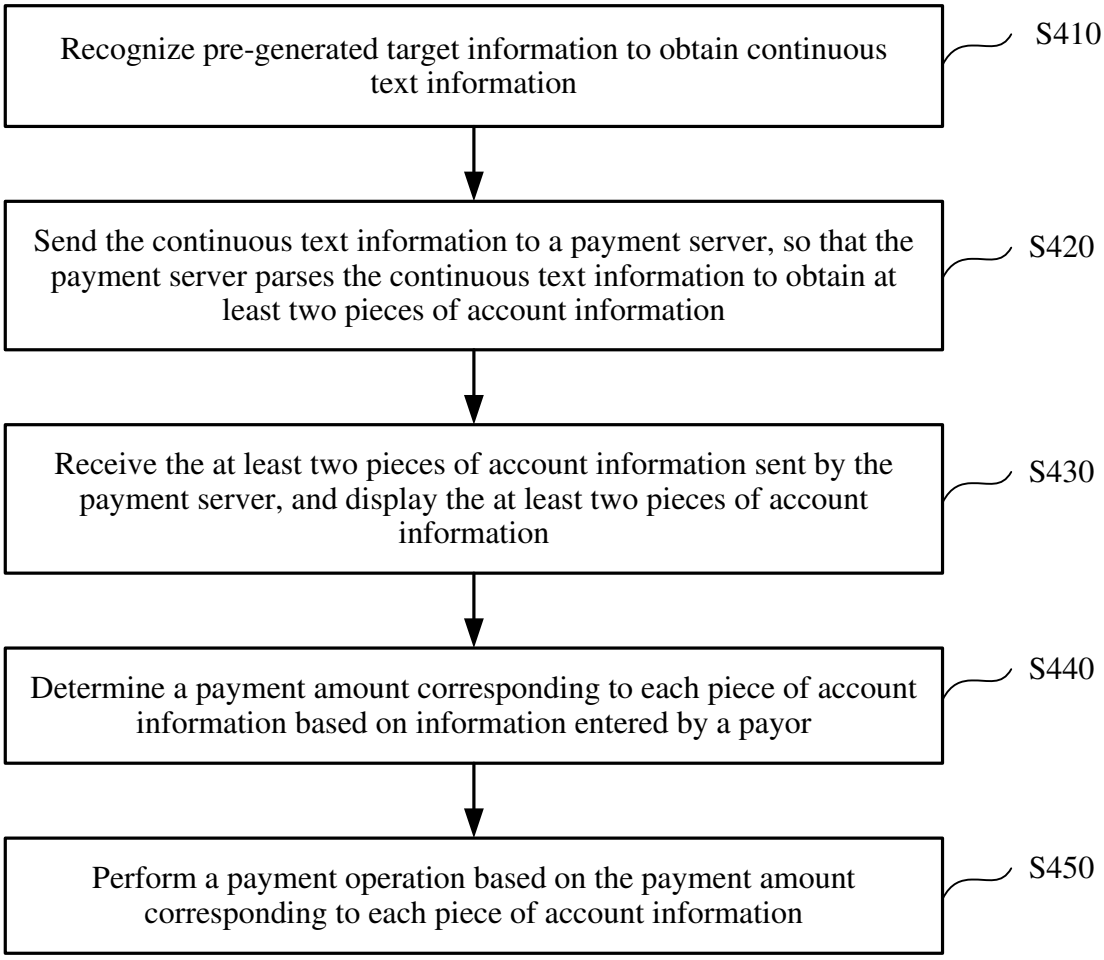
Recognize pre-generated target information to obtain continuous text information
S410
Send the continuous text information to a payment server, so that the payment server parses the continuous text information to obtain at least two pieces of account information
S420
Receive the at least two pieces of account information sent by the payment server, and display the at least two pieces of account information
S430
Determine a payment amount corresponding to each piece of account information based on information entered by a payor
S440
Perform a payment operation based on the payment amount corresponding to each piece of account information
S450

FIG. 4

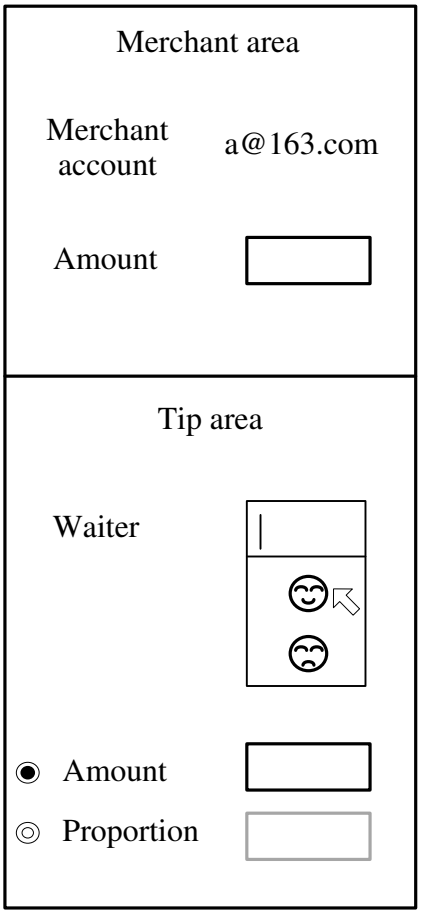
Merchant area
Merchant account
a@163.com
Amount
Tip area
Waiter
Amount
Proportion

FIG. 5

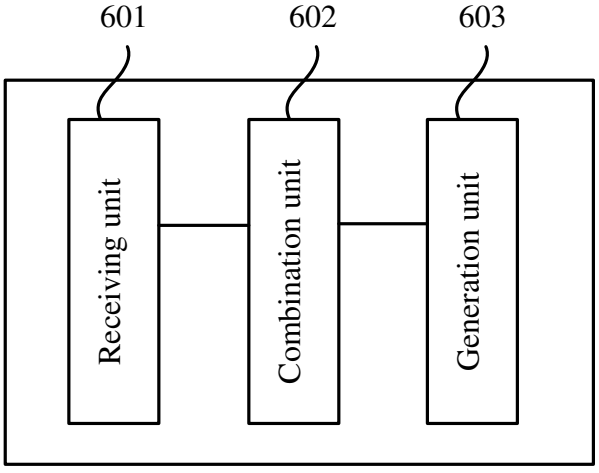
601
602
603
Receiving unit
Combination unit
Generation unit

FIG. 6

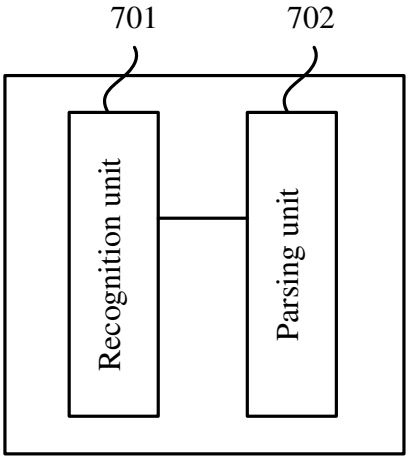
701
702
Recognition unit
Parsing unit

FIG. 7

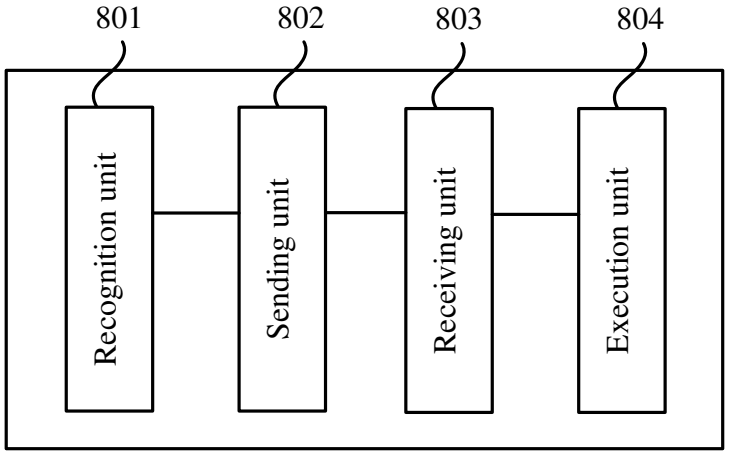
801
802
803
804
Recognition unit
Sending unit
Receiving unit
Execution unit

FIG. 8

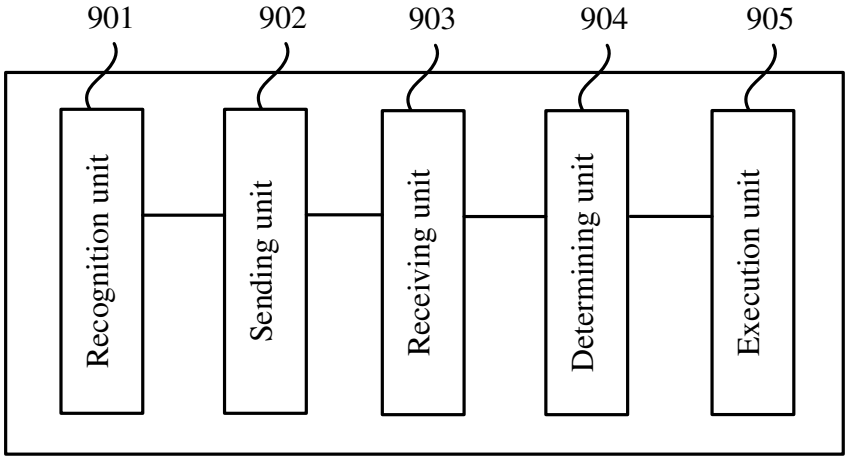
901
902
903
904
905
Recognition unit
Sending unit
Receiving unit
Determining unit
Execution unit

FIG. 9