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## SEAMLESS EXPENSE SHARING FOR REMOTE PURCHASES”

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**TITLE: “SEAMLESS EXPENSE SHARING FOR  
REMOTE PURCHASES”**

**VISA**

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## **TECHNICAL FIELD**

[0001] This disclosure relates generally to the field of payment processing. More particularly, the disclosure provides seamless expense sharing for remote purchases.

## **BACKGROUND**

[0002] Generally, various technologies focus on simplifying the user's ability to make payments using credit cards and accumulate rewards. In other words, credit cards provided by banks allow customers to borrow funds within a pre-approved credit limit. It enables customers to make purchase transactions on goods and services.

[0003] Further, a virtual credit card may help seamlessly transact from any location, without revealing details of the primary card to the vendors. Like a regular debit card, all expenses are eligible for reward points according to terms set by the bank. One of the existing technologies discloses a method which may provide the details of reward points associated with the plurality cards of the user. The user may avail the associated reward points based on the processed transactions. However, there is a need to carry the user's or customer's credit card to process the payment and obtain the reward points associated with it.

[0004] Thus, the payment industry is exploring a method that helps the user to obtain the reward without making use of physical credit cards. In other words, there is a need for technology that may help the user to process his/her credit card in any shopping environment and obtain the rewards associated with the processed payment even when there is no physical credit card with the user.

## **SUMMARY**

[0005] According to some non-limiting embodiments, the present disclosure discloses a technique for payment processing for seamless expense sharing for remote purchases. The objective of the present disclosure is to process the payment in any shopping environment which may enable a user to accumulate the reward points even when there is no physical credit card with the user. In other words, even when there is no physical credit card or any other card with the user, the present disclosure may help the user to claims benefits such as reward points,

cashback, discounts, etc. by processing the payment using the generated QR code. As the result, the present disclosure helps the user to accumulate reward points by processing the payment same as in credit card, even when there is no physical card present with the user for payment at the desired location.

**[0006]** The present disclosure may focus on solving the below-mentioned real-world problems such as but not limited thereto i.e., when the user visits any store for shopping, but he/she forgets to get his/her credit card which may be provide some benefits in one or more ways such as discount, cashback, etc. In such scenarios, the only option is that the user may process the transaction through cash or using any other payment method which may not provide such benefits to the user. However, if there is a mechanism which may help the user to process the transaction without the need physical card, then the user may use his/her virtual card details and also may obtain the benefits such as reward points, cashback, gift voucher and the like. In an alternative embodiment of the present disclosure, the subject matter provides a solution to a scenario which may be when the user's friends or family members may shop on behalf of the user and may use user's credit card to make payments. For instance, when the user's friends or family visit any shop or if there is any deal but does not have any credit card or money. However, the user may process the transaction on behalf of his friends and family only using bank transfer or via UPI payment as the user does not have his/her credit card with him. As a result, the user may also lose his reward points.

**[0007]** Thus, to overcome the above-mentioned problems, the present disclosure focuses to provide a solution in which the user may process a transaction or make a payment via his/her credit card even when he/she does not have physical credit card associated with him or at a merchant location.

**[0008]** The present disclosure provides a solution by generating a dynamic QR code that may be shared with family or friends. The steps are as follows: initially the user may register his/her credit card(s) in an application. When the credit card details of the user are registered, a dynamic QR code may be generated using a Software Development Kit (SDK). The QR code which is generated may have pre-approved amount which the user may use instantly to process his/her payment when there is no physical credit card with him. The user presents the generated QR code to the merchant and process the transaction when there is no physical credit/debit card associated with the user. In an alternative embodiment, the user may share the generated dynamic QR code via one or more platforms such as messages or email and the like so that the

user's friend or family member may process the transaction. When the QR code is presented to the merchant, a POS associated with the merchant may send the QR code for further authorization process to a third party, for example, Visa. When the third party may verify the details and submit the details to the issuer for final authorization. The issuer may generate a link by which the user may access the link and may process the payment. Once the transaction is complete, the issuer may send the transaction complete message to the user.

**[0009]** In some non-limiting embodiments, the present disclosure focuses to provide seamless expense sharing for remote purchases. To overcome the problem of when the user forgets to carry the physical credit or any payment card from which the user may obtain benefits may be missed. The present disclosure discloses a mechanism which may help the user to process a payment without making use of physical credit cards. As a result, the user may still obtain the benefits even when he does not pay using his credit cards but manages to get the associated benefits.

**[0010]** These and other features and characteristics of the present invention, as well as the methods of operation and functions of the related elements of structures and the combination of parts and economies of manufacture, will become more apparent upon consideration of the following description and the appended claims with reference to the accompanying drawings, all of which form a part of this specification, wherein like reference numerals designate corresponding parts in the various figures. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only and are not intended as a definition of the limits of the invention. As used in the specification and the claims, the singular form of "a," "an," and "the" include plural referents unless the context clearly dictates otherwise.

#### BRIEF DESCRIPTION OF THE DRAWINGS AND APPENDICES

**[0011]** Additional advantages and details of non-limiting embodiments are explained in greater detail below with reference to the exemplary embodiments that are illustrated in the accompanying schematic figures, in which:

**[0012]** FIG.1 discloses an exemplary architecture of a system that may provide seamless expense sharing for remote purchases, according to some principles of the present disclosure;

[0013] FIG.2 shows an exemplary QR code generated using the credential of the user’s card, in accordance with some embodiments of the present disclosure;

[0014] FIG.3 discloses an example illustrating seamless expense sharing for remote purchases, according to some principles of the present disclosure;

[0015] FIG. 4 is a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure.

### **DESCRIPTION OF THE DISCLOSURE**

[0016] In the present document, the word "exemplary" is used herein to mean "serving as an example, instance, or illustration." Any embodiment or implementation of the present subject matter described herein as "exemplary" is not necessarily to be construed as preferred or advantageous over other embodiments.

[0017] While the disclosure is susceptible to various modifications and alternative forms, specific embodiment thereof has been shown by way of example in the drawings and will be described in detail below. It should be understood, however that it is not intended to limit the disclosure to the particular forms disclosed, but on the contrary, the disclosure is to cover all modifications, equivalents, and alternative falling within the spirit and the scope of the disclosure.

[0018] The terms “comprises”, “comprising”, or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a setup, device or method that comprises a list of components or steps does not include only those components or steps but may include other components or steps not expressly listed or inherent to such setup or device or method. In other words, one or more elements in a device or system or apparatus preceded by “comprises... a” does not, without more constraints, preclude the existence of other elements or additional elements in the device or system or apparatus.

[0019] The terms "an embodiment", "embodiment", "embodiments", "the embodiment", "the embodiments", "one or more embodiments", "some embodiments", and "one embodiment" mean "one or more (but not all) embodiments of the invention(s)" unless expressly specified otherwise.

**[0020]** The terms "including", "comprising", "having" and variations thereof mean "including but not limited to", unless expressly specified otherwise.

**[0021]** As used herein, the terms "communication" and "communicate" may refer to the reception, receipt, transmission, transfer, provision, and/or the like of information (e.g., data, signals, messages, instructions, commands, and/or the like). For one unit (e.g., a device, a system, a component of a device or system, combinations thereof, and/or the like) to be in communication with another unit means that the one unit is able to directly or indirectly receive information from and/or transmit information to the other unit. This may refer to a direct or indirect connection (e.g., a direct communication connection, an indirect communication connection, and/or the like) that is wired and/or wireless in nature. Additionally, two units may be in communication with each other even though the information transmitted may be modified, processed, relayed, and/or routed between the first and second unit. For example, a first unit may be in communication with a second unit even though the first unit passively receives information and does not actively transmit information to the second unit. As another example, a first unit may be in communication with a second unit if at least one intermediary unit (e.g., a third unit located between the first unit and the second unit) processes information received from the first unit and communicates the processed information to the second unit. In some non-limiting embodiments, a message may refer to a network packet (e.g., a data packet and/or the like) that includes data. It will be appreciated that numerous other arrangements are possible.

**[0022]** As used herein, the term "merchant" may refer to an individual or entity that provides goods and/or services, or access to goods and/or services, to customers based on a transaction, such as a payment transaction. The term "merchant" or "merchant system" may also refer to one or more computer systems operated by or on behalf of a merchant, such as a server computer executing one or more software applications. A "point-of-sale (POS) system," as used herein, may refer to one or more computers and/or peripheral devices used by a merchant to engage in payment transactions with customers, including one or more card readers, near-field communication (NFC) receivers, RFID receivers, and/or other contactless transceivers or receivers, contact-based receivers, payment terminals, computers, servers, input devices, and/or other like devices that can be used to initiate a payment transaction.

**[0023]** As used herein, the term “computing device” may refer to one or more electronic devices that are configured to directly or indirectly communicate with or over one or more networks. A computing device may be a mobile or portable computing device, a desktop computer, a server, and/or the like. Furthermore, the term “computer” may refer to any computing device that includes the necessary components to receive, process, and output data, and normally includes a display, a processor, a memory, an input device, and a network interface. A “computing system” may include one or more computing devices or computers. An “application” or “Application Program Interface” (API) refers to computer code or other data stored on a computer-readable medium that may be executed by a processor to facilitate the interaction between software components, such as a client-side front-end and/or server-side back-end for receiving data from the client. An “interface” refers to a generated display, such as one or more graphical user interfaces (GUIs) with which a user may interact, either directly or indirectly (e.g., through a keyboard, mouse, touchscreen, etc.). Further, multiple computers, e.g., servers, or other computerized devices, such as an autonomous vehicle including a vehicle computing system, directly or indirectly communicating in the network environment may constitute a “system” or a “computing system”.

**[0024]** It will be apparent that systems and/or methods, described herein, can be implemented in different forms of hardware, software, or a combination of hardware and software. The actual specialized control hardware or software code used to implement these systems and/or methods is not limiting of the implementations. Thus, the operation and behavior of the systems and/or methods are described herein without reference to specific software code, it being understood that software and hardware can be designed to implement the systems and/or methods based on the description herein.

**[0025]** FIG. 1 discloses an exemplary architecture of a system that may provide seamless expense sharing for remote purchases, configured according to some principles of the present disclosure.

The architecture may comprise a merchant 105, a third-party server 107, an issuer 109, a user 101 associated with a user device 103. For instance, the user may have one or more cards that may be used to process the transaction or any payment. The card of the user may be a credit card, debit card, a gift card, a smartcard, smart media, a payroll card, and the like. Further, the user device may be a smart phone or a tab and the like.



**[0026]** When the user wishes to process any transaction, but has not got the credit card from which he/she may obtain benefits such as reward points, cashback or gift cards then the user may login to an application where he may enter card details. For instance, the card details card number, CVV of the card and the expiry date of the card. The user may also provide the amount that is required for processing the transaction, Based on the above mentioned details of the card, a system herewith may also be referred to as the user device may generate the QR code instantly. A QR code is a type of two-dimensional matrix barcode. A barcode is a machine-readable optical image that contains information specific to the labelled item. In practice, QR codes contain data for a locator, an identifier, and web tracking. When the QR code is presented to a POS associated with the merchant, the merchant system may send the presented QR code to the third party server, the third party server may verify the details of the user associated with the card and make send to the issuer for further verification process. Once the issuer approves the credentials of the user, the issuer may send a message to the user as shown in figure 1A. For instance, the message may comprise the link which the user may access and process the transaction. In an alternative embodiment, the link may comprise the verification process in which the user may provide the One Time Password (OTP) and may approve the payment. Once the merchant receives the processed payment, the issuer may send a successful message to the user.

**[0027]** FIG.2 illustrates a process of seamless expense sharing for remote purchases, according to some principles of the present disclosure. In FIG.2, the exemplary embodiment of the subject matter discloses a scenario in which the user may wish to purchase the plurality of products in the shopping environment. However, the user may not have access to his/her physical card. Then the user may provide the system that can seamlessly generate the QR code through which he/she may process the transaction. For QR code generation, the user may provide the amount necessary to process the payment for example, Rs 20000. The user may also have to provide credit card number, CVV number, expiry date of the card as shown in figure 2. When the above-mentioned credentials are provided, the system may generate the QR code. The generated QR code may be presented to the POS of the merchant. The data associated with the QR code may be sent to the third-party server. The third party server may further verify the details for example, credit card number, CVV number, expiry date of the user. When the details such as credit card number, CVV number, expiry date are authorized, then the system may further send the details to the issuer for further verification. The issuer may verify the details and may send an SMS to the user. The SMS or email may comprise of the link which

the user may access to approve the payment by providing the OTP or password. Once the user approves the payment, the amount may be credited to the merchant. Upon successful payment, the issuer may send messages which may indicate successful transaction and may also receive the reward points associated with the transaction amount that may be added to the reward account of the user.

**[0028]** In an alternative embodiment, when friends and family member wants to buy the plurality of products and may use the user credit card. However, the family of the user has no access to physical cards but the user may wish to provide payment support to his friends and family. Then the user may enter credit card details to get dynamic QR code may in an application of the user device. When the user may share the generated QR code which his/her family member or friends presents the generated QR code to the merchant and may process the transaction. The user may share the generated dynamic QR code via one or more platforms such as messages or email and the like so that the user’s friend or family member may process the transaction. When the QR code is presented to the merchant, a POS associated with the merchant may send the QR code for further authorization process to a third party, for example, Visa. When the third party may verify the details and submit the details to the issuer for final authorization. The issuer may generate a link comprising a link where the user may access the link and may process the payment. Once the transaction is complete, the issuer may send the transaction complete message to the user.

**[0029]** FIG.3 shows a flowchart illustrating a method of providing seamless expense sharing for remote purchases, in accordance with some embodiments of the present disclosure.

**[0030]** As illustrated in **FIG. 3**, method **300** includes one or more blocks illustrating a method for performing early detection of discounts, promotions, loyalty. The method **300** may be described in the general context of computer-executable instructions. Generally, computer-executable instructions can include routines, programs, objects, components, data structures, procedures, modules, and functions, which perform functions or implement abstract data types.

**[0031]** The order in which the method **300** is described is not intended to be construed as a limitation, and any number of the described method blocks can be combined in any order to implement the method **300**. Additionally, individual blocks may be deleted from the methods without departing from the scope of the subject matter described herein. Furthermore, the

method **300** can be implemented in any suitable hardware, software, firmware, or combination thereof.

[0032] At **block 301**, the method **300** may include receiving plurality of information associated with the user. The plurality of information may include the card details such as amount that the user wants to process the transaction, card number, CVV of the card and the expiry date of the card.

[0033] At **block 303**, the method **300** may include generating dynamic QR code based on the received plurality of information.

[0034] At **block 305**, the method **300** may include sending the generated QR code to the third-party server for authentication process.

[0035] At **block 307**, the method **300** may include transmitting the plurality of information to the issuer for final authorization.

[0036] At **block 309**, the method **300** may include receiving the link comprising a link where the user may access the link and may process the payment. Once the transaction is complete, the issuer may send the transaction complete message to the user.

[0037] FIG. 4 is a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure. In some embodiments, **FIG.4** illustrates a block diagram of an exemplary computer system **400** for implementing embodiments consistent with the present invention. In some embodiments, the computer system **400** for seamless expense sharing for remote purchases. The computer system **400** may include a central processing unit (“CPU” **402**). The processor **402** may include at least one data processor **402** for executing program components for executing user or system-generated business processes. A user **101** may include a person, a person using a device such as such as those included in this invention, or such a device itself. The processor **402** may include specialized processing units such as integrated system (bus) controllers, memory management control units, floating point units, graphics processing units, digital signal processing units, etc. The processor **402** may be disposed in communication with input devices **411** and output devices **412** via I/O interface **401**. The I/O interface **401** may employ communication protocols/methods such as, without limitation, audio, analog, digital, stereo, IEEE-1394, serial

bus, Universal Serial Bus (USB), infrared, PS/2, BNC, coaxial, component, composite, Digital Visual Interface (DVI), high-definition multimedia interface (HDMI), Radio Frequency (RF) antennas, S-Video, Video Graphics Array (VGA), IEEE 802.n /b/g/n/x, Bluetooth, cellular (e.g., Code-Division Multiple Access (CDMA), High-Speed Packet Access (HSPA+), Global System For Mobile Communications (GSM), Long-Term Evolution (LTE), WiMax, or the like), etc. Using the I/O interface **401**, computer system **400** may communicate with input devices **411** and output devices **412**.

**[0038]** In some embodiments, the processor **402** may be disposed in communication with a communication network **409** via a network interface **403**. The network interface **403** may communicate with the communication network **409**. The network interface **403** may employ connection protocols including, without limitation, direct connect, Ethernet (e.g., twisted pair 10/100/1000 Base T), Transmission Control Protocol/Internet Protocol (TCP/IP), token ring, IEEE 802.11a/b/g/n/x, etc. Using the network interface **403** and the communication network **409**, the computer system **400** may communicate with one or more sensors **105**, and grinder **103**. The communication network **409** can be implemented as one of the different types of networks, such as intranet or Local Area Network (LAN), Closed Area Network (CAN) and such within the vehicle. The communication network **409** may either be a dedicated network or a shared network, which represents an association of the different types of networks that use a variety of protocols, for example, Hypertext Transfer Protocol (HTTP), CAN Protocol, Transmission Control Protocol/Internet Protocol (TCP/IP), Wireless Application Protocol (WAP), etc., to communicate with each other. Further, the communication network **409** may include a variety of network devices, including routers, bridges, servers, computing devices, storage devices, etc. The one or more computing devices **103** may include, but not limited to, a mobile phone, a tablet phone, a laptop and the like. In some embodiments, the processor **402** may be disposed in communication with a memory **405** (e.g., RAM, ROM, etc. not shown in **FIG.4**) via a storage interface **404**. The storage interface **404** may connect to memory **405** including, without limitation, memory drives, removable disc drives, etc., employing connection protocols such as Serial Advanced Technology Attachment (SATA), Integrated Drive Electronics (IDE), IEEE-1394, Universal Serial Bus (USB), fibre channel, Small Computer Systems Interface (SCSI), etc. The memory drives may further include a drum, magnetic disc drive, magneto-optical drive, optical drive, Redundant Array of Independent Discs (RAID), solid-state memory devices, solid-state drives, etc.

[0039] The memory **405** may store a collection of program or database components, including, without limitation, a user interface **406**, an operating system **407**, a web browser **408** etc. In some embodiments, the computer system **400** may store user/application data, such as the data, variables, records, etc. as described in this invention. Such databases may be implemented as fault-tolerant, relational, scalable, secure databases such as Oracle or Sybase.

[0040] The operating system **407** may facilitate resource management and operation of the computer system **400**. Examples of operating systems include, without limitation, APPLE<sup>®</sup> MACINTOSH<sup>®</sup> OS X<sup>®</sup>, UNIX<sup>®</sup>, UNIX-like system distributions (E.G., BERKELEY SOFTWARE DISTRIBUTION<sup>®</sup> (BSD), FREEBSD<sup>®</sup>, NETBSD<sup>®</sup>, OPENBSD, etc.), LINUX<sup>®</sup> DISTRIBUTIONS (E.G., RED HAT<sup>®</sup>, UBUNTU<sup>®</sup>, KUBUNTU<sup>®</sup>, etc.), IBM<sup>®</sup> OS/2<sup>®</sup>, MICROSOFT<sup>®</sup> WINDOWS<sup>®</sup> (XP<sup>®</sup>, VISTA<sup>®</sup>/7/8, 10 etc.), APPLE<sup>®</sup> IOS<sup>®</sup>, GOOGLE<sup>™</sup> ANDROID<sup>™</sup>, BLACKBERRY<sup>®</sup> OS, or the like. The User interface **406** may facilitate display, execution, interaction, manipulation, or operation of program components through textual or graphical facilities. For example, user interfaces may provide computer interaction interface elements on a display system operatively connected to the computer system **400**, such as cursors, icons, check boxes, menus, scrollers, windows, widgets, etc. Graphical User Interfaces (GUIs) may be employed, including, without limitation, Apple<sup>®</sup> Macintosh<sup>®</sup> operating systems' Aqua<sup>®</sup>, IBM<sup>®</sup> OS/2<sup>®</sup>, Microsoft<sup>®</sup> Windows<sup>®</sup> (e.g., Aero, Metro, etc.), web interface libraries (e.g., ActiveX<sup>®</sup>, Java<sup>®</sup>, Javascript<sup>®</sup>, AJAX, HTML, Adobe<sup>®</sup> Flash<sup>®</sup>, etc.), or the like.

[0041] In some embodiments, the computer system **400** may implement the web browser **408** stored program components. The web browser **408** may be a hypertext viewing application, such as MICROSOFT<sup>®</sup> INTERNET EXPLORER<sup>®</sup>, GOOGLE<sup>™</sup> CHROME<sup>™</sup>, MOZILLA<sup>®</sup> FIREFOX<sup>®</sup>, APPLE<sup>®</sup> SAFARI<sup>®</sup>, etc. Secure web browsing may be provided using Secure Hypertext Transport Protocol (HTTPS), Secure Sockets Layer (SSL), Transport Layer Security (TLS), etc. Web browsers **408** may utilize facilities such as AJAX, DHTML, ADOBE<sup>®</sup> FLASH<sup>®</sup>, JAVASCRIPT<sup>®</sup>, JAVA<sup>®</sup>, Application Programming Interfaces (APIs), etc. In some embodiments, the computer system **400** may implement a mail server stored program component. The mail server may be an Internet mail server such as Microsoft Exchange, or the like. The mail server may utilize facilities such as Active Server Pages (ASP), ACTIVEX<sup>®</sup>, ANSI<sup>®</sup> C++/C#, MICROSOFT<sup>®</sup>, .NET, CGI SCRIPTS, JAVA<sup>®</sup>, JAVASCRIPT<sup>®</sup>, PERL<sup>®</sup>, PHP, PYTHON<sup>®</sup>, WEBOBJECTS<sup>®</sup>, etc. The mail server may utilize communication protocols such as Internet Message Access Protocol (IMAP), Messaging Application Programming

Interface (MAPI), MICROSOFT<sup>®</sup> exchange, Post Office Protocol (POP), Simple Mail Transfer Protocol (SMTP), or the like. In some embodiments, the computer system **400** may implement a mail client stored program component. The mail client may be a mail viewing application, such as APPLE<sup>®</sup> MAIL, MICROSOFT<sup>®</sup> ENTOURAGE<sup>®</sup>, MICROSOFT<sup>®</sup> OUTLOOK<sup>®</sup>, MOZILLA<sup>®</sup> THUNDERBIRD<sup>®</sup>, etc.

**[0042]** Furthermore, one or more computer-readable storage media may be utilized in implementing embodiments consistent with the present invention. A computer-readable storage medium refers to any type of physical memory on which information or data readable by a processor **402** may be stored. Thus, a computer-readable storage medium may store instructions for execution by one or more processor **402**, including instructions for causing the processor **402** to perform steps or stages consistent with the embodiments described herein. The term “computer-readable medium” should be understood to include tangible items and exclude carrier waves and transient signals, i.e., non-transitory. Examples include Random Access Memory (RAM), Read-Only Memory (ROM), volatile memory, non-volatile memory, hard drives, Compact Disc (CD) ROMs, Digital Video Disc (DVDs), flash drives, disks, and any other known physical storage media.

**ABSTRACT**

**SEAMLESS EXPENSE SHARING FOR REMOTE PURCHASES.**

The present disclosure discloses payment processing that seamless expense sharing for remote purchases. When the user does not have plurality of physical card then the user may provide plurality of information associated with the card of the user. Based on the provided information QR code may be generated which may be also shared to family and friends via email or MMS. The generated QR code is provided to POS associated with the merchant. The merchant may send details to the third party for authorization based on which the details is sent to issuer for final authorization. Once the issuer approves, the link may be sent to user through which he/she may provide the approval for the payment. When the amount gets credited to the merchant, then the successful message may be sent to the user.

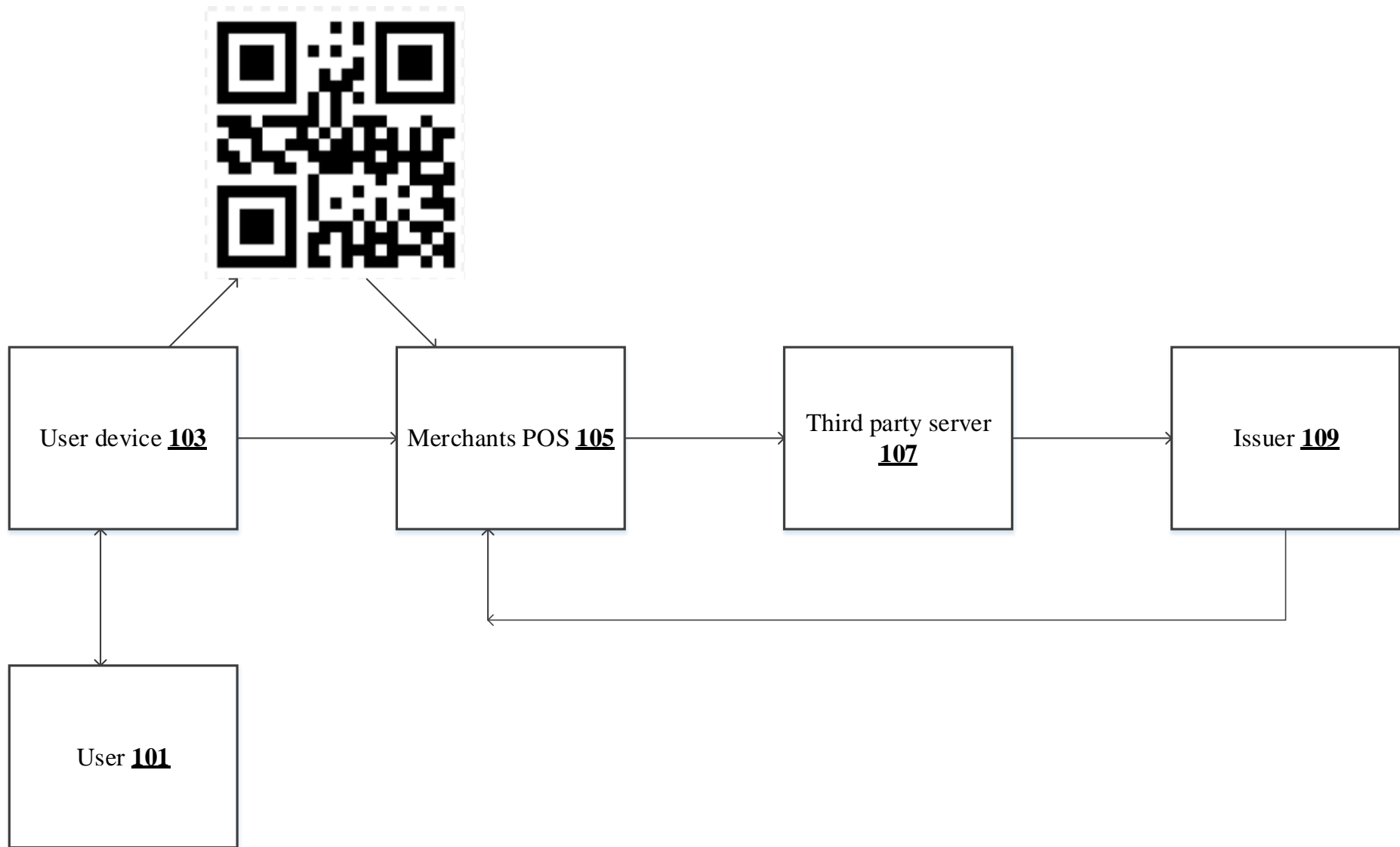


FIG.1A





FIG. 1B

# Payment Process

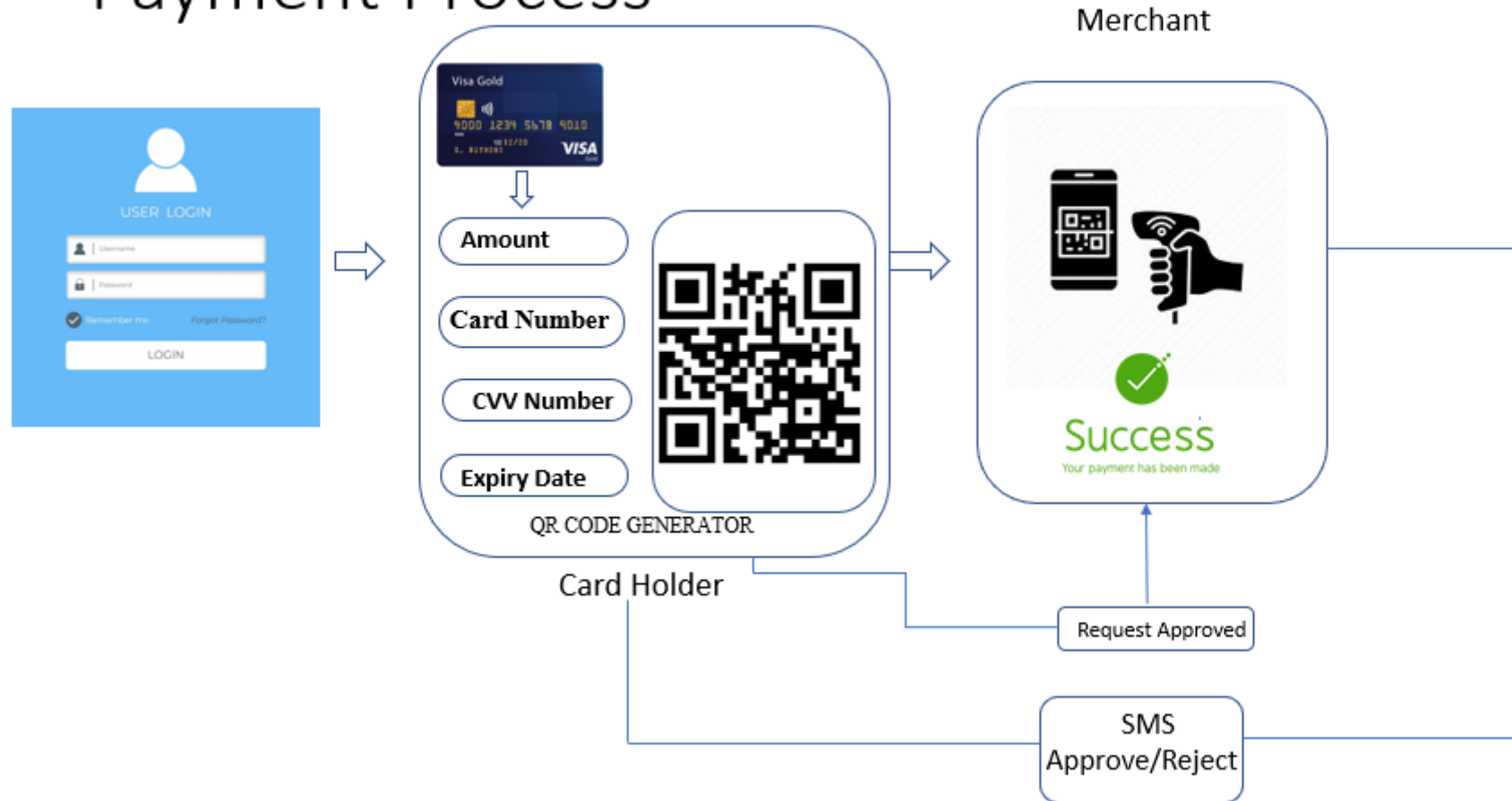
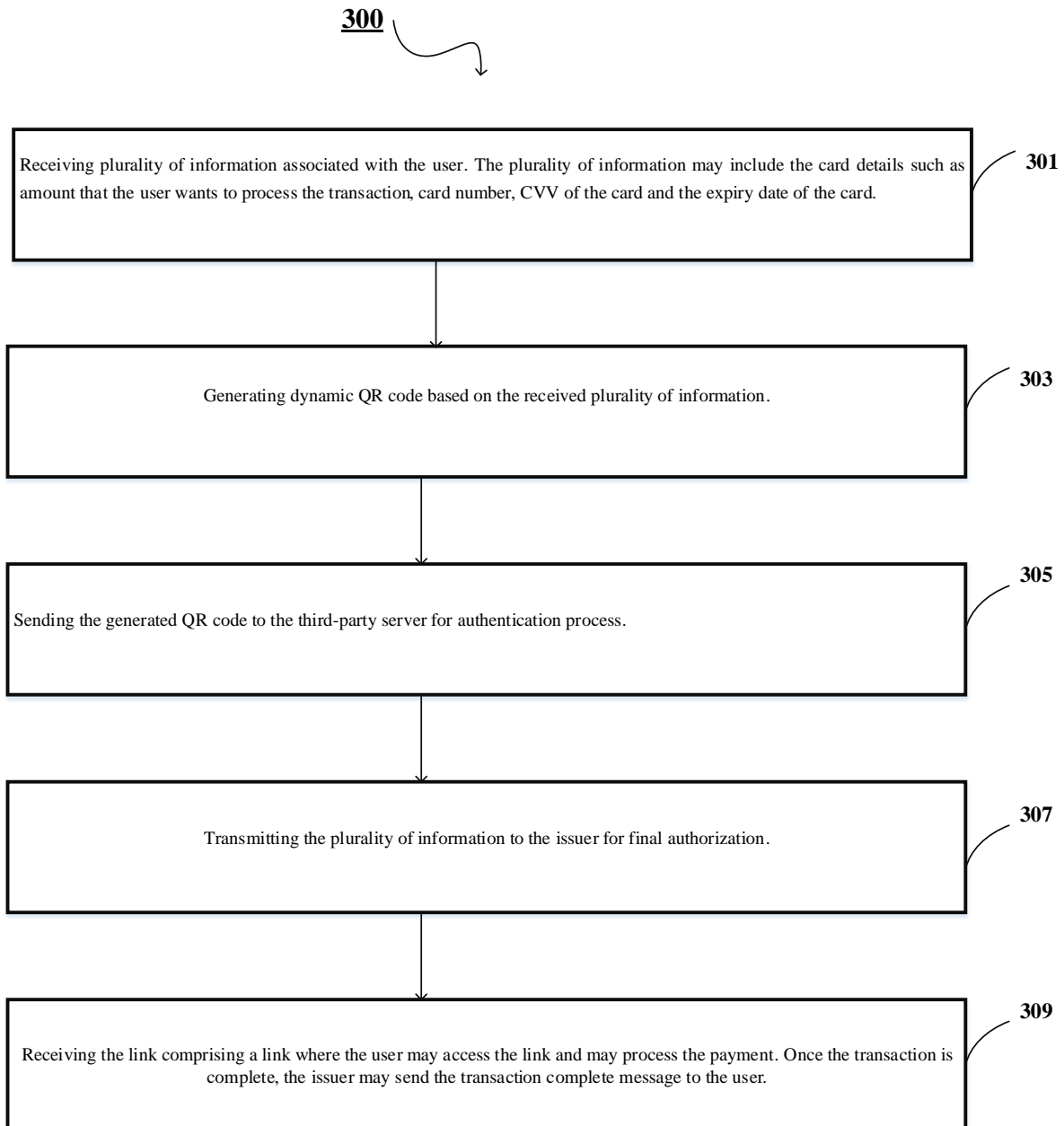


FIG.2



**FIG.3**

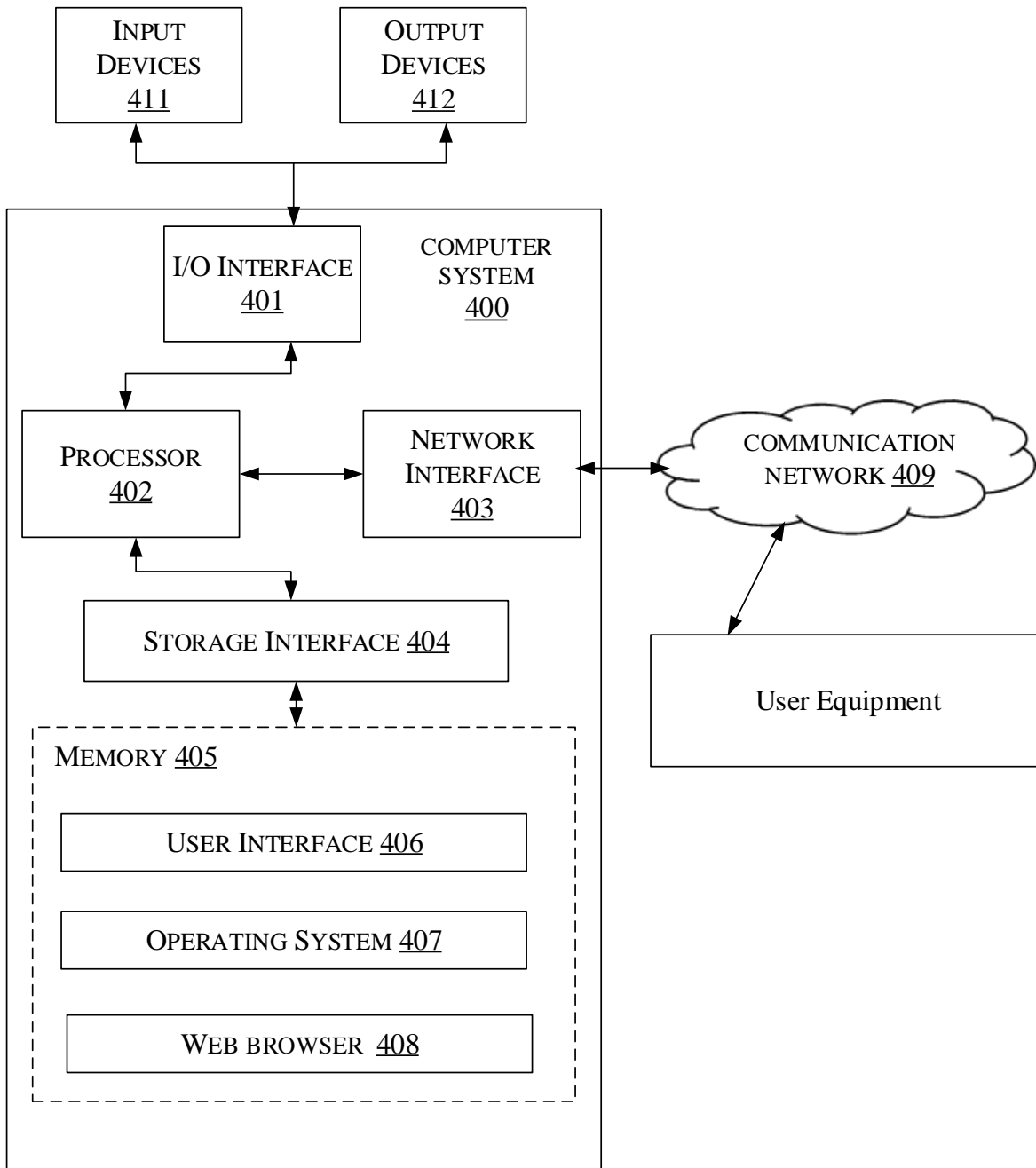


FIG.8