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A SYSTEM AND METHOD FOR PROVIDING MUTIPLE TRASACTIONS FOR A SINGLE PAYMENT

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TECHNICAL FIELD

The present subject matter is related, in general to a payment transactions, and more particularly, but not exclusively to system and method for providing multiple payment transactions for a single payment.

BACKGROUND

Generally, single payment transaction occurs at Point of Sale (PoS) device where a customer executes the payment transaction in exchange of purchased goods or services. After successful completion of the payment transaction, merchant may issue receipt to the customer. When a bill must be split between multiple users, multiple transactions are required for the same payment. In the existing technologies, there is increased friction between the customers and the merchant while splitting the bill between the customers. In existing systems, during multiple transactions the merchant needs to divide the transaction amount manually based the number of payment methods (e.g., credit card, debit card, prepaid card, and the like. The merchant must enter the transaction amount in a PoS device and need to wait for the payment transaction authorization and receipt to print before moving onto the next payment. This increases idle time for the PoS device, and it can result in duplicating computing processes.

In view of above, there is a need for a system to provide one transaction and one process managing multiple payment transactions for single payment simultaneously without someone waiting to pay.

The information disclosed in this background of the disclosure section is only for enhancement of understanding of the general background of the invention and should not be taken as an acknowledgment or any form of suggestion that this information forms the prior art already known to a person skilled in the art.

SUMMARY

The following presents a simplified summary of the present disclosure in order to provide a basic understanding of some aspects of the disclosure. This summary is not an extensive overview of the disclosure. It is not intended to identify key or critical elements of the disclosure or to delineate the scope of the disclosure. The following summary merely presents some concepts of the disclosure in a simplified form as a prelude to the more detailed description provided below.

In an embodiment, the present disclosure provides a system and method for providing multiple transactions by tapping multiple cards consecutively on a Point of Sale (PoS) device for a single payment. The system includes a PoS device and a network server. The PoS device receives a merchant input number for a payment. The PoS device splits the total amount by the number input by the merchant. The PoS device then receives payment card information related to each of the at least two customers. After receiving all the payment card details, the PoS device sends the card details to the network server for authorisation. The network server sends authorization requests related to each of the at least two customers to a respective acquirer entity via the communication network. Upon receiving authorization responses from the network server, the PoS device generates a single receipt to the merchant including the multiple payment transactions details related to each of the at least two customers.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this disclosure, illustrate exemplary embodiments and, together with the description, serve to explain the disclosed principles. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The same numbers are used throughout the figures to reference like features and components. Some embodiments of device or system and/or methods in accordance with embodiments of the present subject matter are now described, by way of example only, and with reference to the accompanying figures, in which:

Figure 1 shows an exemplary environment for providing multiple payment transactions for a single payment in accordance with some embodiments of the present disclosure**;**

Figure 2 illustrates a method flow diagram of a PoS device for providing multiple payment transactions for a single payment in accordance with some embodiments of the present disclosure;

Figure 3 illustrates a method flow diagram of retrying declined payment card transaction in accordance with some embodiments of the present disclosure; and

Figure 4 illustrates a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure.

The figures depict embodiments of the disclosure for purposes of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the disclosure described herein.

DESCRIPTION OF THE DISCLOSURE

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.

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.

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 proceeded by “comprises… a” does not, without more constraints, preclude the existence of other elements or additional elements in the device or system or apparatus.

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.

The terms "including", "comprising", “having” and variations thereof mean "including but not limited to", unless expressly specified otherwise.

Present disclosure proposes a system and method for providing multiple transactions by tapping multiple cards consecutively on a Point of Sale (PoS) device for a single payment. The system may include a PoS device and a network server. The PoS device receives merchant input for a payment. The merchant input includes total transaction amount and payment split input into the PoS device. The payment split input indicates the total number of customers who desire to divide the total transaction amount within themselves. The PoS device splits the total amount by the number input by the merchant. For example, total transaction amount is divided between at least two customers. The PoS device then receives payment card information related to each of the at least two customers based on the split calculation. After receiving all the payment card details, the PoS device sends the card details to the network server for authorisation. The network server sends authorization requests related to each of the at least two customers to respective acquirer entity via the communication network. Upon receiving authorization responses from the network server, the PoS device generates a single receipt to the merchant including the multiple payment transactions details related to each of the at least two customers. The system authorises multiple payment transactions through a single process, rather than distinctly following

separate processes. This reduces the idling time on the PoS device. Thereby, the quicker and efficient payment process may be achieved. The system removes the need for the merchant to divide the transaction amount by the number of payment methods. The merchant only has to key in the transaction amount and the system processes the further steps to complete the single payment transaction. The payment transaction authorisations and receipt are shown and printed, therefore removing the need to wait for separate authorisations and receipts to be printed.

Figure 1 shows an exemplary environment (100) for providing multiple payment transactions for a single payment in accordance with some embodiments of the present disclosure. The exemplary environment (100) may include, but not limited to, merchant facility (101) such as taxicabs services, theatres, tourist places, sports club, amusement parks/circus, member clubs, restaurants and so on. The exemplary environment (100) comprises the merchant facility (101), a communication network (108), and a network server (109). The merchant facility (101) may be retail store, shopping complex, restaurant, coffee shop, mall, and so on. The merchant facility (101) may include, but not limited to merchant (102), merchant device (103), Point of Sale (PoS) device (104), at least two customers (105, 106), a plurality of commodities/products/services (not shown in Fig). The PoS device (104) may include Central Processing Unit (CPU) (not shown in Fig), a memory (not shown in Fig), input interface (104b), and an output interface (104a).

In an embodiment, consider customer A (105) and customer B (106) may go to merchant facility (101) such as retail store for shopping. The customer A (105) and the customer B (106) may purchase one or more products (107). The one or more products (107) may include, but not limited to, vegetables, fruits, dairy products, clothes, electronic products and so on. Upon purchasing, the customer A (105) and customer B (106) may move to billing counter for billing. The merchant (102) may enter the one or more products (107) for billing using merchant device (103). The merchant device (103) may be a computer, a phone, a tablet, and so on. In an embodiment, the merchant device (103) and the PoS device (104) may be communicatively coupled with each other via wire/wireless connection mode. The merchant device (103) may calculate and provide total transaction amount for the entered one or more products (107) to the merchant (102) via a display associated with the merchant

device (107). The merchant (102) may input the total transaction amount in the POS device (104) via the input interface (104b) such as input keys to receive payment against the purchase performed by the customer A (105) and customer B (106). The merchant (102) may ask the customer A (105) or customer B (106) about payment split input. Based on the customer A (105) or customer B (106) input, the merchant (102) may enter payment split input along with the total transaction amount. The payment split input may indicate number of customers who desires to share the total transaction amount within themselves. The number of customers may be indicated in integer form such as 2, 3, 4 and so on. For example, customer A (105) and customer B (106) both want to share the total transaction amount, then the payment split input is 2. In another example, customer C joins customer A (105) and customer B (106) and agrees to share the total transaction amount, then the payment split input is 3.

The merchant (102) input that is total transaction amount and the payment split input may be provided via input interface (104b) to the PoS device (104). The PoS device (104) may be configured to perform split calculation based on the merchant (102) input. The PoS device (104) may be configured to accept multiple transactions based on the split calculation for a single bill and transmit the multiple transactions to the network server (109). In an embodiment, the type of transactions are not limited to card, but may include wallet transactions. The PoS device (104) may be configured to send the authorization requests related each of the at least two customers (105, 106) to the network server (109) via communication network (108). In an embodiment, the memory of the PoS device (104) may store information related to the payment transaction such as payment card details, split calculation details, authorization requests, authorization responses, and so on. The network server (109) may be configured to process multiple payment transactions for single payment by sending the authorization requests received by the PoS device (104) to respective acquirer entity. The network server (109) may be configured to send authorization responses received from the respective acquirer entity related to each of the at least two customers (105, 106) to PoS device (104). The PoS device (104) may be configured to generate a single receipt based on the received authorization responses including the multiple payment transactions details corresponding to each of the at least two customers (105, 106).

The PoS device (104) may be implemented in a variety of computing systems, such as a smartphone, a laptop, computer, a desktop computer, a Personal Computer (PC), a notebook, a tablet, e-book readers, a server, a network server, a cloud-based server, and the like. The network server (109) may include at least one Central Processing Unit (also referred to as "CPU" or "processor") (110) and a memory (112) storing instructions executable by the processor (104). The processor (109) may comprise at least one data processor for executing program components to execute user requests or system-generated requests. The memory (112) is communicatively coupled to the processor (109). The memory (109) stores instructions, executable by the processor (109), which, on execution, may cause the network server (109) to process the multiple transactions for single payment by sending the authorization requests to an acquirer entity and receiving authorization responses from the acquirer entity.

The network server (109) further comprises an Input/ Output (I/O) interface (111). The I/O interface (111) is coupled with the processor (110) through which an input signal or/and an output signal is communicated. The input signal and the output signal may represent data received by the network server (109) and data transmitted by the network server (109), respectively. In an embodiment of the present disclosure, the system (109) may be configured to receive and transmit data via the I/O interface (111). The received data may comprise the authorization requests related to each of the at least two customers (105, 106) and the like. The transmitted data may include authorization responses from acquirer entity (not shown in Figure), and the like.

In an embodiment, the network server (109) may communicate with the PoS device (104) and acquirer entity via communication network (108). The PoS device (104) may be, but not limited to, a payment card tap device, payment card swipe device, wireless payment termninal device, payment terminal device, and so on. The PoS device (104) and the network server (109) may communicate over the communication network (102) via Application Program Interfaces (APIs). The communication network (108) may include, without limitation, a direct interconnection, Local Area Network (LAN), Wide Area Network (WAN), wireless network (e.g., using Wireless Application Protocol), the Internet, Ultra-Wide Band, etc.

Figure 2 illustrates a method flow diagram of the PoS device (104) for providing multiple payment transactions for a single payment in accordance with some embodiments of the present disclosure. The method steps (200) are performed using the PoS device (104) and the network server (109). The order in which the method steps (200) may be described is not intended to be construed as a limitation, and any number of the described method steps (201 to 205) may be combined in any order to implement the method. Additionally, individual steps may be deleted from the method without departing from the scope of the subject matter described herein. Furthermore, the method may be implemented in any suitable hardware, software, firmware, or combination thereof.

At step.201: upon purchasing the one or more products (107) by the at least two customers (105, 106), the merchant may enter the total transaction amount in the PoS terminal to process the payment transaction. For example, the customer A (105) and customer B (106) both enter to merchant facility (101) for shopping. After purchasing the one or more products (107), the merchant (102) may enter the total amount against the purchased one or more products (107) via PoS device (104). Consider the one or more products (107) total transaction amount is INR 2000. The merchant enters the total transaction amount INR 2000 in the PoS device (104) using the input interface (104b) such as input keys. The input keys may be touch keys, button keys and so on.

At step.202: the merchant (102) provides the payment split input in the PoS device (104) based on one of the at least two customers (105, 106) input (e.g., the customer A (105) or customer B (106) input). In an example scenario, consider customer A (105) and customer B (106) may be friends and they decide to share the total amount equally. The merchant (102) while billing, he may ask the customer A (105) or customer B (106) regarding splitting of the total transaction amount. The customer A (105) or customer B (106) may provide the payment split input as ‘2’ as they decided to share the total transaction amount in between them.

At step.203: the PoS device (104) may be configured to perform the split calculation based on the received total amount and the payment split input. The PoS device (104) divides the total

amount by the payment split input to find each of the at least two customers (105, 106) individual payment amount from the total amount. For example, consider total amount may be INR 2000 and payment split input may be 2. The PoS device (104) divides 2000/2= 1000. Thereby, the customer A has to pay INR 1000 and the customer B has to pay INR 1000 to complete the billing process.

At step 204: the PoS device (104) may be configured to receive payment card information related to each of the at least two customers (105, 106) such as customer A (105) and customer B (106). The payment card information may include, but not limited to, customer name, payment card type, issuer bank name, account type, credentials, payment card expiry date and so on. Upon performing the split calculation for each of the at least two customers (105, 106), the customer A (105) and the customer B (106) may tap their respective payment cards consecutively to initiate corresponding payment transactions. In an embodiment, at least one of the customer A (105) and customer B (106) may initiate the payment transactions by performing contactless or contact based payment card transaction. The contact less payment transaction may be performed by tapping the payment card via Near Field Communication (NFC), using mobile wallets, payment cards and the like. The contact based payment card transaction may be performed by swiping the payment card through a slot present in the PoS device (104). The payment card may be credit card, debit card, prepaid cards and so on. The mobile wallets may be digital credit card, digital debit card, digital gift card and so on. For example, consider total transaction amount may be INR2000, after split calculation, the customer A may require to pay INR1000 and customer B may require to pay INR1000. The customer A (105) may pay INR1000 by tapping their payment card (i.e., payment card A) near the PoS device (104) and customer B (106) may pay INR1000 by tapping their payment card (i.e., payment card B) near the PoS device (104). In one embodiment, the PoS device (104) may receive the payment card information consecutively or simultaneously from the at least two customers (105, 106).

At step 205: the PoS device (104) may be configured to send authorization requests related to each of the at least two customers (105,106) to the network server (109) via communication network (108). In one embodiment, the PoS device (104) may send the authorization request associated with the customer A (105) to the network server (109) while reading the customer

B (106) payment card information. In another embodiment, the PoS device (104) may aggregate the at least two customers (105, 106) such as customer A (105) and customer B (106) authorization requests and configured to send single aggregated package to the network server (109). Further, the network server (109) may be configured to send received authorization requests to respective acquirer entity(ies) for authorization.

At step 206: the PoS device (104) may be configured to receive authorization responses related to each of the at least two customers (105, 106) from the network server (109) via the communication network (108). The network server (109) may be configured to receive authorization responses from respective acquirer entity(ies). The PoS device (104) may be configured consolidate the authorization responses into a single aggregated authorization response. Based single aggregated authorization response, the single receipt may be generated which includes the multiple payment transactions details associated with each of the at least two customers (105, 106). The payment card A or payment card B may decline due to authorization failure. The customer A (105) or the customer B (106) may re-tap/re-try the corresponding payment cards, or alternate cards, to complete the payment transaction. In an embodiment, the merchant (102) may request the PoS device (104) for separate receipts for each of the at least two customers (105,106) based their corresponding requests.

Figure 3 illustrates a method flow diagram of retrying declined payment card transaction in accordance with some embodiments of the present disclosure. In an embodiment, the payment card A or the payment B may get declined due to, but not limited to, authorization failure, verification failure, insufficient balance in the payment card, network issue and so on. The PoS device (104) may receive the payment card information related to each of the at least two customers (105, 106) such as customer A (105) and customer B (106) at step.301. At step.302, the payment card A may be declined. The output interface (104a) such as display associated with the PoS device (104) may be configured to display information related to decline. The information related to decline may include, but not limited, declined payment card code, declined payment card last four-digit number and so on. Declined payment card may be identified based on the information related to decline. For example, the output interface(104a) may display the declined payment card code and the last four digit of the declined payment card. The payment card code for payment card A may be ‘1/2’ and its

corresponding last four digit may be “1234”. The payment card code for payment card B may be ‘2/2’ and its corresponding last four digit may be “5678”. The output interface (104a) may display the payment card code as ‘1/2’ and corresponding last four digit may be “1234”. In the payment card code ‘2’ of ‘1/2’ indicates total number cards tapped against the total transaction amount or single bill and ‘1’ of ‘1/2’ indicates the code of the declined card. Payment card code ‘1’ may be corresponding to the payment card ‘A’ and payment card code ‘2’ may be corresponding to the payment card ‘B’. Based on the displayed payment card code ‘1/2’ and its corresponding last four digit “1234”, the payment card ‘A’ may be declined. In another example, output interface (104a) may display the payment card code as ‘2/2’ and its corresponding last four digit “5678”, then the payment card ‘B’ may be declined. At step.3, the declined payment card (e.g., payment card A), or an alternate payment card, may be re-tapped/retried by the corresponding customer (e.g., customer A (105)). Upon re-tapping, the step 205 may be executed for sending authorization request and step 206 may be executed for receiving authorization response, upon successful authorization the single receipt may be generated as shown in the Fig.3.

In an example embodiment, consider the customer A (105) created verification code for payment transactions performed through their payment card i.e., payment card A. upon tapping the payment card A by the customer A (105). The output interface (104a) may display the last four digit of payment card A i.e., ‘1234’ by requesting to enter the verification code associated with the payment card A. The verification code, may include, but not limited to. One Time Password (OTP), profile password, and so on. The verification code and authorization request may be transmitted to the network server (109) via communication network (108). The network server (109) may transmit the verification code and authorization request to the respective acquirer entity. The authorization of the payment card A may be declined if the verification is failed. In an embodiment, the single receipt may be generated for the merchant (102) based on the successful verification and authorization of the payment request.

The proposed disclosure enables the customers to consecutively tap multiple payment cards on the PoS device for a single payment. The system efficiently splits total amount between multiple card holders without repeating processes and ability to do so with a single click (e.g.,

split between 3 cards (i.e., three customers) only requires one to press the number 3). The system reads and authorises multiple taps consecutively without requiring additional steps in between each new card read. The system facilitates holding multiple outstanding authorisation requests on the single PoS device before receiving authorisation responses back onto the PoS device. The system is able to receive separate authorisation responses and consolidates the multiple authorisation responses into a single aggregated authorisation response. The system provides single receipt including the multiple transaction details. The system is capable of reducing idling time on the PoS device by making the payment process quicker and more efficient. The system authorises multiple payment transactions through a single process, rather than distinctly following separate processes. This reduces the idling time on the PoS device. Thereby, the quicker and efficient payment process may be achieved.

Computing System

Figure 4 illustrates a block diagram of an exemplary computer system 400 for implementing embodiments consistent with the present disclosure. In an embodiment, the computer system 400 is used to implement the system for providing multiple transactions by tapping multiple cards consecutively on a PoS device (412) for a single payment. The computer system 400 may include a central processing unit ("CPU" or "processor") 402. The processor 402 may include at least one data processor for executing processes in Virtual Storage Area Network. 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 one or more input/output (I/O) devices 409 and 410 via I/O interface 401. The I/O interface 401 may employ communication protocols/methods such as, without limitation, audio, analog, digital, monaural, RCA, 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, 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, the computer system 400 may communicate with one or more I/O devices 409 and 410. For example, the input devices 409 may be an antenna, keyboard, mouse, joystick, (infrared) remote control, camera, card reader, fax machine, dongle, biometric reader, microphone, touch screen, touchpad, trackball, stylus, scanner, storage device, transceiver, video device/source, etc. The output devices 410 may be a printer, fax machine, video display (e.g., cathode ray tube (CRT), liquid crystal display (LCD), light-emitting diode (LED), plasma, Plasma Display Panel (PDP), Organic light-emitting diode display (OLED) or the like), audio speaker, etc.

The processor 402 may be disposed in communication with a communication network 411 via a network interface 403. The network interface 403 may communicate with the communication network 411. 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. The communication network 411 may include, without limitation, a direct interconnection, local area network (LAN), wide area network (WAN), wireless network (e.g., using Wireless Application Protocol), the Internet, etc. Using the network interface 403 and the communication network 411, the computer system 400 may communicate with at least one user device 412 via communication network 411 to provide preference based campaign page. The network interface 403 may employ connection protocols include, but not limited to, 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.

In an embodiment, the computer system (400) may receive merchant input including total transaction amount and payment split input via PoS device (412) associated with merchant through the communication network (411).

The communication network 411 includes, but is not limited to, a direct interconnection, an e-commerce network, a peer to peer (P2P) network, local area network (LAN), wide area network (WAN), wireless network (e.g., using Wireless Application Protocol), the Internet, Wi-Fi, and such. The first network and the second network 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), Transmission Control Protocol/Internet Protocol (TCP/IP), Wireless Application Protocol (WAP), etc., to communicate with each other. Further, the first network and the second network may include a variety of network devices, including routers, bridges, servers, computing devices, storage devices, etc.

In some embodiments, the processor 402 may be disposed in communication with a memory 405 (e.g., RAM, ROM, etc. not shown in **Figure 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.

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

The operating system 407 may facilitate resource management and operation of the computer system 400. Examples of operating systems include, without limitation, APPLE MACINTOSH® OS X, UNIX®, UNIX-like system distributions (E.G., BERKELEY SOFTWARE DISTRIBUTION™ (BSD), FREEBSD™, NETBSD™, OPENBSD™, etc.), LINUX DISTRIBUTIONS™ (E.G., RED HAT™, UBUNTU™, KUBUNTU™, etc.), IBM™ OS/2, MICROSOFT™ WINDOWS™ (XP™, VISTA™/7/8, 10 etc.), APPLE® IOS™, GOOGLE® ANDROID™, BLACKBERRY® OS, or the like.

In some embodiments, the computer system 400 may implement a web browser 408 stored program component. The web browser 408 may be a hypertext viewing application, such as Microsoft Internet Explorer, Google Chrome, Mozilla Firefox, Apple Safari, etc. Secure web browsing may be provided using Hypertext Transport Protocol Secure (HTTPS), Secure Sockets Layer (SSL), Transport Layer Security (TLS), etc. Web browsers 408 may utilize facilities such as AJAX, DHTML, Adobe Flash, JavaScript, Java, 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 ASP, ActiveX, ANSI C++/C#, Microsoft .NET, Common Gateway Interface (CGI) scripts, Java, JavaScript, PERL, PHP, Python, WebObjects, etc. The mail server may utilize communication protocols such as Internet Message Access Protocol (IMAP), Messaging Application Programming Interface (MAPI), Microsoft 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 Mail, Microsoft Entourage, Microsoft Outlook, Mozilla Thunderbird, etc.

Furthermore, one or more computer-readable storage media may be utilized in implementing embodiments consistent with the present disclosure. 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 processors, including instructions for causing the processor(s) 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., be non-transitory. Examples include Random Access Memory (RAM), Read-Only Memory (ROM), volatile memory, non-volatile memory, hard drives, Compact Disc (CD) ROMs, DVDs, flash drives, disks, and any other known physical storage media.

The described operations may be implemented as a method, system or article of manufacture using standard programming and/or engineering techniques to produce software, firmware,

hardware, or any combination thereof. The described operations may be implemented as code maintained in a “non-transitory computer readable medium”, where a processor 402 may read and execute the code from the computer readable medium. The processor 402 is at least one of a microprocessor and a processor capable of processing and executing the queries. A non-transitory computer readable medium may include media such as magnetic storage medium (e.g., hard disk drives, floppy disks, tape, etc.), optical storage (CD-ROMs, DVDs, optical disks, etc.), volatile and non-volatile memory devices (e.g., EEPROMs, ROMs, PROMs, RAMs, DRAMs, SRAMs, Flash Memory, firmware, programmable logic, etc.), etc. Further, non-transitory computer-readable media may include all computer-readable media except for a transitory. The code implementing the described operations may further be implemented in hardware logic (e.g., an integrated circuit chip, Programmable Gate Array (PGA), Application Specific Integrated Circuit (ASIC), etc.).

The illustrated steps are set out to explain the exemplary embodiments shown, and it should be anticipated that ongoing technological development will change the manner in which particular functions are performed. These examples are presented herein for purposes of illustration, and not limitation. Further, the boundaries of the functional building blocks have been arbitrarily defined herein for the convenience of the description. Alternative boundaries can be defined so long as the specified functions and relationships thereof are appropriately performed. Alternatives (including equivalents, extensions, variations, deviations, etc., of those described herein) will be apparent to persons skilled in the relevant art(s) based on the teachings contained herein. Such alternatives fall within the scope and spirit of the disclosed embodiments. Also, the words "comprising," "having," "containing," and "including," and other similar forms are intended to be equivalent in meaning and be open ended in that an item or items following any one of these words is not meant to be an exhaustive listing of such item or items, or meant to be limited to only the listed item or items. It must also be noted that as used herein and in the appended claims, the singular forms “a,” “an,” and “the” include plural references unless the context clearly dictates otherwise.

Furthermore, one or more computer-readable storage media may be utilized in implementing embodiments consistent with the present disclosure. A computer readable storage medium refers to any type of physical memory on which information or data readable by a processor

may be stored. Thus, a computer readable storage medium may store instructions for execution by one or more processors, including instructions for causing the processor(s) 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., are non-transitory. Examples include random access memory (RAM), read-only memory (ROM), volatile memory, non-volatile memory, hard drives, CD ROMs, DVDs, flash drives, disks, and any other known physical storage media.

Finally, the language used in the specification has been principally selected for readability and instructional purposes, and it may not have been selected to delineate or circumscribe the inventive subject matter. Accordingly, the disclosure of the embodiments of the disclosure is intended to be illustrative, but not limiting, of the scope of the disclosure.

With respect to the use of substantially any plural and/or singular terms herein, those having skill in the art can translate from the plural to the singular and/or from the singular to the plural as is appropriate to the context and/or application. The various singular/plural permutations may be expressly set forth herein for sake of clarity.

A SYSTEM AND METHOD FOR PROVIDING MUTIPLE TRASACTIONS FOR A SINGLE PAYMENT.

ABSTRACT

Present disclosure provides a system and method for providing multiple transactions by tapping multiple cards consecutively on a Point of Sale (PoS) device (104) for a single payment. The system may include a PoS device (104) and a network server (109). The PoS device (104) receives merchant input for a payment. The merchant (102) input includes total transaction amount and payment split input into the PoS device (104). The payment split input indicates the total number of customers who desire to divide the total transaction amount within themselves. The PoS device (104) splits the total amount by the number input by the merchant (102). The PoS device (104) then receives payment card information related to each of the at least two customers (105, 106) based on the split calculation. After receiving all the payment card details, the PoS device (104) sends the card details to the network server (109) for authorisation. The network server (109) sends authorization requests related to each of the at least two customers (105, 106) to a respective acquirer entity via the communication network (108). Upon receiving authorization responses from the network server (109), the PoS device (104) generates a single receipt to the merchant including the multiple payment transactions details related to each of the at least two customers (105, 106). This reduces the idling time on the PoS device (104). Thereby, a quicker and efficient payment process may be achieved.

Figure 1

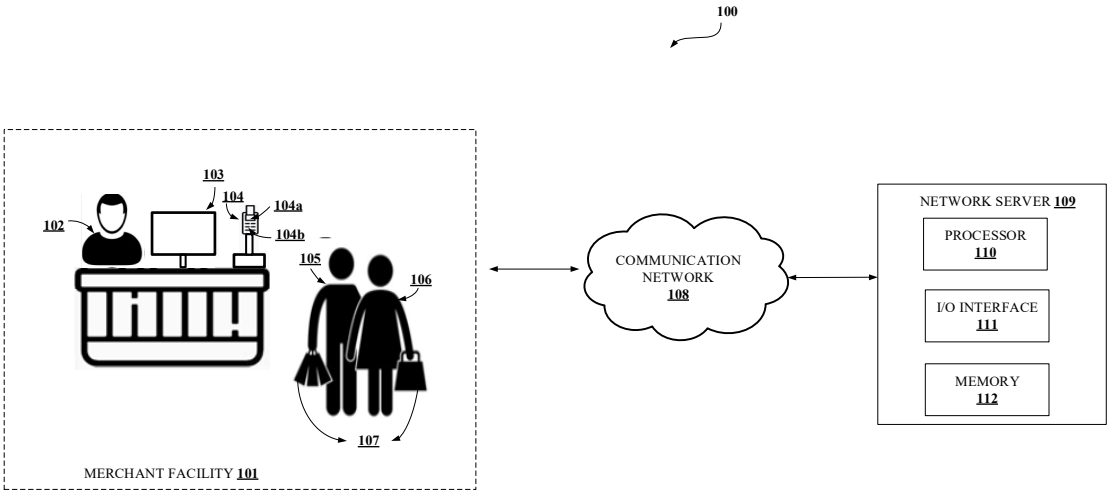
100
103
104
104a
104b
102
105
106
107
MERCHANT FACILITY 101
COMMUNICATION NETWORK 108
NETWORK SERVER 109
PROCESSOR 110
I/O INTERFACE 111
MEMORY 112

Figure 1

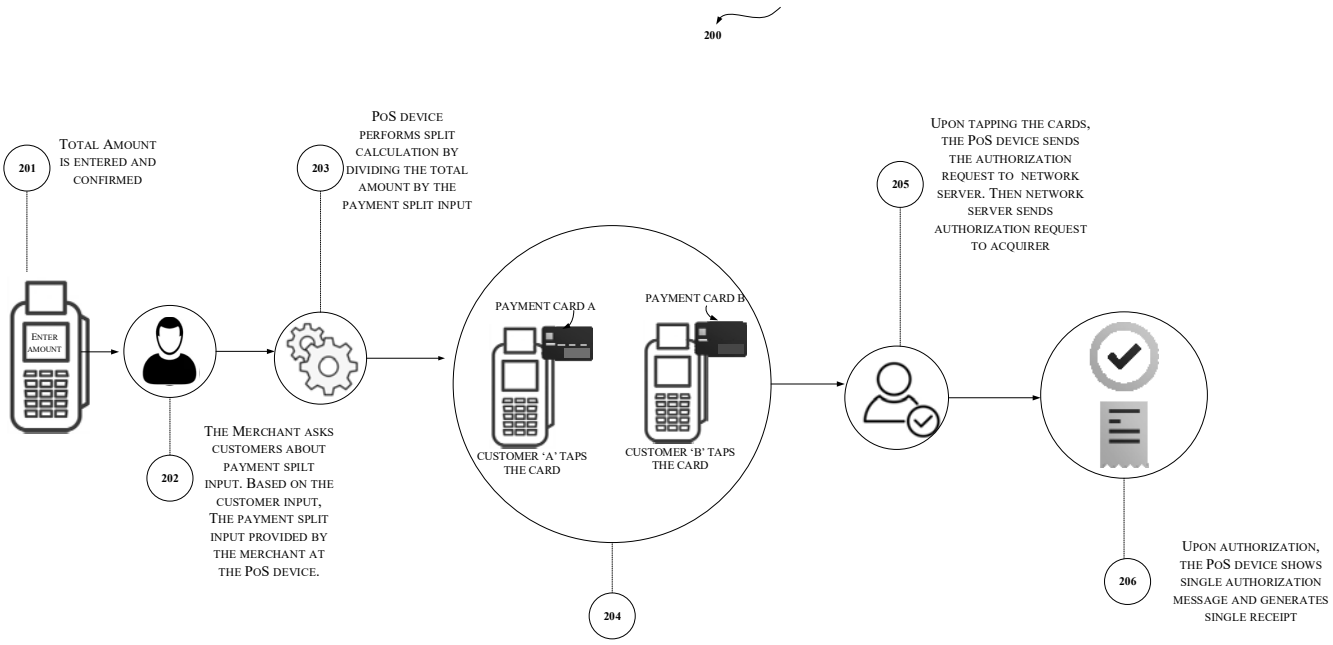
200
201
TOTAL AMOUNT IS ENTERED AND CONFIRMED
ENTER AMOUNT
202
THE MERCHANT ASKS CUSTOMERS ABOUT PAYMENT SPILT INPUT. BASED ON THE CUSTOMER INPUT, THE PAYMENT SPLIT INPUT PROVIDED BY THE MERCHANT AT THE PoS DEVICE.
203
PoS DEVICE PERFORMS SPLIT CALCULATION BY DIVIDING THE TOTAL AMOUNT BY THE PAYMENT SPLIT INPUT
PAYMENT CARD A
PAYMENT CARD B
CUSTOMER 'A' TAPS THE CARD
CUSTOMER 'B' TAPS THE CARD
204
205
UPON TAPPING THE CARDS, THE PoS DEVICE SENDS THE AUTHORIZATION REQUEST TO NETWORK SERVER. THEN NETWORK SERVER SENDS AUTHORIZATION REQUEST TO ACQUIRER
206
UPON AUTHORIZATION, THE PoS DEVICE SHOWS SINGLE AUTHORIZATION MESSAGE AND GENERATES SINGLE RECEIPT

Figure 2

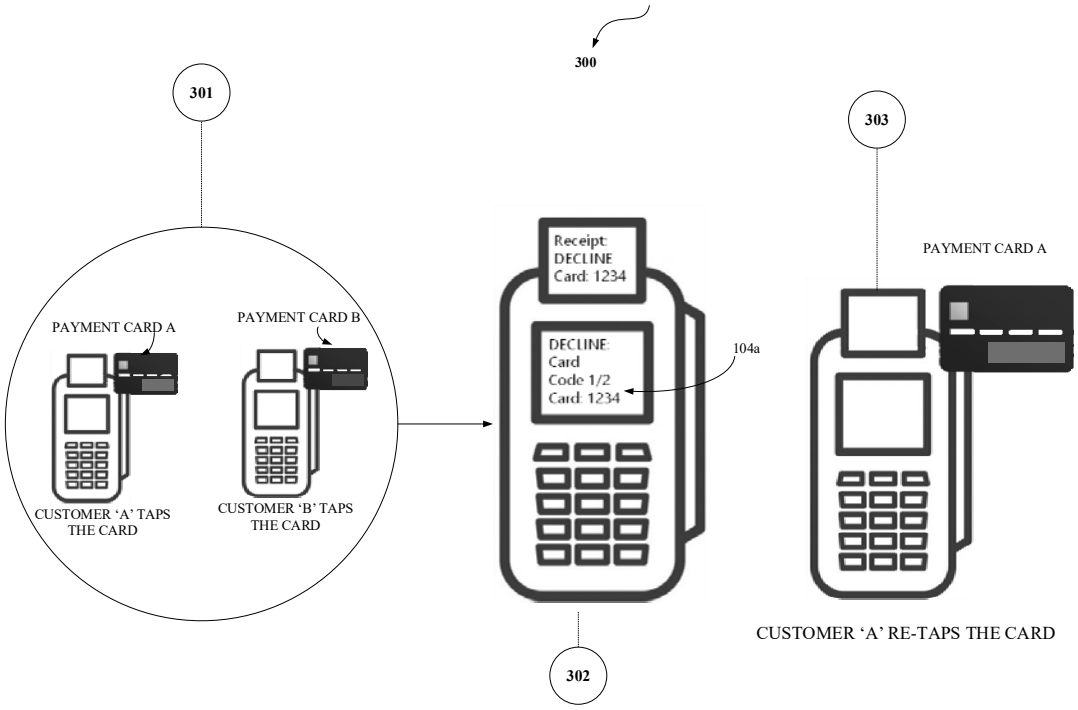
300
301
303
PAYMENT CARD A
PAYMENT CARD B
CUSTOMER 'A' TAPS THE CARD
CUSTOMER 'B' TAPS THE CARD
Receipt:
DECLINE
Card: 1234
DECLINE:
Card
Code 1/2
Card: 1234
104a
PAYMENT CARD A
CUSTOMER 'A' RE-TAPS THE CARD
302

Figure.3

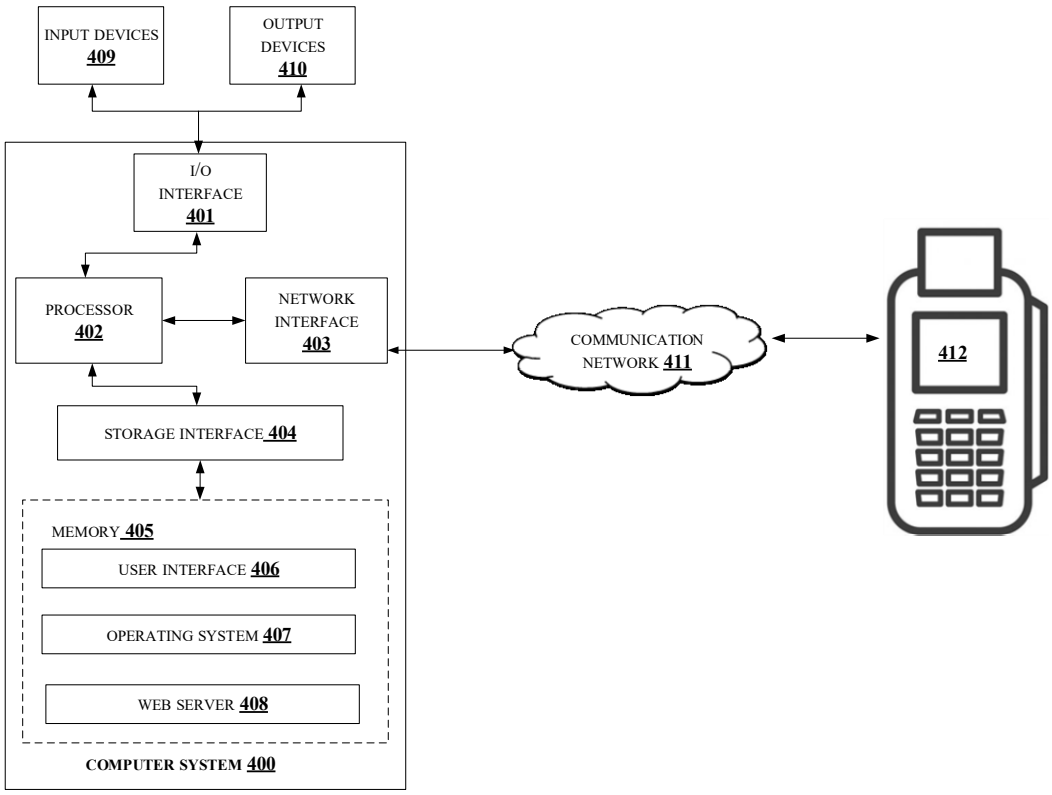
INPUT DEVICES
409
OUTPUT
DEVICES
410
I/O
INTERFACE
401
PROCESSOR
402
NETWORK
INTERFACE
403
STORAGE INTERFACE 404
MEMORY 405
USER INTERFACE 406
OPERATING SYSTEM 407
WEB SERVER 408
COMPUTER SYSTEM 400
COMMUNICATION
NETWORK 411
412

Figure 4