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A GLOBAL ATM LOCATOR AND A METHOD THEREOF

VISA

INVENTORS:

- **MANAS SHARMA**

TECHNICAL FIELD

[0001] The present subject matter in general, relates to automated banking systems and particularly, a global Automated Teller Machine (ATM) locator and a method thereof.

BACKGROUND

[0002] Automated Teller Machine (ATM) is a simple device that enable customers to perform one or more functions associated with a transaction for a bank. Existing traditional ATMs are limited to withdrawal of cash. However, existing recent ATMs allow depositing cash, change security pin associated with a transaction card, check transaction statements associated with a user, order a cheque book and the like.

[0003] Sometimes, users run out of money during emergency or normal conditions and when they try to withdraw cash due to insufficient balance in the ATMs, one may not be able to withdraw cash on time and may have to search for other ATMs having sufficient balance, which can be tedious and time consuming. Further, some places do not accept online transactions or sometimes due to bank issues one may not be able to perform the online transactions efficiently, which would necessitate the user to find an ATM for performing one or more financial operations.

[0004] Therefore, there is a need for an provide a global ATM locator and a method thereof, which can address at least one problem discussed above.

[0005] The information disclosed in the background section of the disclosure is only for enhancement of understanding of the general background of the invention and should not be taken as an acknowledgement or any form of suggestion that this information forms the prior art already known to a person skilled in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The accompanying drawings, which are incorporated in and constitute a part of this disclosure, illustrate exemplary embodiments and, together with the description, 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:

[0007] **FIG. 1A** shows an exemplary environment and a method for updating current status of an Automated Teller Machine (ATM) to a global ATM locator, through an exemplary cash withdrawal scenario from ATM, in accordance with some embodiments of the present disclosure;

[0008] **FIG. 1B** shows an exemplary environment illustrating a method of locating an ATM using a global ATM locator using an exemplary scenario, in accordance with some embodiments of the present disclosure;

[0009] **FIG. 2** shows a flowchart illustrating a method of locating an ATM using a global ATM locator, in accordance with some embodiments of the present disclosure; and

[0010] **FIG.3** shows a pictorial representation of exemplary filters used by a global ATM locator for locating an ATM, in accordance with embodiments of the present disclosure.

[0011] 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

[0012] 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.

[0013] 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.

[0014] 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.

[0015] 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.

[0016] The terms "including", "comprising", “having” and variations thereof mean "including but not limited to", unless expressly specified otherwise. The terms “user” and “customer” have been used interchangeably throughout the disclosure. In the present disclosure, the term “offers” “promotions” and “promotional offers” have been used interchangeably throughout the disclosure. The offers/promotions may include discounts, incentives, rewards, rebates, gifts, cashbacks, coupons, reward points, or any such benefit which can be availed/redeemed upon satisfaction of certain conditions.

[0017] At times when users run out of money during emergency or normal conditions and attempt to withdraw cash due to insufficient balance in an Automated Teller Machines (ATM), one may not be able to withdraw cash on time may have to search for other ATMs having sufficient balance, which can be tedious and time consuming. Further, some places do not accept online transactions or sometimes due to bank issues one may not be able to perform the online transactions, which would necessitate the user to find an ATM for performing one or more financial operations.

[0018] Therefore, the present disclosure aims to provide a location of an Automated Teller Machine (ATM) in the context of the present disclosure. The present disclosure discloses a global ATM locator to achieve the aforementioned objective. In some embodiments, the global

ATM locator may be associated with the payment network provider such as VisaNet, and may be accessible to a user when the user logs into his/her bank account via the banking website/application. In some other embodiments, the global ATM locator may be an open source and accessible to all the users without the need to explicitly log into the bank account via the banking website/application. The method of providing location of an ATM to the users is disclosed in detail in the next section as part of **FIG.1B**.

[0019] FIG. 1A shows an exemplary environment and a method for updating current status of an Automated Teller Machine (ATM) to a global ATM locator, through an exemplary cash withdrawal scenario from ATM, in accordance with some embodiments of the present disclosure.

[0020] In some embodiments, the environment includes one or more users such as user 1 and user 2 as shown in the **FIG.1A**, an ATM (102), an acquiring bank (104), a payment network provider (106), a global ATM locator (107), and an issuer bank (108)). In some embodiments, interaction between the aforementioned elements of the environment is explained in terms of an exemplary withdrawal scenario. Consider an ATM (102) that has a total balance of 5000\$. User 1 interacts with the ATM (102) to withdraw cash amount from the ATM (102). As an example, consider user 1 wishes to withdraw 1000\$ as shown in the **FIG.1A**. User 1 inserts a financial card such as a debit card into the ATM (102) that enables the user to select one or more financial operations offered by the ATM (102). As an example, the one or more financial operations may include, but not limited to, withdrawal of cash, deposition of cash, checking account balance, changing authentication code, generating account statement and the like. As the user 1 wishes to withdraw cash, user 1 may select the financial operation “withdrawal of cash” and enter the amount to be withdrawn. In the exemplary scenario, (1) user 1 enters 1000\$ for withdrawal and enters an authentication code associated with the financial card for authentication. Thereafter, (2) the ATM (102) may send a withdrawal request to the acquiring bank (104) associated with the ATM (102) via a communication network (not shown in the **FIG.1A**). In some embodiments, the withdrawal request may include, but not limited to, financial card details of user 1, authentication code, and amount requested for withdrawal. (3) The acquiring bank (104) associated with the ATM (102) may send a verification request to a payment network provider (106) along with the financial card details of user 1, authentication code, and amount requested for withdrawal. (4) The payment network provider (106) sends the verification request to the issuer bank (108) wherein the issuer bank verifies the authenticity of

the user based on the financial card details and the authentication code, and if the user has sufficient balance in the account to withdraw the amount that has been entered for withdrawal. (5) If the verification is successful, the issuer bank (108) sends a success message to the payment network provider, (6) which in turn indicates the message to the acquiring bank (104). (7) The acquiring bank (104) indicates to the ATM (102) to enable withdrawal, post which, the ATM (102) shall dispense cash of 1000\$ to the user 1. Upon withdrawing the cash amount of 1000\$, the remaining amount in the ATM (102) is 4000\$.

[0021] In some embodiments, (8) the ATM (102) updates the information related to the balance amount and denomination of the balance amount to the acquiring bank (104) via an Application Programming Interface (API) call. (9) The Acquiring bank (104) in turn updates the balance amount and denomination of the balance amount to the payment network provider (106). The payment network provider (106) is associated with a global ATM locator (107). In some embodiments, the global ATM locator (107) may be an application which is installed with the payment network provider (106). For instance, the global ATM locator (107) may be an API of the payment network provider (106). The global ATM locator (107) may act as an interface to users who wish to know information related to ATMs such as location of ATMs, balance amount in the ATMs, denominations present in the ATMs and the like. In some other embodiments, the global ATM locator (107) may be a separate entity which is locally associated with the payment network provider (106) through wired or wireless communication network. In yet other embodiments, the global ATM locator (107) may be remotely associated with the payment network provider (106) via a wireless communication network. In some embodiments, when the global ATM locator (107) is a separate entity, the global ATM locator (107) may comprise an I/O interface, a processor and a memory (not depicted in the figure). The I/O interface may perform receiving and transmitting operations while interacting with the users and the payment network providers, while the processor may initiate API calls for fetching data related to the user request from the payment network providers. The memory may store information related to API calls, user request, data fetched from the payment network providers etc., either temporarily or permanently based on the type and importance of the information.

[0022] In some embodiments, as shown in **FIG.1B**, after the withdrawal from user 1, as explained in the above exemplary scenario, there exists a user 2 who wishes to locate nearby ATMs comprising a balance amount of at least 2000\$. User 2 may interact with the global

ATM locator (107) to locate the nearby ATMs comprising a balance amount of at least 2000\$. In some embodiments, to interact with the global ATM locator (107), user 2 may log into his/her bank account via the banking website/application. In some other embodiments, the global ATM locator (107) may be an open source and accessible to all the users without the need to explicitly log into the bank account via the banking website/application. The global ATM locator (107) may receive the request from user 2 via the I/O interface. The global ATM locator (107) fetch the details related to nearest ATM for the user 2 from the payment network provider (106) via an API call and shares the information to the user 2. As an example, information shared with the user 2 may include, but not limited to, nearest ATM location, balance amount, and currency denomination of the balance amount. Based on the information, in this exemplary scenario, the user 2 makes a decision to visit or not visit the nearest ATM, if the balance amount indicates a balance of more than 2000\$.

[0023] FIG. 2 shows a flowchart (200) illustrating a method for locating an Automated Teller Machine (ATM) using a global ATM locator, in accordance with some embodiments of the present disclosure.

[0024] The method (200) 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.

[0025] The order in which the method (200) 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 (200). Additionally, individual blocks may be deleted from the methods without departing from the spirit and scope of the subject matter described herein. Furthermore, the method (200) can be implemented in any suitable hardware, software, firmware, or combination thereof.

[0026] At block 202, the method (200) includes receiving, by a global ATM locator (107), a request message from an electronic device of a user. In some embodiments, the request message may include a request for indicating the nearest ATM and details related to the nearest ATM. In some embodiments, the request message may indicate a specific requirement of the user such as balance enquiry, denomination enquiry etc., with respect to the nearest bank.

At block 204, the method (200) includes initiating, by the global ATM locator (107), an API call to a payment network provider (106) associated with the global ATM locator (107) for fetching details related to nearest ATM to the user. In some embodiments, the global ATM locator (106) may provide details of the user such as current location of the user to the payment network provider (106). Based on the current location, the payment network provider (106) may determine the nearest ATM and fetch the recently updated details of the nearest ATM. In some embodiments, the payment network provider (107) may receive the recent updates about one or more ATMs via the corresponding acquiring banks associated with the one or more ATMs. In some embodiments, frequency of the updates may be once every transaction. In some other embodiments, the updates may be periodic in nature.

[0027] At block 206, the method (200) includes receiving, by the global ATM locator (107), information related to the nearest ATM from the payment network provider (106). In some embodiments, the information related to the nearest ATM may include, but not limited to, nearest ATM location, working status of the ATM, balance amount, and currency denomination of the balance amount.

[0028] At block 208, the method includes sending, by the global ATM locator (107), information related to the nearest ATM to the user. Based on the information, the user may make an informed decision about visiting the ATM, without the need to physically go and find an ATM, working status of the ATM and the like.

[0029] In some instances, the payment network provider (106) may provide all information related to a nearest ATM to the global ATM locator (107) such as balance amount, denomination of the balance amount, whether the ATM location has wheelchair access, whether cash depositing option is available in the ATM, acquiring bank associated with the ATM, transaction fee charged by the acquiring bank and the like. In such instances, the Application Programming Interface (API) associated with the global ATM locator (107) may filter out non-important factors and may select only information required for the user. As an example, consider user requested for nearest ATM, then the API would filter out only details of the nearest ATM such as address and geolocation. If the user has requested for nearest ATM having denominations of \$50. Then the API of the global ATM locator (107) may detect the nearest ATM by filtering on the basis of denomination of \$50. In yet other embodiments, if the user sends a request for ATMs having balance amount of 1000\$, as the user wishes to withdraw

1000\$, then the global ATM locator (107) may send locations of the ATMs having sufficient balance of at least 1000\$ dollars nearby to the current location of the user.

FIG.3 showcases exemplary filters that the global ATM locator (107) may use for filtering purpose. In some embodiments, the global ATM locator (107) may apply the filter based on user request. As an example, if the user requests says “Nearest ATMs having cash more than 2000\$”, then the global ATM locator (107) may apply the filter “balance availability” as shown in the FIG.3. In some other embodiments, the global ATM locator (107) may facilitate the user to select an apt filter which can be considered as a query by the global ATM locator (107) and respond suitably. As an example, may select “balance availability” filter and the global ATM locator (107) may provide list of nearest ATMs for instance within a 5km radius and indicate balance availability of each of the ATMs. Similarly, the user may select or the global ATM locator (107) may apply various other filters such as “Nearest ATMs with No ATM access fee”, “nearest ATMs with wheelchair accessibility”, “nearest ATMs with depositing functionality”, “nearest ATM and its denominations” and the like. This enhances user experience in terms of querying the global ATM locator (107) and also in getting accurate results as per the user’s specific requirement.

Advantages of the present disclosure

[0030] The present disclosure provides a method and a system to locate nearest ATMs without the need for the user to physically search for the ATMs which is tedious and time consuming.

[0031] Further, the present disclosure enables the user to even query a global ATM locator to receive information related to not just the nearest ATM, but also other details such as balance amount in the ATM, working status of the ATM, wheelchair accessibility at the ATM, depositing capability at the ATM, Access fee/transaction fee of the ATM, and the like without the need to physically visit the ATM center. Hence, the present disclosure enables the user to make an informed decision about which ATM center to visit for performing one or more financial operations based on the user’s specific requirement. Therefore, the present disclosure enhances user experience, eliminates the time and resources involved in the tedious process of searching for an ATM center for performing certain financial operations, and also reduces delays in the financial operations that can be performed through the ATM.

[0032] 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 may read and execute the code from the computer readable medium. The processor 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.).

[0033] 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. It must also be noted that as used herein, the singular forms “a,” “an,” and “the” include plural references unless the context clearly dictates otherwise.

[0034] 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.

[0035] 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.

[0036] 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 GLOBAL ATM LOCATOR AND A METHOD THEREOF”

ABSTRACT

The present disclosure is related to a global Automated Teller Machine (ATM) locator and a method thereof. The method includes receiving, by a global ATM locator, a request message from an electronic device of a user for details related to a nearest ATM. The global ATM locator initiates an API call to a payment network provider associated with the global network provider to fetch the information related to the nearest ATM for the user, as per the information given in the request message and current location of the user. Thereafter, the global ATM locator receives the requested details related to the nearest ATM such as balance amount, denominations of the balance amount, location of the ATM, wheelchair accessibility at the ATM, depositing capability at the ATM, access fee of the ATM and the like. The received information is provided to the user such that can make an informed decision about which ATM to visit for performing desired financial operations. Further, the present disclosure enables the user to query a global ATM locator to receive information related to not just the nearest ATM, but also other details such as balance amount in the ATM, working status of the ATM, wheelchair accessibility at the ATM, depositing capability at the ATM, Access fee/transaction fee of the ATM, and the like without the need to physically visit the ATM center. Therefore, the present disclosure enhances user experience, eliminates the time and resources involved in the tedious process of searching for an ATM center for performing certain financial operations, and also reduces delays in the financial operations that can be performed through the ATM.

FIG.2

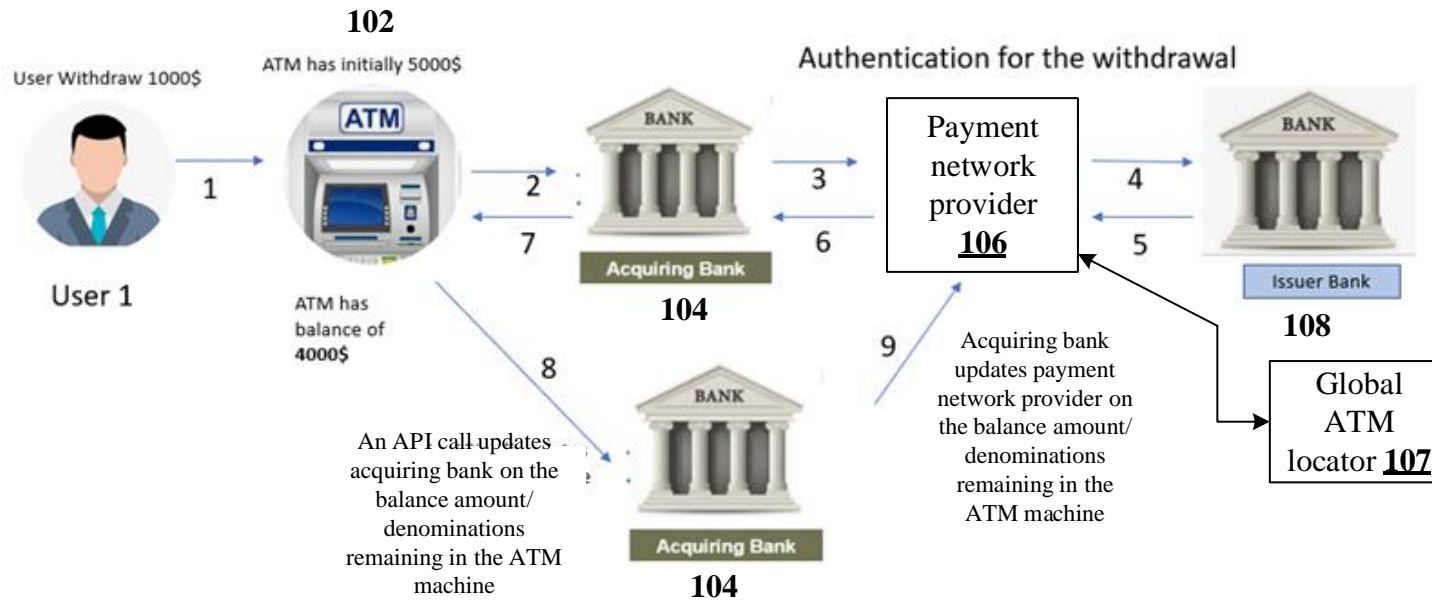


FIG.1A

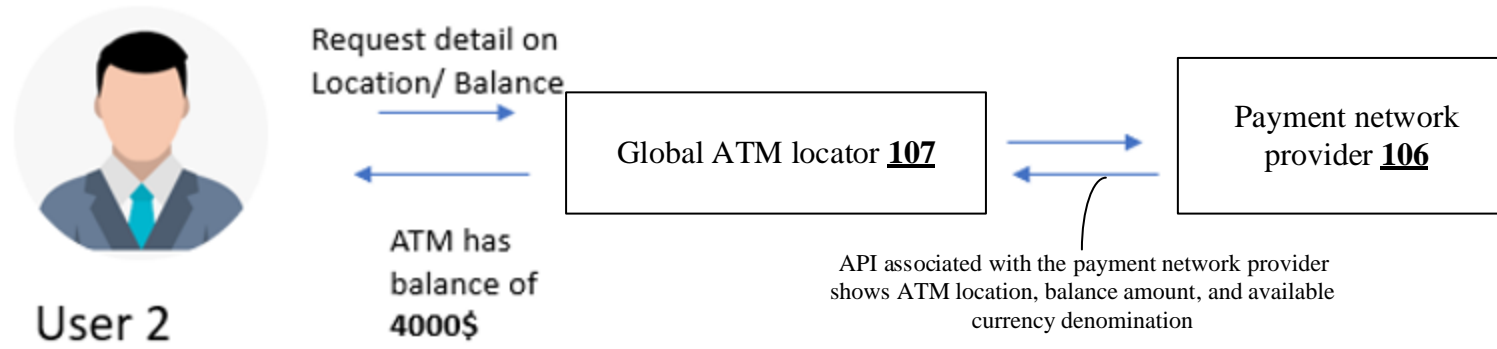


FIG.1B

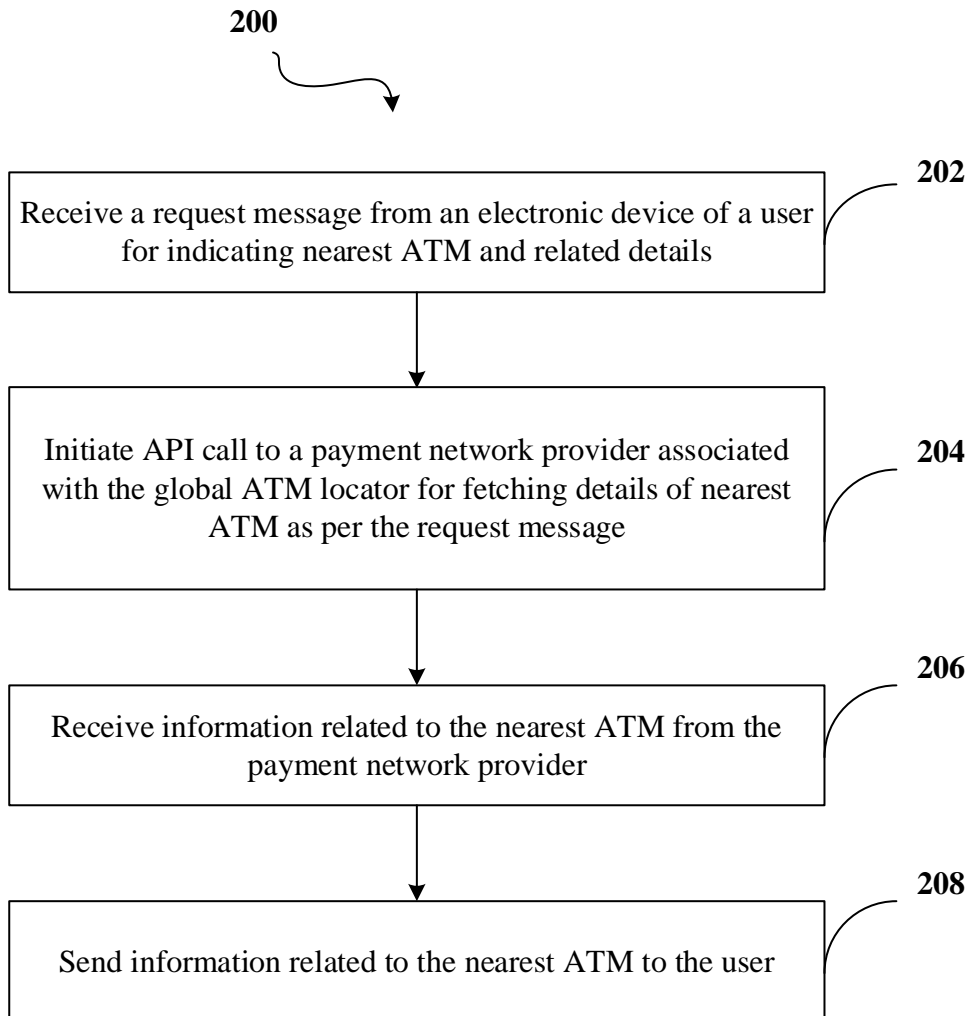


FIG. 2

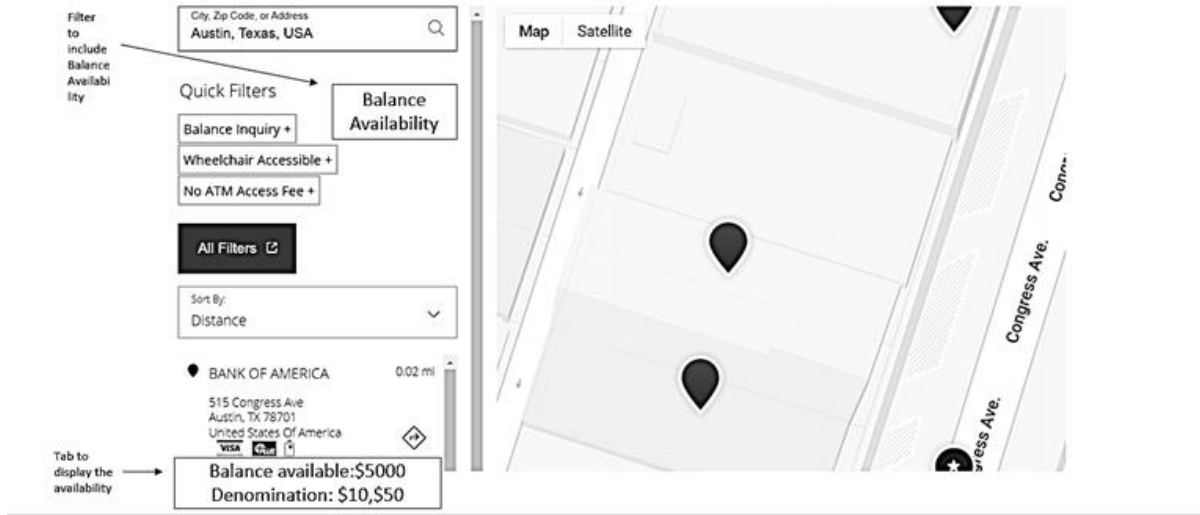


FIG.3