

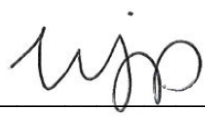


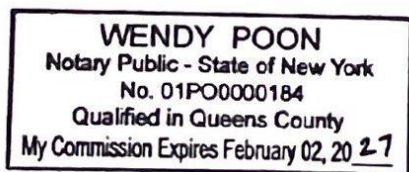
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I, Jacqueline Yorke, hereby certify that the document “**2 JP2002-133100**” is, to the best of my knowledge and belief, a true and accurate translation from Japanese into English.

  
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Jacqueline Yorke

Sworn to before me this  
November 21, 2023

  
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Signature, Notary Public



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Stamp, Notary Public

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|                          |                                                        |                                                                                        | (74) Agent: 100098899<br>Patent attorney: Shinichi Iizuka                                |

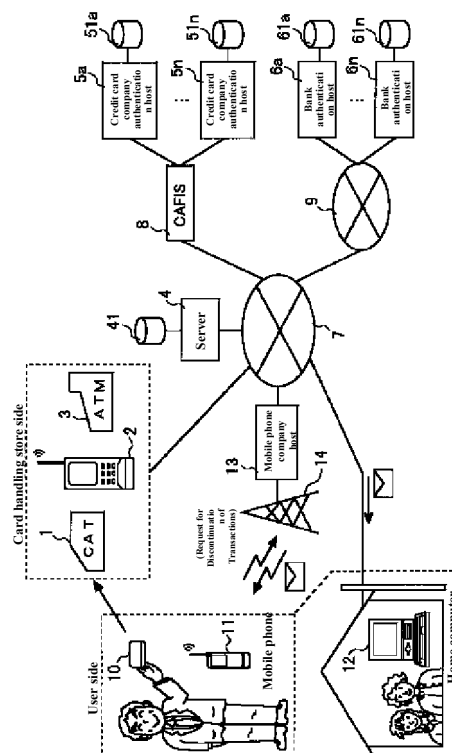
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## (54) [Title of Invention] Card usage status notification method

## (57) [Abstract]

[Problem to be solved] To provide a card usage status notification method for notifying the fact that a card payment transaction has been made via an information terminal device such as a mobile phone or a personal computer, and a card payment transaction system using the same method.

[Means for solving the problems] In a card payment transaction system that enables online card payment transactions through data communication between a card transaction terminal device and a card authentication host, a card authentication host is provided with a means to create an email to notify the user of a card payment transaction, and a means to send the above created email to a pre-specified address for each card.



## [Scope of Patent Claims]

[Claim 1] A card usage status notification method that automatically sends an e-mail to a pre-specified destination when a card payment transaction occurs.

[Claim 2] A card usage status notification method that automatically notifies when a card payment transaction occurs via a wireless information terminal device such as a pre-designated mobile phone.

[Claim 3] A card usage status notification method according to claim 1, wherein the card includes a credit card and a debit card.

[Claim 4] A card usage status notification method according to claim 1, wherein the e-mail destination is a wireless information terminal device such as a mobile phone having an e-mail receiving function.

[Claim 5] A card usage status notification method according to claim 1, wherein the e-mail destination is a stationary information terminal device such as a personal computer.

[Claim 6] A card usage status notification method according to claim 1, wherein the notification content includes transaction content information such as card usage date and time, card usage location information, etc.

[Claim 7] A card payment transaction system characterized in that in a card payment transaction system that enables online card payment transactions through data communication between a card transaction terminal device and a card authentication host via a network,

The card authentication host has the following options:

A means for creating an e-mail to notify the user when a card payment transaction occurs; and

A means for transmitting the created email to a destination specified in advance for each card

.

[Claim 8] A server is further connected via a network in a card payment transaction system that enables online card payment transactions through data communication via a network between the card transaction terminal device and the card authentication host;

The server includes:

a means for creating an e-mail to notify the user when a card payment transaction occurs.

A means for transmitting the created email to a destination specified in advance for each card

.

[Claim 9] A card payment transaction system characterized in that data is exchanged between a wireless information terminal device such as a mobile phone, etc. in a card payment transaction system that enables online card payment transactions through data exchange via a network between a card transaction terminal device and a card authentication host; and

A host of the telecommunications company sends a specific signal and/or predetermined data to a pre-designated wireless information terminal device to notify the user of the transaction when a card payment transaction occurs

.

[Claim 10] A card payment transaction system according to claim 9, wherein the specified reception operation is performed by sound, vibration, light, etc. on the side of the wireless information terminal device, upon receiving a specified signal and/or predetermined data to notify that a card payment transaction has occurred.

[Claim 11] A card payment transaction system according to any of claims 7 to 9, wherein the card includes a debit card, the card transaction terminal device includes an ATM and/or a CAT, and the card authentication host includes a bank host.

[Claim 12] A card payment transaction system according to any of claims 7 to 9, wherein the card includes a credit card, the card transaction terminal device includes an ATM and/or a CAT, and the card authentication host includes a credit card company host.

[Claim 13] A card payment transaction system according to claim 11 or 12, wherein the CAT includes a portable CAT having a wireless communication function.

[Claim 14] A card payment transaction system according to any of claims 7 to 9, wherein the card transaction terminal device includes a Kiosk terminal device.

[Claim 15] A card authentication host that enables online card payment transactions through data communication with a card transaction terminal device via a network is provided  
A means for creating an e-mail to notify the user when a card payment transaction occurs; and

A means for transmitting the created email to a destination specified in advance for each card

.

[Claim 16] A server connected via a network to a card payment transaction system that enables online card payment transactions through data communication between a card transaction terminal device and a card authentication host via a network, and

a means for receiving a request from a card authentication host and creating an e-mail for notifying a card user of the request are provided

A means for transmitting the created email to a destination specified in advance for each card

.

[Detailed description of the invention]

[0001]

[Technical field to which the invention pertains] The present invention relates to a card usage status notification method that automatically notifies a card user, etc. that a card payment transaction has occurred via a network, and a card payment transaction system using the same method. In particular, the present invention relates to a card usage status notification method using an information terminal device such as a mobile phone or a personal computer as a notification medium, and a card payment transaction system using the same method.

[0002]

[Prior art] In recent years, card payment transactions using

credit cards, debit cards (cash cards), etc., which are widely used throughout the world, are mainly conducted online using card transaction terminal devices such as CAT and ATM.

[0003] Normally, when these card payment transactions are performed, a receipt, statement of use, etc. containing the details of the card transaction is issued and handed to the card user on the spot. On the user side, furthermore, it has become possible to check the usage status of each card through monthly invoices and, recently, usage status inquiry services on the card company's website, etc.

[0004]

[Problems to be solved by the invention] However, it may take several days to several weeks after the actual card payment transaction occurs before the user is able to confirm that the card payment transaction has occurred at a later date via the bill or usage status inquiry service, etc. As a result, there were problems as listed below.

(1) In the event of fraudulent card use using a counterfeit card, etc., if the credit card company, etc. does not notice this, the legitimate card user will be notified of the fraudulent use on the bill that will be sent to them at a later date. In many cases, the transaction is not discovered until the person notices the unexpected transaction. This also became an obstacle to early detection of fraudulent card use.

(2) For example, even if a father, etc., who is the holder of an automatic debit account for credit card transactions, wants to keep track of the card usage status of his wife and children at all times, if the family does not report, there will be no reports of credit card usage. As mentioned above, it may take several days to several weeks after the card is actually used to find out. Therefore, in such cases, fathers and others had no choice but to trust and wait for family members to declare their card usage each time.

[0005] This invention was made by focusing on the above-mentioned problems, and its purpose is to notify the user of a card payment transaction through an information terminal device such as a mobile phone or a personal computer. The present invention aims to provide a card usage status notification method that allows the user to confirm the status more quickly and reliably, and a card payment transaction system using the same method.

[0006] Another purpose of this invention is to notify the fact that a card payment transaction has been made through an information terminal device such as a mobile phone or a personal computer, and to provide a card usage status notification method that more quickly and reliably notifies a user to that effect, thereby enabling early detection of card fraud, and a card payment transaction system using the same method.

[0007] Still other purposes of this invention will be readily understood by those skilled in the art upon reference to the following description.

[0008]

[Means for solving the problems] In order to achieve the above object, in the first embodiment of the card usage status notification method of the present invention, when there is a card payment transaction, an e-mail notification to that effect is automatically sent to a pre-specified destination.

[0009] Here, the "card" includes, for example, a credit card, a debit card, and the like. Of course, the present invention can also be applied to the use of various payment transaction cards such as cash advance cards issued by consumer financial institutions and the like. Therefore, the contents of "card payment transactions" include, for example, product purchases, cash advance services, deposits and withdrawals to and from bank accounts, and the like.

[0010] Although it states "when a card payment transaction occurs", this does not limit the timing of sending the email. The e-mail could be sent after the card payment transaction, or the e-mail notification could be sent while the card payment transaction is in progress.

[0011] Although it is written as "specified in advance", it is preferable that the designation be appropriately selected mainly by the card user, but is not necessarily limited thereto. For example, there may be cases where the destination is designated by a credit card company or the like depending on the situation. However, it goes without saying that notifications to the effect that card payments have been made should be made primarily to legitimate card users, their families, and others who share an interest in the use of the card.

[0012] The term "destination" mainly indicates the e-mail address, etc., and does not indicate the information terminal device (destination) itself for viewing the e-mail. The gist of this can be understood from the fact that on the recipient side, it is possible to repeatedly view e-mails sent to the same destination over and over again via various information terminal devices.

[0013] According to the first embodiment of the card usage status notification method of the present invention, when a card payment transaction occurs, the legitimate card user and his/her family are notified of this via e-mail. So even in the event that the information is being used, the fact can be noticed as soon as possible. This also makes it possible to quickly respond to fraudulent card usage. Furthermore, for example, a father who wants to keep track of the credit card usage status of his wife and children at all times can find out more quickly and reliably without any notification from his family.

[0014] In the first embodiment of the card usage status notification method of the present invention, the destination of the email is preferably a wireless information terminal device such as a mobile phone having an email receiving function. In this way, card users and the like can receive and view e-mails from various locations using mobile phones, etc., so that they can more quickly confirm that a card payment transaction has occurred. This makes it possible to respond

more quickly even in the event of fraudulent use of the card.

[0015] In addition, in the first embodiment of the card usage status notification method of the present invention, the destination of the email may be a stationary information terminal device such as a personal computer. According to such an aspect, for example, it is also possible to use a received e-mail by appropriately printing it out via a home computer or the like.

[0016] In the card usage status notification method of the present invention, preferably, the e-mail notification content includes transaction content information such as card usage date and time, card usage location information (store name, ATM installation location, etc.).

[0017] In this way, the card user, etc. will not only be notified that a card payment transaction has occurred, but also be able to know the details of the transaction via e-mail. So it is also possible to use it as a usage statement.

[0018] Next, the above-mentioned conventional problems can also be solved by the second embodiment of the card usage status notification method of the present invention. That is, in the second embodiment of the card usage status notification method of the present invention, when a card payment transaction occurs, the user is automatically notified of the transaction via a wireless information terminal device such as a pre-specified mobile phone.

[0019] Here, the meanings of "card", "card payment transaction", "when there is a card payment transaction", and "specified in advance" are almost the same as in the first embodiment shown above, so the explanation will be omitted.

[0020] The phrase "notify via a wireless information terminal device such as a mobile phone" specifically refers to, for example, notification by sending and receiving specific data via a normal phone line of a mobile phone, or 'I-mode' (registered trademark of NTT Docomo) and 'Saurus' (registered trademark of Sharp Corporation).

[0021] In such a case, it would be also more desirable for the user if the mobile phone or the like performs a specific reception operation using sound, vibration, light, etc. when receiving the notification.

[0022] According to the second embodiment of the card usage status notification method of the present invention, when a card payment transaction occurs, the card user and his or her family members are notified of the transaction more quickly via a wireless information terminal device such as a mobile phone. Therefore, it can be used not only for checking card usage status but also for early detection of fraudulent card usage.

[0023] In addition, even in the second embodiment of the card usage status notification method of the present invention, it would be even more preferable to ensure that the content of the notification includes transaction content information such as card usage date and time, card usage location information, etc.

[0024] The card usage status notification method according to

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the first embodiment described above is also realized by the card payment transaction system according to the first embodiment of the present invention. That is, the card payment transaction system according to the first embodiment of the present invention is a card payment transaction system that enables online card payment transactions through data communication via a network between a card transaction terminal device and a card authentication host. When a card payment transaction is made to the card authentication host, a means for creating an e-mail to notify the user of this fact, and a means for transmitting the created e-mail to a destination specified in advance for each card are provided.

[0025] Here, the "card" includes a credit card, a debit card, and the like, as described above. Therefore, examples of the "card transaction terminal device" include CAT (wireless CAT etc. may also be used), ATM, Kiosk terminal device, etc.

[0026] The term "card authentication host" includes, for example, a credit card company's host computer, a bank's host computer, and the like. It should be noted that in this case, one host does not necessarily indicate one device or computer. It is also possible to realize the host of said 1 by connecting multiple devices to computers, etc. scattered over a network. Here, it refers to a host system that can at least perform card authentication processing during card payment transactions. Therefore, when the present invention is applied to the use of cards by multiple companies, the card authentication hosts of the multiple companies will be connected via a network. Of course, it is fully possible to use one representative host for both.

[0027] According to the card payment transaction system of the first embodiment of the present invention, it is possible to use the existing card payment transaction system to perform card authentication processing and to provide card usage status notifications according to the first embodiment of the present invention described above.

[0028] It should be noted that in the card payment transaction system according to the first embodiment of the present invention, the authentication host performs e-mail creation and e-mail transmission, but these processes may also be performed, for example, on a separately provided server.

[0029] In other words, in another aspect of the card payment transaction system of the first embodiment of the present invention, a server is further connected through a network in a card payment transaction system that enables online card payment transactions through data communication between the card transaction terminal device and the card authentication host, and the server is provided with a means for creating an email to notify the user of such a card payment transaction, and a means for sending said created email to a destination designated in advance for each card.

[0030] Therefore, although the term "server" is used here,

this may be realized by further connecting a host computer, such as a mobile phone company, having the server function via a network.

[0031] According to such an aspect, the processing of email transmission can be performed on the server side, and so the processing on the card authentication host side is reduced.

[0032] The card usage notification method in the second embodiment described above is also implemented by a card payment transaction system in accordance with the second embodiment of the present invention. That is, the card payment transaction system in the second embodiment of the present invention further connects a communication company host through the network to communicate data with a wireless information terminal device such as a mobile phone in a card payment transaction system that enables online card payment transactions through data communication between the card transaction terminal device and the card authentication host, and the host of the communication company sends a specific signal and/or predetermined data to the side of the wireless information terminal device specified in advance for notifying the user of such fact when there is a card payment transaction.

[0033] Here, the meanings of "card" and "card authentication host" are almost the same as those in the first embodiment shown above, so the explanation thereof will be omitted.

[0034] The term "host of a communication company" includes, for example, a host computer of a mobile phone company and a host computer for communicating data with other wireless information terminal devices. It should be noted that in this case, one host does not necessarily indicate one device or computer. This has been explained previously, so it will be omitted here.

[0035] The phrase "specific signals and/or predetermined data" refers to, for example, ordinary telephone lines of mobile phones, 'I-mode' (registered trademark of NTT Docomo), and It can be transmitted via a dedicated information communication line used in Zaurus (registered trademark of Sharp Corporation) and the like.

[0036] In addition, specific notification aspects may include, for example, cases where receiving a specific signal causes a fixed operation predetermined in advance on the side of a wireless information terminal device (for example, specific operation when receiving sound, vibration, light, etc., fixed text display, etc.), or cases where receiving predetermined data causes a variable operation (for example, transaction content display, etc.) on the side of a wireless information terminal device according to the status of card payment transactions. Of course, it is also possible to use them in combination. In addition to this, those skilled in the art should be able to easily imagine various notification modes. At least here, the "notification" is assumed to be made via a wireless information terminal device.

[0037] According to the card payment transaction system of the second embodiment of the present invention, it is possible to use the existing card payment transaction system

to perform card authentication processing as well as to provide card usage status notifications according to the second embodiment of the present invention described above.

[0038]

[Embodiments of the present invention] A preferred embodiment of the present invention will be described in detail below with reference to the accompanying drawings. It should be noted that in this example, the method of notification of card usage status shall be explained at the same time by showing the card payment transaction system.

[0039] A schematic configuration of the entire card payment transaction system of the present invention is shown in FIG. 1. As shown in the figure, a card payment transaction system according to the first embodiment of the present invention includes a CAT 1 installed in a card handling store, a portable wireless CAT 2 suitable for use in door-to-door sales, etc., and an ATM 3 installed in a bank etc., an information processing company server (hereinafter simply referred to as server) 4 that executes various processes for notifying card usage status according to the present invention, and a credit card company authentication host 5a to 5n that performs card authentication processing when using a credit card, bank authentication hosts 6a to 6n for performing card authentication processing when using a debit card (cash card), and a network 7 that connects them.

[0040] In addition, the server 4, credit card company authentication host 5, and bank authentication host 6 each have storage devices 41, 51, and 61, and each of the storage devices 41, 51, and 61 stores various information files to be described later for notification of card usage status.

[0041] In this example, a mobile phone 11 owned by the card user and a personal computer 12 owned by the card user at home are connected to the network 7. It should be noted that the symbol 13 indicates a host computer of a mobile phone company that connects the mobile phone 11 and the network 7, and data communication between the mobile phone 11 and the host of the mobile phone company is performed via the relay base station 14.

[0042] In addition, the symbol 8 indicates CAFIS, which connects the network 7 and each credit card company authentication host 5 to 5n, and various service processing related to card authentication processing etc. is executed between the card transaction terminal device 1 to 3 and each authentication host 5 to 6. Further, the symbol 9 indicates an interbank network, which connects the network 7 and each bank authentication host 6 to 6n, and it is also used as a dedicated line for data communication between each bank authentication host 6 to 6n.

[0043] The card payment transaction system of the present invention is configured as described above, and when using card payment transactions, both normal card authentication processing and card usage status notification via email are performed simultaneously.

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[0044] Specifically, when card 10 owned by a card user is used for payment transactions via card transaction terminal devices 1 to 3, card authentication processing is performed between card transaction terminal devices 1 to 3 and each authentication host via CAFIS8, and an e-mail is sent from the side of server 4 to the mobile phone 11 owned by the card user and the PC 12 owned by the card user at home to notify the user that there was a card payment transaction.

[0045] The flowchart in FIG. 2 shows the processing on the card transaction terminal device side during a card payment transaction. As will be explained first, the processing on the card transaction terminal device shown below is similar to the processing performed during a conventional card payment transaction. Therefore, herein, the processing in the card transaction terminal device CAT1, wireless CAT2, and ATM3 will be simultaneously explained based on the same flowchart, and the contents of the processing will only be briefly explained. However, a person skilled in the art will be able to easily understand the detailed processing in each terminal device based on the same flowchart.

[0046] As shown in FIG. 2, when the process is started, card information, transaction details information, and other necessary information are sequentially read on the card transaction terminal device side (steps 201, 202, and 203).

[0047] Here, the card information includes card number information. Transaction details information, when using a credit card, includes the transaction type (CAT: product purchase, etc., ATM: cash advance, deposit/withdrawal, etc.), transaction amount (CAT: purchase amount, etc., ATM: cash advance amount, etc.), transaction product classification (purchased product type, etc.), payment method, etc. (lump sum, split, etc.), when using a debit card, transaction type (CAT: product purchase, etc., ATM: balance inquiry, deposit/withdrawal, etc.), transaction settlement Examples include the amount (CAT: purchase amount, etc., ATM: acquisition amount, etc.), transaction product classification, payment method, etc. Other necessary information includes ID information for each card transaction terminal, card password information input by the user, and the like.

[0048] The various types of information that have been read are sent as data to each card authentication host 5-6 (or CAFI S8), thereby issuing a card authentication processing request (step 204).

[0049] Thereafter, the response is waited until it is received from the side of each card authentication host (step 205NO, step 206), but when the response is received (step 205 YES), then the content of the response is determined (step 207). Here, the response content includes, in addition to result information on whether authentication is possible or not, a processing serial number, approval number, etc. in the case of CAT1 or wireless CAT2, for example. In addition, in the case of the ATM 3, in addition to the result information of whether authentication is possible or not, the information includes, for

example, individual information for each card user such as the balance after the transaction.

[0050] If the received response indicates that authentication is not possible (step 208 NO), a predetermined error processing is performed (step 210), but if authentication is successful (step 208 YES), processing is performed according to the response content, and (step 209) processing is completed. Processes according to the response include, for example, issuing a usage statement, and in the case of an ATM, processing for depositing and withdrawing money, processing for printing on a passbook, and the like.

[0051] In addition, in this example, various information read by the card transaction terminal device is sent in bulk to the card authentication hosts 5 to 6, and the card transaction terminal device waits and receives the responses. However, in reality, data is repeatedly sent and received between the card transaction terminal device and the card authentication host to proceed with the process. However, since this point is already known, no particular explanation is necessary.

[0052] The flowchart in FIG. 3 shows the processing on the card authentication host side when using a card payment transaction. Regarding the processing on the card authentication host side, the processing on the credit card company authentication host 5 and the bank authentication host 6 will be explained at the same time based on the same figure.

[0053] As shown in FIG. 3, based on the authentication processing request from the side of the card transaction terminal device, card information, transaction content information, and other necessary information transmitted from the side of the card transaction terminal device are sequentially received and loaded on the side of the card authentication host (steps 301, 302, and 303). Since this information has been explained previously, the description thereof will be omitted.

[0054] The authentication process is then performed based on the received information (step 304). In this example, the card authentication process is actually executed via the CAFIS 8, but since the details of the CAFIS and the authentication process are already known, detailed explanation thereof will be omitted here.

[0055] If the authentication is not successful (step 305 NO), a signal indicating an authentication error is sent to the card transaction terminal devices 1 to 3 as a response to the authentication request (step 306), and the process ends.

[0056] On the other hand, when authentication is successful (step 305 YES), a signal indicating authentication OK or data, etc., required for processing on the side of the card transaction terminal device is transmitted to the side of the card transaction terminal device 1-3 (step 307), and various processing is then performed according to the transaction content (step 308). The "various processes" mentioned here

include, for example, recording transaction details in a predetermined file, updating the usage balance, and the like.

[0057] In step 309, a predetermined file is called for determining whether or not to notify the user of the card payment transaction via e-mail (step 309). An example of the file is shown in FIG. 7(a). This file is a file stored in each of the recording devices 51 to 61 of the card authentication hosts 5 to 6, and as shown in (a) in the same figure, in this example, the corresponding electronic data is stored for each card number. Whether or not notification is to be provided by email is recorded in advance (in this example, it is indicated by "o" and "x").

[0058] Therefore, in the next step 310, the presence or absence of the email transmission is identified from the card number information received in step 301 and the file. In this example, the presence or absence of notification by e-mail is received in advance for each card user via, for example, an application form, as a notification service when using the card.

[0059] If the email notification service is not requested here (step 310 NO), the processing is terminated. That is, in this case, a normal card payment transaction is performed as usual and the process ends. On the other hand, if the email notification service has been applied for (step 310 YES), a request for email transmission processing is made to the server 4 via the network 7 (step 311). That is, in this example, processing for sending e-mail is performed on the server 4 side.

[0060] Here, at the time of the email transmission processing request (step 311), in addition to card information (e.g. card number), in this example, transaction information generated by the authentication host 5 to 6 or CAFIS8 (e.g., various information required for the creation of email such as transaction date and time, terminal ID used, transaction store name, processing number, authentication number, product category, transaction type, etc.) is sent to the server 4 side. Note that various types of information can be added to the transaction information, depending on the content of the email being created. Of course, if the notification is simply that the card has been used, very limited information such as the date and time of the transaction will be sufficient as the transaction information.

[0061] The process for notifying the card usage status on the server 4 side is shown in the flowchart of FIG. 4.

[0062] As shown in the same figure, on the side of server 4, in response to an email transmission processing request from authentication hosts 5 to 6, data corresponding to card information (card number), transaction information (transaction date and time, terminal ID used, transaction store name, processing number, authentication number, item category, transaction type, etc.) is received and loaded from the side of authentication hosts 5 to 6 (steps 401 and 402). Next, based on the read information, an e-mail is created (step 403), and the e-mail is sent to a destination specified in advance by the user (step 404).

[0063] Details of the mail creation process in step 403 are shown in the flowchart of FIG. 5. In the mail creation process, first, a predetermined file for specifying the destination of the e-mail is read based on the read card information (step 501).

[0064] An example of the file is shown in FIG. 7(b). This file is a file stored in the recording device 41 of the server 4, and as explained earlier, it is created in response to an application from the card user (the card user or his/her family, etc.) in advance. As shown in (b) of the figure, in this example, card type, card number, subscriber information, email address, etc. are each recorded.

[0065] In this example, credit card company name, debit card, credit card type, etc. are recorded as the card type. In addition, as the subscriber information, in addition to the name of the subscriber (the card user, the card user's family, etc.), the subscriber's address, contact information, etc. are recorded. In addition, the e-mail address is the one specified in advance by the contractor, and in this example, e-mail addresses for receiving e-mail are recorded on a mobile phone 11 owned by the card user and a personal computer 12 installed at the user's home.

[0066] In the e-mail creation process, among the information recorded in these files, the card type and subscriber name are first read in order as information to be attached to the e-mail (steps 502 and 503), and then the same information is attached to the e-mail. Fixed information such as characters and designs are read (step 504), and the e-mail is edited based on this information and the transaction information previously shown in step 402.

[0067] Details of the mail sending process are shown in the flowchart of FIG. 6. As shown in the figure, in the email sending process, the edited email is read (step 601), and the specified address is read into the e-mail from the file called in step 501, set as the destination address (step 602), and transmitted (step 603). Although not shown, the sent e-mail is sent from the server 4 via the network 7 according to a predetermined protocol. It will be received by a predetermined mail server, and delivered from the predetermined mail server to the mobile phone 11 and personal computer 12 owned by the user.

[0068] An example of the content of the email is shown in FIG. 8. It should be noted that this example shows an example of the content of an email generated when a debit card payment transaction is made using CAT1, and it should be noted that an email of somewhat different content is created when using a caching service, etc., using wireless CAT2 or ATM3, for example.

[0069] As shown in the same figure, in this example, the email sent to the user shows the type of card used for card payment transactions, card number, transaction date and time, card usage store name, card transaction terminal device ID, processing number, authorization number, purchased product category, transaction type (purchase, loan, etc.), and payment

amount.

[0070] In addition, fixed text information such as "The following card payment transaction has been confirmed for the card you are using" is displayed as a guide, and fixed text information such as a phone number, email address, IP address, etc. is displayed as a contact for inquiries about the transaction. In this example, the displayed phone number, email address, and IP address allow hyperlinks to those contacts.

[0071] As explained above, according to the present embodiment, when a payment transaction is made using a card owned by the card user or a family member, the card user can be informed of the fact via e-mail, and can also receive notification of the transaction. Since the content of the e-mail can be known in detail, the e-mail can be used as a card transaction history.

[0072] Furthermore, according to the present embodiment, when a payment transaction is made using a card that the card user owns, the card user can immediately know through the mobile phone 11 that the card payment transaction has been made, and early detection of card fraud, etc. is also possible.

[0073] In addition, in the embodiment described above, although an e-mail is sent to notify the user after the card authentication process in the card payment transaction, the e-mail can also be sent, for example, during the card authentication process. In such a case, for example, it would be possible to prevent fraudulent card use by making it possible to issue a transaction cancellation request to the authentication hosts 5 to 6 via the mobile phone 11.

[0074] Next, in the above-described embodiment, the user side (mobile phone 11 and PC 12) was notified via email that a card payment transaction had occurred, but the notification can also be made by sending a specific signal and/or specific data to notify the mobile phone 11 from the mobile phone company host 13, for example.

[0075] FIG. 9 shows a schematic configuration of the entire card payment transaction system according to the second embodiment, with the previously described embodiment as the first embodiment. It should be noted that for the second embodiment, the description of the detailed processing will now be limited to a schematic description, as it would readily be performed by a person skilled in the art by reference to the various processing described in the first embodiment.

[0076] As shown in the same figure, the card payment transaction system according to the second embodiment of the present invention has a card transaction terminal device (CAT1, wireless C AT2, ATM3) installed on the card handling store side, an information processing company server 4, a credit card company authentication host 5 for card authentication processing when using a credit card, a bank authentication host 6 for card authentication processing when using a debit card (cash card), a network 7 connecting them, and a mobile phone company host 13, and the basic configuration is similar to that of the first embodiment, but in that the mobile phone company host 13 is connected to the

server 4 via a dedicated line.

[0077] That is, in this example, when there is a card payment transaction, a processing request for card usage status notification from the side of the card authentication host 5 to 6 is received at the server 4 once, as in the first embodiment, and a processing request is sent from the side of the server 4 to the host of the applicable mobile phone company to make such notification.

[0078] In this way, the server 4 and the mobile phone company host 13 are directly connected by a dedicated line because, in the first embodiment, the special processing for notification is terminated once the email is sent from the side of the server 4, while in the second embodiment, the special processing for notification is continued until the specific signal and/or specific data is sent from the mobile phone company host 13 to the mobile phone 11.

[0079] With such a configuration, in the second embodiment, on the side of the mobile phone 11, when a specific signal is received from the side of the mobile phone company host 13, a predetermined specific reception operation is performed based on the signal or data. Specific examples of the reception operation include an incoming melody, vibration in manner mode, lighting of a light, and the like. That is, in the second embodiment, various preset incoming behavior patterns allow the mobile phone user to know that a particular card has been used for a payment transaction. Of course, specific data indicating the content of card payment transactions can be transmitted from the mobile phone company host to the mobile phone 12, and the mobile phone 12 can display the content on the display by text, etc.

[0080]

[Effects of the present invention] As is clear in the explanation above, according to the card usage determination method of the invention and card payment transaction system, it is possible to notify the card user and their family members, etc. of the existence of card payment transactions more quickly via an information terminal device such as a mobile phone or personal computer.

[0081] In addition, according to the card usage determination method and card payment transaction system of the present invention, it is possible to know that a payment transaction was performed with a card that is owned by the customer or his family via an information terminal device such as a mobile phone or a personal computer, so it is possible to detect the unauthorized use of the card early, etc.

[Brief Description of the Drawings]

FIG. 1 is a diagram showing a schematic configuration of a card payment transaction system of the present invention.

FIG. 2 is a flowchart showing the processing in the card transaction terminal device during a card payment transaction.

FIG. 3 is a flowchart showing processing in a card authentication host during a card payment transaction.

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FIG. 4 is a flowchart showing processing in the server during a card payment transaction.

FIG. 5 is a diagram showing details of email creation processing.

FIG. 6 is a diagram showing details of email sending processing.

FIG. 7 is a diagram showing an example of various files according to the present invention.

FIG. 8 is a diagram illustrating an example of the contents of an e-mail.

FIG. 9 is a diagram showing a schematic configuration of another aspect (second embodiment) of the present invention.

[Explanation of References]

1 CAT

2 Wireless CAT

3 ATM

4 Server

5 Credit card company authentication host

6 Bank authentication host

\* 7 Network

8 CAFIS

9 Interbank networks

10 Cards for payment transactions

11 Information terminal devices (mobile phones)

12 Information terminal devices (computers)

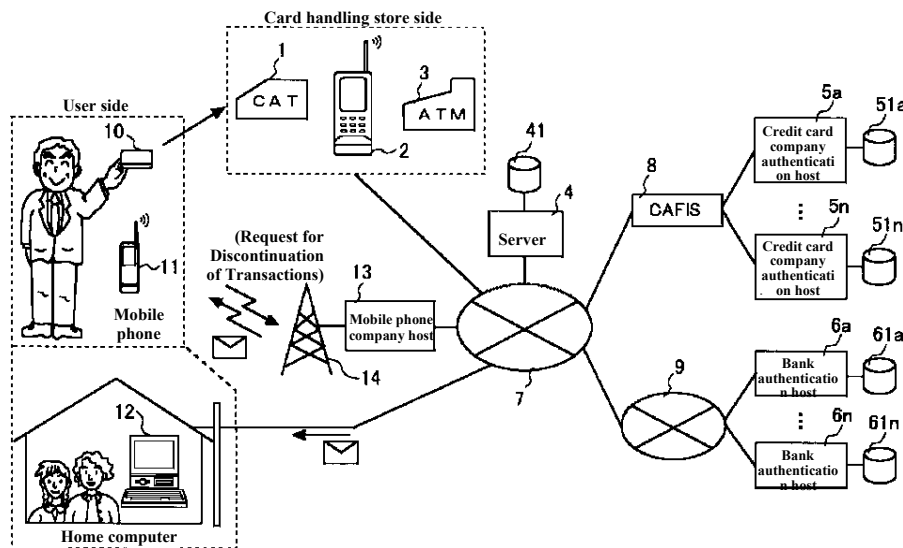
13 Mobile phone company host

14 Relay Base Station

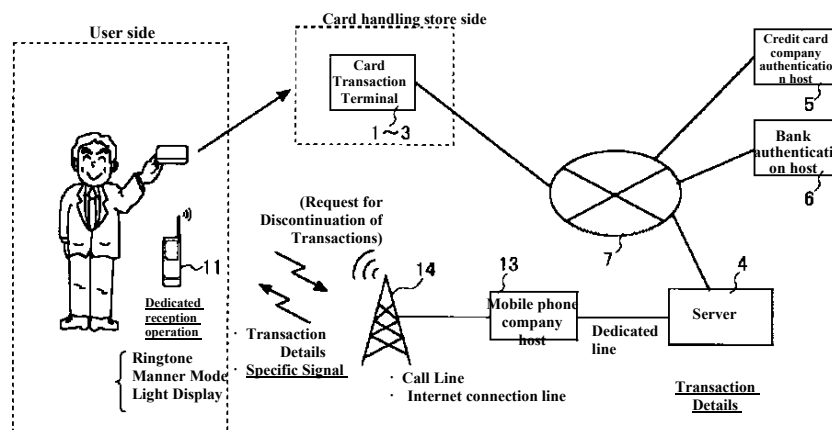
41, 51, 61 Storage devices

\*

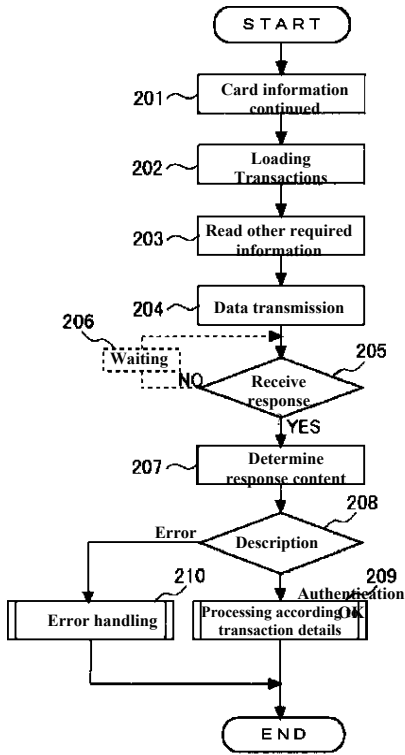
[FIG. 1]



[FIG. 9]

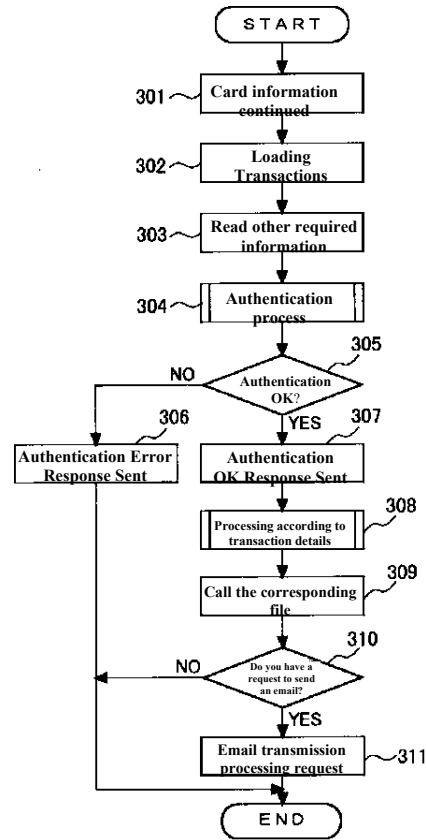


[FIG. 2]



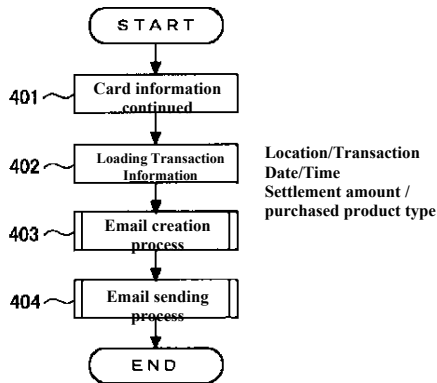
Flowchart showing processing in card transaction terminal devices

[FIG. 3]



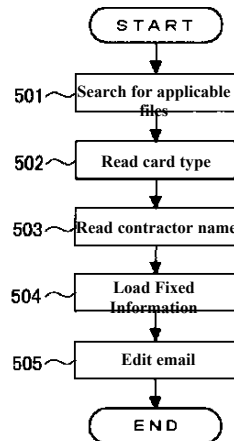
Flowchart showing card authentication host side processing

[FIG. 4]



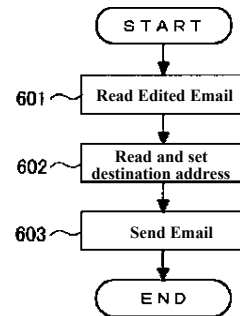
Flowchart showing server-side processing

[FIG. 5]



Flowchart showing details of email creation process

[FIG. 6]



Flowchart showing details of email sending process

[FIG. 7]

| Card number             | Email notification service |
|-------------------------|----------------------------|
| ⋮                       | ⋮                          |
| 1234-5678<br>-9012-1234 | ○                          |
| 1234-5678<br>-9012-1235 | ○                          |
| 1234-5678<br>-9012-1236 | ×                          |
| ⋮                       | ⋮                          |

(A) An example of a file stored on the authentication host side

|               |                                                 |
|---------------|-------------------------------------------------|
| Card Type     | ○○ Bank / Debit                                 |
| Card number   | 1234-5678-9012-1234                             |
| Contractor    | Junichi Horie<br>Nishi-Kanda, Chiyoda-ku, Tokyo |
| Email address | ○○○@acac.co.jp<br>○○○@docomo.ne.jp              |

|           |                  |
|-----------|------------------|
| Card Type | ○○ Card / Credit |
|           |                  |

(B) An example of a file stored on the server side

Example of various files

[FIG. 8]

Card usage information  
About the card used by Mr. Horie

The following card payment transactions have been confirmed:

Cards used: ○○ Bank / debit card  
Card Number: 1234-5678-9012-1234

Transaction date and time: ○ month ○ day      ○ hour ○ minute

Name of store:    Axess

Terminal No.:    00000

Processing number: 6 7 8 9 0 — 1

Approval Number: 0 0 0 0 0 0 1

Product classification:    Electrical appliances

Transaction type:    ¥    \*    \*    \*    \*    Purchase

Amount paid:

Contact information for the above transactions

Tel: 03-1234-0000

Email:    \*    \*    @    \*    \*    .    co    .    jp

Web :    http://www.acac.co.jp

An example of email content

Continuation from the front page

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F term (reference) 3E040 AA03 BA18 CA14 CB01  
                          5K067 AA35 BB04 BB21 DD53 EE02  
                          EE10 EE16 FF02 FF23 HH05  
                          HH21