

## CLAIMS

1. A computer-implemented method of distributing rewards and loyalty points in a payment network based on ~~purchase a shopping~~ patterns, the method comprising:

receiving, at a module of a payment network computer system, purchase data indicating a purchase history for a payment device, the purchase data corresponding to a plurality of purchases transactions for the payment device, the purchase data including, for each purchase transaction, a merchant, a purchase location, and a purchase time;

determining, at the module of the payment network computer system, from the purchase data, two or more pairs of purchase transactions, wherein each pair of purchase transactions indicates a first purchase transaction beginning at a first merchant and proceeding to a second purchase transaction at a second merchant;

determining, at the module of the payment network computer system, from the two or more pairs of purchase transactions, an average elapsed time between the first purchase transaction at the first merchant and the second purchase transaction at the second merchant;

determining, at the module of the payment network computer system, a the shopping pattern based on the average elapsed time being below a threshold~~purchase data corresponding to a plurality of purchases, wherein the shopping pattern indicates a probability that a first purchase transaction beginning at a first store will proceed to a second purchase transaction at a second store, the probability being above a threshold;~~

receiving, at the module of the payment network computer system, further purchase data from a user computer system, the further purchase data indicating a further purchase transaction for the payment device at the first merchant;

~~comparing the further purchase data to the shopping pattern;~~ and

sending, from the module of the payment network computer system to the user computer system, one or more of rewards and loyalty points corresponding to the second merchant before expiration of the average elapsed time from a further purchase

~~time of the further purchase transaction~~store when the further purchase data includes the first store.

2. The method of claim 1, further comprising appending a purchase location and a purchase time to the purchase data in response to receiving the purchase data corresponding to the plurality of purchases.

3. The method of claim 2, wherein the purchase data includes one or more of a user name, a user purchase amount, financial institution system account data, payment network system account data, merchant data, purchase location data, and purchase timestamp data.

~~4. The method of claim 3, wherein determining the shopping pattern based on the purchase data corresponding to the plurality of purchases includes analyzing the purchase data corresponding to the plurality of purchases.~~

~~54. The method of claim 43, wherein the two or more pairs of purchase transactions include purchase location data further comprising determining a plurality of transactions within a single mall, the plurality of transactions corresponding to a user name based on the purchase data.~~

~~6. The method of claim 5, wherein comparing the further purchase data to the shopping pattern includes comparing the further purchase data to the purchase data corresponding to the plurality of purchases.~~

~~75. The method of claim 64, further comprising determining an address for an unknown merchant of the plurality of transactions within the single mall based on a distance between a first purchase location data for the first purchase transaction and a second purchase location data for the second purchase transaction an elapsed time between two or more of the plurality of transactions~~being below a threshold.

86. A system comprising:

- a processor and a memory in communication with the processor, the memory storing instructions that, when executed by the processor, cause the processor to:
  - receive purchase data indicating a purchase history for a payment device, the purchase data corresponding to a plurality of purchases transactions for the payment device, the purchase data including, for each purchase transaction, a merchant, a purchase location, and a purchase time;
  - determine, from the purchase data, two or more pairs of purchase transactions, wherein each pair of purchase transactions indicates a first purchase transaction beginning at a first merchant and proceeding to a second purchase transaction at a second merchant;
  - determine, from the two or more pairs of purchase transactions, an average elapsed time between the first purchase transaction at the first merchant and the second purchase transaction at the second merchant;
  - determine a shopping pattern based on the average elapsed time being below a threshold~~purchase data corresponding to a plurality of purchases, wherein the shopping pattern indicates a probability that a first purchase transaction beginning at a first store will proceed to a second purchase transaction at a second store, the probability being above a threshold;~~
  - receive further purchase data from a user computer system, the further purchase data indicating a further purchase transaction for the payment device at the first merchant;
  - ~~compare the further purchase data to the shopping pattern;~~ and
  - send, to the user computer system, one or more of rewards and loyalty points corresponding to the second merchant before expiration of the average elapsed time from a further purchase time of the further purchase transaction~~store when the further purchase data includes the first store.~~

97. The system of claim 86, further comprising instructions to append one or more of a purchase location and a purchase time to the purchase data in response to the instructions to receive the purchase data corresponding to the plurality of purchases.

~~408.~~ The system of claim ~~97~~, wherein the instructions to determine the shopping pattern based on the purchase data corresponding to the plurality of purchases includes instructions to analyze the purchase data corresponding to the plurality of purchases.

~~11. The system of claim 10, wherein the instructions to compare the further purchase data to the shopping pattern includes instructions to compare the further purchase data to the purchase data corresponding to the plurality of purchases.~~

~~129.~~ The system of claim ~~148~~, wherein the two or more pairs of purchase transactions include purchase location data ~~further comprising instructions to determine a plurality of transactions within a single mall, the plurality of transactions corresponding to a user name based on the purchase data.~~

~~13. The system of claim 12, wherein instructions to compare the further purchase data to the shopping pattern includes instructions to compare the further purchase data to the purchase data corresponding to the plurality of purchases.~~

~~1410.~~ The system of claim ~~139~~, further comprising instructions to determine an address for an unknown merchant of the plurality of transactions within the single mall based on a distance between a first purchase location data for the first purchase transaction and a second purchase location data for the second purchase transaction ~~an elapsed time between two or more of the plurality of transactions~~ being below a threshold.

~~1511.~~ A non-transitory tangible computer-readable medium having computer-executable instructions stored thereon, the computer-executable instructions comprising:

receiving purchase data indicating a purchase history for a payment device, the purchase data corresponding to a plurality of purchases transactions for the payment device, the purchase data including, for each purchase transaction, a merchant, a purchase location, and a purchase time;

determining, from the purchase data, two or more pairs of purchase transactions, wherein each pair of purchase transactions indicates a first purchase transaction beginning at a first merchant and proceeding to a second purchase transaction at a second merchant;

determining, from the two or more pairs of purchase transactions, an average elapsed time between the first purchase transaction at the first merchant and the second purchase transaction at the second merchant;

determining a shopping pattern based on the average elapsed time being below a threshold~~purchase data corresponding to a plurality of purchases, wherein the shopping pattern indicates a probability that a first purchase transaction beginning at a first store will proceed to a second purchase transaction at a second store, the probability being above a threshold;~~

receiving further purchase data from a user computer system, the further purchase data indicating a further purchase transaction for the payment device at the first merchant;

~~comparing the further purchase data to the shopping pattern;~~ and

sending, to the user computer system, one or more of rewards and loyalty points corresponding to the second merchant before expiration of the average elapsed time from a further purchase time of the further purchase transaction~~store when the further purchase data includes the first store.~~

**4612.** The non-transitory tangible computer-readable medium of claim **4511**, further comprising computer-executable instructions for appending one or more of a purchase location and a purchase time to the purchase data in response to receiving the purchase data corresponding to the plurality of purchases.

~~17.—The non-transitory tangible computer-readable medium of claim 16, wherein the instructions for determining the shopping pattern based on the purchase data corresponding to the plurality of purchases includes instructions for analyzing the purchase data corresponding to the plurality of purchases.~~

~~1813.~~ The non-transitory tangible computer-readable medium of claim ~~1712~~, wherein the two or more pairs of purchase transactions include purchase location data within a single mall~~instructions for comparing the further purchase data to the shopping pattern includes instructions for comparing the further purchase data to the purchase data corresponding to the plurality of purchases.~~

~~1914.~~ The non-transitory tangible computer-readable medium of claim ~~1413~~, further comprising instructions to ~~;~~  
~~determine a plurality of transactions within a single mall, the plurality of transactions corresponding to a user name based on the purchase data; and~~  
determine an address for an unknown merchant of the plurality of transactions within the single mall based on a distance between a first purchase location data for the first purchase transaction and a second purchase location data for the second purchase transaction~~an elapsed time between two or more of the plurality of transactions~~ being below a threshold.

~~20.~~ ~~The non-transitory tangible computer-readable medium of claim 19, wherein instructions to compare the further purchase data to the shopping pattern includes instructions to compare the further purchase data to the purchase data corresponding to the plurality of purchases.~~