US 20180293562A1

(19) **United States**

(12) **Patent Application Publication**

Squire et al.

(10) **Pub. No.: US 2018/0293562 A1**

(43) **Pub. Date: Oct. 11, 2018**

(54) **SYSTEMS AND METHODS FOR TRANSACTION PROCESSING**

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(21) Appl. No.: **16/006,480**

(22) Filed: **Jun. 12, 2018**

Related U.S. Application Data

(63) Continuation-in-part of application No. 14/103,848, filed on Dec. 12, 2013, now Pat. No. 10,002,366.

(60) Provisional application No. 61/847,077, filed on Jul. 16, 2013.

Publication Classification

(51) **Int. Cl.**

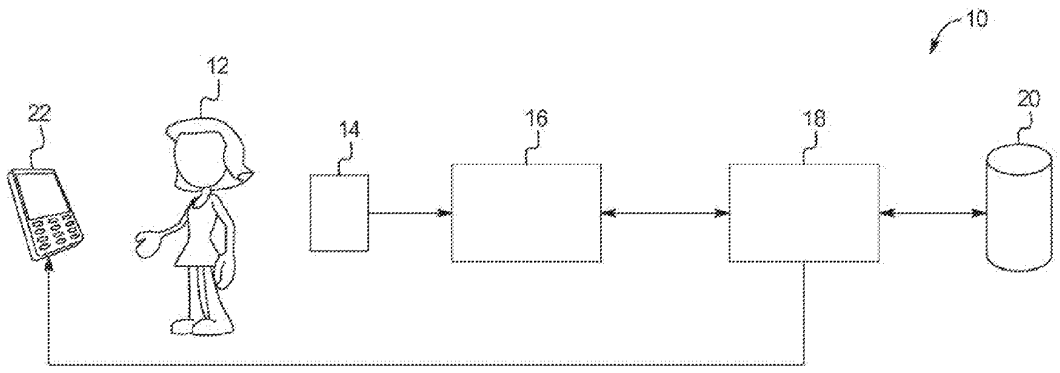
G06Q 20/10	(2006.01)
G06Q 20/32	(2006.01)
G06Q 20/38	(2006.01)
G06Q 20/20	(2006.01)
G06Q 30/02	(2006.01)
H04L 29/08	(2006.01)

(52) **U.S. Cl.**

CPC ***G06Q 20/102*** (2013.01); ***G06Q 20/3276*** (2013.01); ***H04L 67/26*** (2013.01); ***G06Q 20/204*** (2013.01); ***G06Q 30/0238*** (2013.01); ***G06Q 20/385*** (2013.01)

(57) **ABSTRACT**

Pay@Table is the fastest way to pay at restaurants, allowing guests to view and pay for their bill whenever is convenient for them. Pay@Table, as discussed, can be available through a mobile app or without downloading an app such as via a browser interface. Guests can simply use their mobile phones to scan a QR code on their table or bill to quickly be able to view their bill, pay, and close their bill. Payments are processed in seconds and allow guests to use their already set up electronic payment accounts, or quickly scan their credit card to make a payment. Payments are passed directly to the restaurant's point of sale and the table closed, so no extra input is required from wait staff.



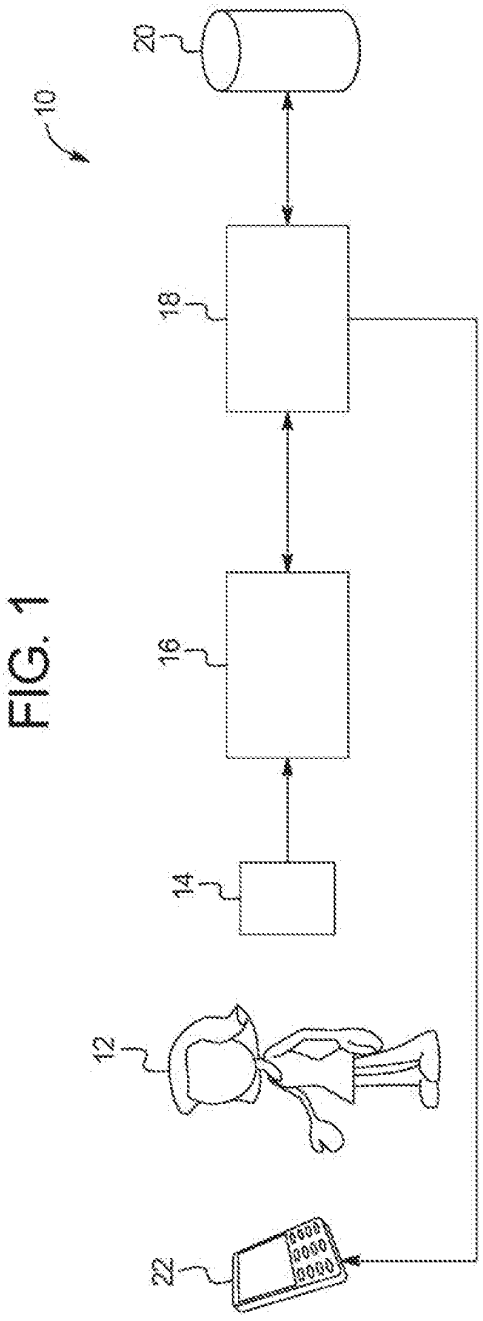


FIG. 1

FIG. 2

	Purse Type	Value Definition	Currency Definition
24			
26	Cash	Amount in local currency	Any standard ISO currency
25	Product code purse	Number of products (units)	List of one or more applicable SKUs (or other identifying criteria such as UPC)
28	Non-Standard Currency	Amount in a defined non-standard currency	Any measurable unit such as loyalty points
	Purse Use-Model	Definition	Key Elements
30	Value Debit	No conditions. Debit balance based on amount of payment transaction	
31	Conditional Value	When conditional criteria are met (e.g. minimum transaction value, SKU present in transaction) a defined value is deducted from the transaction and applied against the purse or credited to another purse in original or other currency.	Purse enactment conditions Amount of conditional value (purse value)
32	Conditional Discount	When conditional criteria are met (e.g. minimum transaction value, SKU present in transaction) a defined percentage is deducted from the transaction and applied against the purse or credited to another purse in original or other currency.	Purse enactment conditions Percentage discount
33	Conditional SKU	When conditional criteria are met (e.g. minimum transaction value, SKU present in transaction) either the value of one or more other SKUs is deducted from the transaction and applied against the purse or a SKU is applied as currency to another purse in original or other currency.	Purse enactment conditions Applicable SKU list
34	Conditional loyalty Use-model type	When conditional use-type loyalty criteria are met, either the value or other SKUs are deducted from the transaction and applied against the cash purse or product code purse	Purse enactment conditions applicable

FIG. 3

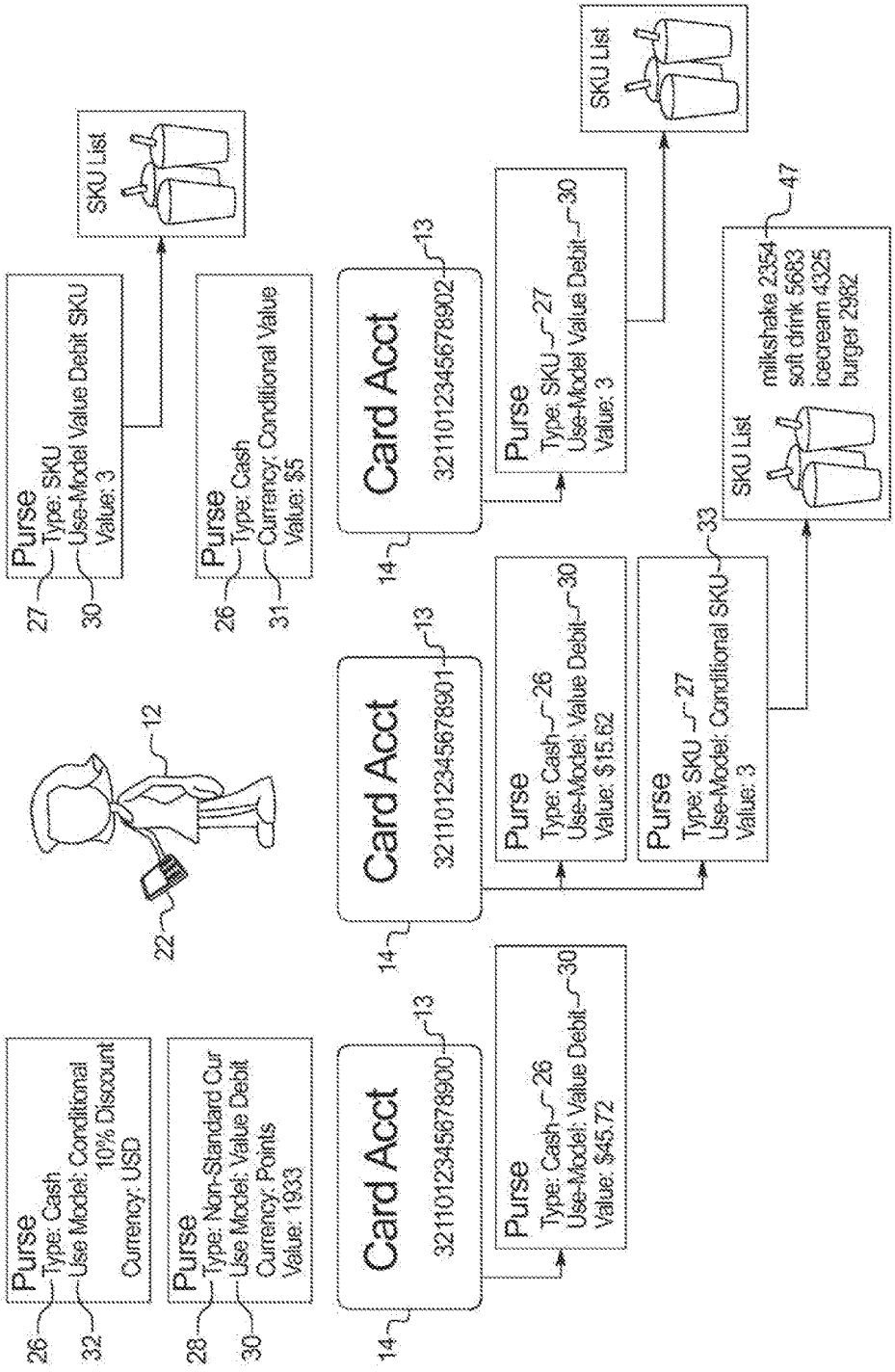

Purse
Type: Cash
Use-Model: Conditional
10% Discount
Currency: USD
26
32
Purse
Type: Non-Standard Cur
Use-Model: Value Debit
Currency: Points
Value: 1933
28
30
Card Acct
3211012345678900
13
14
Purse
Type: Cash
Use-Model: Value Debit
Value: $45.72
26
30
22
12
Card Acct
3211012345678901
13
14
Purse
Type: Cash
Use-Model: Value Debit
Value: $15.82
26
30
Purse
Type: SKU
Use-Model: Conditional SKU
Value: 3
27
33
Purse
Type: Cash
Use-Model: Conditional Value
Value: $5
26
31
Purse
Type: SKU
Use-Model Value Debit SKU
Value: 3
27
30
SKU List
Card Acct
3211012345678902
13
14
Purse
Type: SKU
Use-Model Value Debit
Value: 3
27
30
SKU List
SKU List
milkshake 2354
soft drink 5683
icecream 4325
burger 2982
47

FIG. 4

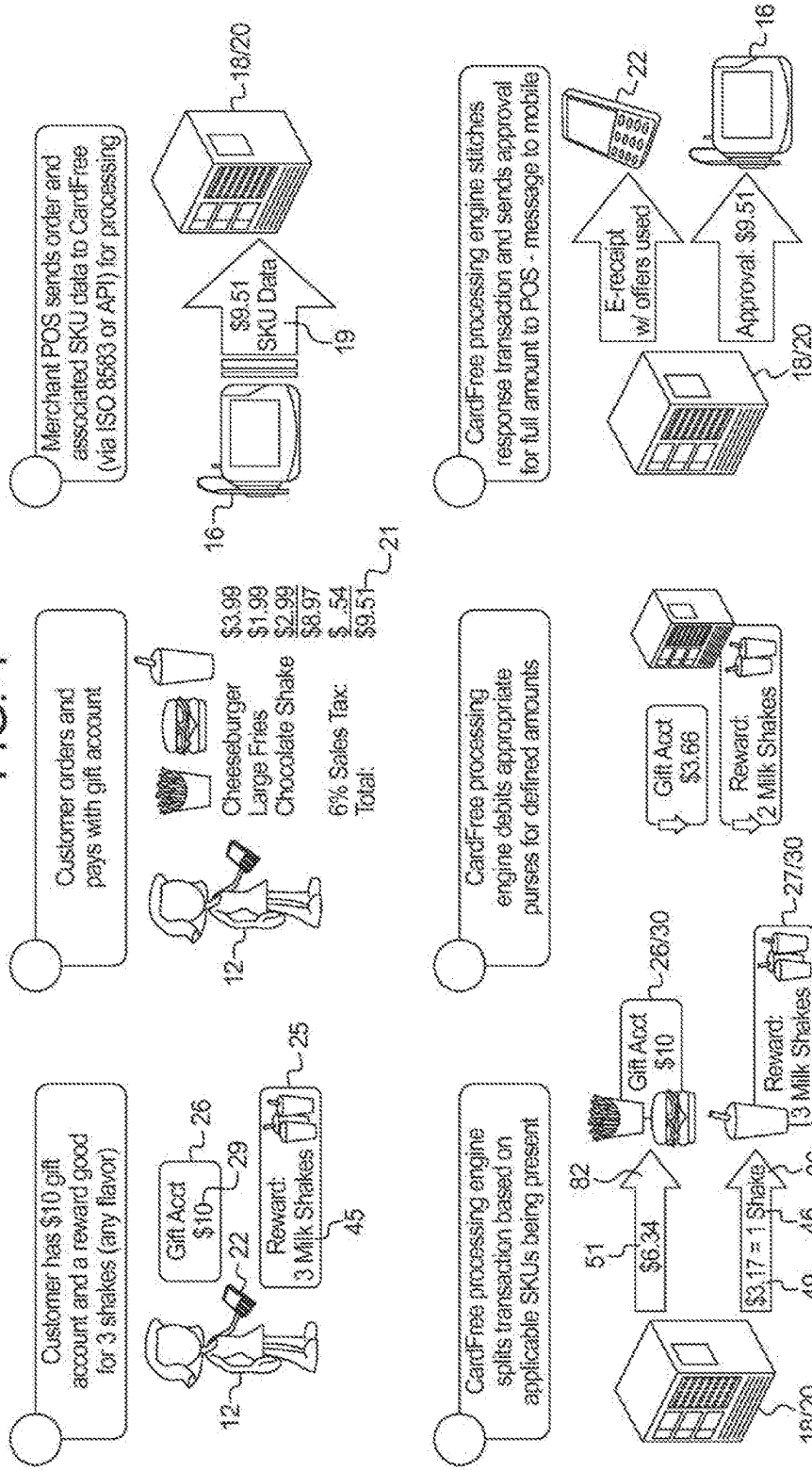
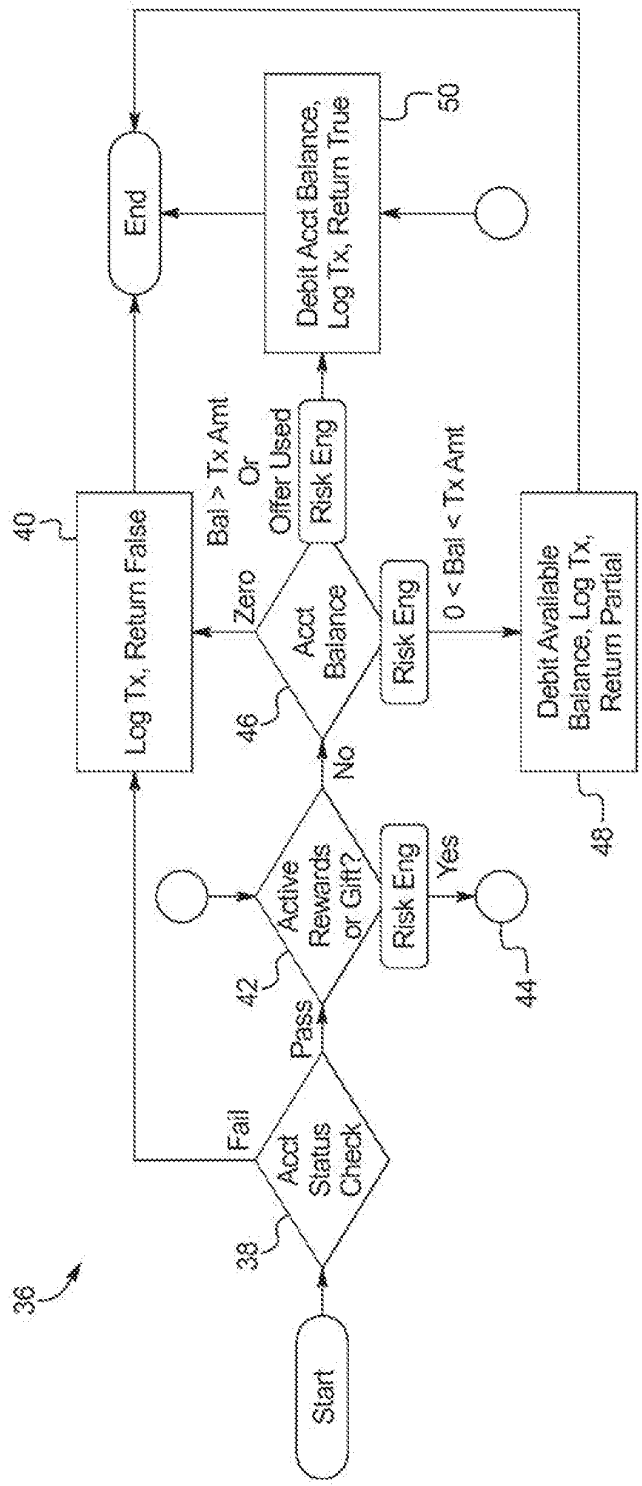

Customer has $10 gift account and a reward good for 3 shakes (any flavor)
Gift Acct $10
Reward: 3 Milk Shakes
12
22
26
29
25
45
Customer orders and pays with gift account
Cheeseburger $3.99
Large Fries $1.99
Chocolate Shake $2.99
$8.97
6% Sales Tax: $.54
Total: $9.51
21
12
Merchant POS sends order and associated SKU data to CardFree (via ISO 8583 or API) for processing
$9.51 SKU Data
19
16
18/20
CardFree processing engine splits transaction based on applicable SKUs being present
$6.34
$3.17 = 1 Shake
Gift Acct $10
Reward: 3 Milk Shakes
51
82
49
46
86
26/30
27/30
18/20
CardFree processing engine debits appropriate purses for defined amounts
Gift Acct $3.66
Reward: 2 Milk Shakes
CardFree processing engine stitches response transaction and sends approval for full amount to POS - message to mobile
E-receipt w/ offers used
Approval: $9.51
22
16
18/20

FIG. 5


36
Start
38
Acct Status Check
Fail
Pass
42
Active Rewards or Gift?
Risk Eng
Yes
44
No
46
Acct Balance
Risk Eng
0 < Bal < Tx Amt
Debit Available Balance, Log Tx, Return Partial
48
Bal > Tx Amt Or Offer Used
Zero
Risk Eng
Debit Acct Balance, Log Tx, Return True
50
40
Log Tx, Return False
End

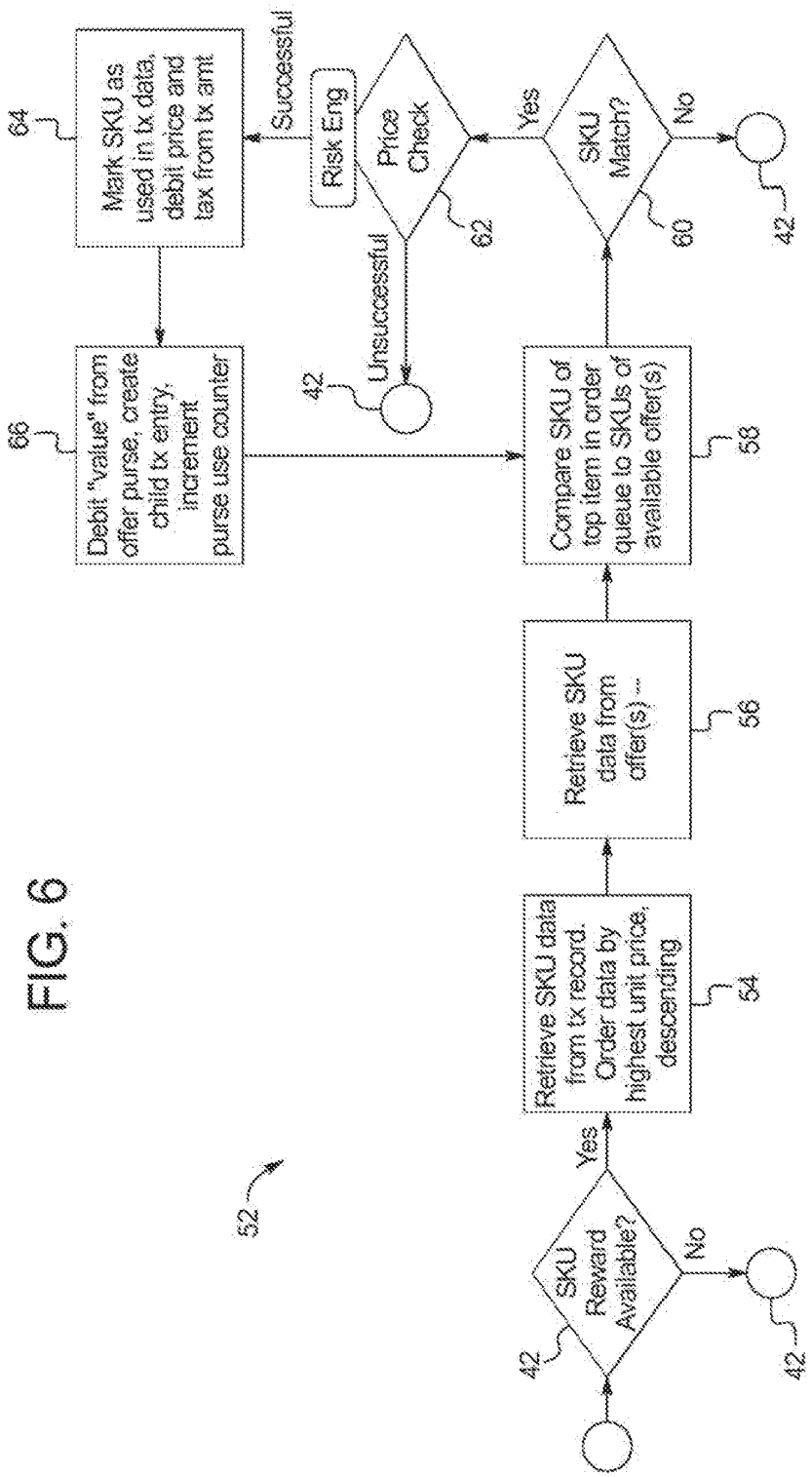

52
SKU Reward Available?
Yes
No
42
42
Retrieve SKU data from tx record. Order data by highest unit price, descending
54
Retrieve SKU data from offer(s) --
56
Compare SKU of top item in order queue to SKUs of available offer(s)
58
SKU Match?
60
Yes
No
42
Price Check
62
Unsuccessful
42
Risk Eng
Successful
Mark SKU as used in tx data, debit price and tax from tx amt
64
Debit "value" from offer purse, create child tx entry, increment purse use counter
66

FIG. 6

FIG. 7

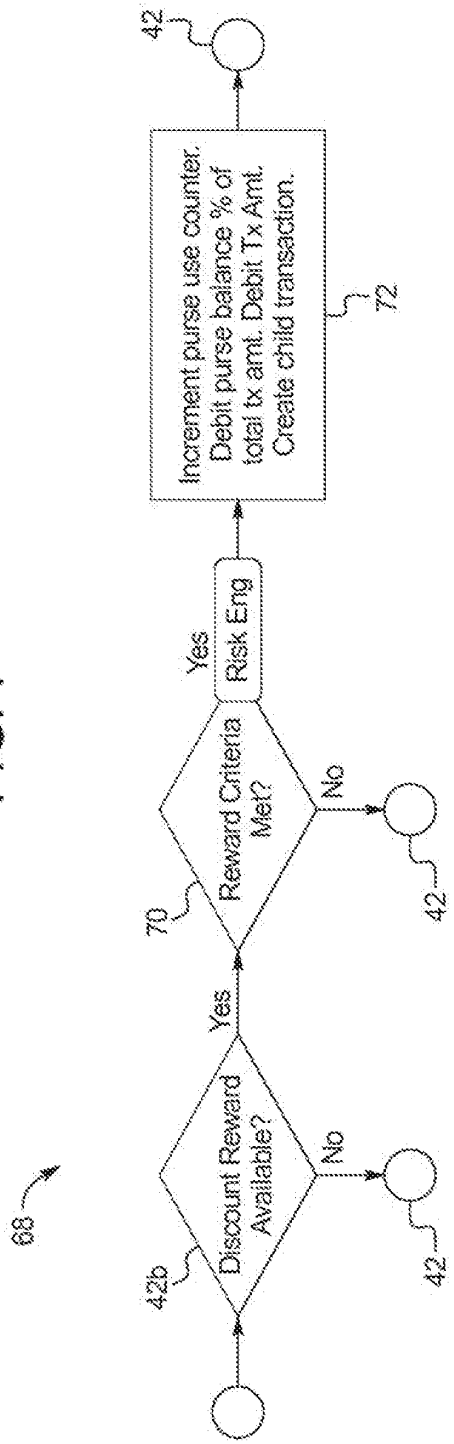

68
42b
Discount Reward Available?
Yes
No
42
70
Reward Criteria Met?
Yes
No
42
Risk Eng
72
Increment purse use counter.
Debit purse balance % of total tx amt. Debit Tx Amt.
Create child transaction.
42

FIG. 8

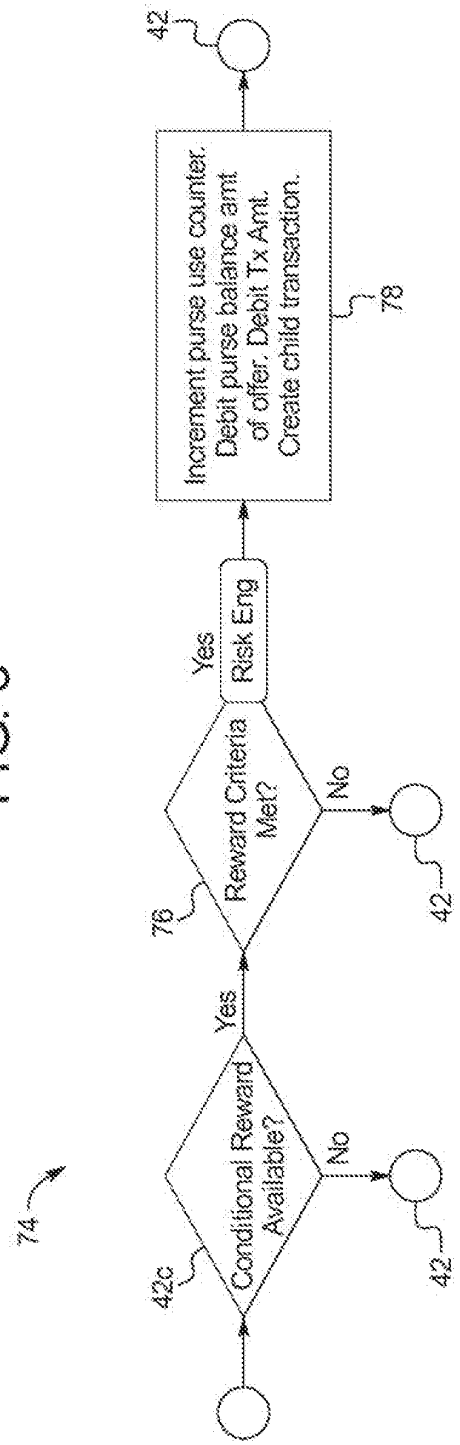

74
42c
Conditional Reward Available?
Yes
No
42
76
Reward Criteria Met?
Yes
No
42
Risk Eng
78
Increment purse use counter. Debit purse balance amt of offer. Debit Tx Amt. Create child transaction.
42

FIG. 9

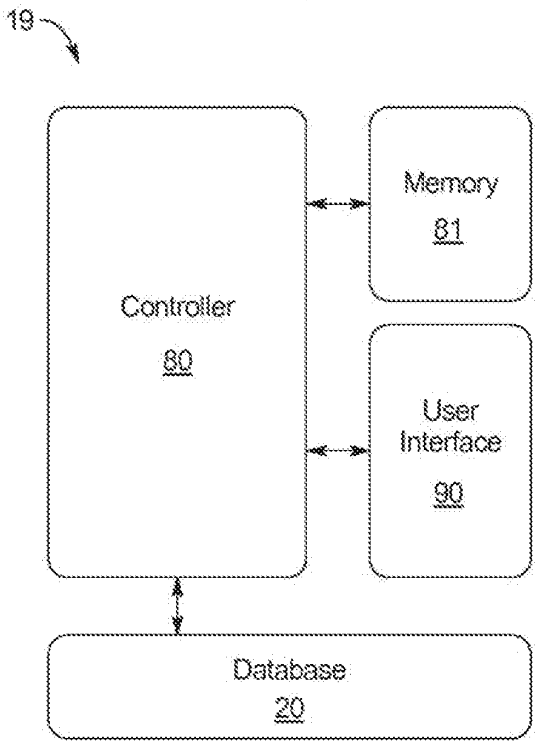
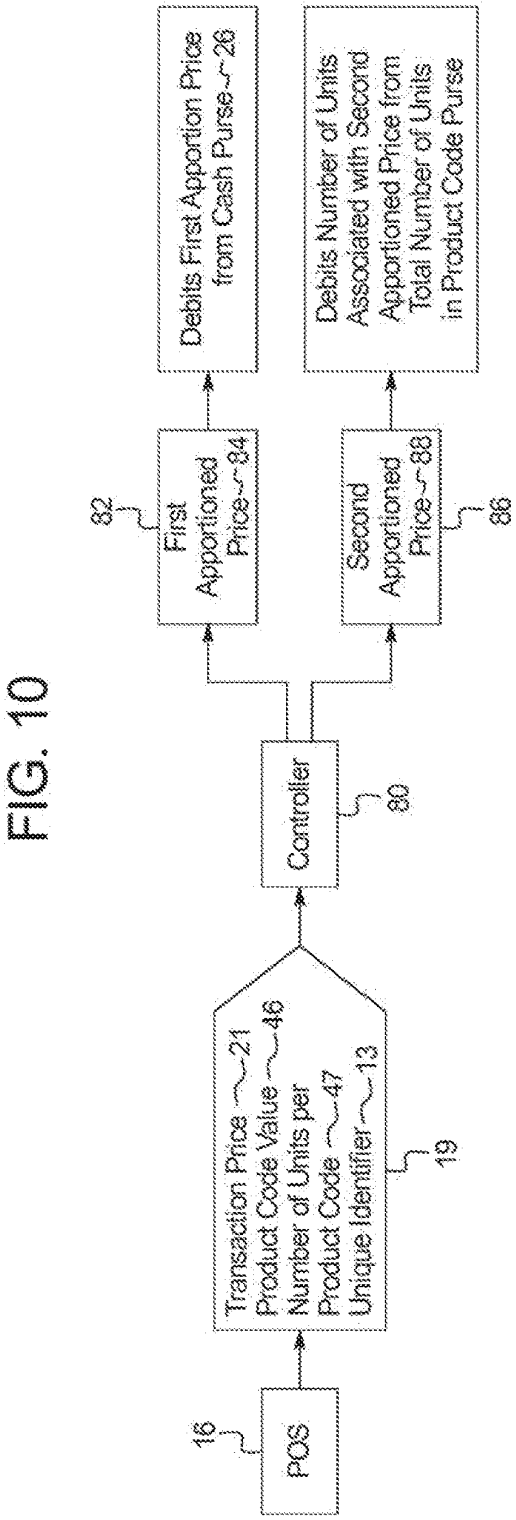


FIG. 10


16
POS
Transaction Price 21
Product Code Value 46
Number of Units per Product Code 47
Unique Identifier 13
19
Controller
80
82
First Apportioned Price 84
Second Apportioned Price 88
86
Debits First Apportion Price from Cash Purse 26
Debits Number of Units Associated with Second Apportioned Price from Total Number of Units in Product Code Purse

ABC Restaurant
45623 Main Street South
Bigtown, USA
1120
Order: #XXX
Payment Date: March 26th 2018
Payment Time: 12:47pm
Table Number: 12
Your order:
1 Braised Pork Belly $12.00
1 Bone-in Ribeye* $54.00
4 Red Diamond $28.00
1 Bone-in Filet Mignon* $64.00
1 Bone-in Ribeye* $54.00
Subtotal $212.00
Estimated Tax $10.0
Tip $53.00
Total $275.00
SCAN THIS CODE WITH YOUR MOBILE PHONE TO PAY THE BILL
1110
Powered by
PAY@TABLE
1110
1130
Scan, Pay and Go!
CAFÉ
RESTAURANT
Simply scan the above QR Code with your phone, enter your payment details and go!
No Need to wait

FIG. 11

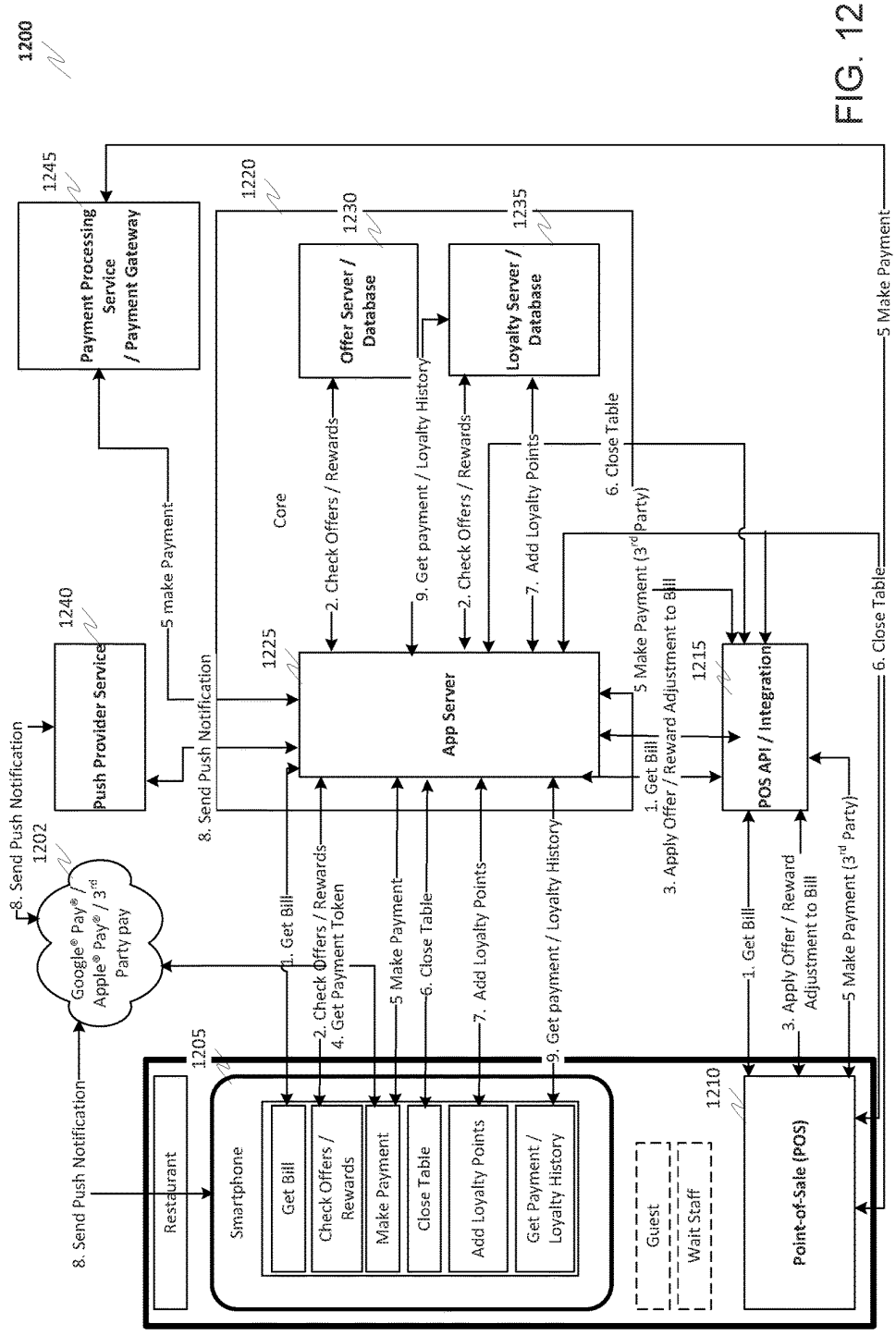

1200
1245
Payment Processing Service / Payment Gateway
1220
1230
Offer Server / Database
1235
Loyalty Server / Database
1240
Push Provider Service
1225
App Server
1215
POS API / Integration
1202
Google® Pay® / Apple® Pay® / 3rd Party pay
1205
Restaurant
Smartphone
Get Bill
Check Offers / Rewards
Make Payment
Close Table
Add Loyalty Points
Get Payment / Loyalty History
Guest
Wait Staff
1210
Point-of-Sale (POS)
Core
8. Send Push Notification
5 make Payment
8. Send Push Notification
2. Check Offers / Rewards
9. Get payment / Loyalty History
2. Check Offers / Rewards
7. Add Loyalty Points
6. Close Table
5 Make Payment (3rd Party)
5 Make Payment
6. Close Table
1. Get Bill
3. Apply Offer / Reward Adjustment to Bill
8. Send Push Notification
1. Get Bill
2. Check Offers / Rewards
4. Get Payment Token
5 Make Payment
6. Close Table
7. Add Loyalty Points
9. Get payment / Loyalty History
8. Send Push Notification
1. Get Bill
3. Apply Offer / Reward Adjustment to Bill
5 Make Payment (3rd Party)

FIG. 12

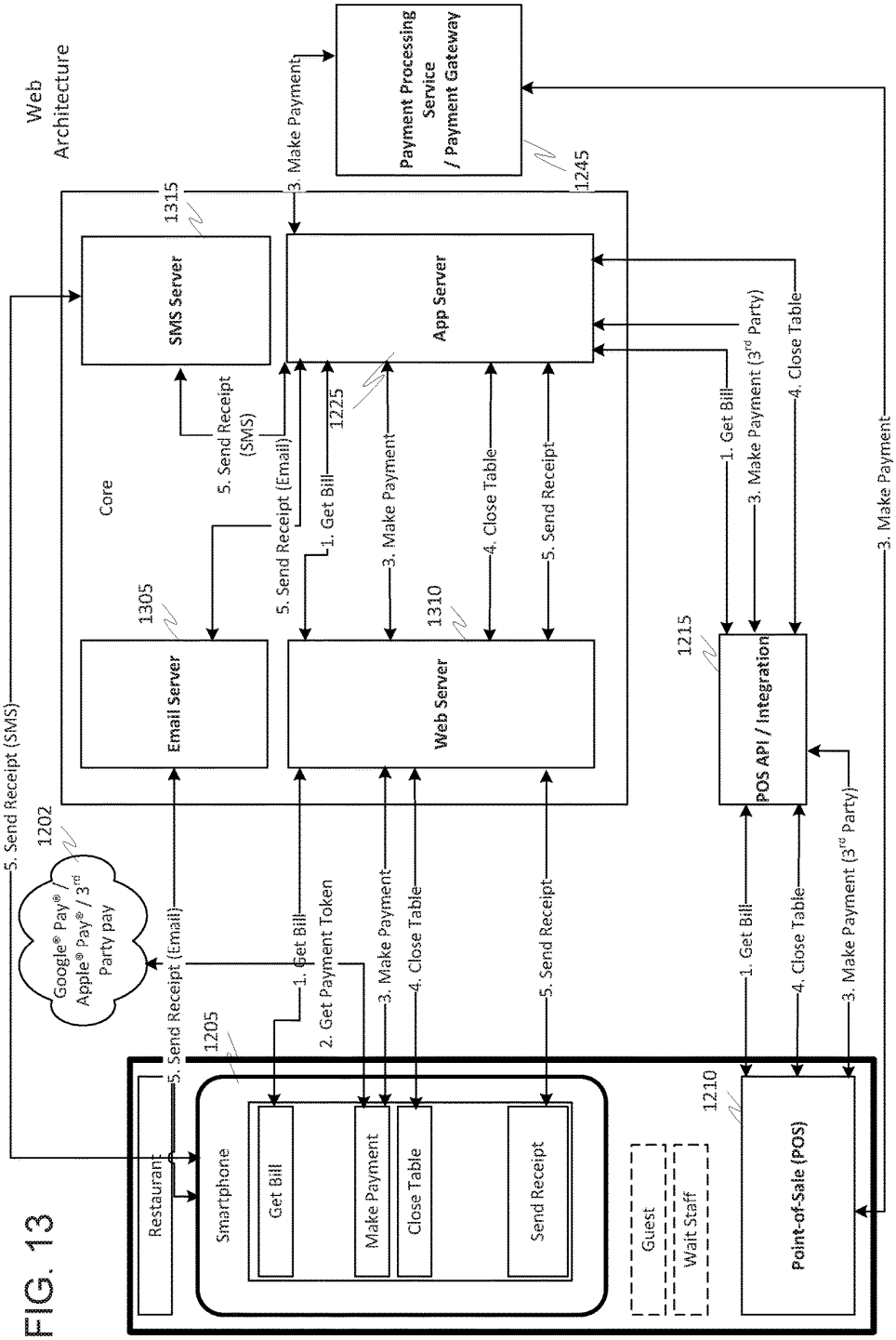

Web Architecture
Payment Processing Service / Payment Gateway
1245
3. Make Payment
1315
SMS Server
App Server
Core
5. Send Receipt (SMS)
5. Send Receipt (Email)
1. Get Bill
1225
3. Make Payment
4. Close Table
5. Send Receipt
1. Get Bill
3. Make Payment (3rd Party)
4. Close Table
3. Make Payment
1305
Email Server
1310
Web Server
1215
POS API / Integration
5. Send Receipt (SMS)
1202
Google® Pay® / Apple® Pay® / 3rd Party pay
5. Send Receipt (Email)
1. Get Bill
2. Get Payment Token
3. Make Payment
4. Close Table
5. Send Receipt
1. Get Bill
4. Close Table
3. Make Payment (3rd Party)
1205
Restaurant
Smartphone
Get Bill
Make Payment
Close Table
Send Receipt
Guest
Wait Staff
1210
Point-of-Sale (POS)

FIG. 13

SYSTEMS AND METHODS FOR TRANSACTION PROCESSING

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a Continuation-in-Part of U.S. patent application Ser. No. 14/103,848, filed Dec. 12, 2013, now U.S. Pat. No. 10,002,366, which claims priority to U.S. Provisional Application No. 61/847,077 filed Jul. 16, 2013, each of which are incorporated herein by reference in their entirety.

BACKGROUND

[0002] The present subject matter relates generally to systems and methods of processing transaction payments. More specifically, the present subject matter provides systems and methods in which transactions are processed for payment from any of a plurality of applicable purses associated with an account, wherein the plurality of purses include values defined by: currency; SKUs; discounts; conditional values; loyalty points; or other non-standard currencies and/or various combinations thereof.

[0003] For marketing and other purposes, merchants often provide offers or rewards to their customers. In some instances, the merchant may provide offers or rewards based on units of goods or services (e.g., a free milkshake). Such offers or rewards may be conditional or unconditional. In an example of a conditional offer or reward, prior to earning the reward, the customer may need to meet some predetermined criteria (e.g., receive a free milkshake on a purchase of $10 dollars or more).

[0004] The reward can be measured in something other than units of goods or services. In other examples, the rewards may be based on an unconditional value (e.g., an unconditional $10 credit), an unconditional discount (e.g., an unconditional 10% discount), a conditional value (e.g., a $10 credit is provided after specified conditions are met), a conditional discount (e.g., a 10% discount is provided after specified conditions are met), etc.

[0005] As a result of these varied offers and rewards, a single transaction may include a combination of values to process. For example, a transaction at a fast food restaurant may include a hamburger, a milkshake, and fries. Each of the goods has an independent price associated with it, which combine to create a total transaction price. But when a reward is provided such that the milkshake is free, the merchant needs to manage a transaction in which a unit of goods (e.g., a milkshake) needs to be credited against a total cash value. We refer to such transactions as non-standard currency transactions.

[0006] Currently, merchant offers and rewards that result in non-standard currency transactions are redeemed either manually, such as by entering paper certificates, or performed directly with the Point of Sale (POS) system of the merchant, for example crediting a line item in a transaction. The former is a poor consumer experience and is resource intensive. The latter requires significant interaction at the POS resulting in an inefficient process.

[0007] In addition, the payment of such non-standard currency transactions is complicated by the lack of non-standard currency transaction mechanisms. For example, conventional transaction cards, such as loyalty cards, gift cards, and other payment cards, are based on a monetary currency, such as the U.S. dollar. However, having only one value type for payment cards is limiting and does not allow a merchant to provide the creative incentives and marketing tools described herein.

[0008] Accordingly, there is a need for systems and methods of transacting that provide merchants and consumers with transactional cards including a plurality of value types, as described and claimed herein.

BRIEF SUMMARY

[0009] The present disclosure provides systems and methods for transaction processing using a plurality of value types. Various examples of the systems and methods are provided herein.

[0010] The systems and method provided herein enable more efficient non-standard currency transactions and further enable non-standard currency transaction payment methods, for example by providing accounts including currency and non-currency purses. As a result, using the systems and methods described herein transactions can be processed more efficiently by applying credits to transactions from cash purses and non-cash purses (e.g., a product code purse). The systems and methods provided can be applied to create a more efficient transaction process for instances in which a customer purchases a set of goods while paying for some of the goods in cash and paying for some of the goods with product credits.

[0011] In a specific, but non-limiting example, a customer may have a transaction card linked to a transaction account in which there is a cash purse and a non-cash purse. The non-cash purse may be a product code purse where value is measured in units of a given product. To make the example simple, the product code purse may be a milkshake purse with three units of credit. Thus, if the customer were to make a purchase including two hamburgers, two milkshakes, and fries, and made payment using the transaction card, the transaction processing system and method may debit two units of milkshakes from the milkshake purse and then debit the cash value associated with the two hamburgers and fries from the cash purse. This processing of this transaction may occur in a processor in communication with the merchant POS system such that the customer experiences no greater delay or other inefficiency than the customer would paying with any standard (e.g., cash purse only) transaction card.

[0012] Numerous examples of the systems and methods described herein may be utilized to accomplish the advantages described. In a first example, the systems and methods disclosed herein involve a customer presenting a unique identifier, possibly in the form of a transaction card, to a merchant POS system, which communicates with a processing engine and associated database, which in turn may communicate with a mobile device. The elements of the disclosed technology cooperate to enable a purchase process in which a transaction may be paid for using value debited against one or more of a combination of transactional values (i.e., transactional credit). While this primary example is relied upon herein for much of the description of the features and functions of the systems and methods provided, the advantages and objects of disclosed technology may be embodied in varied systems and methods that incorporate one or more of the unique elements presented, as will be understood by those skilled in the art based on the descriptions provided herein. For example, the use of varied purse types is a concept that can be employed independently of

whether the system or method incorporates a mobile device. Similarly, while described with reference to a merchant POS system, it is known that the systems and methods herein may be used in association with vending machines and other payment processing devices not commonly considered "a merchant POS system."

[0013] In one embodiment, the system of payment for a transaction includes a processing engine configured to receive (a) transaction data including a transaction price and (b) a unique identifier from a merchant POS. The system further includes a database in communication with the processing engine, wherein the database includes a plurality of unique identifiers. Each unique identifier is associated with a cash purse and at least one product code purse, wherein the cash purse and each product code purse have an associated value. The cash purse value is measured in a currency value and the product code purse value is measured in a number of units of an associated product code. In an example, the product code is an SKU, UPC, another unique identifier, or combinations thereof.

[0014] The processing engine separates the transaction data into one or more product code values, wherein each product code value being associated with a product code and a corresponding subtotal of the transaction price.

[0015] When the processing engine determines a match between the product code associated with one of the product code purses and one of the product codes in the transaction data, the processing engine debits the associated product code value (either transmitted in the transaction data or retrieved from a defined value) from the corresponding product code purse and debits the corresponding subtotal of the transaction price from the transaction price. In one embodiment a maximum value of a product code value may be set in the database. If the value of a matching product code exceeds this maximum value then the maximum value is substituted. After every corresponding subtotal of the transaction price has been debited from the transaction price for matching product codes, the processing engine debits the remaining transaction price from the cash purse value.

[0016] In an example, the processing engine is configured to communicate the values associated with the cash purse and product code purse to a mobile device associated with the unique identifier.

[0017] If the unique identifier is associated with a purse type including a non-standard value debit purse, a conditional value purse, a conditional discount purse, a conditional SKU purse, a conditional loyalty value purse, and combinations there of, the processing engine is configured to separate the transaction data into values corresponding to the purse type, wherein the processing engine is configured to debit the value corresponding to the purse type from the appropriate purse type.

[0018] The disclosure also provides a method of payment including receiving a unique identifier and transaction data including a transaction price and one or more product codes, each with an associated price and applicable sales tax. The method further includes accessing a database including a plurality of unique identifiers, wherein each unique identifier is associated with at least one cash purse and at least one product code purse, wherein each cash purse and product code purse has an associated value, further wherein, the product code purse has an associated product code value. The method includes separating the transaction data into a cash value and a product code value, wherein the cash value is equivalent to the transaction price minus a price associated with the product code value. In an example, the value associated with the product code purse correlates to a number of products.

[0019] If the processing engine determines the product code associated with the product code purse matches one of the product codes of the transaction data, then debiting the product code value from the product code purse associated with the unique identifier. If the processing engine determines the value associated with the cash purse is equal to or greater than a cash value of the transaction data, debiting the cash value from the cash purse associated with the unique identifier. The method further includes communicating confirmation of the transaction to a merchant POS system. The method further has the ability to include or exclude any applicable sales tax in the product value.

[0020] In another embodiment, the processing engine is configured to communicate the values associated with the cash purse and product code purse to a mobile device associated with the unique identifier.

[0021] In another example, the unique identifier may be associated with a non-standard value debit purse, a conditional value purse, a conditional discount purse, a conditional SKU purse, a conditional loyalty value purse, and combinations thereof, and the method includes separating the transaction data into values corresponding to the purse type. The method further includes debiting the value corresponding to the purse type from the appropriate purse type.

[0022] In one example, if the unique identifier is not associated with at least one cash purse or product code purse in the database, then the method includes communicating a failure notice to the merchant POS system. Alternatively, or in addition to, if the transaction data includes a transaction cost that is greater than the sum of the values associated with the cash purse and the product code purse in the database, the method includes communicating a failure notice to the merchant POS system. In a further example, if the unique identifier is associated with a discount purse, and if the transaction data satisfies a reward criteria, the method includes debiting a value associated with the discount purse against the transaction price, and then debiting the transaction price from the cash purse.

[0023] The present disclosure also provides a payment transaction system comprising a controller and a memory coupled to the controller, wherein the memory is configured to store program instructions executable by the controller. In response to executing the program instructions, the controller is configured to receive transaction data from a merchant POS including a transaction price, at least one product code, a product code value associated with each product code, a number of units associated with each product code, and a unique identifier. The controller is also configured to generate at least two subtotals from the transaction price, wherein a first subtotal includes a first apportioned price and a second subtotal includes a second apportioned price, wherein the second apportioned price is associated with one of the at least one product code, and the number of units associated with the at least one product code. The controller is further configured to, as payment for the first apportioned price, debit the first apportioned price against a cash purse. The controller is configured to, as payment for the second apportioned price, debit the number of units associated with the second apportioned price from a total number of units in a product code purse associated with the unique identifier.

The controller is also configured to communicate payment confirmation of the transaction price to the POS.

[0024] An advantage of the present systems and methods is processing of non-standard financial transactions through standard ISO 8583 mechanisms.

[0025] A further advantage of the systems and methods is processing of non-standard financial transactions through API mechanisms.

[0026] Another advantage of the systems and methods is facilitating transaction completion as a single purchase on a POS system with multiple purse types.

[0027] Another advantage of the systems and methods is processing discounts and product rewards on a host system instead of the POS.

[0028] Yet another advantage of the systems and methods is processing one or more host-based coupons or offers from one or more purses as a part of a payment transaction.

[0029] Yet another advantage of the systems and methods is processing virtual currencies at physical POS systems.

[0030] Yet another advantage of the systems and methods is the ability to process all non-standard (e.g. non-ISO currency) transactions on a host system with minimal POS impact through either existing ISO payment pathways or through an API.

[0031] Additional objects, advantages and novel features of the examples will be set forth in part in the description which follows, and in part will become apparent to those skilled in the art upon examination of the following description and the accompanying drawings or may be learned by production or operation of the examples. The objects and advantages of the concepts may be realized and attained by means of the methodologies, instrumentalities and combinations particularly pointed out in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0032] The drawing figures depict one or more implementations in accord with the present concepts, by way of example only, not by way of limitations. In the figures, like reference numerals refer to the same or similar elements.

[0033] FIG. **1** is a schematic illustration of elements of the systems and methods provided herein.

[0034] FIG. **2** is a chart illustrating examples of various purse types.

[0035] FIG. **3** is a schematic representation of the relationship between a person, a set of transaction cards, and a set of purses.

[0036] FIG. **4** is a flow chart illustrating a purchase process in which a transaction is paid for using value debited against a combination of purse types.

[0037] FIG. **5** is a transactional flow chart illustrating decision logic in processing a transaction.

[0038] FIG. **6** is a flow chart illustrating a sub-flow for SKU rewards.

[0039] FIG. **7** is a flow chart illustrating a sub-flow for discounts.

[0040] FIG. **8** is a flow chart illustrating a sub-flow for conditional value.

[0041] FIG. **9** is a schematic representation of an embodiment of the system.

[0042] FIG. **10** is a flow chart illustrating a purchase process in which a transaction is paid for using value debited against a combination of purse types.

[0043] FIG. **11** illustrates exemplary scannable codes usable with aspects of the technology.

[0044] FIG. **12** illustrates an exemplary architecture and operation flow of an embodiment of the disclosed technology.

[0045] FIG. **13** illustrates another exemplary architecture and operation flow of an embodiment of the disclosed technology.

DETAILED DESCRIPTION

[0046] The systems and methods **10** disclosed herein are described by way of the following examples. In these examples, the various features and functions of the systems and methods **10** are described with reference to a customer **12**, a transaction payment account and associated access device **14** (e.g., transaction card **14**), a merchant POS system **16**, a processing engine **18**, a database **20**, and a mobile device **22**. These elements are shown in FIG. **1**, wherein a customer **12** presents a unique identifier **13**, in certain examples by way of a transaction card **14** to a merchant POS system **16**, which communicates with a processing engine **18** and associated database **20**, as described further herein, which in turn may communicate with a mobile device **22**.

[0047] While shown as separate elements in FIG. **1**, the transaction card **14** and the mobile device **22** may be embodied in a single element, for example, a communication enabled transaction card **14** or a mobile device **22** including transaction card data, such as the unique identifier **13**. While the merchant POS system **16** is may be understood in the context of the examples provided herein to describe the current versions of known merchant POS systems **16**, it is understood that the teachings provided herein are applicable to future versions of or alternatives to the current merchant POS system **16**. Further, the merchant POS system **16** includes, but is not limited to alternative payment processing devices including, cashier systems, online payment systems, and vending machine systems, among others. Similarly, while the mobile devices **22** may presently be understood to encompass various smartphones, tablets, wearable computing devices, and the like, the teachings provided herein are applicable to any present or future mobile computing device.

[0048] The elements shown in FIG. **1** cooperate to enable a purchase process in which a transaction may be paid for using value debited against one or more of a combination of purse types **24**. As used herein, purse types **24** are categories by which transactional value (i.e., transactional credit) is defined.

[0049] FIG. **2** is a chart illustrating three different purse types **24** that are used in the examples of the systems and methods **10** provided herein. Additionally four purse use-models **25** are illustrated in FIG. **2**. The purse types **24** are the measurement units that store value in the account. The use-models **25** describe how the value of the purse may be redeemed. It is understood that those skilled in the art will recognize other purse types **24** and use-models **25** that may be substituted for, or used in addition to, the purse types **24** and use-models **25** shown in FIG. **2**. However, for clarity of the description, the purse types **24** in the examples described herein have been limited to the three purse types **24** and four use-models **25** shown in FIG. **2**.

[0050] In one embodiment, the system **10** of payment for a transaction includes a processing engine **18** configured to receive (a) transaction data **19** including a transaction price **21**, and (b) a unique identifier **13** from a merchant POS system **16**. The system **10** further includes a database **20** in

communication with the processing engine **18**, wherein the database **20** includes a plurality of unique identifiers **13**. Each unique identifier **13** is associated with a cash purse **26** and at least one product code purse **27**, wherein the cash purse **26** and each product code purse **27** have an associated value. The cash purse value **29** is measured in a currency value and the product code purse value **45** is measured in a number of units of an associated product code. In an example, the product code is any identifying code, such as an SKU, UPC, or combinations thereof. It is understood that while many embodiments may include a cash purse **26** associated with the unique identifier **13**, not all uses of the systems and methods provided herein rely on use of a cash purse **26**. For example, a unique identifier **13** may be associated with one or more product code purses **26** and/or one or more non-standard currency purses **28** without being associated with a cash purse **26**. Those skilled in the art will understand such embodiments based on the examples provided herein.

[0051] FIG. **1** will be expanded to include the transaction data elements that are communicated from the POS to the processing engine and back from this part of the description.] Upon receipt of transaction data **19**, the processing engine **18** separates the transaction data **19** into one or more product code values **46**, wherein each product code value **46** is associated with a product code **47** and a corresponding subtotal **49** of the transaction price **21**. For example, the processing engine **18** may recognize from the transaction data **19** that the product code value **46** is associated with a product code **47** associated with milkshakes having a certain subtotal **49** associated with the cost of the milkshake that the processing engine **18** subtracts from the transaction price **21**.

[0052] When the processing engine **18** determines a match between the product code **47** associated with one of the product code purses **27** and one of the product codes **47** in the transaction data **19**, the processing engine **18** debits the associated product code value **46** from the corresponding product code purse value **45** and debits the corresponding subtotal **49** of the transaction price **21** from the transaction price **21**. After every corresponding subtotal **49** of the transaction price **21** has been debited from the transaction price **21** for matching product codes **47**, the processing engine **18** debits the remaining transaction price **21** from the cash purse value **29**.

[0053] In an example, the processing engine **18** is configured to communicate the values associated with the cash purse **26** and product code purse **27** to a mobile device **22** associated with the unique identifier **13** such that a user is able to monitor receipts and/or account status through the mobile device **22**. For example, the processing engine **18** may provide the cash purse value **29** in terms of currency to a user interface **90** of the mobile device **22**. Similarly, the processing engine **18** may provide the product code purse value **45** in terms of the number of units of a product to a user interface **90** of the mobile device **22**.

[0054] As shown, if the unique identifier **13** is associated with a purse type **24** including a product code purse **27** and/or a non-standard value purse **28** (which may use any of; a value debit use-model **30**, a conditional value use-model type **31**, a conditional discount use-model type **32**, a conditional SKU use-model type **33**, a conditional loyalty value use-model type **34**), the processing engine **18** is configured to separate the transaction data **19** into values corresponding to the purse type **24**, wherein the processing engine **18** is configured to debit the value corresponding to the purse type **24** from the appropriate purse type **24**.

[0055] The disclosure also provides a method of payment including receiving a unique identifier **13** and transaction data **19** including a transaction price **21** and one or more product codes **47**. The method further includes accessing a database **20** including a plurality of unique identifiers **13**, wherein each unique identifier **13** is associated with at least one cash purse **26** and at least one product code purse **27**, wherein each cash purse **26** and product code purse **27** has an associated value, further wherein, the product code purse **27** has an associated product code **47**. The method **10** includes separating a the transaction data **19** into a cash value **51** and a product code value **46**, wherein the cash value **51** is equivalent to the transaction price **21** minus a price associated with the product code value **46**. In an example, the value associated with the product code purse **27** correlates to a number of products.

[0056] If the processing engine **18** determines the product code **47** associated with the product code purse **27** matches one of the product codes **47** of the transaction data **19**, then the processing engine **18** debits the product code value **46** from the product code purse **27** associated with the unique identifier **13**. If the processing engine **18** determines the value associated with the cash purse **26** is equal to or greater than a cash purse value **29** of the transaction data **19**, then the processing engine **18** debits the cash purse value **29** from the cash purse **26** associated with the unique identifier **13**. The method further includes communicating confirmation of the transaction to a merchant POS system **16**.

[0057] In another embodiment, the processing engine **18** is configured to communicate the values associated with the cash purse **26** and product code purse **27** to a mobile device **22** associated with the unique identifier **13**.

[0058] In another example, the unique identifier **13** is associated with a purse type **24** including a product code purse **27** and/or a non-standard value purse **28** (which may use any of; a value debit use-model **30**, a conditional value use-model type **31**, a conditional discount use-model type **32**, a conditional SKU use-model type **33**, a conditional loyalty value use-model type **34**), and the method **10** includes separating the transaction data **19** into values corresponding to the purse type **24**. The method **10** further includes debiting the value corresponding to the purse type **24** from the appropriate purse type **24**.

[0059] In one example, if the values associated with the one or more purse types **24** are not sufficient to cover the transaction price **21**, then the method **10** includes communicating a failure notice to the merchant POS system **16**. Alternatively, or in addition to, if the values associated with the one or more purse types **24** are not sufficient to cover the transaction price **21**, then the method **10** includes communicating instructions for the customer associated with the unique identifier **13** for providing additional payment funds or sources. Accordingly, the transaction may still be completed by using a different payment method.

[0060] In another example, if the transaction data **19** includes a transaction price **21** that is greater than the sum of the values associated with the cash purse **26** and the product code purse **27** in the database **20**, the method **10** includes communicating a failure notice to the merchant POS system **16**.

[0061] In a further example, if the unique identifier **13** is associated with a purse type **24** having a conditional dis-

count use-model type **32**, and if the transaction data **19** satisfies the conditional discount use-model type **32** criteria, the method includes debiting a value associated with the purse type **24** against the transaction price **21**.

[0062] As shown in FIG. **2**, the purse types **24** in this example include, but are not limited to: a cash purse **26**; a product code purse **27**, such as an SKU purse type **27**; and a non-standard value purse type **28**. Each of purse type **24** may have a use-model **25** including, but not limited to: a standard value debit model type **30**; a conditional value use-model type **31**; a conditional discount use-model type **32**; a conditional SKU use-model type **33**; and a conditional loyalty value use-model type **34**. Each of the purse types **24** and use-models **25** is described in further detail below.

[0063] In the cash purse **26**, the cash purse value **29** is defined as a currency value, typically a local currency (e.g., U.S. dollars). The cash purse value **29** is easy to understand as the equivalent cash value of the currency used.

[0064] With respect to the product code purse **27**, the product code purse value **45** is defined in units of the relevant product code **47**. For example, in a given merchant POS system **16**, there may be one or more specific SKUs associated with a milk shake. The product code purse **27** may, for example, store a value of three milk shakes of any flavor. While described herein as SKUs, the product code purse type **27** may alternatively utilize UPCs or any other identifying product codes. The concept being that the value of the product code purse type **27** is directly correlated to a number of products, and the currency of the purse type is defined as a list of applicable SKUs, UPCs or other identifying criteria. A local currency value may be assigned to each purse SKU for the purposes valuing the totality of the SKU purse in the local currency.

[0065] In the non-standard currency purse **28**, value may be defined as points or other unit of measure (e.g., loyalty points). The value of the non-standard currency purse **28** is the amount of non-standard currency present. The currency is any defined unit of measure (e.g. loyalty points, stars, etc.). In addition, non-standard currency purses **28** may be provided based on virtual currencies, such as, for example, Facebook Credits.

[0066] In the value debit use-model type **30**, value is accessed as an unconditional debit.

[0067] In the conditional value use-model type **31**, value is accessed subject to a conditional test. For example, there may be a spending threshold that must be exceeded before the purse value is applied, a date within which the transaction must occur in order for the purse value to be applied, a minimum number of items to purchase in order for the purse value to be applied, etc.

[0068] Similar to the conditional value use-model type **32**, in the conditional discount purse type **32**, a discount is applied subject to a conditional test. For example, if a customer **12** spends $10, the conditional discount use-model type **32** may have a discount value of 20% and be enacted to deduct $2 (20%) from the transaction amount and apply it against the transaction price **21**.

[0069] Similar to the conditional value use-model type **32**, in the conditional SKU use-model type **33**, value is accessed subject to a conditional test. In one example, if a minimum transaction value is met (e.g., the customer **12** spends $10), the conditional SKU use-model type **33** removes the price of the milkshake from the current transaction. In another example, the conditional test may be based on the presence of a given SKU in the transaction data **19**. For example, if the SKU for a milkshake is included in the transaction data **19**, the conditional test is met and the value is applied. In a more complicated example, the conditional test may require the presence of multiple product codes associated with multiple products to be identified in the transaction data **19** (e.g., the value is provided if the transaction data **19** includes at least the product codes for two milkshakes as well as one order of fries). The value may be a monetary value discount, a percentage discount, an SKU credit, etc. As shown, the conditional SKU use-model type **33** examples include conditional tests and/or values that relate to product codes.

[0070] The explanation of the purse types **24** and use-models **25** shown in FIG. **2** continues in further detail with reference to FIGS. **3-8**.

[0071] Turning now to FIG. **3**, the relationship between a customer **12**, a set of transaction cards **14**, and a set of purse types **24** is shown. As shown, a customer **12** may present an associated unique identifier **13** to a merchant POS, wherein the unique identifier **13** may be associated with a number of purse types **24** having associated values. The unique identifier **13** may be, but are not necessarily, associated with one or more transaction cards **14**. As shown in FIG. **3**, the customer **12** may have three separate transaction cards **14**, each having a unique identifier **13** corresponding to a set of purse types **24**.

[0072] For example, the unique identifier **13** may be associated with a cash purse **26** with a conditional discount use-model **32** (e.g., a 10% discount with currency USD), an SKU purse type **27** with a value debit use-model **30** (e.g., a reward valued as three milk shakes), a cash purse **26** with a conditional value use-model **31** (e.g., a conditional value with a value of $5 USD), and a non-standard currency purse type **28** with a value debit use-model **30** (e.g., a loyalty points purse with a value of 1933). These purse types **24** may be associated with the customer **12** in numerous ways, including a customer account accessible by: a login and password; an account number; other identification; or through a mobile app resident on the mobile device **22**.

[0073] Additionally, as shown, the customer **12** may be associated with one or more transaction cards **14** each of which may be associated with one or more purse types **24** and associated values. For example, a first transaction card **14** may be associated with a cash purse **26** with a value debit use-model type **30** (e.g., a $45.72 USD value), a second transaction card **14** may be associated with a cash purse **26** with a value debit use-model type **30** (e.g., a $15.62 USD value) and an SKU purse type **27** with a conditional SKU use-model type **33** (e.g., a reward valued as three milk shakes which may be utilized if specified conditions are met), and a third transaction card **14** may be associated with an SKU purse type **27** with a value debit use-model type **30** (e.g., a card **14** valued as three milk shakes). The redemption of the value associated with the purse types **24** is now described with reference to FIGS. **4-8**.

[0074] FIG. **4** illustrates a purchase process in which a transaction is paid for using value debited against a combination of purse types **24**. The purse types **24** used in the example shown in FIG. **4** are a cash purse **26** and an SKU purse type **27**, though it is understood that the example provided is instructive in how any purse type **24** and any combination of purse types **24** may be used.

[0075] As shown in FIG. **4**, a customer **12** may use her mobile device **22** (and an associated mobile app resident on

the mobile device **22**) to provide an identifying criteria to access values associated with a cash purse **26** with value debit use-model type **30** and an SKU purse type **27** with a value debit use-model type **30**. In this example, the cash purse **26** has a value of $10 and the SKU purse type **27** has a value of three milk shakes. The customer **12** purchases a cheeseburger ($3.99), large fries ($1.99), and a chocolate shake ($2.99). The sub-total of the purchase is $8.79, at a rate of 6% the tax is $0.54, and the total is $9.51.

[0076] The customer **12** pays for the transaction using the values associated with the cash purse **26** and the SKU purse type **27** that are each associated with the customer **12** in the host system and communicated via mobile device **22**. The mobile device **22** communicates with a POS system **16** that communicates both the total (i.e., $9.51) and the SKU and related data (i.e., cheeseburger/SKU/pricing, large fries/SKU/pricing, and a chocolate shake/SKU/pricing) to a processing engine **18** and associated database **20**. The processing engine **18** splits the transaction data into constituent parts based on the purse types **24**.

[0077] For example, in the example shown in FIG. **4**, the transaction is separated into a first subtotal **82** including the cheeseburger and large fries, which is to be paid for using the value associated with the cash purse **26**, and into a second subtotal **86** including the milk shake, which is to be paid for using the value associated with the SKU purse type **27**. The cost associated with the first subtotal **86** is $6.34, which is the cheeseburger ($3.99) and large fries ($1.99) plus the 6% tax. The cost associated with the second subtotal **86** is $3.17, which is the milk shake ($2.99) plus the 6% tax.

[0078] The processing engine **18** then debits the appropriate values from each of the purse types **24**, the values being stored in the database **20** associated with the processing engine **18**. In this example, the $6.34 is deducted from the $10 value in the cash purse **26** leaving a value of $3.66 and one milk shake is deducted from the SKU purse type **27** leaving a value of two milk shakes. The processing engine **18** then communicates the approval for the full amount to the merchant POS system **16** and communicates the updated values in the purse types **24** via a message to the mobile device **22**. It should be noted that while the example of the cash purse **26** described above is a prepaid debit value (e.g., a value stored on a gift card), the cash purse **26** could alternatively be a line of credit.

[0079] As shown, the processing engine **18** is the brain of the systems and methods **10** that enables a transaction to be credited against values stored in one or more purse types **24**. While shown using a specific example, it is understood that those skilled in the art will understand how the processing engine **18** may be implemented to break a transaction into one or more sub-transactions to be credited against values stored in one or more related purse types **24**.

[0080] Turning now to FIG. **5**, a transaction flow **36** illustrating an example of the operation of the processing engine **18** is shown. As shown in FIG. **5**, the processing engine **18** may receive information related to a transaction to process, which starts the transaction flow **36**. In a first step **38**, the processing engine **18** performs an account status check in which the processing engine **18** identifies whether the information presented to the merchant POS system **16** (or directly to the processing engine **18**) is associated with an active account. If the information presented to the merchant POS system **16** (or directly to the processing engine **18**) is not associated with an active account, in a second step **40**, the processing engine **18** logs the transaction and communicates the failure to the merchant POS system **16**. If the information presented to the merchant POS system **16** (or directly to the processing engine **18**) is associated with an active account, the transaction flow **36** moves to a third step **42**.

[0081] In the third step **42**, the processing engine **18** determines whether there are any active values in one or more purse types **24** that may be applied against the transaction. If so, the transaction flow **36** is diverted to one of the sub-flows **44** shown in FIG. **6**-**8**, as described further below. If not, the transaction flow **36** moves to a fourth step **44** in which an account balance is determined and compared against the transaction cost. If there is no account balance, the second step **40** is triggered through which the processing engine **18** logs the transaction and communicates the failure to the merchant POS system **16**.

[0082] If the account balance is greater than zero, but less than the cost of the transaction, a fifth step **48** is triggered in which the available balance is debited, the transaction is logged, and a partial completion of the transaction is communicated to the merchant POS system **16**.

[0083] If the account balance is greater than the cost of the transaction, a sixth step **50** is triggered in which the available balance is debited by the cost of the transaction, the transaction is logged, and a full completion of the transaction is communicated to the merchant POS system **16**.

[0084] FIG. **6** is a sub-flow **44**, specifically an SKU reward sub-flow **52**. As shown in FIG. **5**, in a first sub-step **42***a* of the third step **42**, when the processing engine **18** determines there is an active value in an SKU purse type **28** that may be applied to the transaction, the processing engine **18** initiates the SKU reward sub-flow **52**. When initiated, the SKU reward sub-flow **52** proceeds to a first step **54** in which the processing engine **18** retrieves the SKU data from the transaction record. In a preferred embodiment, the data is ordered in a descending order of unit price.

[0085] In a second step **56**, the processing engine **18** retrieves any SKU data from any active values associated with any associated SKU purse types **28**.

[0086] In a third step **58**, the processing engine **18** compares the SKU of the top item in the sequenced data to the SKU values in the one or more SKU purse types **28**.

[0087] In a fourth step **60**, the processing engine **18** determines whether there is an SKU match. If there is not, the processing engine **18** returns to the third step **42** in the transaction flow **36**. If the processing engine **18** determines there is an SKU match, the processing engine **18** runs a price check in a fifth step **62**. If the price check is successful, the SKU is marked as used in the transaction data and the price and tax are debited from the transaction data, in a sixth step **64**.

[0088] Then, in a seventh step **66**, the processing engine **18** debits the value of the matched SKU from the value in the appropriate SKU purse type **27**, creates a child transaction entry, and increments a use counter in the SKU purse type **27**.

[0089] If, in the fifth step **62**, the price check is not successful, the processing engine **18** returns to the third step **42** in the transaction flow **36**.

[0090] FIG. **7** is a sub-flow **44**, specifically a discount sub-flow **68**. As shown in FIG. **5**, in a first sub-step **42***b* of the third step **42**, when the processing engine **18** determines there is an active value in a discount purse type **30** that may

be applied to the transaction, the processing engine **18** initiates the discount sub-flow **68**. When initiated, the discount sub-flow **68** proceeds to a first step **70** in which the processing engine **18** determines whether the reward criteria has been met. If not, the processing engine **18** returns to the third step **42** in the transaction flow **36**. If so, the processing engine **18** proceeds to a second step **72** in which the processing engine **18** increments the purse use counter, debits the active value in the discount purse type **30** a percentage of the total transaction payment due, applies that credit to the transaction, and creates a child transaction record. The discount sub-flow **68** then returns to the third step **42** in the transaction flow **36**.

[0091] FIG. **8** is a sub-flow **44**, specifically a conditional value sub-flow **74**. As shown in FIG. **5**, in a first sub-step **42***c* of the third step **42**, when the processing engine **18** determines there is an active value in a conditional value use-model type **31** on an active purse and/or a conditional SKU use-model type **33** on an active purse that may be applied to the transaction, the processing engine **18** initiates the conditional value sub-flow **74**. When initiated, the conditional value sub-flow **74** proceeds to a first step **76** in which the processing engine **18** determines whether the reward criteria has been met. If not, the processing engine **18** returns to the third step **42** in the transaction flow **36**. If so, the processing engine **18** proceeds to a second step **76** in which the processing engine **18** increments the purse use counter, debits the active value in the conditional value use-model type **31** purse type **26-28** and/or a conditional SKU use-model type **33** purse type **26-28** by the amount of the offer, applies that credit to the transaction, and creates a child transaction record. The conditional value sub-flow **74** then returns to the third step **42** in the transaction flow **36**.

[0092] As shown in FIG. **9**, the present disclosure provides a processing engine **18** embodied in a controller **80** and a memory **81** coupled to the controller **80**, wherein the memory **81** is configured to store program instructions executable by the controller **80**. In response to executing the program instructions, the controller **80** is configured to receive transaction data **19** from a merchant POS **16** including a transaction price **21**, at least one product code value **46** associated with each product code, a number of units **47** associated with each product code, and a unique identifier **13**. In addition, the controller **80** may also receive a sales tax amount per product code from the merchant POS **16** either separately or included within the transaction price **21**. As shown in FIG. **10**, the controller **80** is configured to generate at least two subtotals from the transaction price **21**, wherein a first subtotal **82** includes a first apportioned price **84** and a second subtotal **86** includes a second apportioned price **88**, wherein the second apportioned price **88** is associated with one of the at least one product code, and the number of units associated with the at least one product code.

[0093] The controller **80** is further configured to, as payment for the first apportioned price **84**, debit the first apportioned price **84** against a cash purse **26**. The controller **80** is configured to, as payment for the second apportioned price **88**, debit the number of units associated with the second apportioned price **88** from a total number of units in a product code purse **27** associated with the unique identifier **13**. The controller **80** is also configured to communicate payment confirmation of the transaction price **21** to the POS system **16**.

[0094] As shown, the controller **80** is in direct communication with the searchable storage structure, which, in one example, may be the database **20**. Of course, in other embodiments, the system **10** may be in communication with the database **20** through a network. While shown and described as a database **20**, it is understood that the database **20** may be any number of databases adapted to support the necessary data management to support the various features and functions of the system **10** described herein. It is further contemplated that a database **20**, as understood in the traditional sense, may not be a requirement of the system **10** described herein, and that any other mechanism or mode of data management may be employed.

[0095] In one example, the system **10** includes an electronic device, such as a portable electronic mobile device **22** embodied in a touchscreen-enabled smartphone as the user interface **90**. However, it is understood that the teachings provided may be applied to numerous variations of mobile devices **22** with user interfaces **90**, including desktop computers, remote controls, etc., as will be recognized by those skilled in the art based on the teachings herein.

[0096] An additional aspect relates to a more efficient and secure payment technology. This aspect can optimally be used in conjunction with any one or more of the other embodiments disclosed herein. This aspect at least allows a more efficient, convenient and secure technology to, for example, pay for a good or service.

[0097] An exemplary embodiment, that can be referred to as "Pay@Table" (although the technology is not limited to only paying at a table) provides a fast way to pay at restaurants (or in at general any location, store, shop, etc., where a purchase is made), allowing guests to view and pay for their bill whenever is convenient for the guest. One exemplary embodiment provides Pay@Table through a mobile app or, for example, via a web page that may not require the downloading and installing of an app. Guests can simply use their mobile phones to scan a QR code on their table or bill to quickly view, pay, and close their bill. While the exemplary embodiment for Pay@Table will be discussed in relation to a QR code, it is to be appreciated that the technology is not limited thereto any can also be used in general with any scannable code, such as a bar code, with RF (Radio Frequency) tags (RFID), bokodes, interactive barcodes, beacons, or in general any comparable technology.

[0098] An exemplary embodiment allows payments to be processed in seconds and allow guests to use their already set up Google®, Apple® Pay®, or comparable account, or quickly scan their credit card to effect the payment. These payments can be passed directly to the restaurant's point of sale and the table closed, so no extra input is required from wait staff. This not only increases wait staff efficiency, but also strengthens security in that fewer people have access to payment information, and also enhances user experience by lessening time for paying for goods/services.

[0099] FIG. **11** illustrates exemplary scannable codes **1110** usable with aspects of the disclosed technology. For the following illustrative embodiment, a scenario will be described in relation to a customer paying at a restaurant by scanning a QR code on a bill **1120** or, for example, on a card **1130** on their table, a menu, on the door, or at some other location(s) at the restaurant.

[0100] Alternatively, or in addition, an identifier that works in a similar manner to the scannable code **1110** could

be communicated to a guest's smartphone with this identifier usable as the QR code to facilitate payment as discussed herein.

[0101] FIG. **12** illustrates an exemplary architecture and operational flow **1200** for a mobile experience of the Pay@Table technology. The exemplary architecture includes a smartphone (or equivalent device) **1205** at the restaurant, a Point-of-Sale (POS) **1210**, cloud payment provider(s) **1202**, a push provider service **1240**, a payment processing service/gateway **1245**, a POS API/Integration service **1215**, and a core **1220** which includes an app server **1225**, an offer server/database **1230** and a loyalty server/database **1235**. All of the various elements are connected by one or more links (or secure links) that include any known wired or wireless technology (or combination thereof). Additionally, any one or more of the communications or communications channels/links herein can use secure communication protocols such as https, SSL, TLS, IPSec, encryption, or the like.

[0102] In accordance with an exemplary operation, the process begins with acquisition of the bill (Step **1**). The user scans the QR code on the bill, table tent, card, etc., using a camera on the smartphone **1205** and associated mobile app. The QR contains the following information:

[0103] Merchant ID

[0104] Store ID

[0105] Table #

[0106] This information is then forwarded to the app server **1225** for processing. This information is used and forwarded to the POS API/Integration service **1215** for that particular restaurant location identifier (Merchant ID). The POS API/Integration service **1215** contacts the POS **1210** where the order information for that table is collected. This order information can then be communicated to the smartphone **1205** for display to the guest.

[0107] In optional step **2**, the app server **1225** queries the offers server/database **1230** to determine whether there are any applicable offer(s) available for the items the guest has selected to purchase in that particular store. If offers are available, the offers server/database **1230** communicates the offer information, such as a discount, to the app server **1225** where the discount will be applied and displayed on the bill which is communicated to the guest. In a similar manner, the loyalty server/database **1235** will check to see if the guest has any available rewards they can redeem. If there are rewards to redeem, the rewards can be handled in a similar manner as any offers in step **3** with the application of any offers/rewards/discounts applied to the bill on the POS **1210** via the POS API/Integration service **1215**.

[0108] In step **4**, the guest selects to pay using an electronic pay service such as Google® Pay® (Android®) or Apple® Pay® (iPhone®) on the mobile app. The selection of use of the electronic payment triggers a payment data request that is sent from the mobile app to the appropriate electronic pay service **1202**. The electronic pay service **1202** then forwards a token to the device **1205**. This token is then used in the next step for a make payment call.

[0109] Step **5** is a make payment step. Once the token has been returned by electronic pay service, the token is forwarded to the core **1220**, and in particular the app server **1225**, as a payment request. The payment request is then subsequently directed from the app server **1225** to the payment processor **1245** for capture and settlement with the merchant. Once the payment has been successfully processed, the payment information is sent to the POS API/Integration service **1215** and then directed to the POS **1210**.

[0110] The payment can be logged in the POS **1210** as a 3rd party payment on behalf of the core **1220**. The response from the POS **1210** is returned to the device **1205** for the next step in the process. The merchant can see all payments made through their POS **1210**, and this logged amount can then be seen as a settlement amount into the payment processor merchant account.

[0111] In step **6**, and once the response has been received that the payment has been successfully processed, the table and corresponding ticket can then be closed. The request to close is sent to the POS **1210** via the POS API/Integration service **1215**. The success of payment response is then sent back to the device **1205**.

[0112] In optional step **7**, loyalty points will be calculated with the cooperation of the app server **1225** and loyalty server/database **1235** based on money spent/frequency of visits and added to the guest's account.

[0113] In step **8**, and once the payment has been successfully processed and the table order closed, a success confirmation screen can be presented to the guest on the device **1205**. At this point a push notification triggered by the app server **1225** can be sent via the push provider service **1240** containing one or more of the following portions of information:

[0114] Merchant Information

[0115] Time and date information

[0116] Amount paid

[0117] Breakdown of charges

[0118] Payment method used

[0119] Payment Confirmation information

[0120] Loyalty Points Earned (if applicable)

[0121] Rewards earned (if applicable)

[0122] A Thank you for the visit

[0123] Optional Merchant Advertising/Survey

[0124] This information is received by the device **1205** and optionally stored.

[0125] In step **9**, the guest can review their payment history at any time. The payment history can contain one or more of the following types of information:

[0126] Merchant Information

[0127] Time and date information

[0128] Order number

[0129] Table Number

[0130] Date and time the order was closed

[0131] Wait staff name

[0132] Loyalty points earned

[0133] Order Items

[0134] Discounts (Offers/Rewards)

[0135] Tip

[0136] Tax

[0137] Total

[0138] Payment method

[0139] For tips and other similar adjustments to the bill, the guest can make these modifications to the bill after receipt of the bill and before making payment by, for example, entering a tip amount on the device **1205**.

[0140] FIG. **13** illustrates an exemplary responsive web architecture and associated operational flow in accordance with one embodiment. The architecture in FIG. **13** is similar to FIG. **12** and contains many of the same components which have been labeled in a similar manner. In addition, the

web architecture includes an email server **1305**, a web server **1310** and a SMS server **1315**.

[0141] In step **1**, when the user scans the QR code on the table tent, card or the bill, three parameters can be passed as a request to a specified web address:

[0142] Merchant ID

[0143] Store ID

[0144] Table #

[0145] This information is received by the web server **1310** which directs the information to the app server **1225** for processing. The request is then directed to the POS API/Integration service **1215** for that particular (restaurant) location ID. The POS **1210** is contacted by the POS API/Integration service **1215** and the order information for that table is collected. The order information is then returned to the device **1205** for display to the guest.

[0146] In step **2**, when, as one illustrative example, the guest taps on the Google® Pay® (Android®) or Apple® Pay® (iPhone®) button (or comparable button), the action triggers a payment data request. A token is sent in the response by Google®, Apple® or the 3rd party payment provider with this token then used in the next make payment call.

[0147] In step **3**, and once the token has been returned by Google®, Apple® or the 3rd party payment provider, the token is then sent to the app server **1225** in the core as a payment request. This payment request is then subsequently directed from the web server **1310** to the app server **1225** and then sent to the payment processor **1245** for capture and settlement with the merchant. Once the payment has been successfully processed, the payment information is sent to the POS API/Integration service **1215** and directed to the POS **1210**. The payment can then be logged in the POS **1210** as a **3**rd Party Payment as discussed. A response is then sent back to the mobile device **1205** for the next step in the process. As with other embodiments, the merchant can then see all payments made through their POS **1210** interface, and the paid amount will then be seen as a settlement amount into the payment processor merchant account.

[0148] In step **4**, once the response has been received that the payment has been successfully processed, the table can then be closed. The request to close is sent to the POS **1210** via the API/Integration service **1215**. The success response and receipt can then be sent back to the device **1205** in step **5**.

[0149] One exemplary advantage to Pay@Table is that it is the fastest way to pay at restaurants, allowing guests to view and pay for their bill whenever is convenient for them. Pay@Table, as discussed, can be available through a mobile app or without downloading an app such as via a browser interface. Guests can simply use their mobile phones to scan a QR code on their table or bill to quickly be able to view their bill, pay, and close their bill. Payments are processed in seconds and allow guests to use their already set up electronic payment accounts, or quickly scan their credit card to make a payment. Payments are passed directly to the restaurant's point of sale and the table closed, so no extra input is required from wait staff. Additionally, Pay@Table is POS agnostic and can also work with any electronic payment service, any credit card provider, and at any merchant.

[0150] An optional embodiment allows the splitting of a bill. For those guest dining with a group, Pay@Table allows the group to split items/portions depending on how they want and pay when they want. Each guest can scan the table QR to be added to a bill. Alternatively, each user can scan the QR code on the bill. This would allow the guest to one or more of: enter a fixed amount to contribute to the bill, allow the guest to select which items to pay for on the bill, allow the guests to split order items between one or more quests, allow each guest to select the item(s) they had, allow each guest to add individual tips and the system can apportion the standard fees such as taxes etc., between the paying quests. This technical solution allows an increase in convenience in that guests can leave when they want and the quests do not have to wait for the table to finish.

[0151] Another optional embodiment provides waitlist functionality. As one example, for a guest wanting to place their name on a waitlist at a restaurant, Pay@Table allows the guest to place the name of a dining party on a waitlist for a specific time at a restaurant. Once the dining party arrives at the restaurant for their dining reservation, a table can be automatically allocated to them and the table and restaurant identifier associated with the Pay@Table app. A welcome message and dining table number can optionally be sent to the diners when they are within, for example, a defined geofence of the restaurant. The host at the restaurant can also optionally be notified upon the dining party arriving within the geofence and notified as to which table to escort the guest to. As with the described embodiment, guests can then place their order with the wait staff and can then review their bill and settle using Pay@Table.

[0152] Another optional embodiment allows ordering directly from the Pay@Table app. For example, the menu can be pushed to the app and orders placed electronically with the ordered information being communicable to the POS in a similar manner to the payment information described herein.

[0153] Another optional embodiment allows reservations. For guests wanting to reserve a table, Pay@Table allows the guest to see all available tables at a specific time, reserve a table, and alert the guests when the table has become available. The host at the restaurant can also be notified the dining party is arriving and which table to escort them to the reserved table. The guests can then place their order with the wait staff and review their bill and settle using Pay@Table.

[0154] Another optional embodiment allows customer satisfaction data to be collected. For example, and after the guests have finished, the customer can enter their customer satisfaction feedback on their dining experience including one or more of: scoring of the dining experience such as satisfied/not satisfied/very satisfied, enter additional comments about their experience, or in general respond to any of the standard customer satisfaction questions. Guests in a similar manner could also write a review.

[0155] Another optional embodiment allows loyally and rewards. Each time a guest uses Pay@Table they can benefit in one or more of the following ways: gather loyalty points based on number of visits or money spent, receive rewards after so many loyalty points have been awarded, redeem Rewards by receiving an SMS or email reward code to get a discount or free menu item, or the like.

[0156] Another optional embodiment allows a bar tab to be created and maintained. For example, Pay@Table allows a user to open a bar tab using their mobile phone. Pay@Table then allows the user to open a bar tab for an individual or group, view the items on a bar tab, add a tip, pay and close their bar tab using their mobile phone. Additionally, each member of the group can pay for their

own drinks as described above in relation to splitting a tab, each member can add a separate tip and each member can settle their bill and leave at any time.

[0157] Another optional embodiment allows valet service. Pay@Table allows a user to pay for their valet using their mobile phone in a similar manner to paying for a meal. The app can notify the host to deliver their car, notify the guest when their car is ready and pay the valet in the same manner as the restaurant bill.

[0158] Exemplary aspects are directed toward:

[0159] A system of payment for a transaction comprising:

[0160] an app server that receives an identifier associated with a bill, the identifier scanned or received wirelessly at a merchant location;

[0161] the app server further receiving an electronic payment token corresponding to a payment service usable to pay the bill, the payment token having been selected by a guest;

[0162] a make payment request received by the app server, the make payment request triggering the app server to send an instruction to a payment processing service to pay for the bill;

[0163] the app server further instructing a point-of-sale device to close a ticket associated with the bill when payment has been confirmed.

[0164] Any one or more of the above aspects, further comprising a mobile device app, the mobile device app causing a camera on the mobile device to scan a scannable code at the merchant location.

[0165] Any one or more of the above aspects, wherein the scannable code is at a table or on a bill at the merchant location.

[0166] Any one or more of the above aspects, further comprising an offer server adapted to determine whether any offers are available based at least on the identifier and the bill.

[0167] Any one or more of the above aspects, further comprising a loyalty server adapted to apply a loyalty credit to an associated loyalty account of the guest based at least on the bill.

[0168] Any one or more of the above aspects, wherein the app server coordinates offers and associated bill adjustments at a point-of-sale via a point-of-sale API service.

[0169] Any one or more of the above aspects, further comprising a push provider service adapted to send push notifications from the app server to an app running on a mobile device.

[0170] Any one or more of the above aspects, wherein a third party vendor provides the electronic payment token.

[0171] A method of payment for a transaction comprising:

[0172] receiving an identifier associated with a bill, the identifier scanned or received wirelessly at a merchant location;

[0173] receiving an electronic payment token corresponding to a payment service usable to pay the bill, the payment token having been selected by a guest;

[0174] receiving a make payment request by the app server, the make payment request triggering the app server to send an instruction to a payment processing service to pay for the bill;

[0175] instructing a point-of-sale device to close a ticket associated with the bill when payment has been confirmed.

[0176] Any one or more of the above aspects, further comprising causing a camera on a mobile device to scan a scannable code at the merchant location.

[0177] Any one or more of the above aspects, wherein the scannable code is at a table or on a bill at the merchant location.

[0178] Any one or more of the above aspects, further comprising determining whether any offers are available based at least on the identifier and the bill.

[0179] Any one or more of the above aspects, further comprising applying a loyalty credit to an associated loyalty account of the guest based at least on the bill.

[0180] Any one or more of the above aspects, further comprising coordinating offers and associated bill adjustments at a point-of-sale via a point-of-sale API service.

[0181] Any one or more of the above aspects, further comprising sending push notifications from the app server to an app running on a mobile device.

[0182] Any one or more of the above aspects, wherein a third party vendor provides the electronic payment token.

[0183] A computer readable information storage media having stored thereon instructions, that when executed by one or more processors, cause the execution of a method of payment for a transaction comprising:

[0184] receiving an identifier associated with a bill, the identifier scanned or received wirelessly at a merchant location;

[0185] receiving an electronic payment token corresponding to a payment service usable to pay the bill, the payment token having been selected by a guest;

[0186] receiving a make payment request by the app server, the make payment request triggering the app server to send an instruction to a payment processing service to pay for the bill;

[0187] instructing a point-of-sale device to close a ticket associated with the bill when payment has been confirmed.

[0188] Any one or more of the above aspects, further comprising causing a camera on a mobile device to scan a scannable code at the merchant location.

[0189] Any one or more of the above aspects, wherein the scannable code is at a table or on a bill at the merchant location.

[0190] A method of payment for a transaction comprising:

[0191] means for receiving an identifier associated with a bill, the identifier scanned or received wirelessly at a merchant location;

[0192] means for receiving an electronic payment token corresponding to a payment service usable to pay the bill, the payment token having been selected by a guest;

[0193] means for receiving a make payment request by the app server, the make payment request triggering the app server to send an instruction to a payment processing service to pay for the bill;

[0194] means for instructing a point-of-sale device to close a ticket associated with the bill when payment has been confirmed.

[0195] Any one or more of the above aspects, further comprising means for causing a camera on a mobile device to scan a scannable code at the merchant location.

[0196] Any one or more of the above aspects, wherein the scannable code is at a table or on a bill at the merchant location.

[0197] Any one or more of the above aspects, further comprising means for determining whether any offers are available based at least on the identifier and the bill.

[0198] Any one or more of the above aspects, further comprising means for applying a loyalty credit to an associated loyalty account of the guest based at least on the bill.

[0199] Any one or more of the above aspects, further comprising means for coordinating offers and associated bill adjustments at a point-of-sale via a point-of-sale API service.

[0200] Any one or more of the above aspects, further comprising means for sending push notifications from the app server to an app running on a mobile device.

[0201] Any one or more of the above aspects, wherein a third party vendor provides the electronic payment token.

[0202] A system of payment for a transaction comprising:

[0203] a merchant Point of Sale (POS) configured to receive a unique identifier from a mobile device, the unique identifier scanned from a scannable code or wirelessly received at a diner's table;

[0204] a processing engine configured to receive (a) electronic transaction data including a transaction price and (b) the unique identifier from the merchant POS; and

[0205] a memory storing a database in communication with the processing engine, wherein the database includes a plurality of unique identifiers, wherein each unique identifier is associated with a cash purse and a plurality of non-cash purses including at least one product code purse, wherein the cash purse and each non-cash purse have an associated value, the cash purse value being measured in a currency value and the product code purse value being measured in a quantity of a product of an associated product code,

[0206] wherein, the processing engine separates the electronic transaction data into one or more product code values corresponding to a purse type, each product code value being associated with a product code and a corresponding subtotal of the transaction price;

[0207] wherein, when the processing engine matches the product code associated with one of the product code purses in the database with one of the product codes associated with one of the product code values of the transaction data, the processing engine debits the quantity of the product of the matched product code from the product code purse and reduces the transaction price by the corresponding subtotal of the transaction price of the matched product code, thereby allowing non-standard financial transactions at the merchant POS,

[0208] wherein, after every corresponding subtotal of the transaction price has been debited from the transaction price for matching product codes, the processing engine debits the remaining transaction price from the cash purse value; and

[0209] a processing engine configured to communicate the values associated with the cash purse and product code purse to a mobile and to communicate confirmation of the transaction to the merchant POS system, wherein the processing engine is configured to communicate the values associated with the cash purse and product code purse to a mobile device associated with the unique identifier.

[0210] Any one or more of the aspects as substantially described herein.

[0211] One or more means adapted to perform any one or more of the above aspects.

[0212] Any non-transitory computer readable information storage medium that stores instructions for performing any one or more of the above aspects.

[0213] For purposes of explanation, numerous details are set forth in order to provide a thorough understanding of the present embodiments. It should be appreciated however that the techniques herein may be practiced in a variety of ways beyond the specific details set forth herein.

[0214] Furthermore, while the exemplary embodiments illustrated herein may show some of the various components of the system collocated, it is to be appreciated that the various components of the system(s) can be located at distant portions of a distributed network, such as a communications network and/or the Internet, or within a dedicated secure, unsecured and/or partially encrypted or fully encryptedsystem. Thus, it should be appreciated that the components of the system can be combined into one or more devices, or collocated on a particular node/element(s) of a distributed network, such as a communications network. As will be appreciated from the description, and for reasons of computational efficiency, the components of the system can be arranged at any location within a distributed network without affecting the operation of the system.

[0215] Furthermore, it should be appreciated that the various links, including communications channel(s), connecting the elements (which may not be not shown) can be wired or wireless links, or any combination thereof, or any other known or later developed element(s) that is/are capable of supplying and/or communicating data and/or signals to and from the connected elements. The term module as used herein can refer to any known or later developed hardware, software, firmware, or combination thereof that is capable of performing the functionality associated with that element. The terms determine, calculate and compute, and variations thereof, as used herein are used interchangeably and include any type of methodology, process, mathematical operation or technique.

[0216] While the above-described flowcharts/operational flows have been discussed in relation to a particular exemplary sequence of events, it should be appreciated that changes to this sequence can occur without materially effecting the operation of the embodiment(s). Additionally, the exact sequence of events need not occur as set forth in the exemplary embodiments, but rather the steps can be performed by one or other device(s) in the system. Additionally, the exemplary techniques illustrated herein are not limited to the specifically illustrated embodiments but can also be utilized with the other exemplary embodiments and

each described feature is individually and separately claimable, and depending on the embodiment, many aspects are optional.

[0217] As will be appreciated by one skilled in the art, aspects of the present disclosure may be embodied as a system, method, and/or computer program product. Thus, aspects of the present disclosure may be embodied entirely in hardware, entirely in software (including, but not limited to, firmware, program code, resident software, microcode), or in a combination of hardware and software. All such embodiments may generally be referred to herein as a circuit, a module, or a system. In addition, aspects of the present invention may be in the form of a computer program product embodied in one or more computer readable media having computer readable program code embodied thereon.

[0218] A computer readable medium as described herein may be a computer readable storage medium, examples of which include, but are not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, or device, or any suitable combination thereof. As used herein, a computer readable storage medium may be any non-transitory, tangible medium that can contain or store a program for use by or in connection with an instruction execution system, apparatus, device, computer, computing system, computer system, or any programmable machine or device that inputs, processes, and outputs instructions, commands, or data. A non-exhaustive list of specific examples of a computer readable storage medium include an electrical connection having one or more wires, a portable computer diskette, a floppy disk, a hard disk, a random access memory (RAM), a read-only memory (ROM), a USB flash drive, an non-volatile RAM (NVRAM or NOVRAM), an erasable programmable read-only memory (EPROM or Flash memory), a flash memory card, an electrically erasable programmable read-only memory (EEPROM), an optical fiber, a portable compact disc read-only memory (CD-ROM), a DVD-ROM, an optical storage device, a magnetic storage device, or any suitable combination thereof. A computer readable storage medium can be any computer readable medium that is not a computer readable signal medium such as a propagated data signal with computer readable program code embodied therein.

[0219] Program code may be embodied as computer-readable instructions stored on or in a computer readable storage medium as, for example, source code, object code, interpretive code, executable code, or combinations thereof. Any standard or proprietary, programming or interpretive language can be used to produce the computer-executable instructions. Examples of such languages include C, C++, C#, Pascal, JAVA, JAVA Script, BASIC, Smalltalk, Visual Basic, and Visual C++.

[0220] Transmission of program code embodied on a computer readable medium can occur using any appropriate medium including, but not limited to, wireless, wired, optical fiber cable, radio frequency (RF), or any suitable combination thereof.

[0221] The program code may execute entirely on a user's/operator's/administrator's computer, partly on such a computer or device (such as a smartphone, device or web server), as a stand-alone software package, partly on the user's/operator's/administrator's computer and partly on a remote computer, or entirely on a remote computer or server. Any such remote computer may be connected to the user's/operator's/administrator's computer through any type of network, including a local area network (LAN) or a wide area network (WAN), or the connection may be made to an external computer (for example, through the Internet using an Internet Service Provider).

[0222] Additionally, the systems, methods and protocols described herein can be implemented to improve one or more of a special purpose computer, a programmed microprocessor or microcontroller and peripheral integrated circuit element(s), an ASIC or other integrated circuit, a digital signal processor, a hard-wired electronic or logic circuit such as discrete element circuit, a programmable logic device such as PLD, PLA, FPGA, PAL, any comparable means, or the like. In general, any device capable of implementing a state machine that is in turn capable of implementing the methodology illustrated herein can benefit from the various communication methods, protocols and techniques according to the disclosure provided herein.

[0223] Examples of the processors as described herein include, but are not limited to, at least one of Qualcomm® Snapdragon® 800 and 801, Qualcomm® Snapdragon® 610 and 615 with 4G LTE Integration and 64-bit computing, Apple® A7, A8, ABX, A9, A9X, or A10 processors with 64-bit architecture, Apple® M7, M8, M9, or M10 motion coprocessors, Samsung® Exynos® series, the Intel® Core™ family of processors, the Intel® Xeon® family of processors, the Intel® Atom™ family of processors, the Intel Itanium® family of processors, Intel® Core® i9, Intel® Core® X-Series, Intel® Core® i5-4670K and i7-4770K 22nm Haswell, Intel® Core® i5-3570K 22nm Ivy Bridge, the AMD® FX™ family of processors, AMD® FX-4300, FX-6300, and FX-8350 32nm Vishera, AMD® Kaveri processors, Texas Instruments® Jacinto C6000™ automotive infotainment processors, Texas Instruments® OMAP™ automotive-grade mobile processors, ARM® Cortex™-M processors, ARM® Cortex-A and ARM926EJS™ processors, Broadcom® AirForce BCM4704/BCM4703 wireless networking processors, the AR7100 Wireless Network Processing Unit, other industry-equivalent processors, and may perform computational functions using any known or future-developed standard, instruction set, libraries, and/or architecture.

[0224] Furthermore, the disclosed methods may be readily implemented in software using object or object-oriented software development environments that provide portable source code that can be used on a variety of computer, workstation, server or mobile device platforms. Alternatively, the disclosed system may be implemented partially in hardware using standard logic circuits or a VLSI design. Whether software or hardware is used to implement the systems in accordance with this invention is dependent on the speed and/or efficiency requirements of the system, the particular function, and the particular software or hardware systems or microprocessor or microcomputer systems being utilized. The methods illustrated herein however can be readily implemented in hardware and/or software using any known or later developed systems or structures, devices and/or software by those of ordinary skill in the applicable art from the functional description provided herein and with a general basic knowledge of the computing arts.

[0225] Moreover, the disclosed methods may be readily implemented in software executed on programmed general-purpose computer, a special purpose computer, mobile device, smartphone, a microprocessor, or the like. In these instances, the systems and methods of this invention can be

implemented as program embedded on personal computer such as JAVA® or CGI script, as a resource residing on a server or graphics workstation, as a routine embedded in a dedicated fingerprint processing system, as a plug-in, or the like. The system can also be implemented by physically incorporating the system and method into a software and/or hardware system, such as the hardware and software systems of a smart phone, web server and/or transaction processing server(s).

[0226] It should be noted that various changes and modifications to the embodiments described herein will be apparent to those skilled in the art. Such changes and modifications may be made without departing from the spirit and scope of the present disclosed technology and without diminishing its attendant advantages. For example, various embodiments of the method may be provided based on various combinations of the features and functions from the subject matter provided herein.

1. A system of payment for a transaction comprising:

an app server that receives an identifier associated with a bill, the identifier scanned or received wirelessly at a merchant location;

the app server further receiving an electronic payment token corresponding to a payment service usable to pay the bill, the payment token having been selected by a guest;

a make payment request received by the app server, the make payment request triggering the app server to send an instruction to a payment processing service to pay for the bill;

the app server further instructing a point-of-sale device to close a ticket associated with the bill when payment has been confirmed.

2. The system of claim **1**, further comprising a mobile device app, the mobile device app causing a camera on the mobile device to scan a scannable code at the merchant location.

3. The system of claim **2**, wherein the scannable code is at a table or on a bill at the merchant location.

4. The system of claim **1**, further comprising an offer server adapted to determine whether any offers are available based at least on the identifier and the bill.

5. The system of claim **1**, further comprising a loyalty server adapted to apply a loyalty credit to an associated loyalty account of the guest based at least on the bill.

6. The system of claim **1**, wherein the app server coordinates offers and associated bill adjustments at a point-of-sale via a point-of-sale API service.

7. The system of claim **1**, further comprising a push provider service adapted to send push notifications from the app server to an app running on a mobile device.

8. The system of claim **1**, wherein a third party vendor provides the electronic payment token.

9. A method of payment for a transaction comprising:

receiving an identifier associated with a bill, the identifier scanned or received wirelessly at a merchant location;

receiving an electronic payment token corresponding to a payment service usable to pay the bill, the payment token having been selected by a guest;

receiving a make payment request by the app server, the make payment request triggering the app server to send an instruction to a payment processing service to pay for the bill;

instructing a point-of-sale device to close a ticket associated with the bill when payment has been confirmed.

10. The method of claim **9**, further comprising causing a camera on a mobile device to scan a scannable code at the merchant location.

11. The method of claim **10**, wherein the scannable code is at a table or on a bill at the merchant location.

12. The method of claim **9**, further comprising determining whether any offers are available based at least on the identifier and the bill.

13. The method of claim **9**, further comprising applying a loyalty credit to an associated loyalty account of the guest based at least on the bill.

14. The method of claim **9**, further comprising coordinating offers and associated bill adjustments at a point-of-sale via a point-of-sale API service.

15. The method of claim **9**, further comprising sending push notifications from the app server to an app running on a mobile device.

16. The method of claim **9**, wherein a third party vendor provides the electronic payment token.

17. A computer readable information storage media having stored thereon instructions, that when executed by one or more processors, cause the execution of a method of payment for a transaction comprising:

receiving an identifier associated with a bill, the identifier scanned or received wirelessly at a merchant location;

receiving an electronic payment token corresponding to a payment service usable to pay the bill, the payment token having been selected by a guest;

receiving a make payment request by the app server, the make payment request triggering the app server to send an instruction to a payment processing service to pay for the bill;

instructing a point-of-sale device to close a ticket associated with the bill when payment has been confirmed.

18. The media of claim **17**, further comprising causing a camera on a mobile device to scan a scannable code at the merchant location.

19. The media of claim **18**, wherein the scannable code is at a table or on a bill at the merchant location.

20. A system of payment for a transaction comprising:

a merchant Point of Sale (POS) configured to receive a unique identifier from a mobile device, the unique identifier scanned from a scannable code or wirelessly received at a diner's table;

a processing engine configured to receive (a) electronic transaction data including a transaction price and (b) the unique identifier from the merchant POS; and

a memory storing a database in communication with the processing engine, wherein the database includes a plurality of unique identifiers, wherein each unique identifier is associated with a cash purse and a plurality of non-cash purses including at least one product code purse, wherein the cash purse and each non-cash purse have an associated value, the cash purse value being measured in a currency value and the product code purse value being measured in a quantity of a product of an associated product code,

wherein, the processing engine separates the electronic transaction data into one or more product code values corresponding to a purse type, each product code value being associated with a product code and a corresponding subtotal of the transaction price;

wherein, when the processing engine matches the product code associated with one of the product code purses in the database with one of the product codes associated with one of the product code values of the transaction data, the processing engine debits the quantity of the product of the matched product code from the product code purse and reduces the transaction price by the corresponding subtotal of the transaction price of the matched product code, thereby allowing non-standard financial transactions at the merchant POS,

wherein, after every corresponding subtotal of the transaction price has been debited from the transaction price for matching product codes, the processing engine debits the remaining transaction price from the cash purse value; and

a processing engine configured to communicate the values associated with the cash purse and product code purse to a mobile and to communicate confirmation of the transaction to the merchant POS system,

wherein the processing engine is configured to communicate the values associated with the cash purse and product code purse to a mobile device associated with the unique identifier.

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