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| --- | --- | --- |
| **Use Case Name** | Process Sale | |
| **Brief Description** |  | |
| **Precondition** | Cashier is identified and authenticated. | |
| **Primary Actor** | Cashier | |
| **Secondary Actors** | Customer, System, Accounting system, Inventory system, Manager, external tax calculation system, external Payment Authorization Service System | |
| **Dependency** | None | |
| **Generalization** | None | |
| **Basic Flow** | **Steps** | |
| **1** | Customer arrives at POS checkout with goods and/or services to purchase. |
| IF the Customer or Manager doesn’t indicate to resume a suspended sale THEN | |
| ENDIF | |
| **2** | Cashier starts a new sale. |
| IF the Customer doesn’t tell the Cashier they have a tax exempt status (e.g., seniors, native peoples) THEN | |
| ENDIF | |
| DO | |
| IF the Customer does not tell the Cashier they have a tax exempt status (e.g., seniors, native peoples) THEN | |
| ENDIF | |
| IF there are not multiple of same item category or tracking unique item identity important THEN | |
| ENDIF | |
| IF Customer not asks Cashier to remove (i.e., void) an item from the purchase THEN | |
| ENDIF | |
| IF Customer not tells Cashier to cancel sale THEN | |
| ENDIF | |
| IF Cashier not suspends the sale THEN | |
| ENDIF | |
| IF Item not requires manual category and price entry (such as flowers or cards with a price on them) THEN | |
| **3** | Cashier enters item identifier. |
| The System VALIDATES THAT the item ID is valid. | |
| ENDIF | |
| **4** | System records sale line item and presents item description, price, and running total. Price calculated from a set of price rules. |
| IF the Customer does not tell the Cashier they have a tax exempt status (e.g., seniors, native peoples) THEN | |
| ENDIF | |
| IF Customer not asks Cashier to remove (i.e., void) an item from the purchase THEN | |
| ENDIF | |
| IF Customer not tells Cashier to cancel sale THEN | |
| ENDIF | |
| IF Cashier not suspends the sale THEN | |
| ENDIF | |
| IF The system supplied item price is wanted (e.g., Customer complained about something and is offered a lower price) THEN | |
| ENDIF | |
| UNTIL Cashier indicates done. | |
| IF Customer not asks Cashier to remove (i.e., void) an item from the purchase THEN | |
| ENDIF | |
| IF Customer not tells Cashier to cancel sale THEN | |
| ENDIF | |
| IF Cashier not suspends the sale THEN | |
| ENDIF | |
| The system VALIDATES THAT communication with external tax calculation system service works. | |
| IF Customer doesn’t say they are eligible for a discount (e.g., employee, preferred customer) THEN | |
| ENDIF | |
| IF Customer doesn’t say they have a credit in their account, to apply to the sale THEN | |
| ENDIF | |
| **5** | System presents total with taxes calculated. |
| **6** | Cashier tells Customer the total, and asks for payment. |
| IF Customer not asks Cashier to remove (i.e., void) an item from the purchase THEN | |
| ENDIF | |
| IF Customer not tells Cashier to cancel sale THEN | |
| ENDIF | |
| IF Cashier not suspends the sale THEN | |
| ENDIF | |
| IF Customer doesn’t say they intend to pay by cash but don’t have enough cash THEN | |
| ENDIF | |
| IF Customer not presents coupons THEN | |
| ENDIF | |
| **7** | Customer pays and System handles payment. |
| IF Customer not pays by cash THEN | |
| ENDIF | |
| IF Customer not pays by credit THEN | |
| ENDIF | |
| IF Customer not pays by check THEN | |
| ENDIF | |
| IF Customer not pays by debit THEN | |
| ENDIF | |
| IF Cashier cancels payment step THEN | |
| ENDIF | |
| **8** | System logs completed sale and sends sale and payment information to the external Accounting system (for accounting and commissions) and Inventory system (to update inventory). |
| **9** | System presents receipt. |
| IF there are no product rebates THEN | |
| ENDIF | |
| IF Customer not requests gift receipt (no prices visible) THEN | |
| ENDIF | |
| IF Printer not out of paper THEN | |
| ENDIF | |
| **10** | Customer leaves with receipt and goods (if any). |
| **Postcondition** | Sale is saved. Tax is correctly calculated.  Accounting and Inventory are updated. Commissions recorded. Receipt is generated.  Payment authorization approvals are recorded. |
| **Specific Alternative Flow** | **RFS Basic Flow 2** | |
| ELSE | |
| **1** | Cashier performs resume operation, and enters the ID to retrieve the sale. |
| **2a** | IF the sale not found THEN |
| **1** | System signals error to the Cashier. |
| **2** | Cashier probably starts new sale and re-enters all the items. |
| RESUME STEP 4 | |
| ENDIF | |
| **2** | System displays the state of the resumed sale, with subtotal |
| **3** | Cashier continues with sale (probably entering more items or handling payment). |
| RESUME STEP 33 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow** 5 | |
| ELSE | |
| **1** | Cashier verifies, and then enters tax-exempt status code. |
| **2** | System records status (which it will use during tax calculations) |
| RESUME STEP 6 | |
| ENDIF | |
| **Postcondition** | System recorded status (which it will use during tax calculations) |
| **Specific Alternative Flow** | **RFS Basic Flow** 8 | |
| ELSE | |
| **1** | Cashier verifies, and then enters tax-exempt status code. |
| **2** | System records status (which it will use during tax calculations) |
| RESUME STEP 9 | |
| ENDIF | |
| **Postcondition** | System recorded status (which it will use during tax calculations) |
| **Specific Alternative Flow** | **RFS Basic Flow** 23 | |
| ELSE | |
| **1** | Cashier verifies, and then enters tax-exempt status code. |
| **2** | System records status (which it will use during tax calculations) |
| RESUME STEP 24 | |
| ENDIF | |
| **Postcondition** | System recorded status (which it will use during tax calculations) |
| **Specific Alternative Flow** | **RFS Basic Flow 20** | |
| **1** | System signals error and rejects entry. |
| **2** | IF there is a human-readable item ID THEN |
| **3** | Cashier manually enters the item ID. |
| **4** | IF the item ID is not valid THEN |
| **5** | RESUME STEP 19 |
| **6** | ENDIF |
| **7** | ELSEIF there is no item ID, but there is a price on the tag THEN |
| **8** | Cashier asks Manager to perform an override operation. |
| **9** | Manager performs override. |
| **10** | Cashier indicates manual price entry, enters price, and requests standard taxation for this amount (because there is no product information, the tax engine can’t otherwise deduce how to tax it) |
| **11** | RESUME STEP 21 |
| **12** | ELSEIF the Cashier performs Find Product Help to obtain true item ID and price and finds an item ID THEN |
| **13** | RESUME STEP 19 |
| **14** | ELSE |
| **15** | Cashier asks an employee for the true item ID or price |
| **16** | IF employee responds with an item ID THEN |
| **17** | RESUME STEP 19 |
| **18** | ELSE |
| **19** | Employee responds with a price. |
| **20** | Cashier indicates manual price entry, enters price, and requests standard taxation for this amount (because there is no product information, the tax engine can’t otherwise deduce how to tax it) |
| **21** | RESUME STEP 21 |
|  | ENDIF |
| **22** | ENDIF |
| RESUME STEP 21 | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 10** | |
| **1** | Cashier can enter item category identifier and the quantity. |
| RESUME STEP 11 | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 18** | |
| ELSE | |
| **1** | Cashier enters special manual category code, plus the price. |
| RESUME STEP 21 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 12** | |
| ELSE | |
| **1** | Cashier enters item identifier for removal from sale. |
| **2a** | IF Item price exceeds void limit for Cashier THEN |
| **1** | System signals error, and suggests Manager override |
| **2** | Cashier requests Manager override, gets it, and repeats operation. |
|  | ENDIF |
| **2** | System removes item and displays updated running total. |
| RESUME STEP 13 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 25** | |
| ELSE | |
| **1** | Cashier enters item identifier for removal from sale. |
| **2a** | IF Item price exceeds void limit for Cashier THEN |
| **1** | System signals error, and suggests Manager override |
| **2** | Cashier requests Manager override, gets it, and repeats operation. |
|  | ENDIF |
| **2** | System removes item and displays updated running total. |
| RESUME STEP 26 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 34** | |
| ELSE | |
| **1** | Cashier enters item identifier for removal from sale. |
| **2a** | IF Item price exceeds void limit for Cashier THEN |
| **1** | System signals error, and suggests Manager override |
| **2** | Cashier requests Manager override, gets it, and repeats operation. |
|  | ENDIF |
| **2** | System removes item and displays updated running total. |
| RESUME STEP 35 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 47** | |
| ELSE | |
| **1** | Cashier enters item identifier for removal from sale. |
| **2a** | IF Item price exceeds void limit for Cashier THEN |
| **1** | System signals error, and suggests Manager override |
| **2** | Cashier requests Manager override, gets it, and repeats operation. |
|  | ENDIF |
| **2** | System removes item and displays updated running total. |
| RESUME STEP 48 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 14** | |
| ELSE | |
| **1** | Cashier cancels sale on System. |
| ABORT | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 27** | |
| ELSE | |
| **1** | Cashier cancels sale on System. |
| ABORT | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 36** | |
| ELSE | |
| **1** | Cashier cancels sale on System. |
|  | ABORT |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 49** | |
| ELSE | |
| **1** | Cashier cancels sale on System. |
|  | ABORT |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 16** | |
| ELSE | |
| **1** | System records sale so that it is available for retrieval on any POS register. |
| **2** | System presents a “suspend receipt” that includes the line items, and a sale ID used to retrieve and resume the sale. |
|  | ABORT |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 29** | |
| ELSE | |
| **1** | System records sale so that it is available for retrieval on any POS register. |
| **2** | System presents a “suspend receipt” that includes the line items, and a sale ID used to retrieve and resume the sale. |
|  | ABORT |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 38** | |
| ELSE | |
| **1** | System records sale so that it is available for retrieval on any POS register. |
| **2** | System presents a “suspend receipt” that includes the line items, and a sale ID used to retrieve and resume the sale. |
|  | ABORT |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 51** | |
| ELSE | |
| **1** | System records sale so that it is available for retrieval on any POS register. |
| **2** | System presents a “suspend receipt” that includes the line items, and a sale ID used to retrieve and resume the sale. |
|  | ABORT |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 31** | |
| ELSE | |
| **1** | Cashier requests approval from Manager. |
| **2** | Manager performs override operation. |
| **3** | Cashier enters manual override price. |
| **4** | System presents new price. |
| RESUME STEP 32 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 40** | |
| ELSE | |
| **1** | System tries to restart the service on the POS node |
| **1a** | IF System detects that the service does not restart THEN |
| **1** | System signals error |
| **2** | IF Cashier manually calculates and enters the tax THEN |
| RESUME STEP 41 | |
| ELSE | |
| ABORT | |
| ENDIF | |
| ENDIF | |
| RESUME STEP 41 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 41** | |
| ELSE | |
| **1** | Cashier signals discount request. |
| **2** | Cashier enters Customer identification. |
| **3** | System presents discount total, based on discount rules. |
| RESUME STEP 42 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 43** | |
| ELSE | |
| **1** | Cashier signals credit request. |
| **2** | Cashier enters Customer identification. |
| **3** | System applies credit up to price=0, and reduces remaining credit. |
| RESUME STEP 44 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 53** | |
| ELSE | |
| **1** | Cashier asks for alternate payment method. |
| IF Customer tells Cashier to cancel sale THEN | |
| Cashier cancels sale on System. | |
| ABORT | |
| ENDIF | |
| RESUME STEP 54 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 55** | |
| ELSE | |
| DO | |
| Cashier records coupon. | |
| IF coupon entered is not for any purchased item THEN | |
| **1** | System signals error to Cashier. |
| ELSE | |
| **1** | System reduces price as appropriate. |
| **2** | System records the used coupons for accounting reasons. |
| ENDIF | |
| UNTIL all coupons recorded | |
| RESUME STEP 56 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 58** | |
| ELSE | |
| **1** | Cashier enters the cash amount tendered. |
| **2** | System presents the balance due, and releases the cash drawer. |
| **3** | Cashier deposits cash tendered and returns balance in cash to Customer. |
| **4** | System records the cash payment. |
| RESUME STEP 68 | |
| ENDIF | |
| **Postcondition** | System recorded status (which it will use during tax calculations) |
| **Specific Alternative Flow** | **RFS Basic Flow 60** | |
| ELSE | |
| **1** | Customer enters their credit account information. |
| **2** | System displays their payment for verification. |
| **3** | IF Cashier cancels payment step THEN |
| **1** | System reverts to “item entry” mode. |
| RESUME STEP 33 | |
| ENDIF | |
| **4** | System sends payment authorization request to external Payment Authorization Service System, and requests payment approval. |
| **4a** | IF System detects failure to collaborate with external system THEN |
| **1** | System signals error to Cashier. |
| **2** | Cashier asks Customer for alternate payment. |
| RESUME STEP 57 | |
| ENDIF | |
| **5** | IF System receives payment approval THEN |
| **5** | System signals approval to Cashier, and releases the drawer (to insert signed credit payment receipt). |
| **5a** | ELSEIF System receives payment denial THEN |
| **1** | System signals denial to Cashier. |
| **2** | Cashier asks Customer for alternate payment. |
| **3** | RESUME STEP 57 |
| **5b** | ELSEIF Timeout waiting for response THEN |
| **1** | System signals timeout to Cashier. |
| **2** | IF Cashier tries again THEN |
| **1** | RESUME STEP 60 |
| ELSE | |
| **1** | Cashier asks for alternate payment. |
| **2** | RESUME STEP 57 |
| ENDIF | |
| ENDIF | |
| **6** | System records the credit payment, which includes the payment approval. |
| **7** | System presents credit payment signature input mechanism. |
| **8** | Cashier asks Customer for credit payment signature. Customer enters signature. |
| **9** | IF signature on paper receipt THEN |
| **9** | Cashier places receipt in cash drawer and closes it. |
| ENDIF | |
| RESUME STEP 68 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 62** | |
| ELSE | |
| **1** | Customer pays by check. |
| RESUME STEP 68 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 64** | |
| ELSE | |
| **1** | Customer pays by debit. |
| RESUME STEP 68 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow** 66 | |
| ELSE | |
| **1** | System reverts to “item entry” mode. |
| RESUME STEP 33 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 70** | |
| ELSE | |
| **1** | System presents the rebate forms and rebate receipts for each item with a rebate. |
| RESUME STEP 71 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 72** | |
| ELSE | |
| **1** | Cashier requests gift receipt and System presents it. |
| RESUME STEP 73 | |
| ENDIF | |
| **Postcondition** | None |
| **Specific Alternative Flow** | **RFS Basic Flow 74** | |
| ELSE | |
| **1** | IF System can detect the fault THEN |
| **2** | System signals the problem. |
| **3** | ENDIF |
| **4** | Cashier replaces paper. |
| **5** | Cashier requests another receipt. |
| RESUME STEP 69 | |
| ENDIF | |
| **Postcondition** | None |