/* Summary Level Use Cases */

use case: RegisterCustomer
scope: SmartStoreSystem
level: SUMMARY
intention: "The user intends to register as a customer."
multiplicity: "Many users can register at different times."
primary actor: HUMAN::Customer::1..*
main success scenario:
   1. "The Customer downloads and installs the smart store mobile application."
   2. "The Customer opens the application and fills in the registration form."
   3. "The Customer submits the registration form."
   4. "The system processes the registration and creates a new customer profile."
   5. "The system confirms the registration to the Customer."
   use case ends in: SUCCESS
extensions:
   alternative for 3:
      3a. "The Customer provides incomplete or incorrect information."
      3a.1. "The system prompts the Customer to correct the information."
      use case continues at step: 2
   exception for 4:
         4a. {SOFTWARE_EXCEPTION::RegistrationError} "Error in processing registration."
      use case ends in: FAILURE

use case: EnterStore
scope: SmartStoreSystem
level: SUMMARY
intention: "The customer intends to enter the store."
multiplicity: "Many customers can enter the store at the same time."
primary actor: HUMAN::Customer::1..*
secondary actor: SENSOR::EntryCamera::1..*
main success scenario:
   1. "The Customer scans their mobile device or pre-registered credit card at the entry gate."

2. "The EntryCamera captures the image of the Customer."

3. "The system verifies the Customer's identity."

4. "The system opens the entry gate."

use case ends in: SUCCESS

extensions:

alternative for 1:

1a. "The Customer does not have a mobile device or credit card."

1a.1. "The system denies entry."

use case ends in: FAILURE

exception for 3:

3a. {NETWORK_EXCEPTION::NetworkFailure} "Network failure during verification."

use case ends in: FAILURE

use case: ExitStore

scope: SmartStoreSystem

level: SUMMARY

intention: "The customer intends to exit the store."

multiplicity: "Many customers can exit the store at the same time."

primary actor: HUMAN::Customer::1..*

secondary actor: SOFTWARE::PaymentService::1..*

main success scenario:

1. "The Customer scans their mobile device or pre-registered credit card at the exit gate."

2. "The system calculates the total bill."

3. "The system processes the payment through the PaymentService."

4. "The system opens the exit gate."

use case ends in: SUCCESS

extensions:

alternative for 3:

3a. "The payment fails due to insufficient funds."

3a.1. "The system prompts the Customer to use an alternative payment method."

use case continues at step: 3

exception for 3:

3b. {NETWORK_EXCEPTION::PaymentServiceUnavailable} "Payment service is unavailable."
    use case ends in: FAILURE

/* User Goal Level Use Cases */

use case: AddItemToCart
scope: SmartStoreSystem
level: USER_GOAL
intention: "The customer intends to add an item to their virtual cart."
multiplicity: "Many customers can add items to their carts at the same time."
primary actor: HUMAN::Customer::1..*
secondary actor: SENSOR::ShelfSensor::1..*
main success scenario:
  1. "The Customer picks up an item from the shelf."
  2. "The ShelfSensor detects the removal of the item."
  3. "The system adds the item to the Customer's virtual cart."
  use case ends in: SUCCESS
extensions:
  alternative for 2:
    2a. "The ShelfSensor fails to detect the removal of the item."
    2a.1. "The system uses the EntryCamera to verify the item removal."
    use case continues at step: 3
  exception for 3:
    3a. {HARDWARE_EXCEPTION::SensorFailure} "Shelf sensor failure."
    use case ends in: FAILURE

use case: RemoveItemFromCart
scope: SmartStoreSystem
level: USER_GOAL
intention: "The customer intends to remove an item from their virtual cart."
multiplicity: "Many customers can remove items from their carts at the same time."
primary actor: HUMAN::Customer::1..*
secondary actor: SENSOR::ShelfSensor::1..*
main success scenario:

1. "The Customer places an item back on the shelf."
2. "The ShelfSensor detects the placement of the item."
3. "The system removes the item from the Customer's virtual cart."
use case ends in: SUCCESS
extensions:
  alternative for 2:
    2a. "The ShelfSensor fails to detect the placement of the item."
    2a.1. "The system uses the EntryCamera to verify the item placement."
    use case continues at step: 3
  exception for 3:
    3a. {HARDWARE_EXCEPTION::SensorFailure} "Shelf sensor failure."
    use case ends in: FAILURE

/* Sub-Functional Level Use Cases */

use case: VerifyCustomerIdentity
scope: SmartStoreSystem
level: SUB_FUNCTION
intention: "The system verifies the identity of the customer."
multiplicity: "The system verifies the identity of many customers at the same time."
primary actor: None
main success scenario:
  1. "The system compares the captured image with the registered images."
  use case ends in: SUCCESS

use case: ProcessPayment
scope: SmartStoreSystem
level: SUB_FUNCTION
intention: "The system processes the payment for the customer's purchases."
multiplicity: "The system processes payments for many customers at the same time."
primary actor: None
main success scenario:
  1. "The system sends the payment request to the PaymentService."

2. "The PaymentService processes the payment."
use case ends in: SUCCESS

/* Handler Use Cases */

handler use case: ReconnectNetwork
scope: SmartStoreSystem
level: USER_GOAL
intention: "To reconnect to the network when a network failure occurs."
primary actor: None
contexts   and   exceptions: EnterStore
{NETWORK_EXCEPTION::NetworkFailure},   ExitStore
{NETWORK_EXCEPTION::PaymentServiceUnavailable}
main success scenario:
   1. "The system attempts to reconnect to the network."
   2. "The system successfully reconnects to the network."
   use case ends in: SUCCESS
extensions:
   alternative for 1:
      1a.^ timeout:30s "The system is unable to reconnect to the network."
      use case continues at step: 1

handler use case: ReplaceSensor
scope: SmartStoreSystem
level: USER_GOAL
intention: "To replace a faulty sensor."
primary actor: HUMAN::MaintenanceStaff::1..*
contexts   and   exceptions: AddItemToCart
{HARDWARE_EXCEPTION::SensorFailure},   RemoveItemFromCart
{HARDWARE_EXCEPTION::SensorFailure}
main success scenario:
   1. "The MaintenanceStaff replaces the faulty sensor."
   use case ends in: SUCCESS