Discussion 5 Restaurant Mobile Payment System

Discussion Topic:

For your initial post, develop a complete use case for **one** of the following activities:

- Making a withdrawal at an ATM
- Using your charge card for a meal at a restaurant
- Searching for books (on a specific topic) using an online bookstore

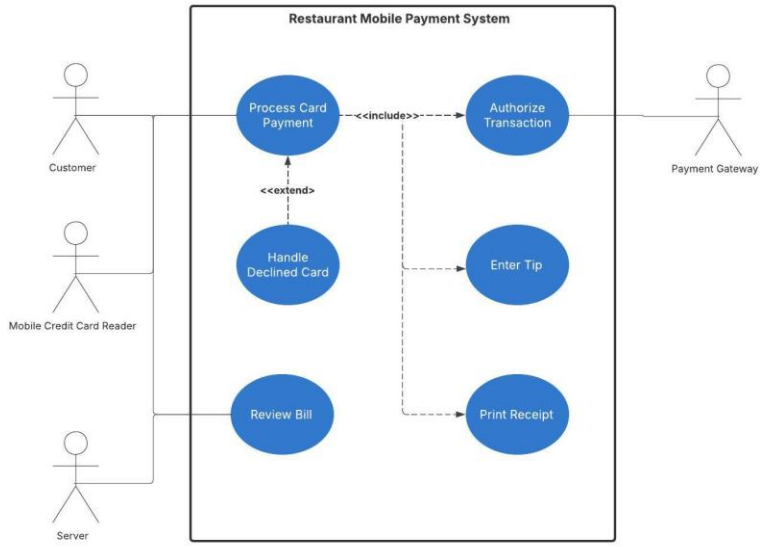
Consider the use case you created above and write a nonfunctional requirement for the application.

My Post:

Hello class,

For this discussion, I have selected the "Using your charge card for a meal at a restaurant" activity. Note that a charge card is a type of credit that requires the cardholder to pay the full balance each month, unlike a credit card that allows the cardholder to build debt and pay interest.
Anyhow, the card reader in this scenario is a mobile credit card reader that allows the customer to add a tip and sign the receipt; the reader also prints the receipt. Please see the use case diagram illustrating the use case scenario.

Figure 1
Restaurant Mobile Payment System



The identity actors for this scenario are:

- The primary actor is the Customer
- The secondary actors are:
    - The Server
    - The Payment Gateway
    - The Mobile Credit Card Reader (MCCR)

The goal for this use case scenario is to illustrate the successful process of meal payment by a customer using a charge card and a mobile credit card at their table.

The preconditions for this use case scenario are:

- The Customer has finished their meal.
- The Server has tallied the bill.
- The Mobile Credit Card Reader has a network connection.

The use case scenario trigger is the Server presents the Mobile Credit Card Reader to the Customer.

User Story Success Scenario:

1. The Server activates the “Review Bill” function on the MCCR.
2. The Customer reviews the digital bill on the MCCR screen.
3. The Customer confirms payment and initiates “Process Card Payment” by inserting or swiping their card in the MCCR.
4. The MCCR reads the card data and prompts the Customer for a tip (<<include>>).
5. Customer enters a tip amount.

6a. The MCCR calculates the total and connects to the Payment Gateway to "Authorize Transaction" (<<include>>).

7. Payment Gateway approves the funds and sends a confirmation code to the MCCR.
8. The MCCR displays a “Payment Successful” message.
9. The MCCR “Print Receipt” (<<include>>).
10. Customer takes the receipt, and
11. The use case ends.

User Story Alternative Flow

6b. Transaction Declined:
The Payment Gateway rejects the transaction (due to insufficient funds or fraud alert)
System triggers the “Handle Declined Card” extension (<<extend>>).
System displays a generic error message to the Customer and Server.
The use case ends, and the server can propose a different payment method.

The postconditions are:

- The restaurant received payment equal to the meal cost plus tip.
- The Customer receives a receipt.

Two nonfunctional requirements for this use case could be defined:

Performance and latency requirements, communicating with the Payment Gateway and receiving a response must be completed within 5 seconds for 95% of all transactions.

Security requirements, customer payment data such as credit card/charge card numbers and CVV codes when transmitted between the Mobile Credit Card Reader and the Payment Gateway must be encrypted using TLS 1.2 or higher

-Alex