Use Case 2:

ID	UC – Guest Requesting and Purchasing Late Checkout
Scope	Hotel Reservation System
Level	User Goal
Stakeholders and Interests	Guest - Wants to stay in the hotel longer than expected, and delay checkout Clerk - Needs to assist the Guest in checking the availability of the room the rest of the day, confirming or denying whether late checkout is possible, and helping with billing information Admin - Assists the Clerk and Guest if needed.
Precondition	1. Guest is currently staying in a room. 2. Guest has payment information on file 3. Clerk is available to assist the user
Postcondition	1. Late checkout is confirmed and additional fees have been charted, or late checkout has been denied

Main Success Scenario	1. A Guest wishes to check out of the hotel late.
	2. The Guest will first log into the system and select the option that says "Request Late Checkout".
	3. The system will notify the Guest whether or not the late checkout is possible based on the availability.
	4. The system will notify the Guest if there will be any additional fees
	5. Late checkout is possible, so the system displays the available late checkout times and additional fees
	6. The Guest accepts the additional charges that may incur
	7. Checkout Process is completed

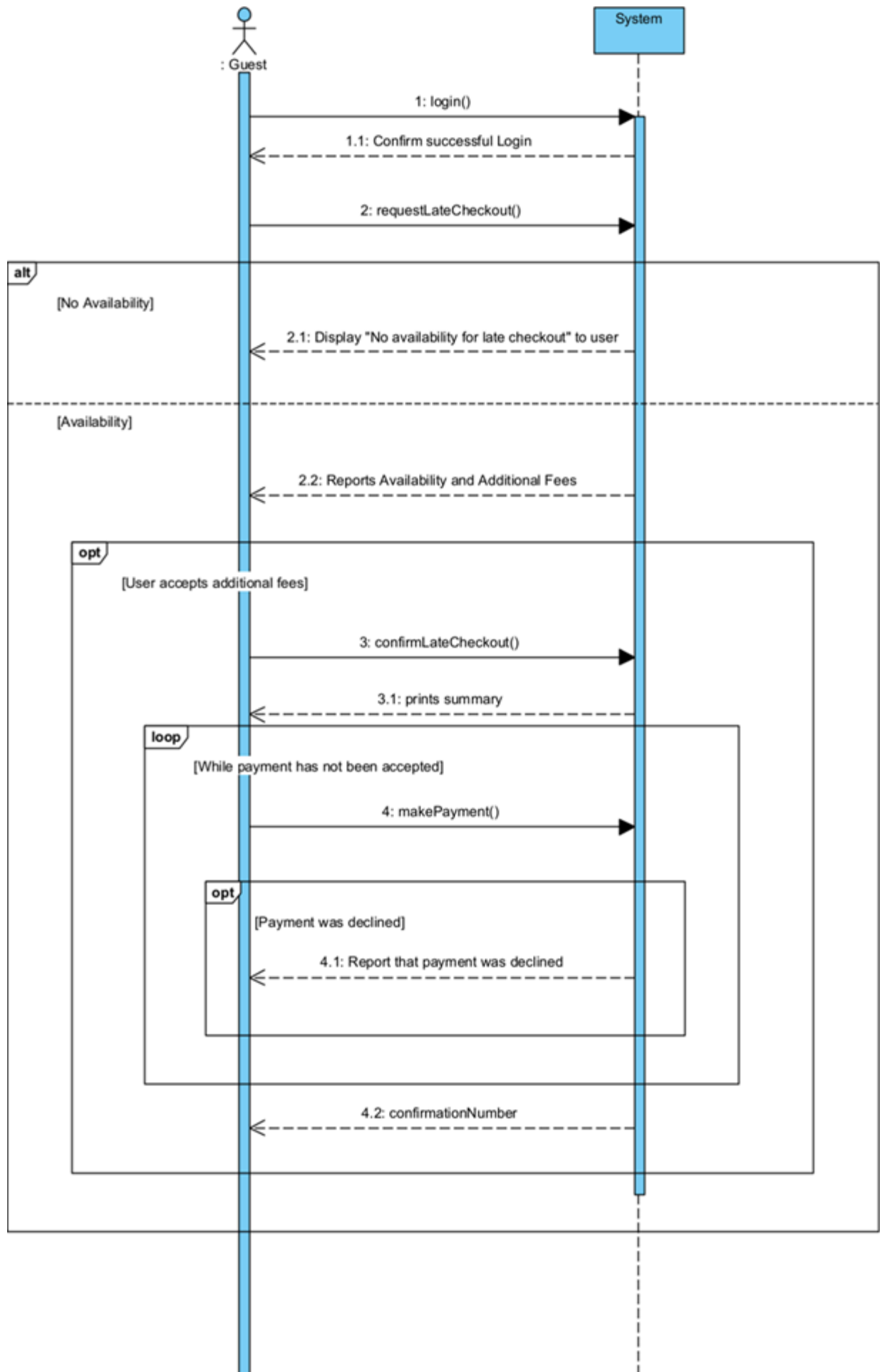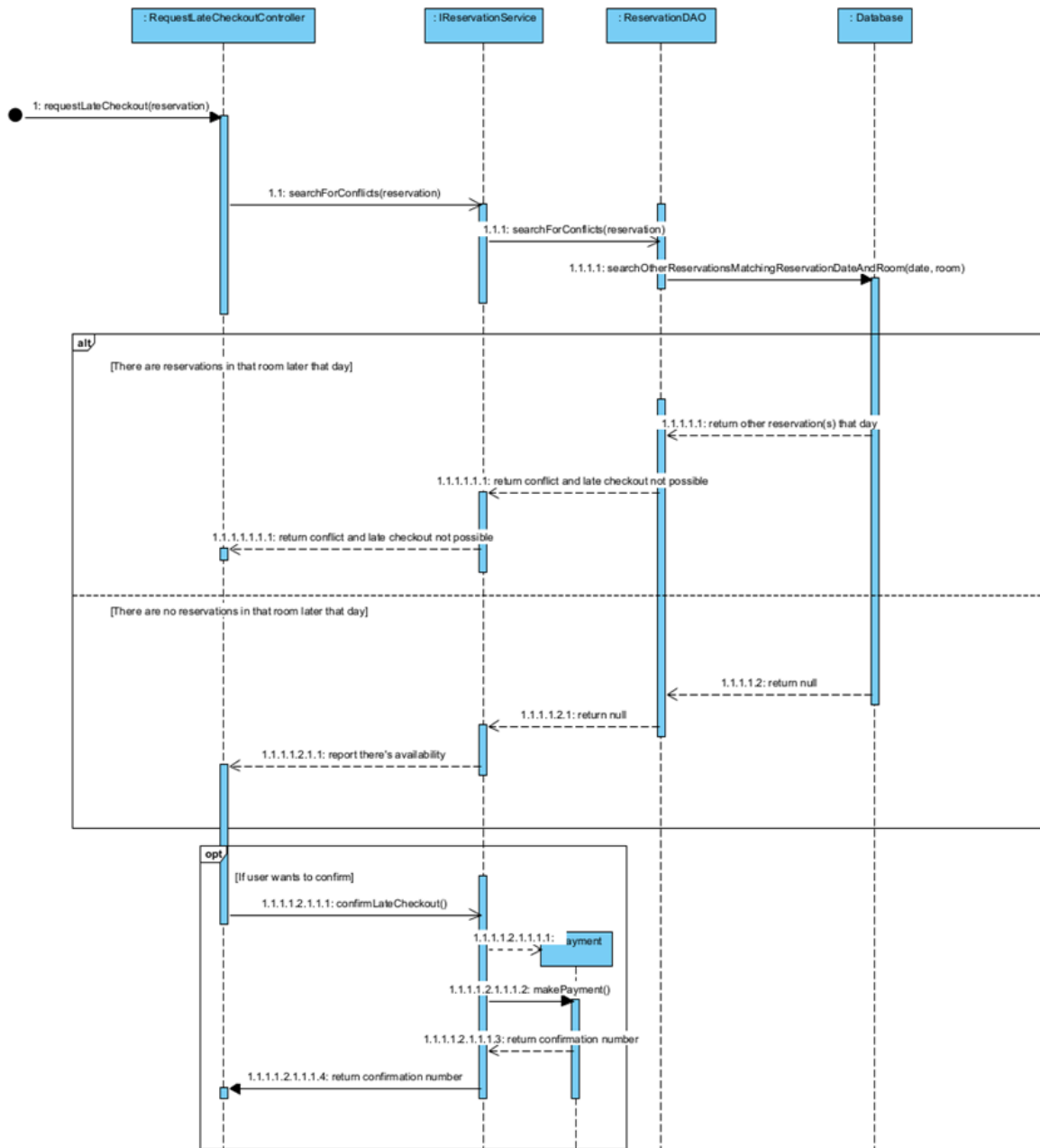| Alternate Paths	*.a No Availability
	1. System determines that late checkout is not possible because of limited availability
	2. System notifies the Guest that they will unfortunately have to check out at their original time
	3. System will then give the Guest the option to talk to a Clerk if they need further assistance
	*.b System has no connection to network
	1. Clerk asks Admin to reset network
	*.c System runs into an error
	1. Guest is attempting to request a late checkout but the system runs into an error while processing the request
	2. Guest will contact the Clerk
	3. Clerk will submit the late checkout for the Guest
	4. Clerk will determine if there is availability
	5. Clerk will verbally confirm whether they would check out late
	*.d Payment declines
	1. System informs Guest that their credit card information was declined during the process.
	2. Guest provides a different payment method, and the payment is reattempted

	3. If successful, the late checkout is confirmed. If unsuccessful, the system requests another payment method.

SSD 2:

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                    ┌──────────┐
         Ω          │  System  │
         ┼          └────┬─────┘
       : Guest           │
         │               │
         │   1: login()  │
         │──────────────▶│
         │               │
         │ 1.1: Confirm successful Login
         │◀╌╌╌╌╌╌╌╌╌╌╌╌╌╌│
         │               │
         │ 2: requestLateCheckout()
         │──────────────▶│
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alt
  [No Availability]

  2.1: Display "No availability for late checkout" to user

  [Availability]

  2.2: Reports Availability and Additional Fees

  opt
    [User accepts additional fees]

    3: confirmLateCheckout()

    3.1: prints summary

    loop
      [While payment has not been accepted]

      4: makePayment()

      opt
        [Payment was declined]

        4.1: Report that payment was declined

    4.2: confirmationNumber

SD 2:

Operations Contract 2:

Contract CO1: login

Operation	Login(String: username, String: password)
Cross References	Use Cases:
Pre-conditions	User is in the process of requesting a late checkout
Post-conditions	Current session is associated with the user's account in the database

Contract CO2: requestLateCheckout

Operation	requestLateCheckout(Reservation: reservation)
Cross References	
Pre-conditions	Current instance of Guest has a reservation associated with it already
Post-conditions	Association of a reservation instance and a guest instance has been confirmed

Database was searched to check availability

Data from search results have been returned to the guest |

Contract CO3: confirmLateCheckout

Operation	confirmLateCheckout(Reservation: reservation)
Cross References	
Pre-conditions	Current session is associated with a late checkout request already Current session is associated with a late checkout option already
Post-conditions	Reservation time attribute has been modified to a later endTime Summary instance has been generated and returned to the guest

Contract CO4: makePayment

Operation	makePayment()
Cross References	
Pre-conditions	Current session is associated with a late checkout Current session is associated with a valid guest

Post-conditions	A Payment is instantiated
	The Payment info instance associated with the guest has a Boolean attribute valid which has been set to true or false based on funds being successfully received
	Guest's payment's Boolean attribute processed has been set to true or false based on whether or not the payment was processed
	Guest's balance attribute has been modified accordingly