Airline Reservation System Midterm Project

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Info-C451: System Implementation

March 17, 2024

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Problem Statement:

An airline ticket purchase system is utilized in order to successfully manage availability and schedule of customer bookings in order to efficiently reserve tickets and dates. Holidays and busy travel dates could make it hard for the system to function due to the amount of bookings.

System Requirements:

No.	Priority	Description
Req-1 (System Booking)	High	System should not allow customers to book flights for plane rides that are full.
Req-2 (Payment)	High	System should allow for customers to pay for booking in forms of credit and debit.
Req-3 (Cancellation)	High	System should allow for customers to cancel their booking.
Req-4 (Cancellation Consequence)	Medium	Customers that cancel flight should be allowed to redeem for flight points to reschedule flight or receive refund with fee based on cancellation.
Req-5 (Class Bookings)	Medium	All classes should be made available to book in as long as they are open.
Req-6 (Availability)	Low	System should update openings for bookings due to customers canceling.
Req-7 (Airport)	Medium	System should communicate bookings from customers with airlines to airports.

Functional Requirements Specifications:

Stakeholders:
● Airlines
● Airports
● Users/Customers

Primary Actors:
● Customer- This actor can book a seat on a desired flight as well as pay for the flight ticket.
● Airline- This actor can add flights as well as flight schedules, and they will provide means for the customer to pay for a booking
Secondary Actors:
● Admin- This actor can update availability of flights based on customer bookings and add or remove flights based on airline activity.
● System- The system will reflect availability of flights to customers and provide booking information provided by customers to the airline.

Use Cases:

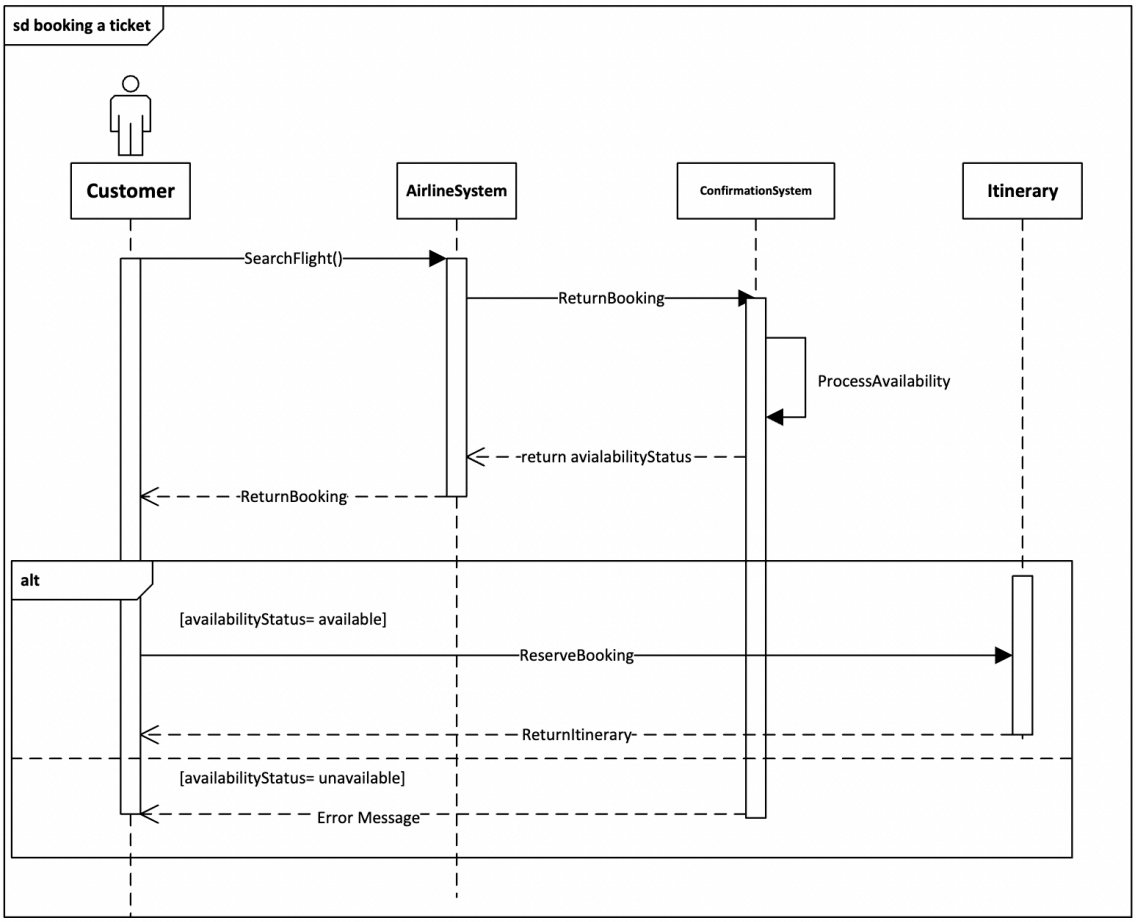
Customer- (10 total)
● Book flight- to book flight (2)
● Credit card- to pay for flight booking with credit card (2)
● Pay flight- to pay for flight the customer booked (2)
● Booking information- to receive information about flight booking (2)
● Take flight ticket- to take a flight ticket to give to airline when flying (2)

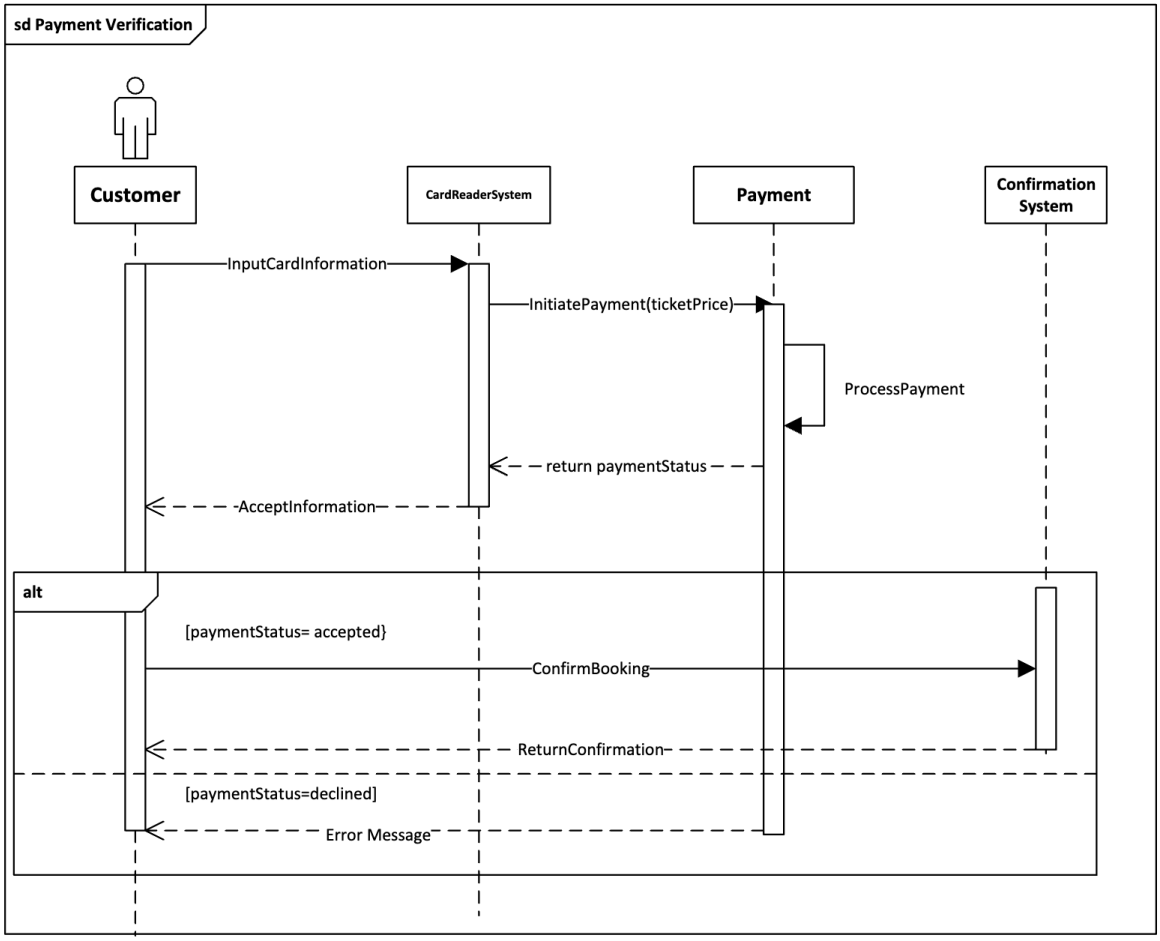
Airline- (12 total)
● Update flight- to update availability of bookings for a flight (2)
● Login/Logout- to login/logout of the airline account or admin account (2)
● View account- to view the status of payment for customer booking (2)
● Add/Remove flight- to add/remove flights on flight schedule (2)
● Take flight ticket- to accept ticket from customer for flight booking (2)
● Credit card- to accept payment of booking for customer with credit card (2)

Admin- (14 total)
● Add/Remove flight- to add/remove a flight on flight schedule (2)
● Update flight- to update availability of bookings on a flight (2)
● Login/Logout- to login/logout of admin or airline account (2)
● Update flight rate- to update the price of bookings (2)
● Add airline- to add an airline to book with (2)
● Update account- to update booking and check on payment status for booking (2)
● View account- to view customer booking account details (2)

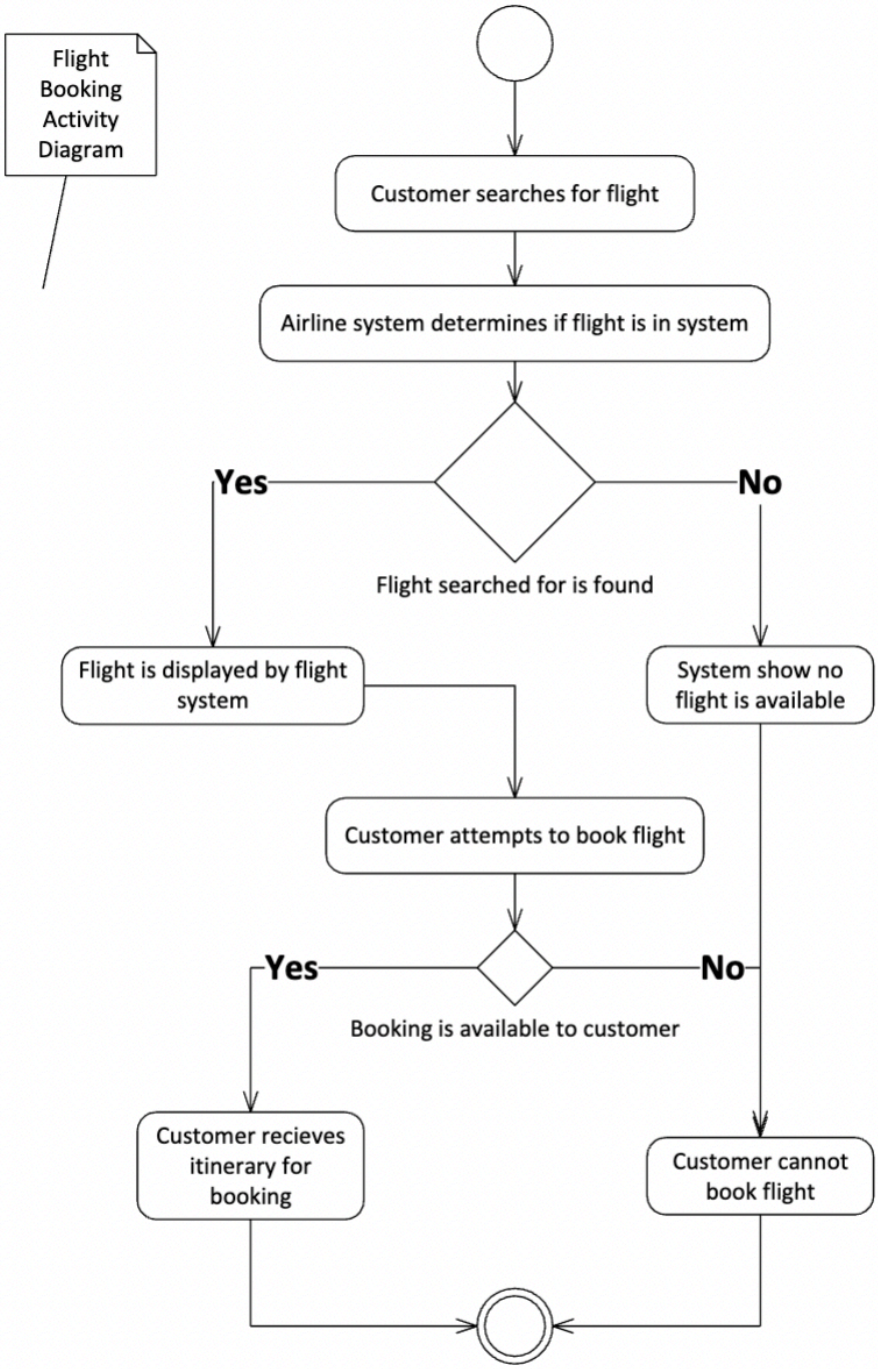
System- (8 total)
- Assign customer to booking- to assign a customer to a specific booking and flight (2)
- Display availability- to display the availability of booking for flights (2)
- Remove booking- to remove a booking that a customer has purchased (2)

System Sequence Diagrams:



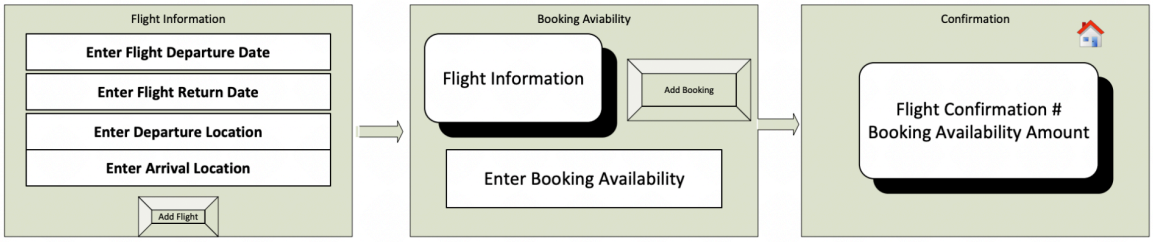

sd Payment Verification
Customer
CardReaderSystem
Payment
Confirmation System
InputCardInformation
InitiatePayment(ticketPrice)
ProcessPayment
return paymentStatus
AcceptInformation
alt
[paymentStatus= accepted}
ConfirmBooking
ReturnConfirmation
[paymentStatus=declined]
Error Message

Activity Diagram:



User Interface Specification:

Use Case: Airline Adds a flight into system

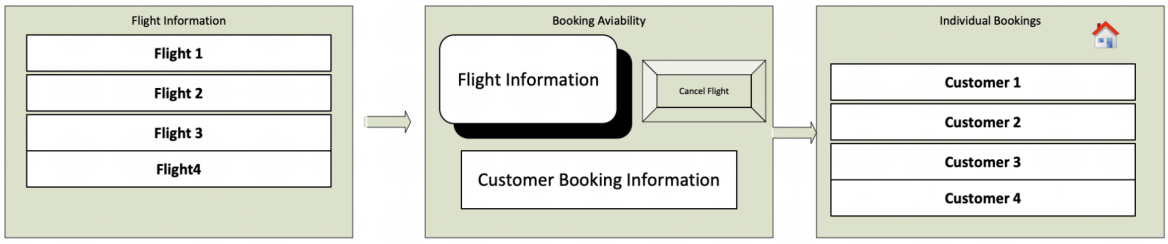


Airline enters flight dates and locations

Airline enters booking availability

Airline receives confirmation information

Use Case: Airline views customer booking information

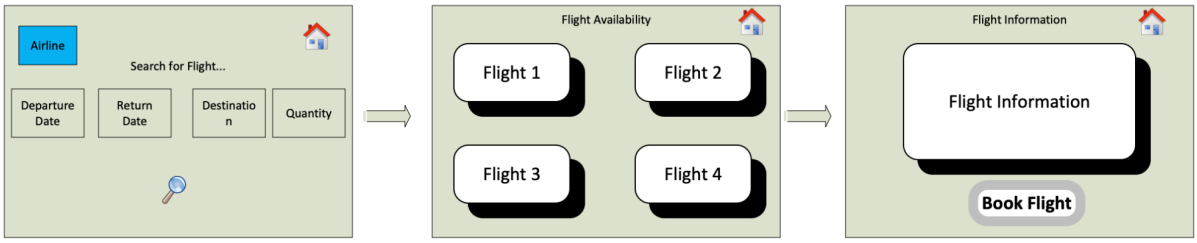


Airline clicks on flight that they want to see information about

Airline can click customer booking information to view bookings

Airline can click on each customer to review information

Use Case: Booking a flight

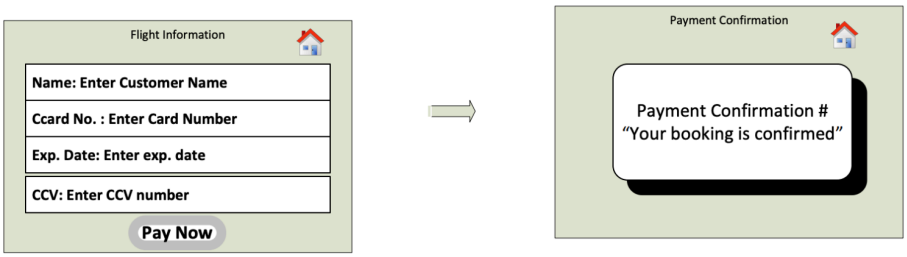


Customer enters flight details and clicks search

Customer chooses available flight

Customer reviews flight information and click book flight

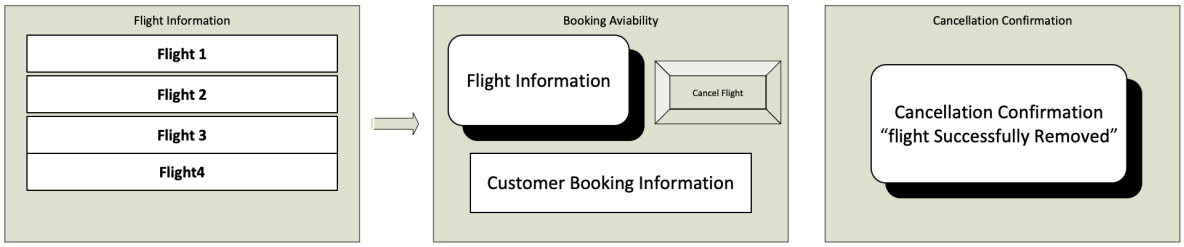
Use Case: Pay for Flight



Customer enters name, card no., exp. Date, and ccv then clicks pay now

Customer receives payment confirmation

Use Case: Airline removes a flight



Airline clicks on flight that they want to see information about

Airline clicks cancel flight

System displays successful removal of flight

Project Plan:

- W1-2: determine the framework and establish the structure of the system, connecting front-end to back-end, connecting back-end to database (**Completed)**
- W3-4: build system login, customer purchase abilities, and flight schedules
- W5-7: Implement basic features for airline; add and cancel flight and implement customer ability to purchase flight and see flight details
- W8: test accomplished features and record demo for midterm
- W9-11: improve the current features based on customers' feedback if there are any, or continue working on implementing the basic features for customers booking flights; the system for airlines to add or cancel flights
- W12-14: writing test cases for the implemented features or continue building possible features you'd like to implement
- W15: record demo for final presentation

References:

Tilley, Scott R., and Harry J. Rosenblatt. *Systems Analysis and Design*. 11th ed., Course Technology Cengage Learning, 2017.