Sequence Diagram for the Airline Management System

Create a sequence diagram for reserving a flight in the airline management system and solve a challenge.

We'll cover the following

- Reserve a flight
- Sequence challenge: Cancel a reservation

Sequence diagrams are a great way to understand the interactions between different entities and objects in the system. There can be different sequence diagrams that we can create for our airline management system. In this lesson, we will create sequence diagrams for the following two interactions:

- **Reserve a flight:** The customer reserves a flight online.
- **Sequence challenge:** The customer cancels a reservation.

Reserve a flight

The sequence diagram for reserving a flight should have the following actors and objects that will interact with each other:

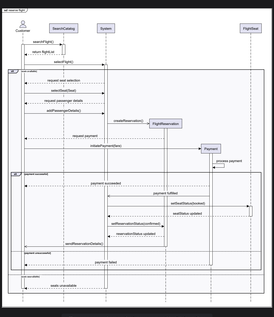
- **Actor:** `Customer`
- **Objects:** `SearchCatalog`, `FlightReservation`, `FlightSeat`, and `Payment`
- System

Here're the steps in the reserve flight interaction:

1. The customer searches for flights flying from an airport on a particular date.
2. The catalog returns a list of flights that satisfy the search query.
3. The customer selects a flight.
4. If seats are available:
    I. The system requests the customer to select seats.
    II. The customer selects a seat.
    III. The system requests to add passenger details.
    IV. The customer adds passenger details.
    V. The system creates a reservation for the customer.
    VI. Payment is requested against the reservation.
    VII. The customer initiates a transaction, and the payment is processed.
    VIII. If the payment is successful:
        i. The customer and system are informed that the payment is successful.
        ii. The system updates the seat status to booked.
        iii. The system updates the reservation status to confirmed.
        iv. The reservation details are sent to the customer.
    IX. Else, if the payment is unsuccessful:
        i. The customer is informed that the payment has failed.
5. Else, if seats are unavailable:
    I. The customer is informed that no seats are available.

> **Note:** We assume that the customer performs a valid search that will result in a list of flights.

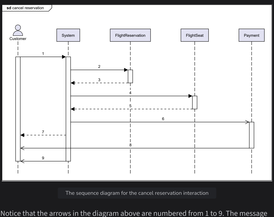
Based on the order above, the sequence diagram for reserving a flight in the airline management system is given below.



The sequence diagram for the reserve a flight interaction

Sequence challenge: Cancel a reservation

Let's complete a sequence diagram for a reservation canceled by the customer. A skeleton of the cancel reservation sequence diagram is given below:



The sequence diagram for the cancel reservation interaction

Notice that the arrows in the diagram above are numbered from 1 to 9. The message boxes shown below are the messages to be exchanged between the actor(s) and object(s). Can you rearrange the messages below in the correct sequence they should appear in, in the skeleton of the sequence diagram given above?

> **Note:** If you're unsure, click the "Show Solution" button to check the correct answer.

Rearrange the sequence.

- cancelReservation()
- updateReservationStatus(canceled)
- reservationStatus updated
- updateSeatStatus(available)
- seatStatus updated
- paymentRefund(amount)
- reservation canceled
- payment refunded
- cancel notification

Reset | Show Solution | Submit

Alternatively, click the "Show complete diagram" button below to view the complete sequence diagram of the cancel reservation interaction.

Hide complete solution