BLG 468E

Object Oriented Modeling and Design 1st Assignment

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Use Case: Online and Web-Based Ticket Booking

Scope: Automation System for an Airline Company

Primary actor: Passenger

Stakeholders and Interests:

- Passenger (customer): Wants to book a ticket according to his/her preferences easily and without errors.
- Airline Company: Wants to provide a good and satisfying service to the passengers, keep detailed booking information safely and get paid for the service it provides.
- Government Tax Agencies: Want to receive tax from each booking operation.
- Payment Authorization Service: Wants to get authentication requests for the issuing bank in line with the related protocol and format. Wants to account for payables to the airline company.

Preconditions: Passenger has internet connection throughout the process. Automation system website is in-service and up-to-date. Passenger has an electronic device to reach the website. Passenger owns a credit card.

Success Guarantee: Booking is saved. Seat availability is updated. Total tax is calculated. Booking information pdf is generated and sent to the passenger by mail. Payment authorization confirmations are recorded.

Main Success Scenario:

1. Passenger goes to the homepage of airline's automation system website.
2. System prompts for flight information selection.
3. Passenger chooses among ticket type options.
4. Passenger chooses departure and arrival locations and date(s).
5. Passenger chooses class type and number of passengers.
6. System displays all possible flights along with departure time, arrival time, duration information and fare including taxes and fees.
7. Passenger chooses flight(s).
8. System displays selected flights' details.
9. System prompts for passenger(s) and contact details.
10. Passenger fills in passenger(s) and contact details.

11. System displays accumulated information (flight information, passenger details, main contact details and fare rules).
12. System prompts for credit card details.
13. Passenger fills in credit card information.
14. System prompts for passenger's consent on terms and conditions.
15. Passenger gives consent.
16. Payment authorization service sends a single use only approval password to the passenger.
17. Payment authorization service prompts for that password.
18. Passenger enters the password and pays.
19. System handles payment.
20. System logs completed booking and payment, updates seat availability and sends booking details by mail.
21. System displays a success message.

Extensions:

3a. Passenger wants to fly one way:

1. Passenger chooses one-way ticket option.

3b. Passenger wants to fly both ways:

1. Passenger chooses round-ticket option.

4a. Passenger chose one-way ticket previously:

1. Passenger chooses only the date of departure.

4b. Passenger chose round-trip ticket previously:

1. Passenger chooses departure and return dates.

6a. No flight found on the selected date and route:

1. System signals error.
2. System asks if the passenger wants to try another date-route combination.
3. Passenger responds to the message:

    3a. Passenger chooses yes.

        1. System redirects passenger to the homepage.

    3b. Passenger chooses no.

        1. System maintains booking process.

6b. Passenger chose economy class previously:

1. System displays economy class tickets.

6c. Passenger chose business class previously:

1. System displays business class tickets.

7a. Passenger chose one-way ticket previously:

1. Passenger selects departure ticket.

7b. Passenger chose round-trip ticket previously:

1. Passenger selects departure and return tickets separately.

10a. Total number of passengers is one:

1. Passenger only enters his/her details.

10b. Total number of passengers is more than one:

1. Passenger enters every other passenger's details along with his/her.

10c. Invalid or incomplete passenger/contact info:

1. System signals error.
2. Passenger fills in passenger and contact details again.

Steps 1 and 2 are repeated until passenger enters correct and complete information.

6-17a. Passenger decides not to buy a ticket and exits website:

1. System cancels booking process.

6-17b. Passenger decides to go back to the homepage:

1. System asks if the passenger wants to cancel booking process.
2. Passenger responds to the question:

    2a. Passenger chooses yes.

    1. System cancels booking process.
    2. System redirects passenger to the homepage.

    2b. Passenger chooses no.

    1. System maintains booking process.

6-17c. Booking session expires:

1. System cancels booking process.
2. System displays expiration message.
3. System redirects passenger to the homepage.

13a. Invalid or incomplete credit card information:

1. System signals error.
2. Passenger fills in credit card details again.

Steps 1 and 2 are repeated until passenger enters correct and complete information.

15a. Passenger doesn't give consent:

1. System prompts for passenger's consent.

System repeats step 1 until passenger gives consent.

18a. Invalid password or insufficient balance:

1. System displays a payment failed message.
2. System asks if the passenger wants to retry payment.
3. Passenger responds to the question:

    3a. Passenger chooses yes:

        1. System redirects passenger to fill the credit card information.

    3b. Passenger chooses no:

        1. System cancels booking process.

Special Requirements:

- Fast credit authorization response.
- Simple and easy-to-understand UI.

Technology and Data Variations List:

16a. 3D Secure protocol can be used to provide online payment security.