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Object-Oriented Modeling and Design 3rd Assignment

Problem:
Assume that you have to design a part of the flight-booking software system. Consider the artifacts (use case and domain model) you have already created in the first and second assignments.

Assumptions:
You may assume that the necessary initial operations have been performed and all information about users and flights reside in the memory in proper data structures.

Consider the following operations:
- Booking: The user enters her ID and the PIN. If the PIN is accepted, the user enters necessary information about the flight (date, destination, etc.).
  Consider the use case from the first assignment.
- Discounts: Different discounts may apply to the ticket prices. For example, for a customer who registered 5 years ago 5% discount off ticket price, or for a customer who has spent 10.000TL in the current year 10% off the ticket price.
  This discount rules may change, and new discount algorithms may be added to the system.
- Payment is made only by a credit card.
  There are two external systems for approving credit card operations. According to the type of the credit cards, different systems are used for approval. Later new systems may be also used.
- You do not need to realize the following operations:
  - List the reservations/bookings and select the seat.
  - Cancel a reservation.
  - Assign an airplane to a flight.

To Do:
- Design the partial system to realize the given operations by considering object-oriented design principles and GRASP patterns. It is important to protect the designed part of the system from possible changes.
- Draw sequential interaction UML diagrams for these operations.
- Construct and draw the proper design class diagram.
- You do not need to submit use cases or domain models.

SUBMISSION:
- Prepare your solution as a file(s) only in pdf format. You may split your drawing in separate pages and create more than one files. In this case, you have to combine them as a zip file.
- Upload the file (pdf, zip) to Ninova until **23.00 on 3 May 2020**, **Sunday**. Late submitted assignments are not accepted.
- **Cheating** will not be tolerated. If cheating is discovered, all responsible students will be subject to the University disciplinary proceedings.
  It is allowed to discuss how to solve a problem with your classmates; however, **this assignment is not group homework. The actual solution should be an independent effort**.