

IT UNIVERSITY OF COPENHAGEN

BDSA 2014

Assignment 36.1

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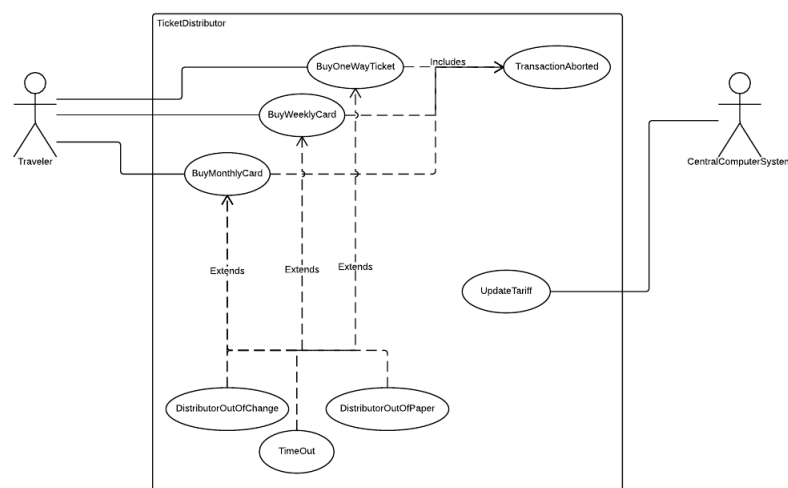
September 12, 2014

0.1 Q2-4

Draw a use case diagram for a ticket distributor for a train system. The system includes two actors: a traveler who purchases different types of tickets, and a central computer system that maintains a reference database for the tariff. Use cases should include BuyOneWayTicket, BuyWeeklyCard, BuyMonthlyCard, and UpdateTariff. Also include the following exceptional cases: TimeOut (i.e., traveler took too long to insert the right amount), TransactionAborted (i.e., traveler selected the cancel button without completing the transaction), DistributorOutOfChange, and DistributorOutOfPaper.

Remember that a use case diagram consists of both the sticky man diagram as well as the use cases written in text using the template on p. 45 in OOSE.

Use Case Diagram - Use Case



Use case name: BuyTicket

Participating actors:

- Initiated by TravelerOR Timeout.
- Communicates with CentralComputerSystem

Flow of events:

1. Traveler initiates BuyOneWayTicket, BuyWeeklyCard or BuyMonthlyCard.
2. Traveler pays for the ticket.
 - a) (Exceptional case) Timeout: Traveler took too long to insert the right amount of money. TicketDistributor has to abort.
 - b) (Exceptional case) TransactionAborted: Traveler selected the cancel button without completing the transaction.
 - c) (Exceptional case) DistributorOutOfChange: TicketDistributor is out of change, and can therefore not give back change to the Traveler, and has to abort.
 - d) (Exceptional case) DistributorOutOfPaper: TicketDistributor is out of paper, and can therefore not print out the ticket for the Traveler, and has to abort.
3. UpdateTariff is initiated, and the database is being updated.

Entry condition: Traveler interacts with the TicketDistributor.

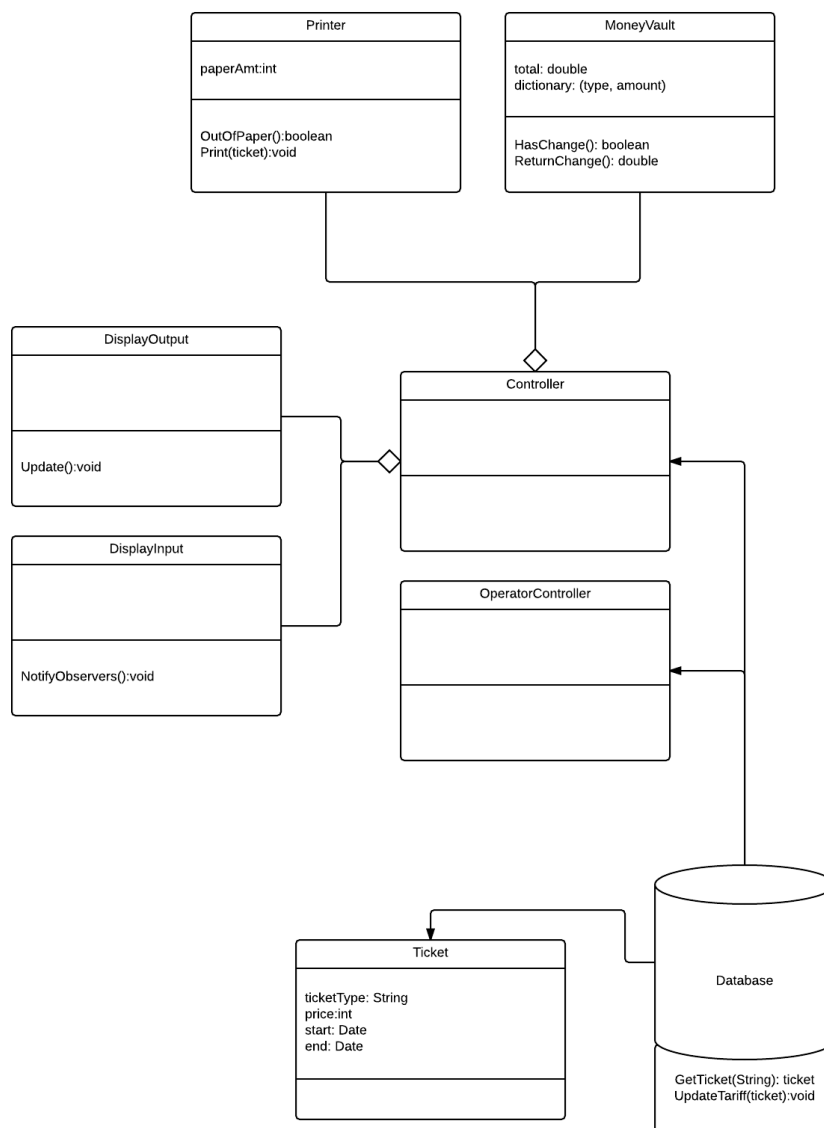
Exit condition:

- Traveler has received the ticket and change (if any).
 - Traveler has initiated TransactionAborted OR Timeout.
 - TicketDistributor has initiated DistributorOutOfChange OR DistributorOutOfPaper.
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Quality Requirements:

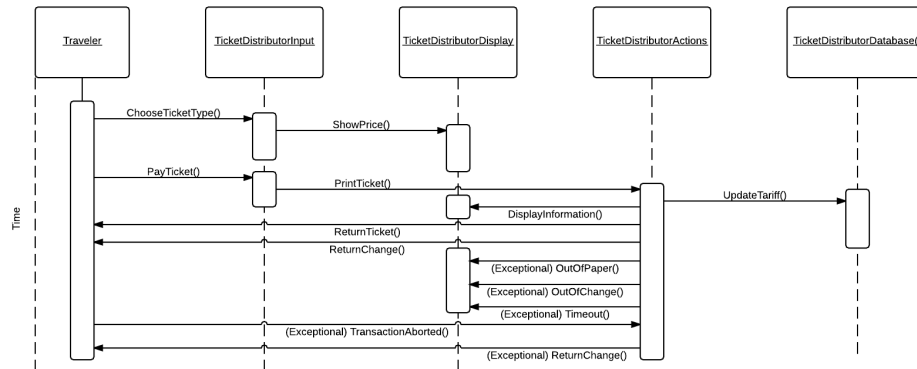
0.2 Q2-4.1

Draw the class diagram for the ticket distributor system from exercise 2-4.
Class Diagram



0.3 Q2-4.2

Draw the sequence diagram for the use case in exercise 2-4.
Sequence Diagram TicketDistributor



0.4 Q2-4.3

Draw an activity diagram showing how a traveler buys a ticket.
Activity Diagram

