Case Description

Kinepolis owns several cinemas in different towns. Each cinema has several theatres in which several shows can be programmed per day. Every cinema needs its own copy of the movie, and possibly more than one if a movie is to be played simultaneously in more than one theatre. A copy will only be shown in the theatres of the premise where the copy is located. But copies of movies can be moved to another cinema if required by the programming.

Every Sunday, the program for the next week is published for the next week (from Wednesday to Tuesday). Once a show has been published on the website, people can start making on-line reservations for that show.

Reservation can be made up to 1 hour before the starting time of the show and must be paid with a credit card. A seat reservation can be cancelled by the customer up to 24h before the starting time of the show. For that reason, credit cards are debited only after the cancellation period is terminated.

A published show can be cancelled by Kinepolis as long as there are no seat reservations for that show. If there are any, the reservations must be cancelled first. When possible, a new seat is offered for a show for the same movie in another theatre. The customer can accept or decline the offer. The offer expires 24 hours before the start of the show. If the offer is declined, expired or no new seat reservation can be offered, the customer receives a free ticket send at home.

People who did not make a seat reservation can buy a ticket at the entrance. The tickets will also be assigned a seat number. In contrast with on-line seat reservations, tickets issued at the entrance are anonymous and cannot be cancelled or refunded. At the ticketing desk a display shows how many seats are still available for that show (according to the number of seats in the theatre).

❑   Create the EDG, OET and FSMs
❑   Test your solution by generating code

Candidate Objects

- Cinema
- Theater
- Seat
- Movie
- Copy of movie
- Ticket
- Show
- Customer
- OnlineTicket
- AlternativeOffer

Remarks
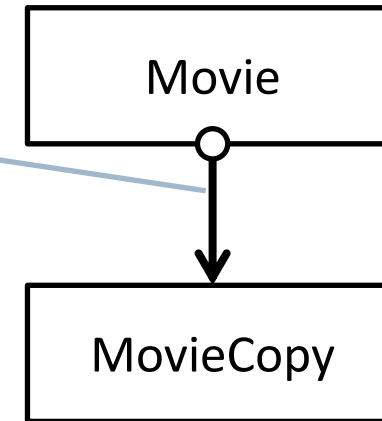
❑ Difference between Movie and MovieCopy

  ○ A movie can have multiple copies. These copies are stored on multiple locations.

❑ Difference between Seat and Ticket

  ○ It is possible to sell multiple tickets per seat (for separate shows). In response, it is possible to calculate the revenue per seat.

❑ Difference between Show and Copy

  ○ A customer does not pay for a copy. He/she pays to see a show were a copy is displayed.
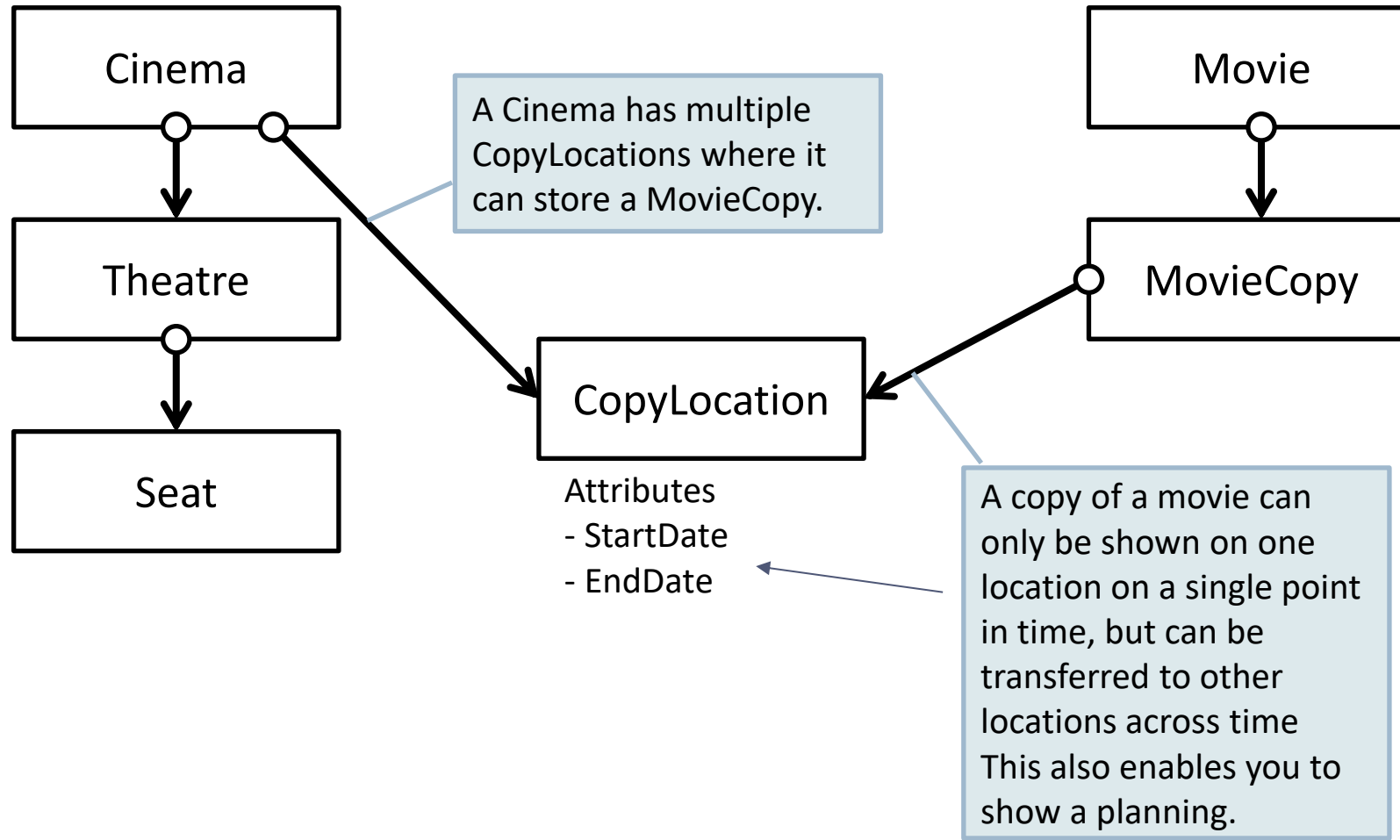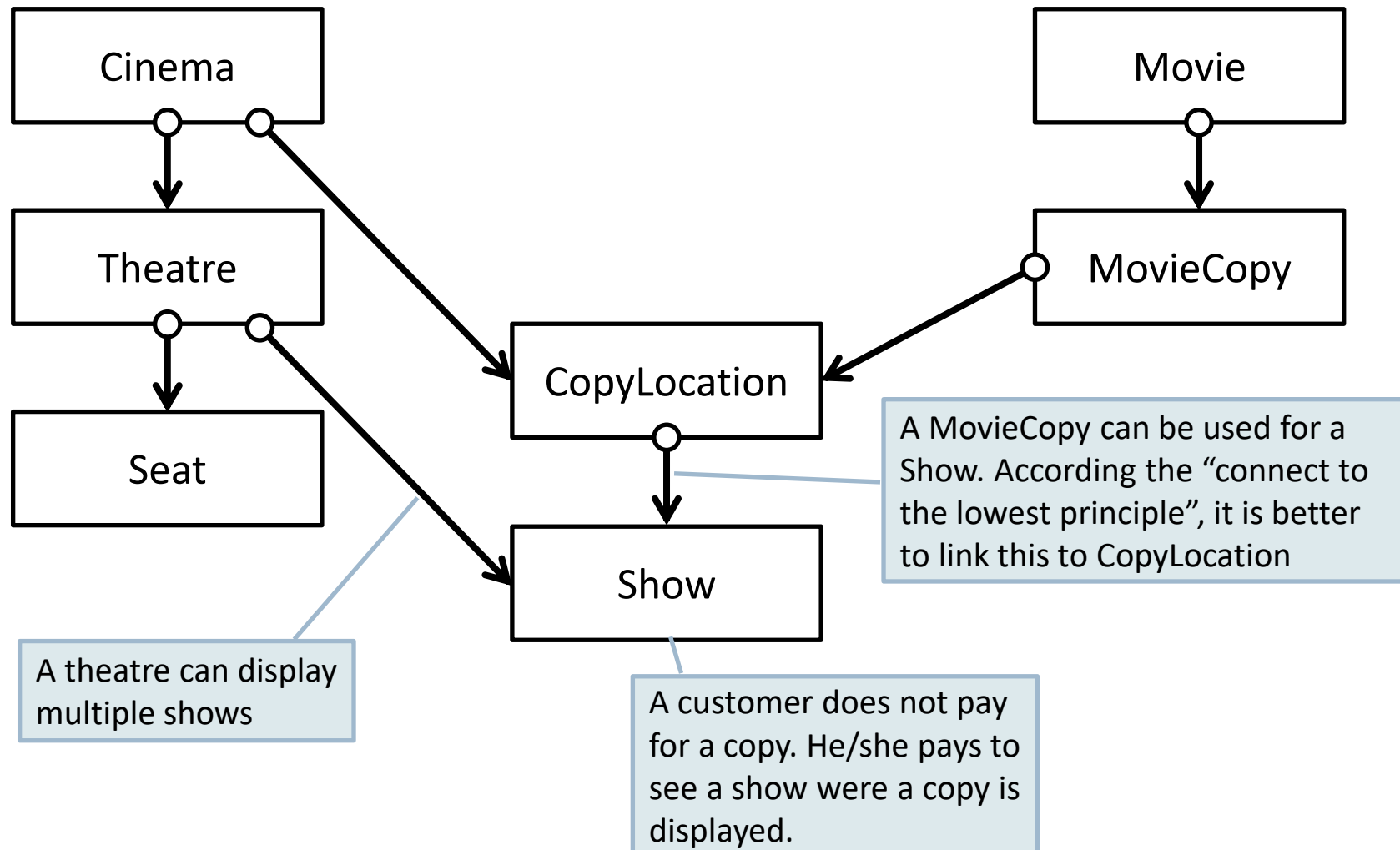
Infrastructure
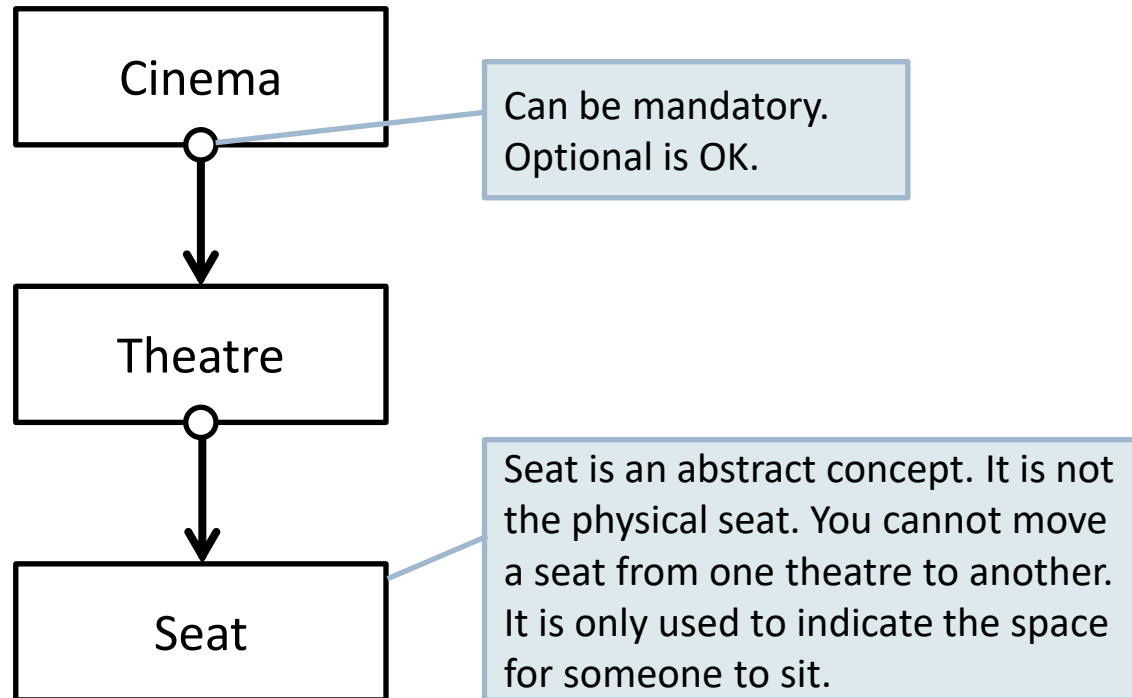
Business Activity

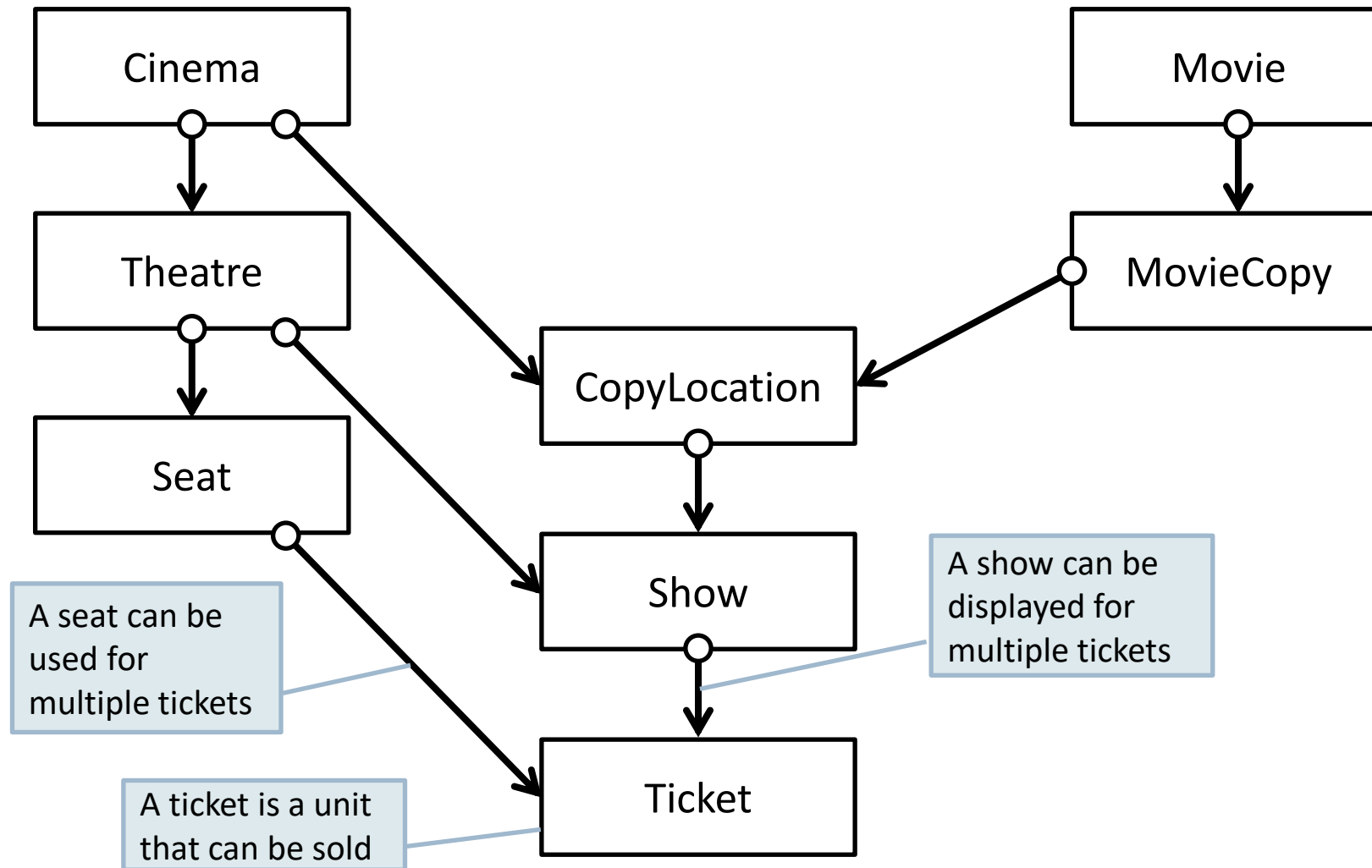A movie can have multiple copies. These copies are stored on multiple locations.

Movie

MovieCopy

Linking Infrastructure and Business

Cinema

Theatre

Seat

A Cinema has multiple CopyLocations where it can store a MovieCopy.

CopyLocation

Attributes
- StartDate
- EndDate

Movie

MovieCopy

A copy of a movie can only be shown on one location on a single point in time, but can be transferred to other locations across time
This also enables you to show a planning.

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Linking Infrastructure and Business

Cinema

Movie

Theatre

MovieCopy

Seat

CopyLocation

Show

A MovieCopy can be used for a Show. According the "connect to the lowest principle", it is better to link this to CopyLocation

A theatre can display multiple shows

A customer does not pay for a copy. He/she pays to see a show were a copy is displayed.

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Linking Infrastructure and Business

Cinema

Theatre

Seat

Movie

MovieCopy

CopyLocation

Show

Ticket

A seat can be used for multiple tickets

A show can be displayed for multiple tickets

A ticket is a unit that can be sold

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Reservations & Alternative Offers

Reservations & Alternative Offers

The model needs a separate "Ticket" and "SeatReservation" (online ticket) object type, because the SeatReservation is ED on customer, whereas the (offline) Ticket is anonymous.

Movie

MovieCopy

Cinema

Theatre

CopyLocation

Customer

Seat

Show

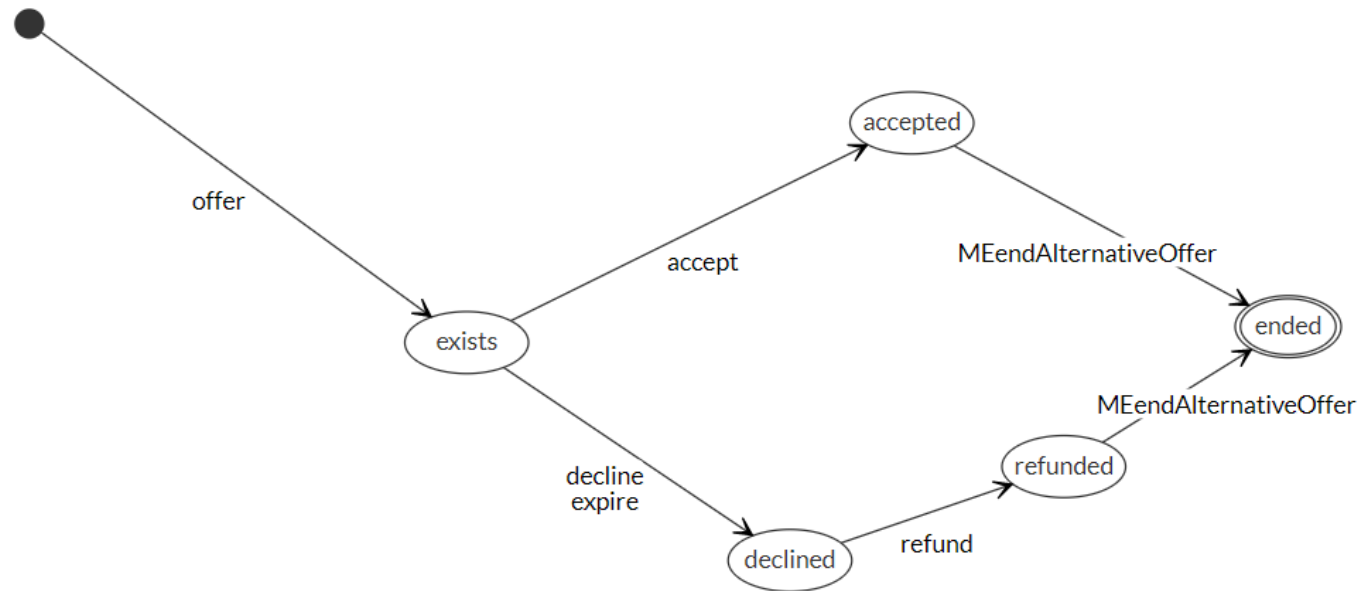OnlineTicket

Ticket
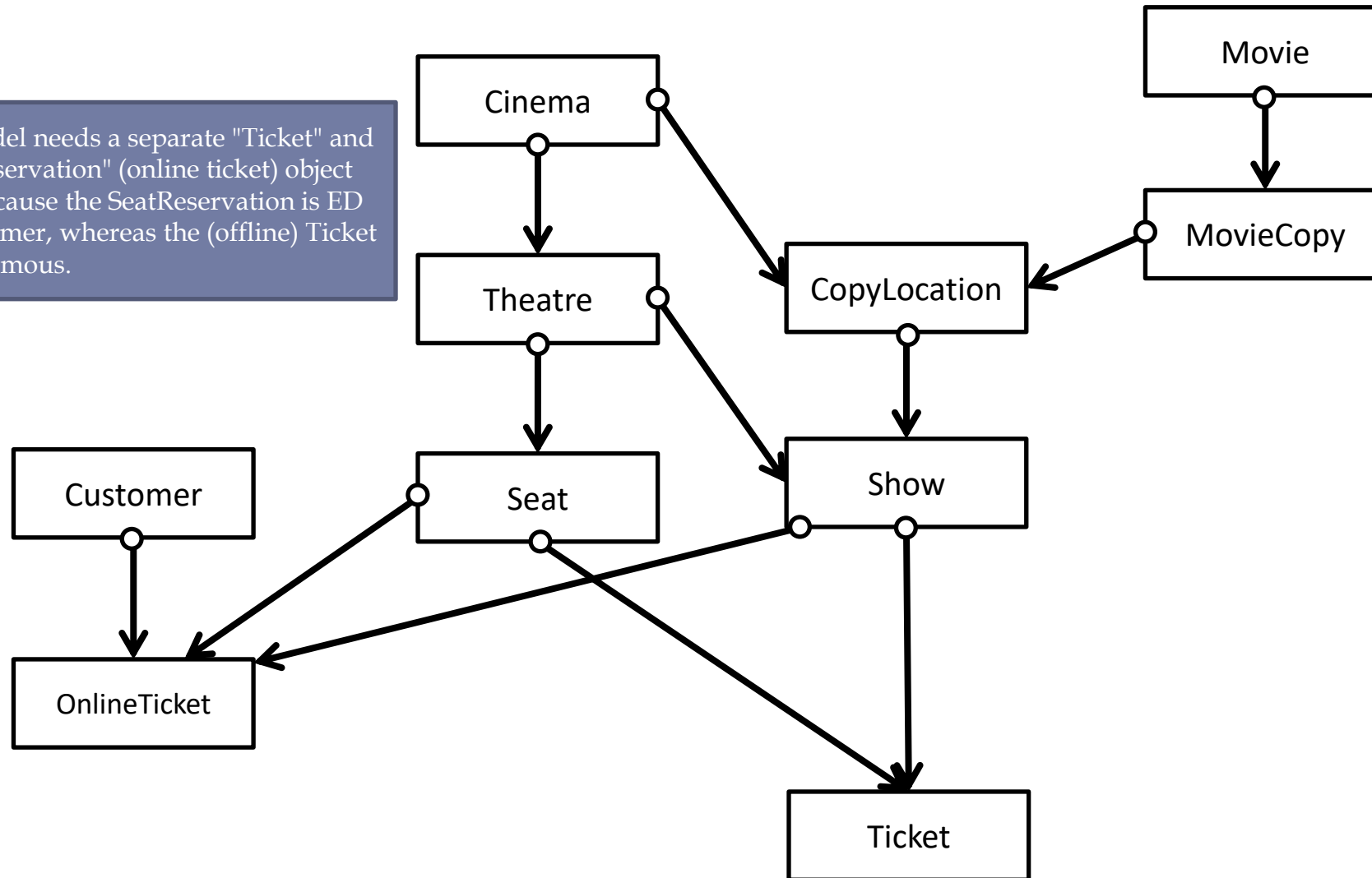
Reservations & Alternative Offers

Alternative Offer needs its own links to Seat and Show because the Seat and Show of the Alternative Offer will differ from the Seat and Show of the SeatReservation.
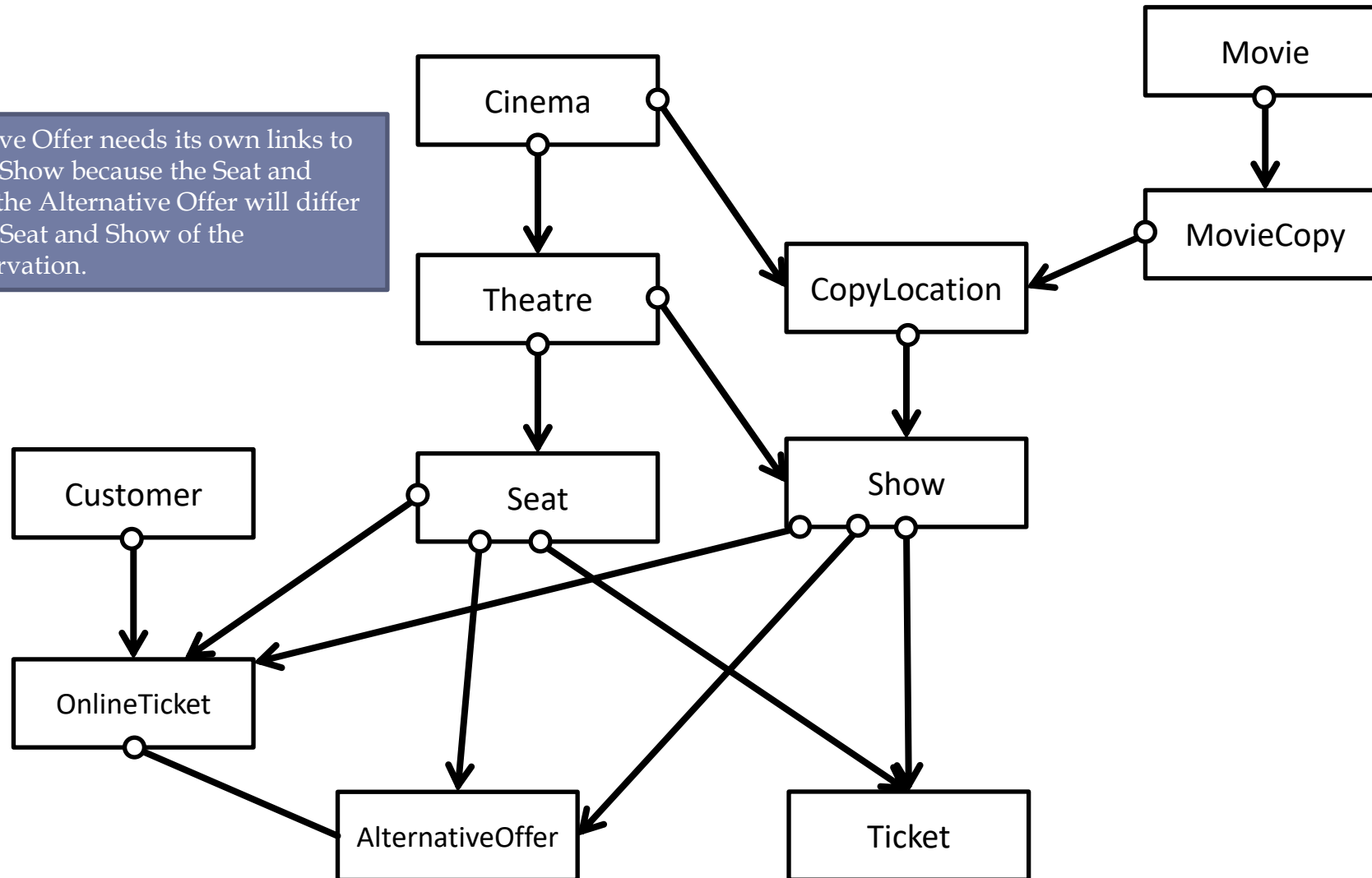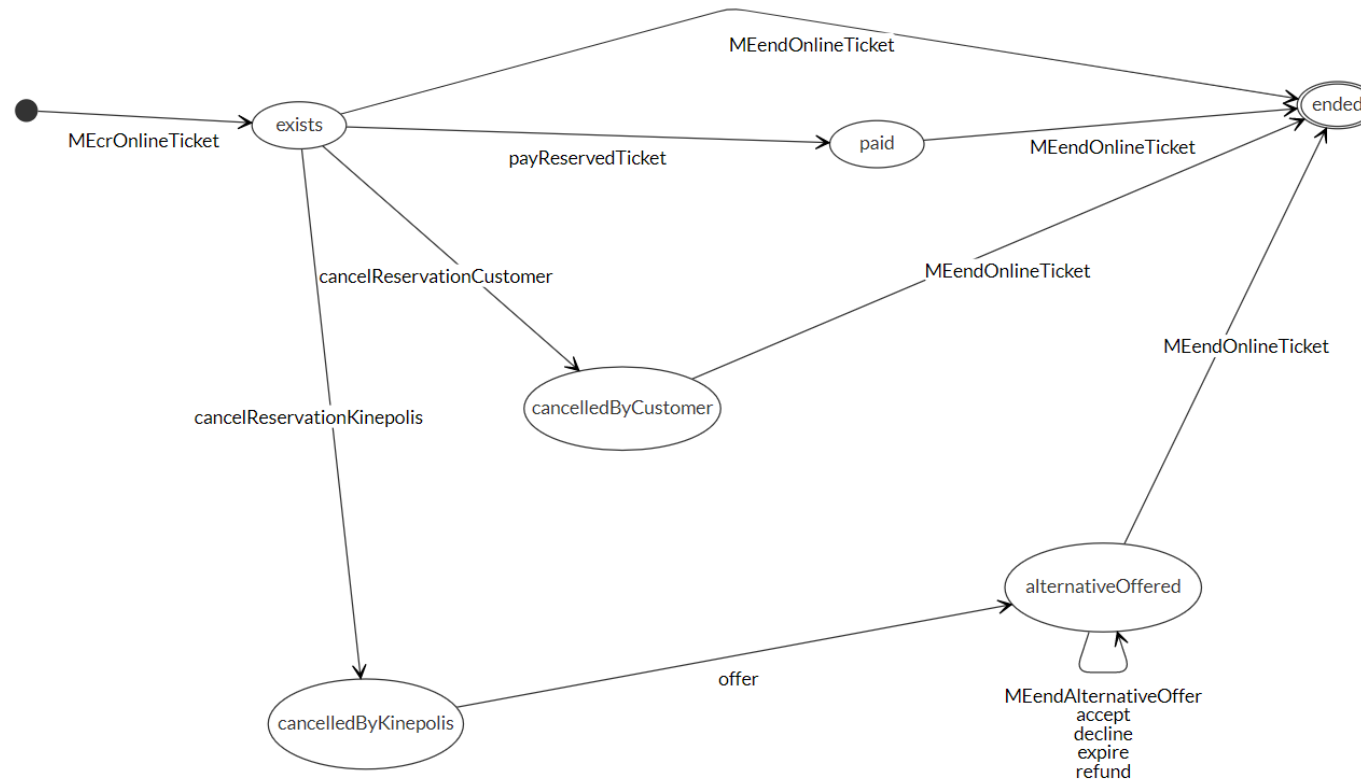
Events

- ❑ AlternativeOffer (lowest)
  - ○ Accept O/M
  - ○ Decline O/M
  - ○ Expire O/M
  - ○ Refund O/M
- ❑ OnlineTicket
  - ○ crOnlineTicket = create a seat reservation
  - ○ Cancel_reservation_customer O/M (refund)
  - ○ Cancel_reservation_kinepolis O/M (alternative offer)
- ❑ Show
  - ○ Publish O/M
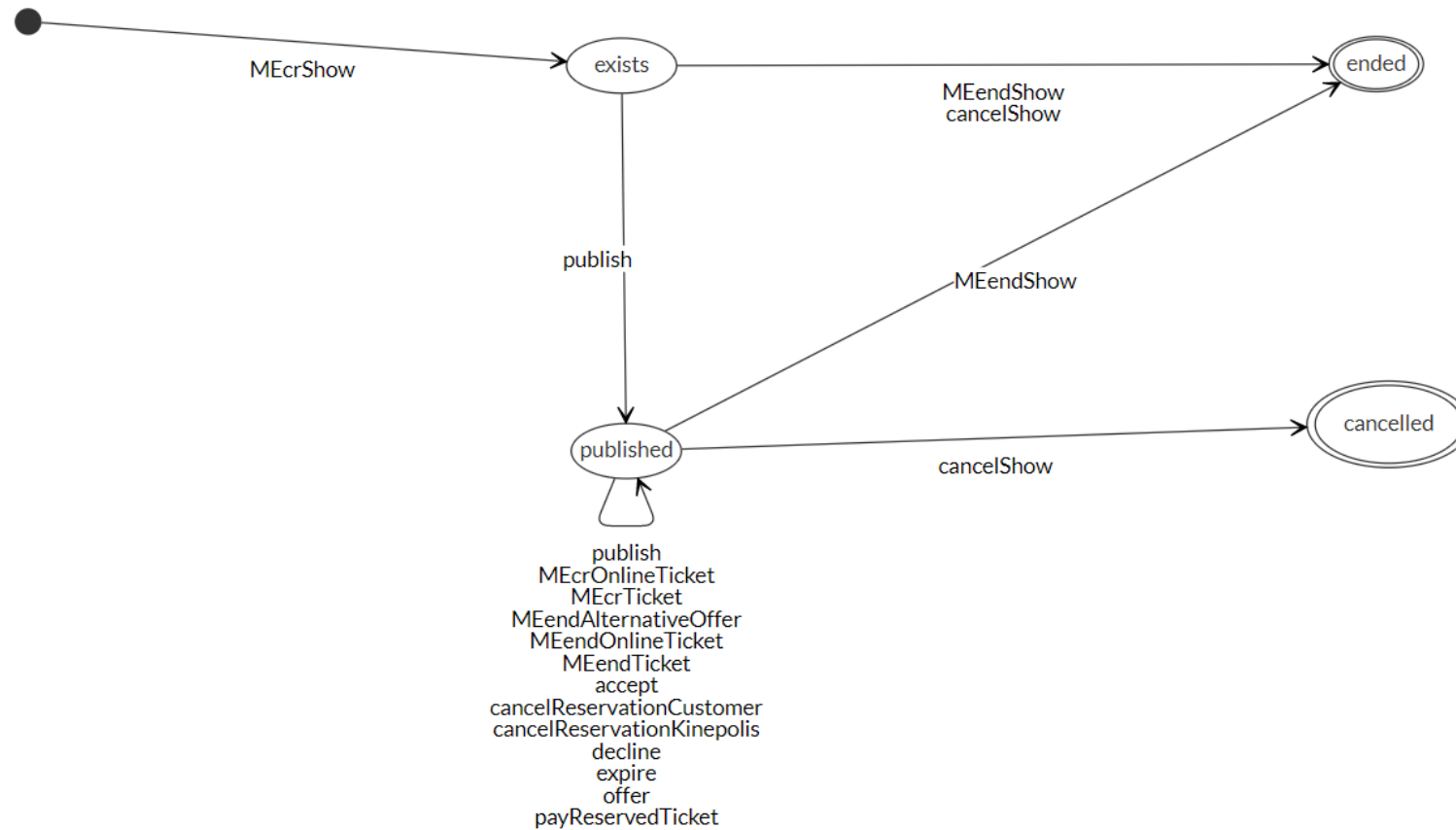 - ○ Cancel_show O/E (differentiate between ended and cancelled)

FSM AlternativeOffer (lowest)

FSM of OnlineTicket

FSM Show (highest)

FSM Show (alternative)

This is an alternative FSM for Show. Here, no new tickets can be sold after the show has started, and alternative offers can be made while the show is in the state cancelled.

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