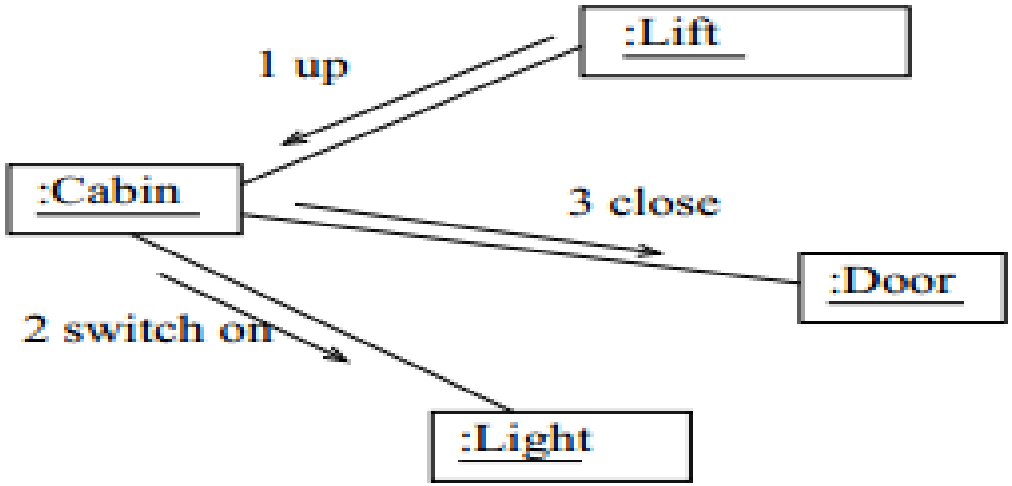
Mô hình hóa hành vi (Behavior Modeling)

Collaboration diagram

- This diagram shows the interactions between objects and the structural relations which allows these interactions.
- The numeration gives the order of messages.
- Time is not represented



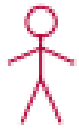
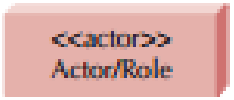
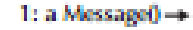
An Actor: ■ Is a person or system that derives benefit from and is external to the system ■ Participates in a collaboration by sending and/or receiving messages	 anActor 
An Object: ■ Participates in a collaboration by sending and/or receiving messages ■ Are placed across the top of the diagram	
An Association: ■ Shows an association between actors and/or objects ■ Messages are sent over associations	
A Message: ■ Conveys information from one object to another one ■ Direction is shown using an arrowhead ■ Sequence is shown by a sequence number	
A Frame: ■ Indicates the context of the communication diagram	

FIGURE 8-7 Communication Diagram Syntax

1. Set the context.
2. Identify which objects (actors) and the associations between the objects participate in the collaboration.
3. Layout the communication diagram.
4. Add messages.
5. Validate the communication diagram.

FIGURE 8-8
Steps for Building Communication Diagrams

EXAMPLE

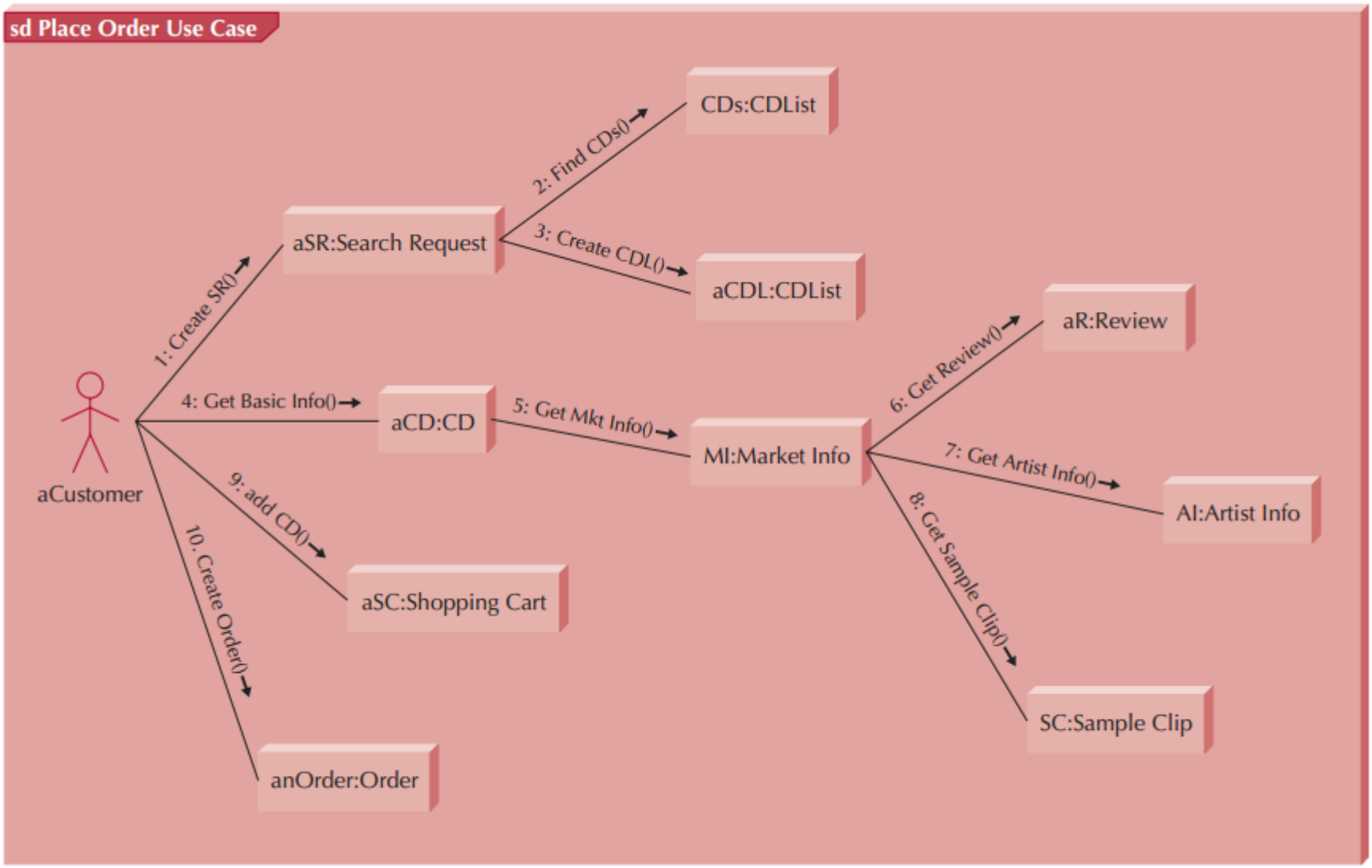
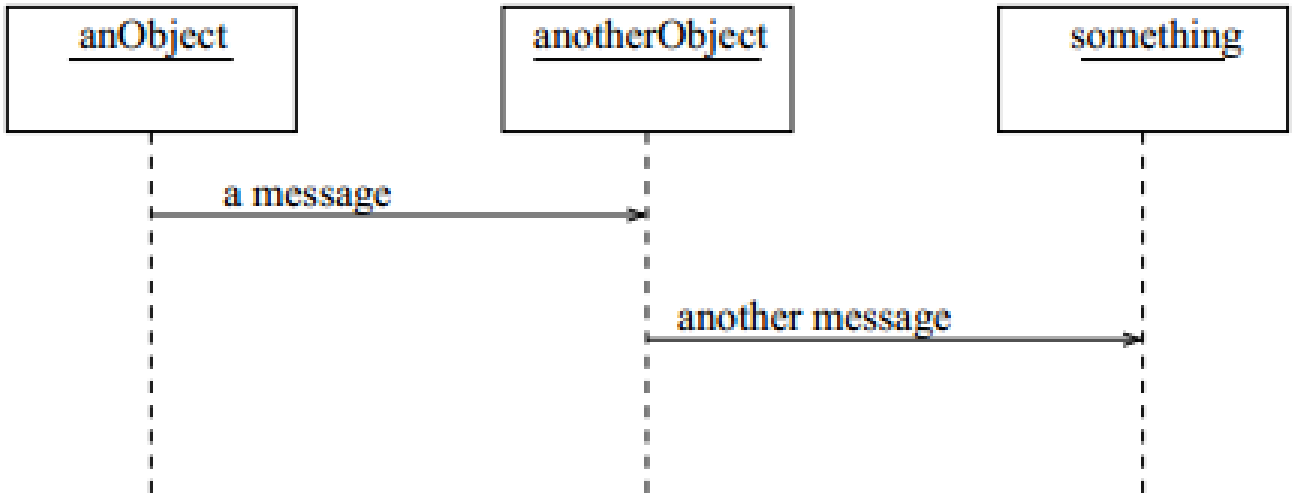


FIGURE 8-10 Communication Diagram for the Place Order Use Case

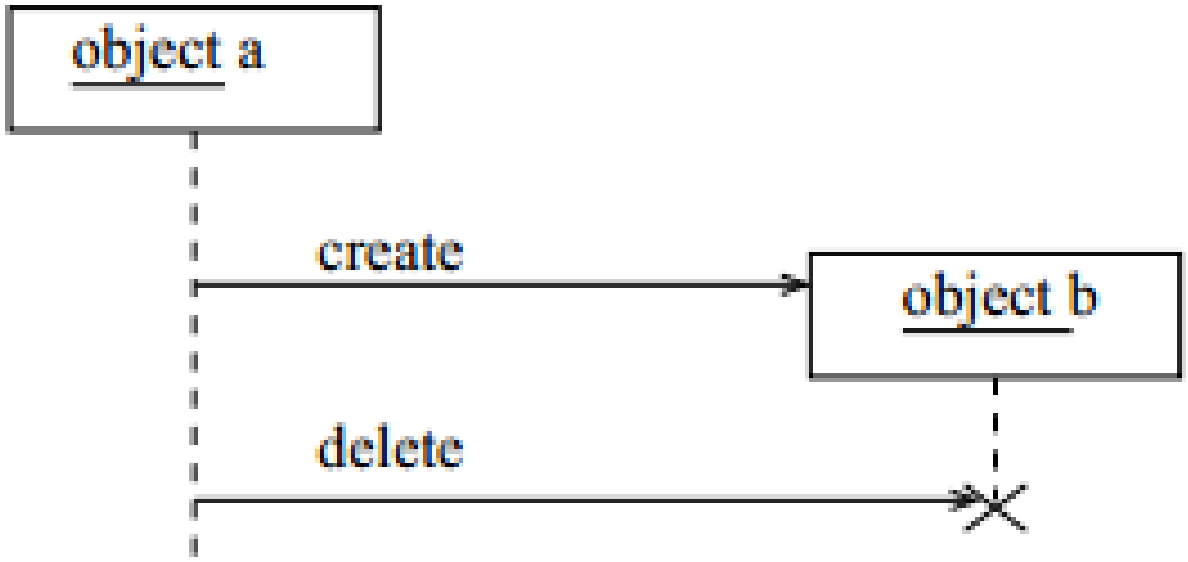
Sequence Diagram

- Show interactions between object from the time point of view.
- The rank of the message sending is done by the position on the vertical axe.



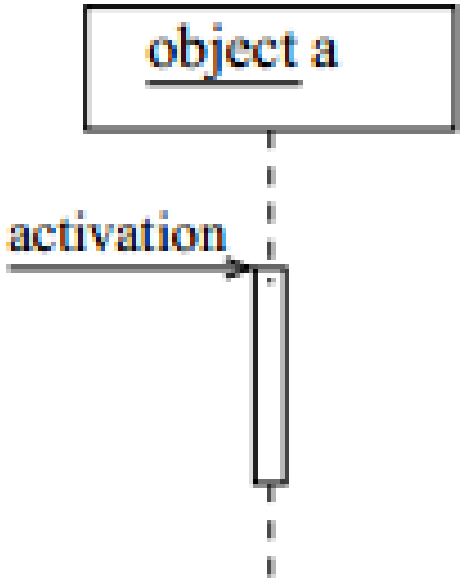
Sequence Diagram

- Creation / destruction of object



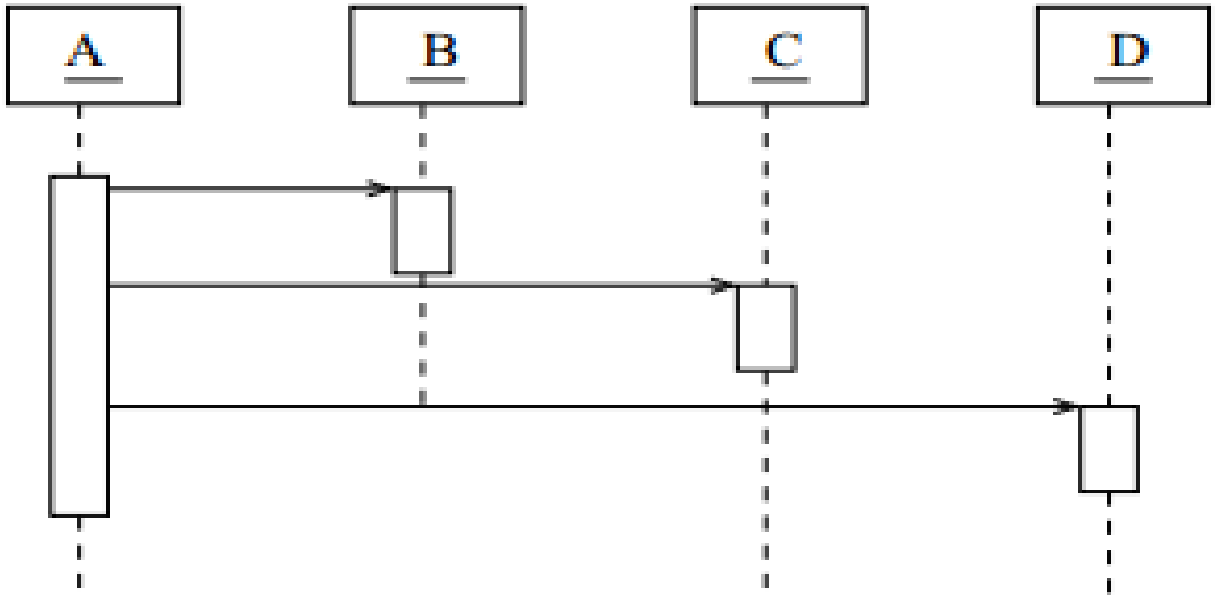
Sequence Diagram

- Representation of activity periods for objects = working time for this object.
- Beginning and the end of the vertical band correspond to the beginning and the end of the activity period.



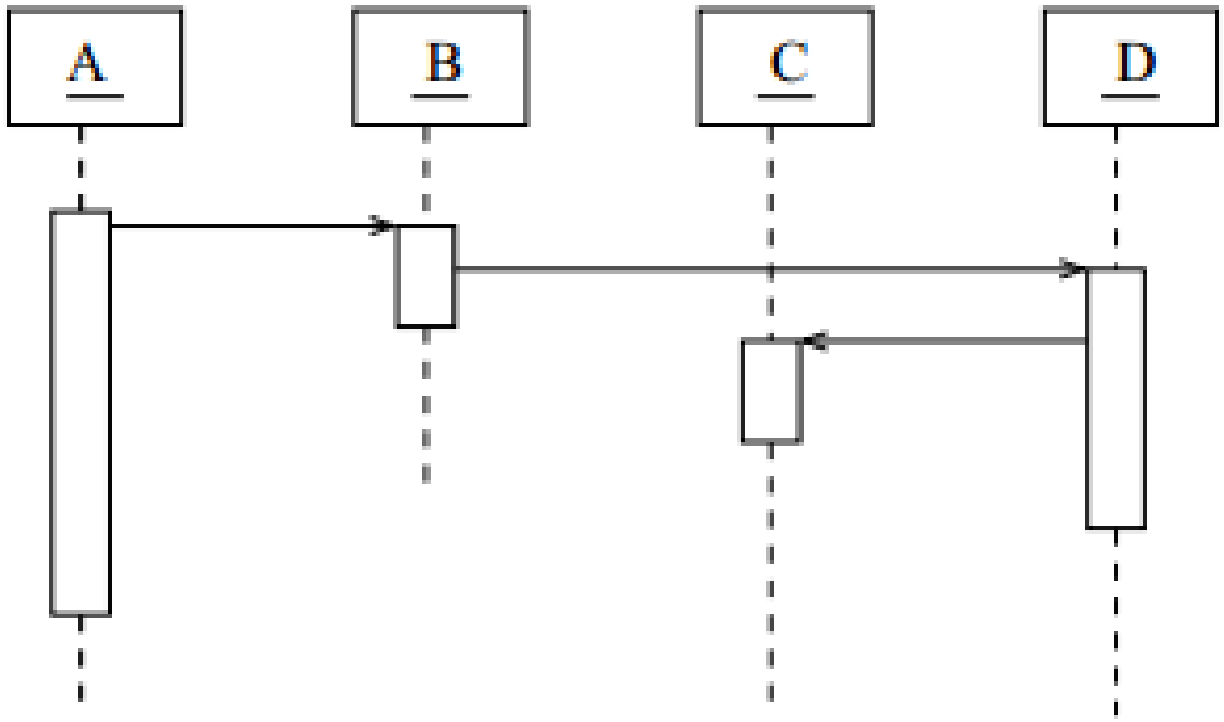
Sequence Diagram

- Choices



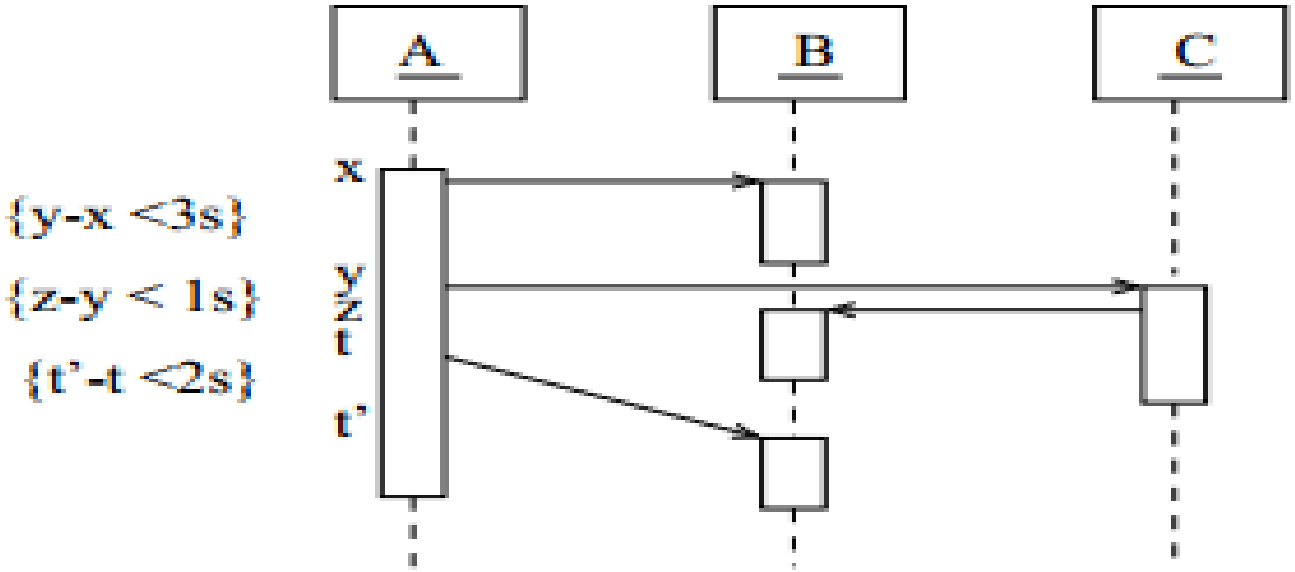
Sequence Diagram

- Decentralized sending of messages



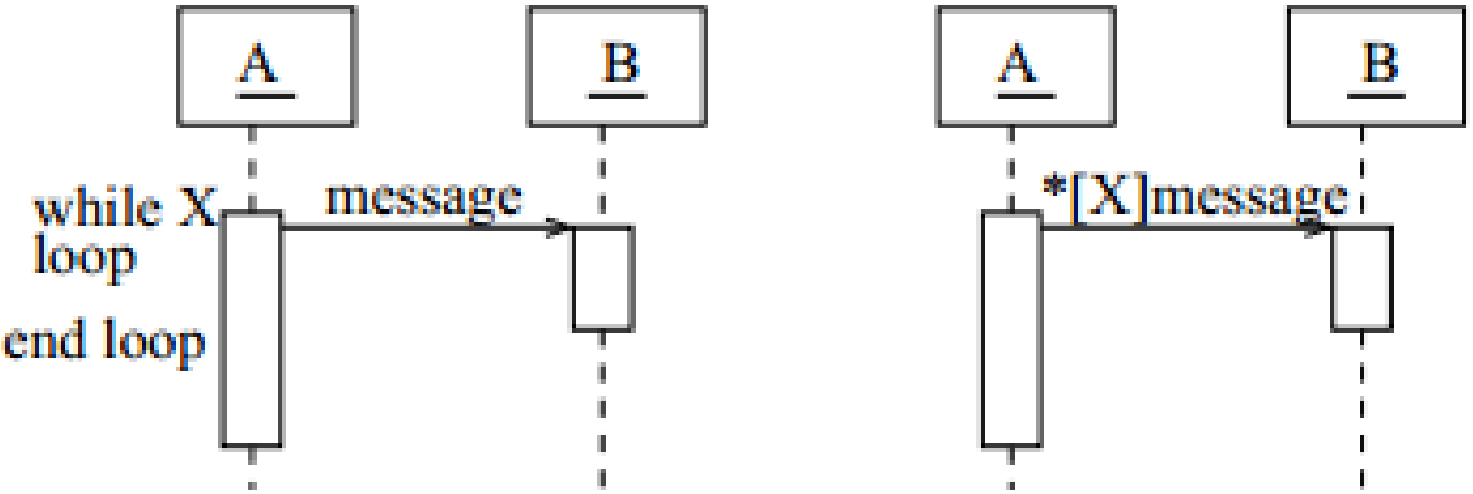
Sequence Diagram

- Temporal constraint



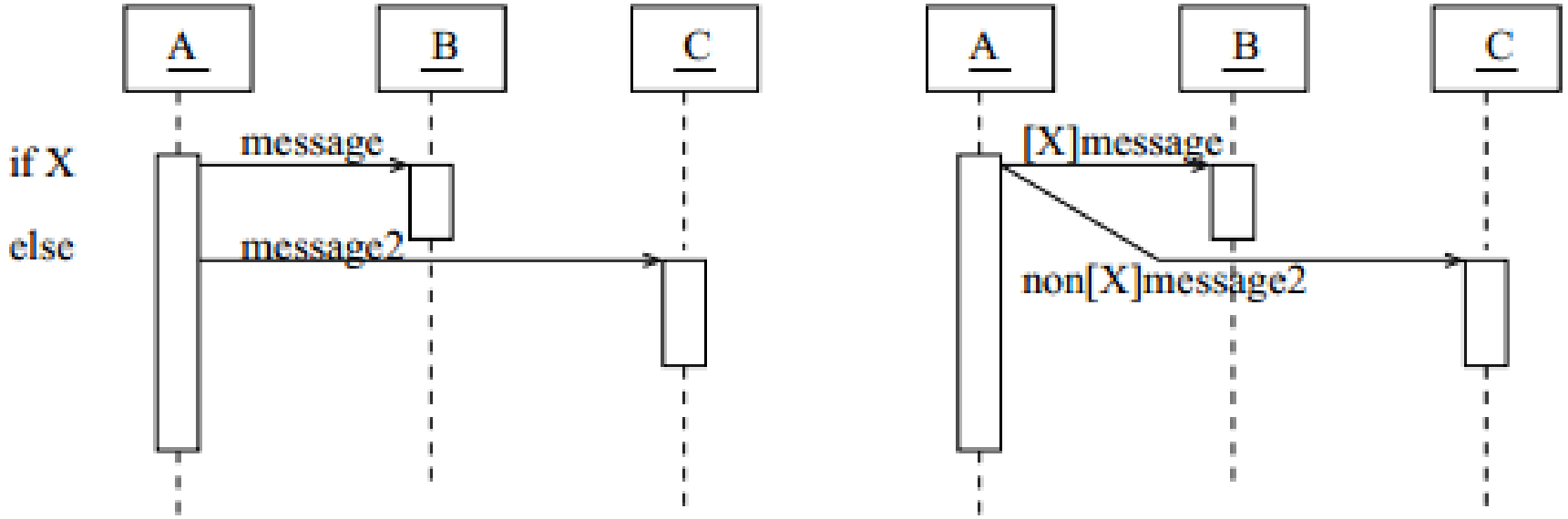
Sequence Diagram

- Loop



Sequence Diagram

- Condition branching



Sequence Diagram

1. Set the context.
2. Identify which objects will participate.
3. Set the lifeline for each object.
4. Layout the messages from the top to the bottom of the diagram based on the order in which they are sent.
5. Add the execution occurrence to each object's lifeline.
6. Validate the sequence diagram.

FIGURE 8-3
Steps for Building Sequence Diagrams

EXAMPLE

Normal Flow of Events:

1. Customer submits a search request to the system.
2. The System provides the Customer a list of recommended CDs.
3. The Customer chooses one of the CDs to find out additional information.
4. The System provides the Customer with basic information and reviews on the CD.
5. The Customer calls the Maintain Order use case.
6. The Customer iterates over 3 through 5 until done shopping.
7. The Customer executes the Checkout use case.
8. The Customer leaves the Web site.

FIGURE 8-4
Normal Flow of Events of the Places Order Use Case

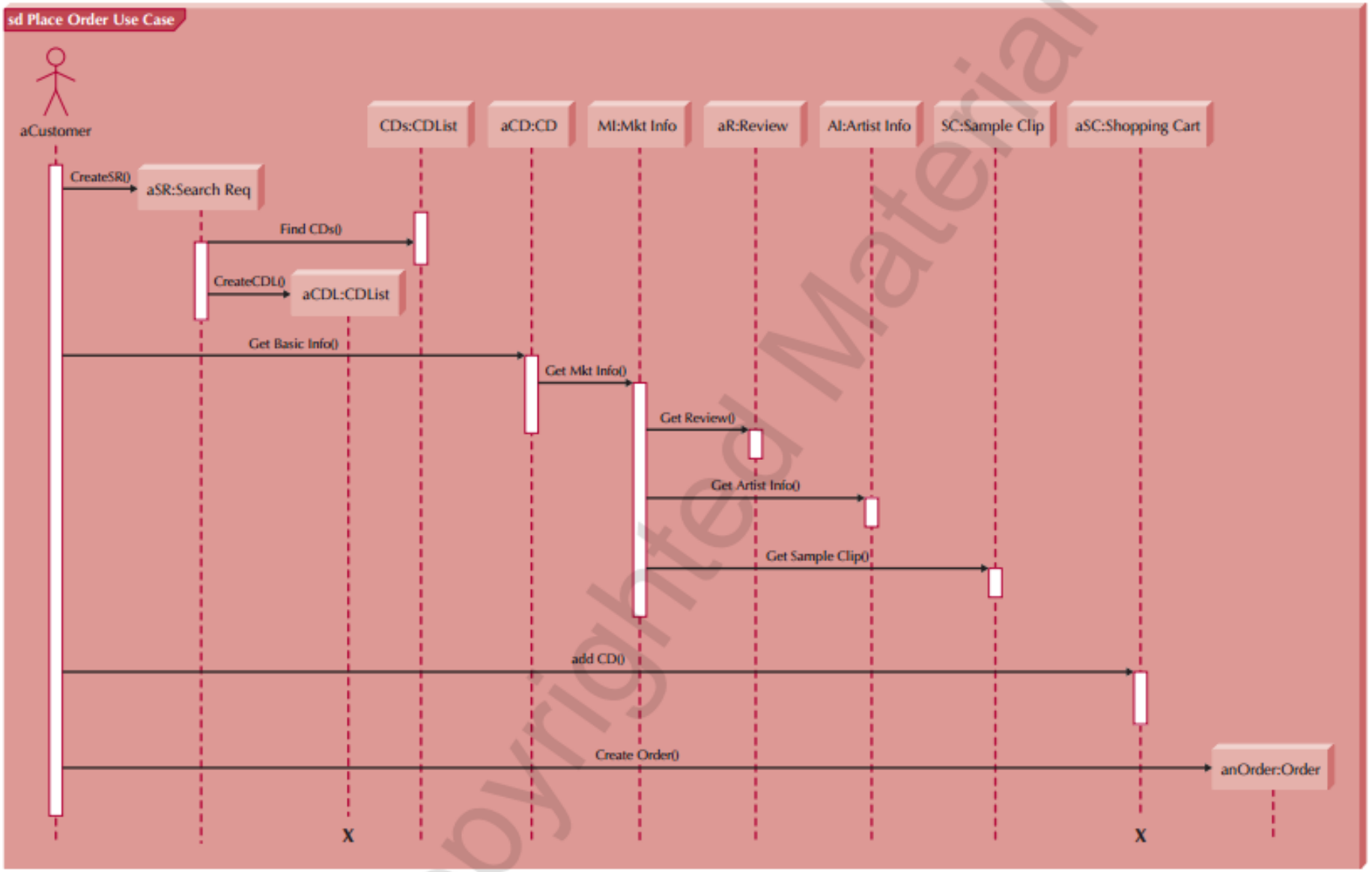


FIGURE 8-5 Sequence Diagram for the Places Order Use Case