Modern Systems Analysis and Design
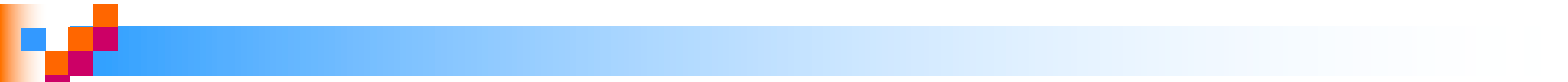## Seventh Edition

Jeffrey A. Hoffer

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Chapter 7 Appendix B

Object-Oriented Analysis and Design: Activity Diagrams

Learning Objectives

✓ Understand how to represent system logic with activity diagrams.

Process Modeling: Activity Diagrams

- **Activity Diagrams**
  - ☐ Show the conditional logic for the sequence of system activities needed to accomplish a business process.
  - ☐ Clearly show parallel and alternative behaviors.
  - ☐ Can be used to show the logic of a use case.

Use Activity Diagrams to:

- Depict the flow of control from activity to activity.

- Help in use case analysis to understand what actions need to take place.

- Help in identifying extensions in a use case.

- Model work flow and business processes.

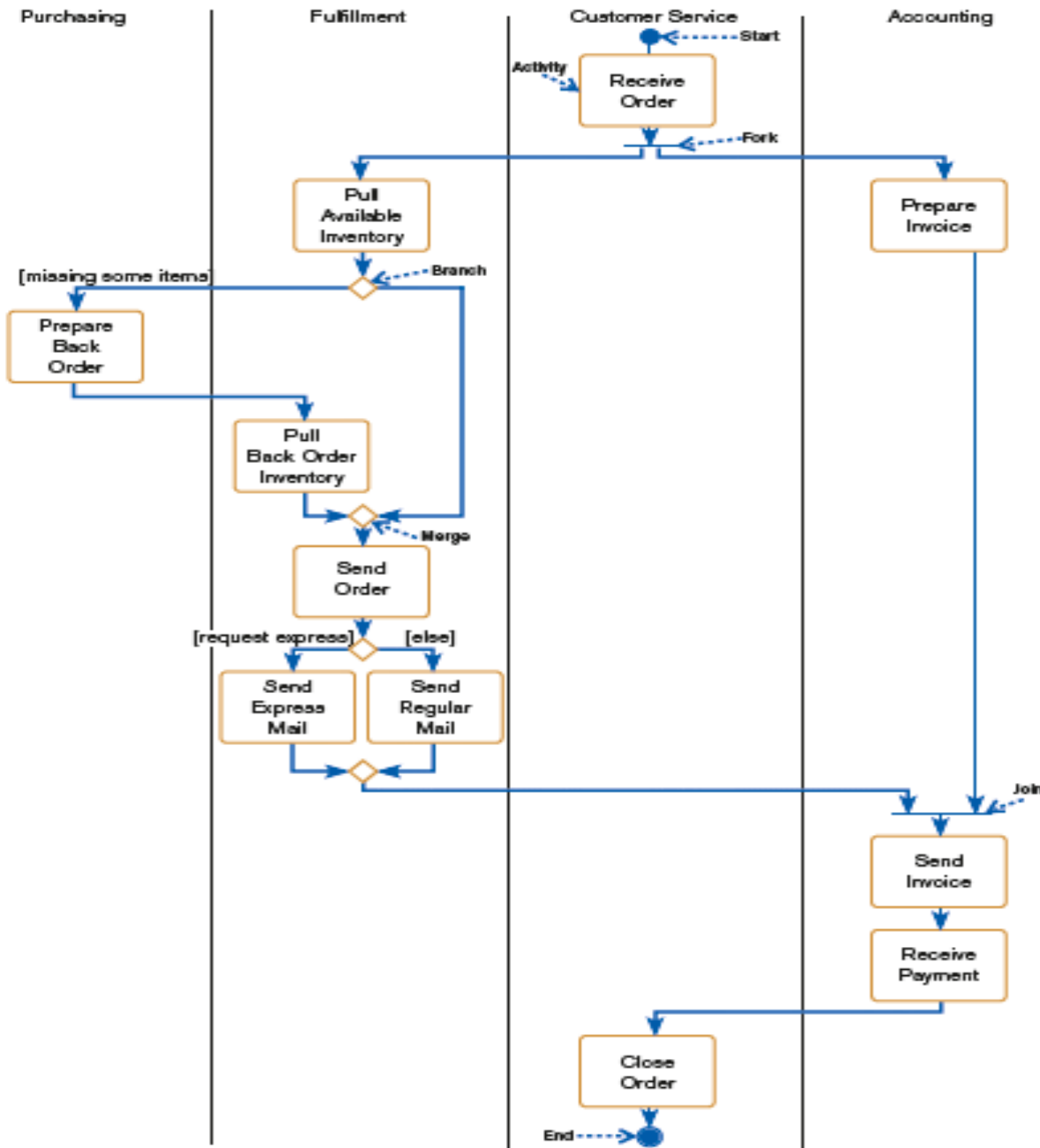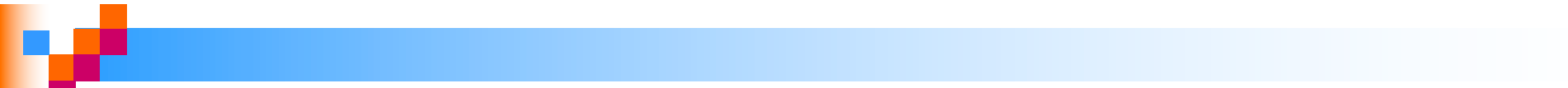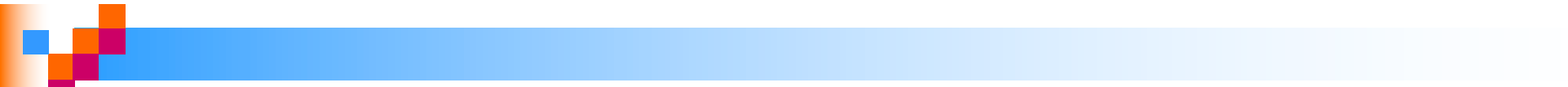- Model the sequential and concurrent steps in a computation process.

FIGURE 7-36 Activity diagram for a customer order process

Purchasing | Fulfillment | Customer Service | Accounting

Start

Activity → Receive Order

Fork

Pull Available Inventory

Prepare Invoice

Branch

[missing some items]

Prepare Back Order

Pull Back Order Inventory

Merge

Send Order

[request express] [else]

Send Express Mail

Send Regular Mail

Join

Send Invoice

Receive Payment

Close Order

End

Process Modeling: Activity Diagrams (Cont.)

- Elements of Activity Diagrams:

  - **Activity**: a behavior that an object carries out while in a particular state

  - **Branch**: a diamond symbol containing a condition whose results provide transitions to different paths of activities

  - **Merge**: a circular symbol where different paths converge

Process Modeling: Activity Diagrams (Cont.)

□**Fork**: the beginning of parallel activities

□**Join**: the end of parallel activities

□**Swimlanes**: columns representing different organizational units of the system

Summary

■ In this appendix you learned how to:

✓ Understand how to represent system logic with activity diagrams.

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