

On to Iteration 3, and Activity Diagrams

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Plan for Today

- ❖ **2/3-term Course Evaluation**

- ❖ **On to Iteration 3**

- ❖ **Activity Diagrams**

Help Us Make the Course Better

**Please take 10 minutes and
complete the 2/3-term Course
Evaluation on ANGEL**

On to Iteration 3: NextGen POS

- ❖ **Failover to local services**
- ❖ **Support for POS devices**
- ❖ **Credit payment authorization**
- ❖ **Persistence**

Iteration 3: Monopoly

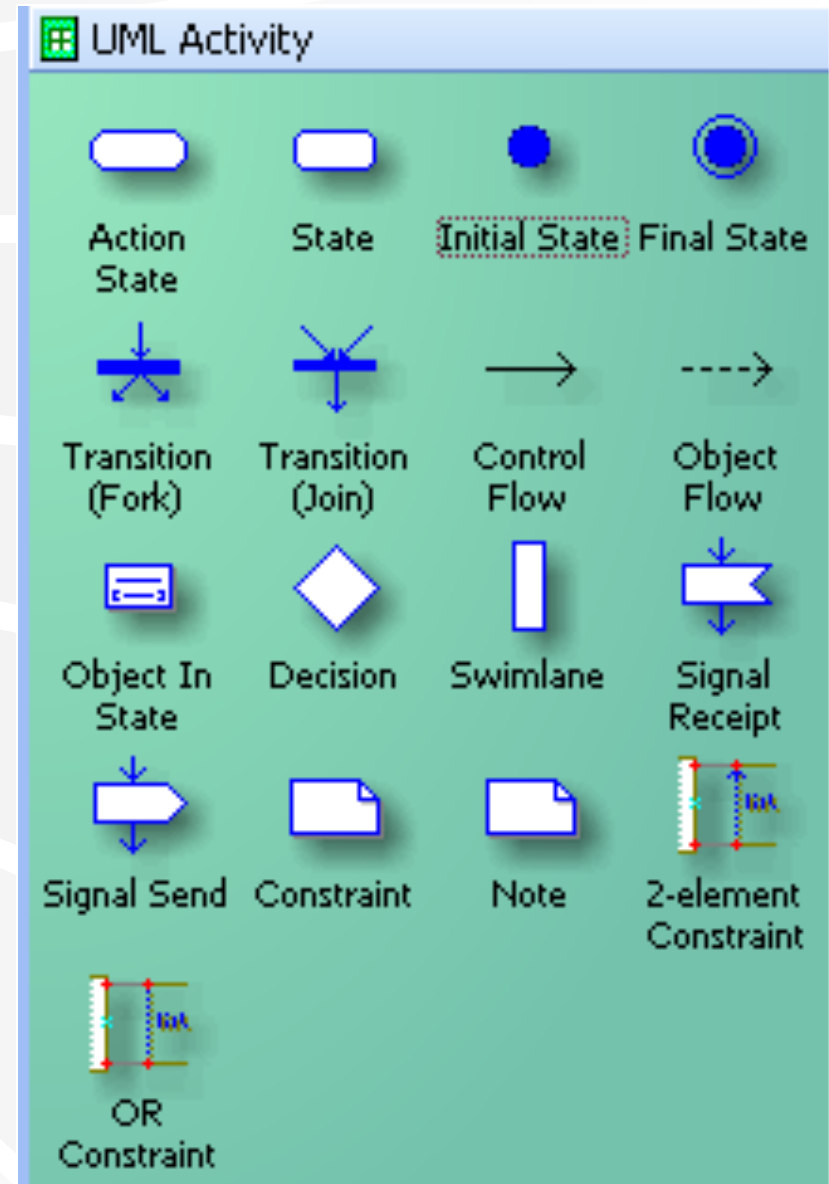
- ❖ **Lots, Railroads, and Utilities**

- ❖ **Purchasing property**

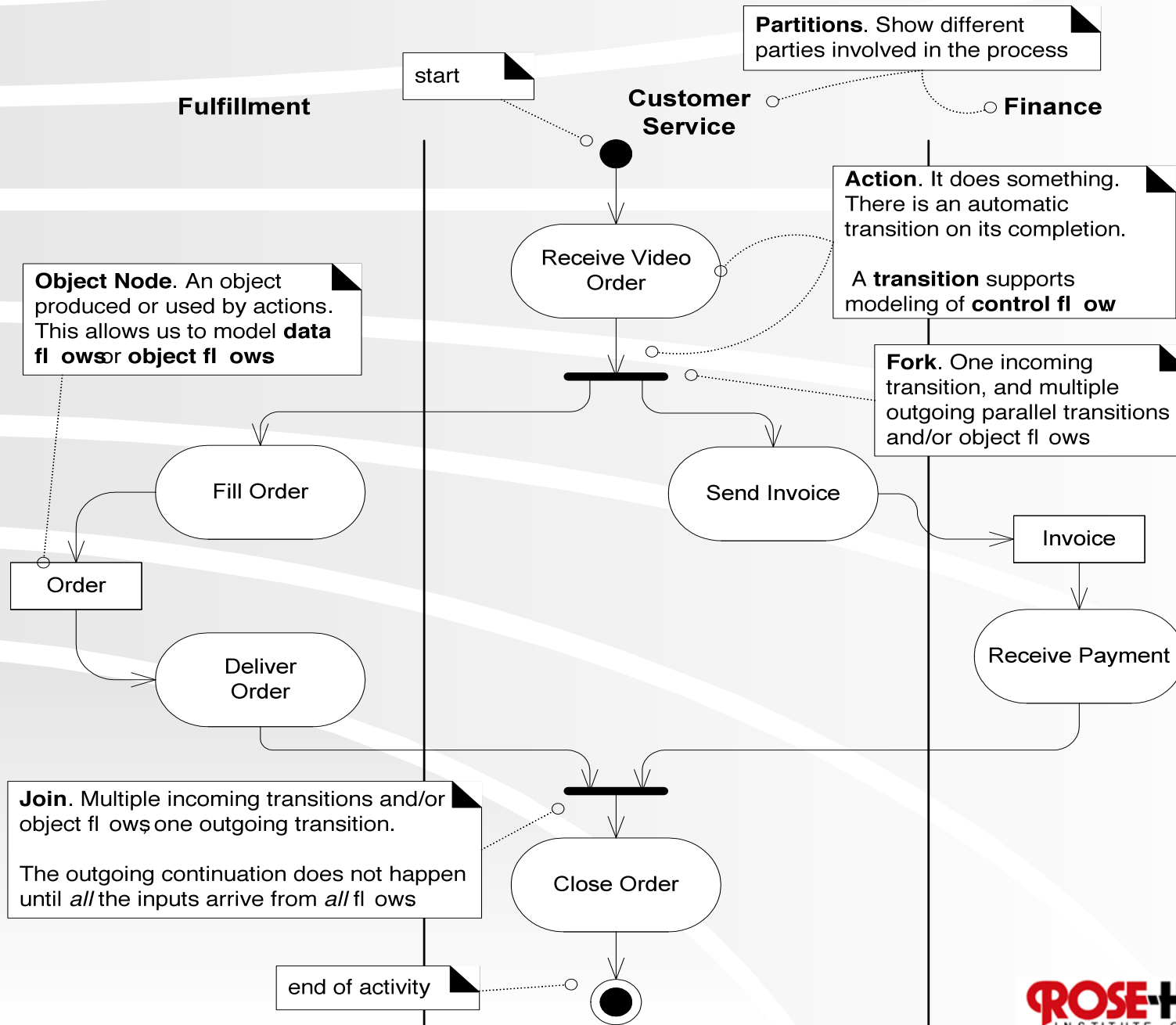
- ❖ **Collecting rent**

UML Activity Diagrams

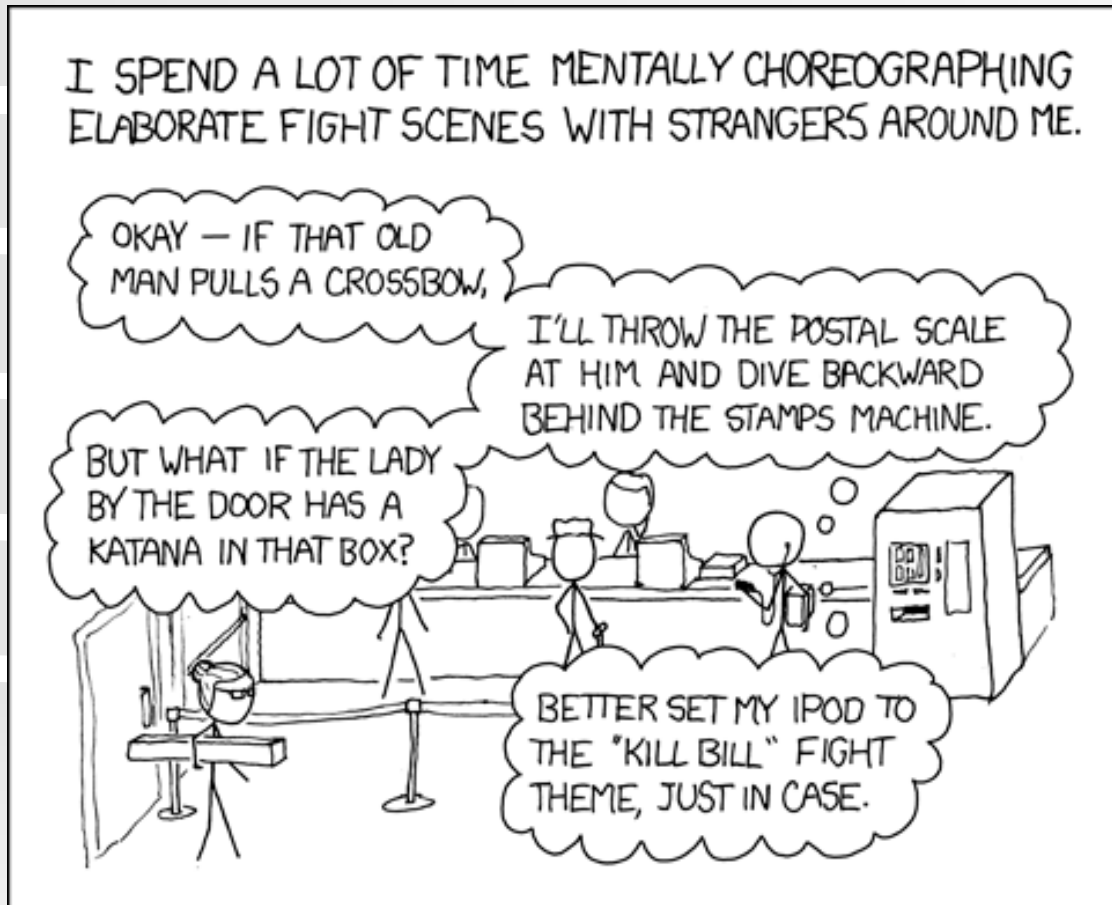
- ❖ **Essentially Modern Version of Flowcharts and/or Data Flow Diagrams**
 - Easy to understand
- ❖ **Used to model:**
 - Business processes
 - Workflows
 - Data Flows
 - Complex algorithms/UCs



Basic Activity Diagram UML Syntax



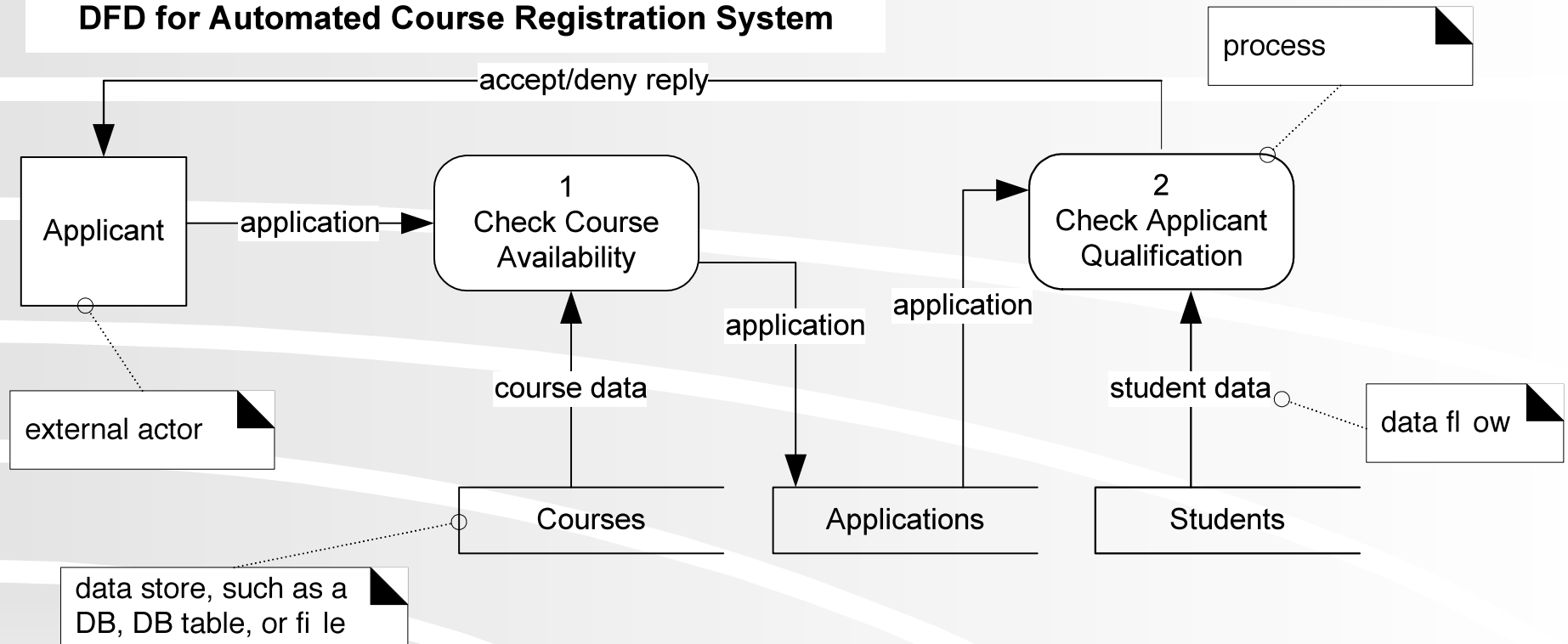
Post Office Showdown



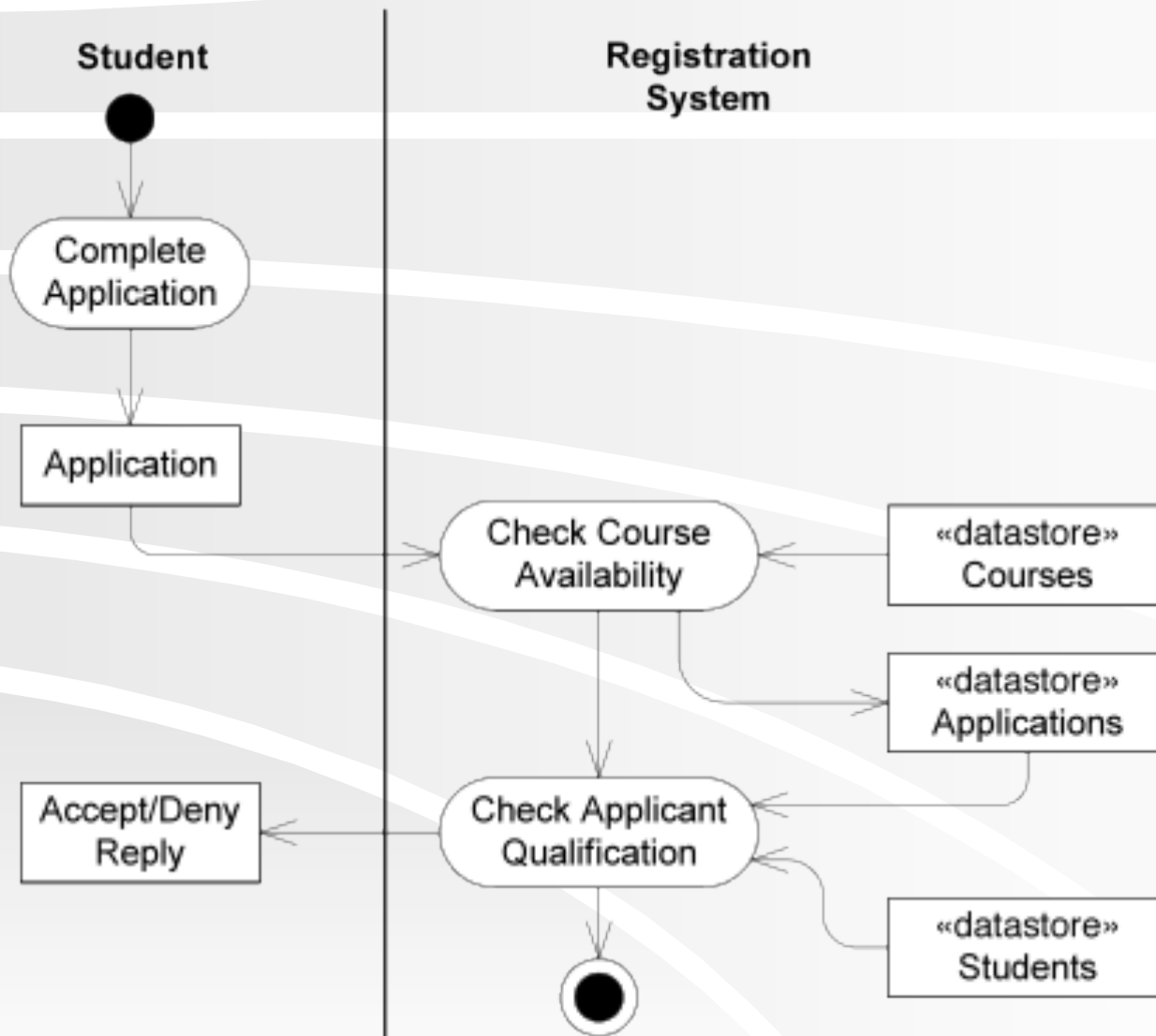
That track (‘Battle Without Honor or Humanity’)—like ‘Ride of the Valkyries’—improves *any* **activity.**

Classic Data Flow Diagram

DFD for Automated Course Registration System

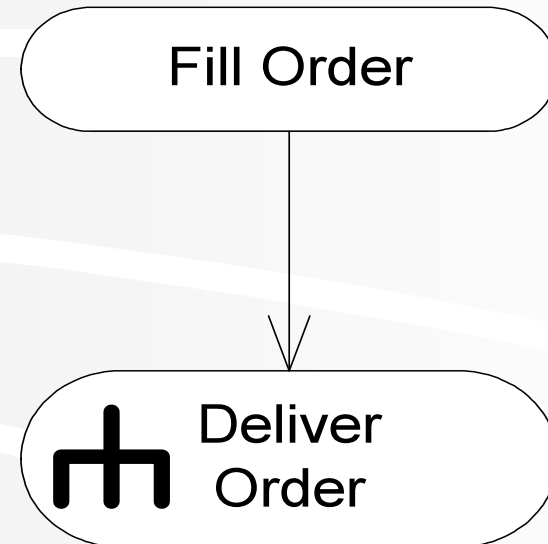


Example of Data Flow Modeling via and Activity Diagram



Hierarchy Representation: Rake Symbol

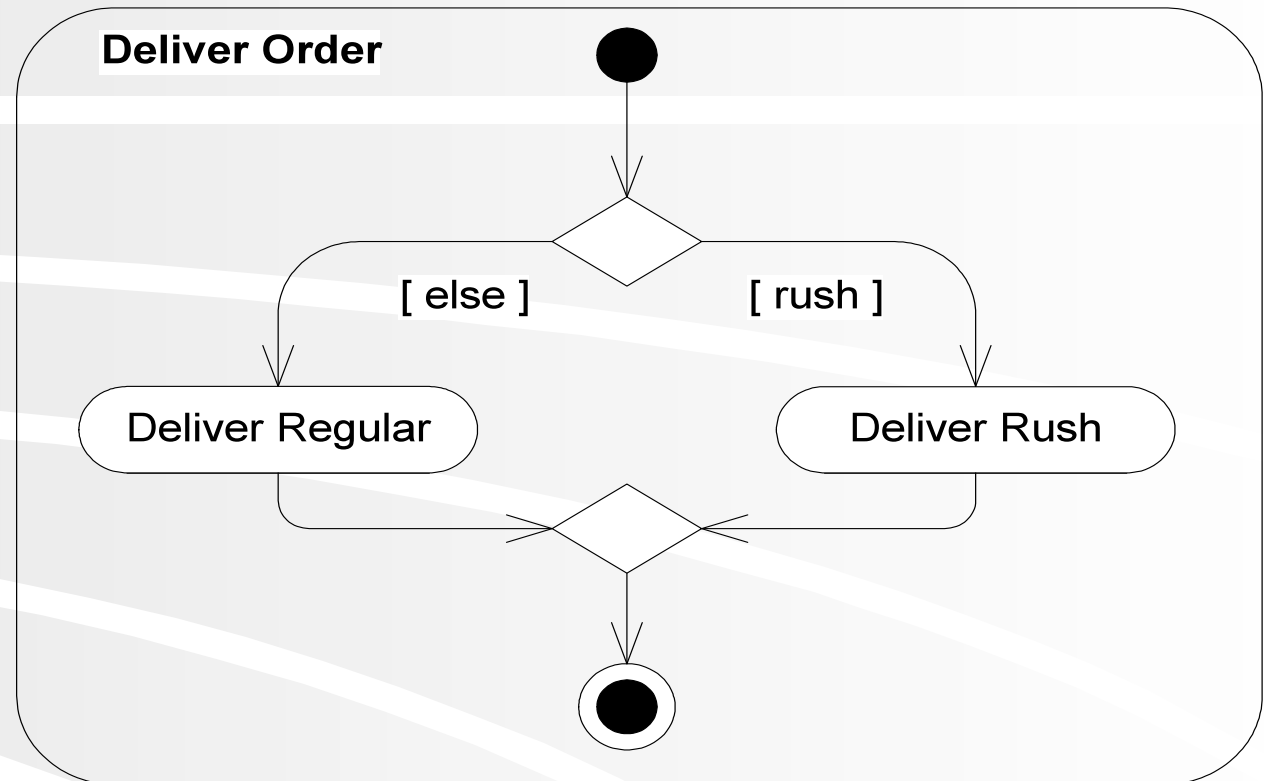
the “rake” symbol (which represents a hierarchy) indicates this activity is expanded in a sub-activity diagram



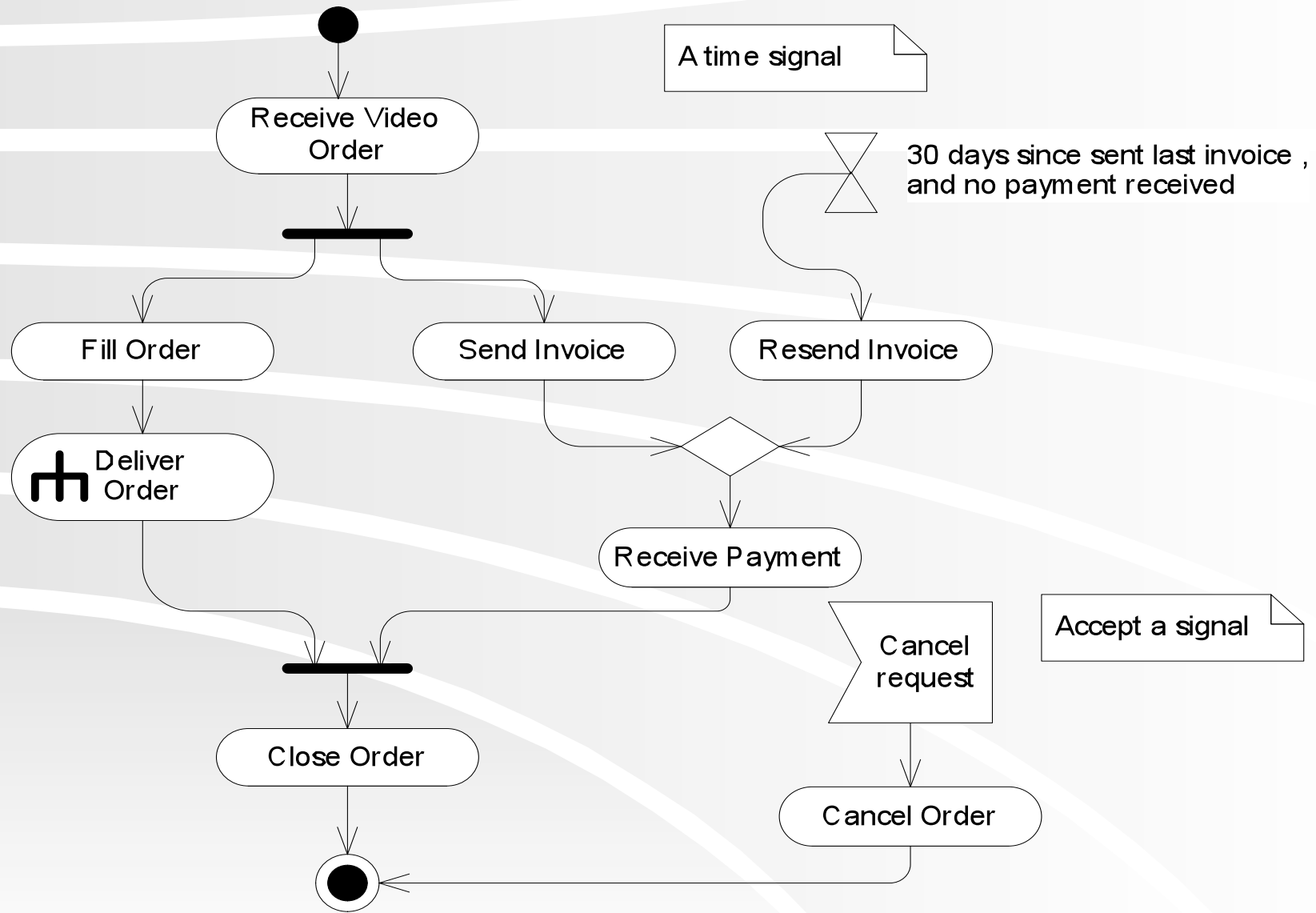
Expanded Delivery Order Activity Diagram

Decision: Any branch happens. Mutual exclusion

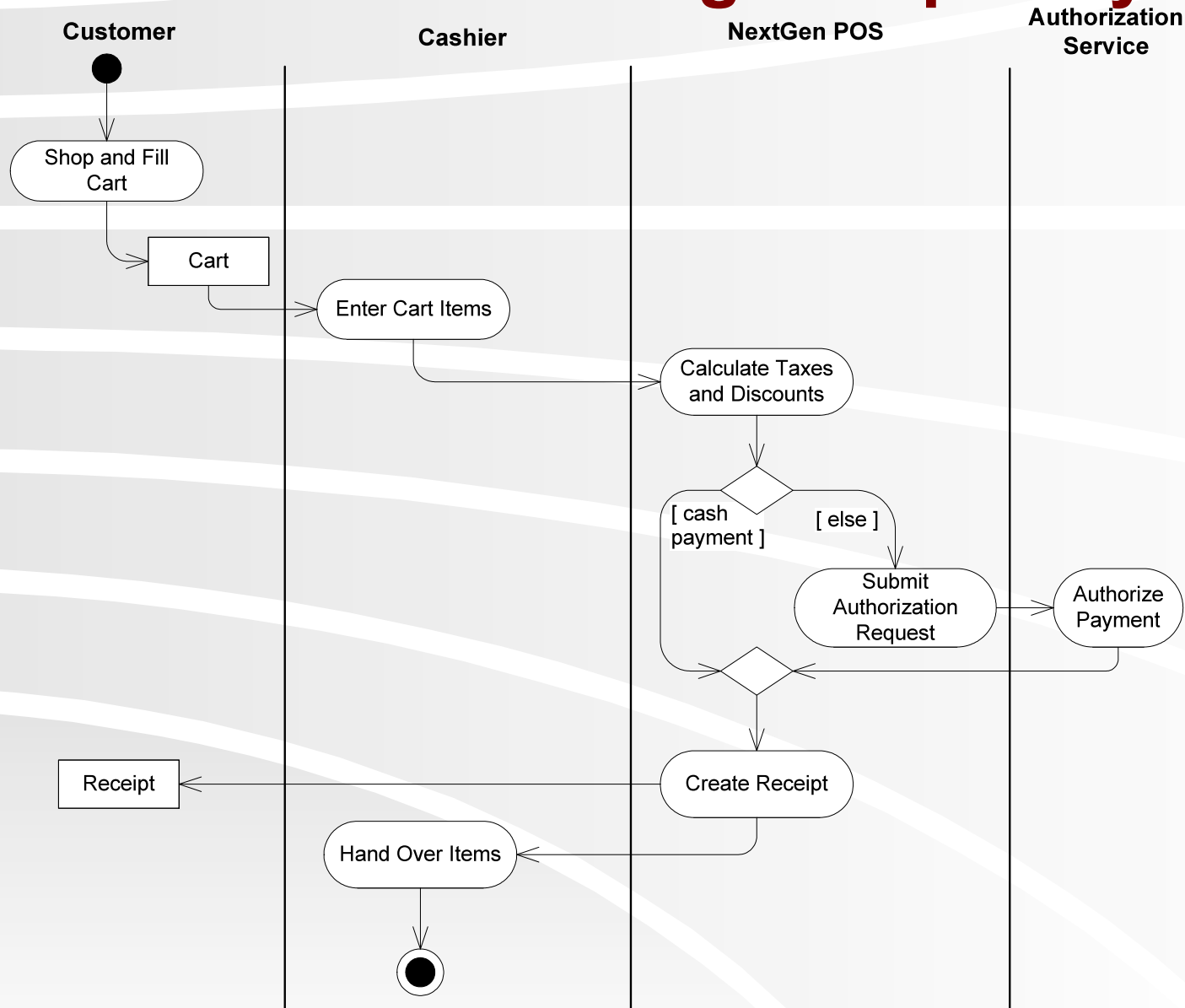
Merge: Any input leads to continuation. This is in contrast to a *join*, in which case *all* the inputs have to arrive before it continues.



Signal Notation



NextGen POS: Reducing Complexity



NextGen Process Sale UC benefits from activity diagram due to its complexity

Activity Diagram Guidelines

- ❖ **Use when need to depict processes with complex flow**
 - Conditional or iterative
- ❖ **Use rake notation for sub-activity diagrams**
 - Keeps parent diagram simple
- ❖ **Maintain a consistent level of abstraction within a diagram**

Your Turn!

Ask for help if you're stuck

Here's an example of a CAPTCHA, or Completely Automated Public Turing test to tell Computers and Humans Apart:

following *finding*

Homework and Milestone Reminders

- ❖ **Read Chapters 30 and 31 (through page 515)**
- ❖ **Homework 7– Gang of Four (GoF) Patterns on Video Store Design**
 - **Due by 5:00pm Tuesday, February 2nd, 2010**
- ❖ **Milestone 4: Patterns and Detailed Design, with some Iteration 2 on the Side**
 - **Due by 11:59pm Friday, January 29th, 2010**