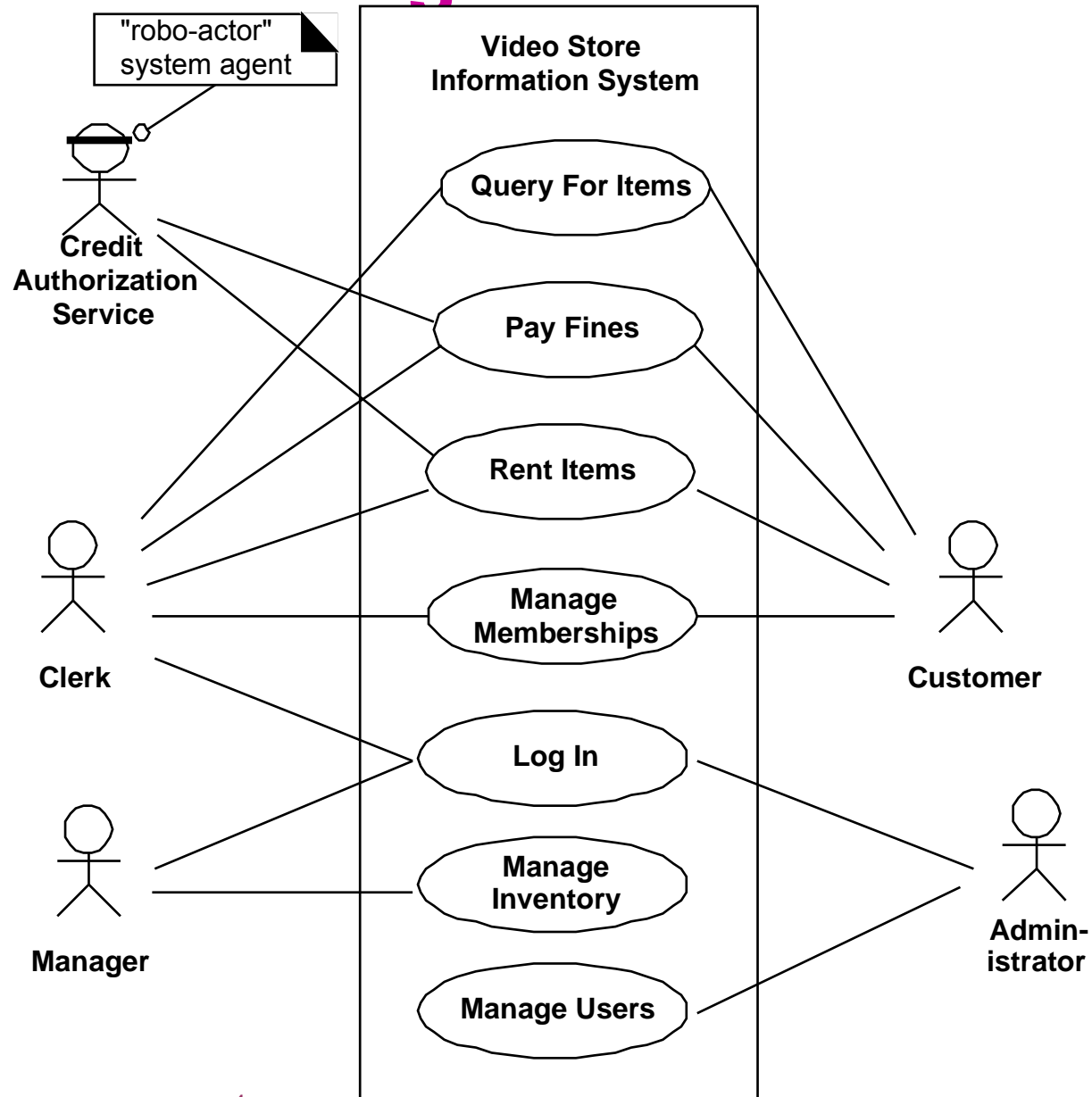# Use Cases

Introduction

- **Types:**
  - **business use cases**
  - **system use cases (our focus)**

- **Use cases tell a story of actors using a system.**

- **They illustrate functional requirements, by the stories they tell.**

- **Complementary with a function requirement list.**

Identifying Use Cases

- **Major distinct, complete, end-to-end processes of using a system.**

- **Not usually one step, but a complete story.**
  - **Common "mistake"!**

- **Examples**
  - **Rent Videos**
  - **Return Videos**
  - **Pay Fines**

Use Case Diagram

- **A way to conceive and illustrate the use cases.**

- **Usually created during the initial use case analysis.**

"robo-actor" system agent

Video Store Information System

Credit Authorization Service

Query For Items

Pay Fines

Rent Items

Manage Memberships

Clerk

Customer

Log In

Manager

Manage Inventory

Manage Users

Admin- istrator

A Sample Detailed Use Case

Use Case: Rent Items

Typical Course of Events

Actor Intentions	System Responsibility
1. Customer arrives at a checkout with videos (and/or less often, video games) to rent.	
2. The Customer presents their membership identification to the Clerk, who enters it into the system.	3. Presents membership information, and status of loans (usually nothing on loan, and no outstanding fines).
4. For each video or game, the Clerk records the item identification into the system.	5. Presents accumulating list of rental item titles, due dates, total rental fee, and any late charges.
6. Clerk informs Customer of total charge, and asks for payment.	
7. Customer pays Clerk by cash or credit.	
8. Clerk records payment into system.	9. If a credit payment, authorizes it.
	10. Generates receipt and loan report.
11. Clerk gives receipt and loan report to Customer, who then leaves with the rental items.	

Alternative Courses

- Step 7. Customer has insufficient cash. Request a credit payment, cancel the transaction, or deduct rental items until transaction can be paid for.

- Step 7: Customer has unpaid late charges and will not pay them. Customer must pay them before renting more items, so either collect full payment, or cancel the transaction.

- Step 9. Failure to authorize credit payment, either because of insufficient credit or inactive authorization service. Request cash payment instead.

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A Sample Summary Use Case

- **Same principles a detailed use case, but simplifies steps and details, as a low-fidelity incomplete first draft.**

  - **Useful during early requirements and scope analysis**

Actor Intentions	System Responsibilities
2. Customer presents items to rent.	
3. Clerk records items.	3. Remember rented items.
	4. Calculate and present price.
5. Customer pays.	6. Authorize and record payment.