Use Case Diagram

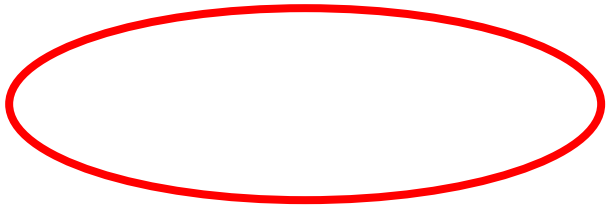
Use Case Diagram

- Use Case Diagrams provide information about the interaction between the use cases and actors.
- Use case diagrams show the high level of functionality of the system.
- Customers can look at these diagrams and receive a great deal of information about the system.
- Use case diagrams are completely based on user's perspective.

Elements of Use Case Diagram

- Use Case
- Actor(s)

Use Case

- Use case are high level piece of functionality that the system provides.
- Use cases are implementation independent high level view of “what” user expects from the system.
- It is represented using the symbol 

Actor

- An actor is anyone or anything that interacts with the system being built.
- It is represented by

Types of Use Case

- Concrete
- Abstract

Concrete Use Case

- It is directly initiated by the actor.

Abstract Use Case

- Abstract use cases which are initiated by other use case(s) like concrete use case(s).

Types of Actor

- Users (of The System)
- External Systems
- Time

Users(of The System)

- Those who use the system or interacts with the system.

External System

- Other systems that interact with the system.

Time

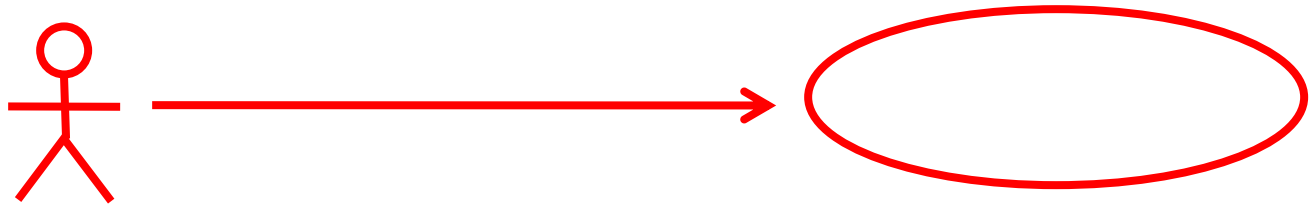
- Time becomes an actor when the passing of a certain amount of time triggers some event in the system.

Relationship

- Communication
- Includes

Communication

- This is a relationship between a use case and an actor.
- It is represented by an arrow as follows: -



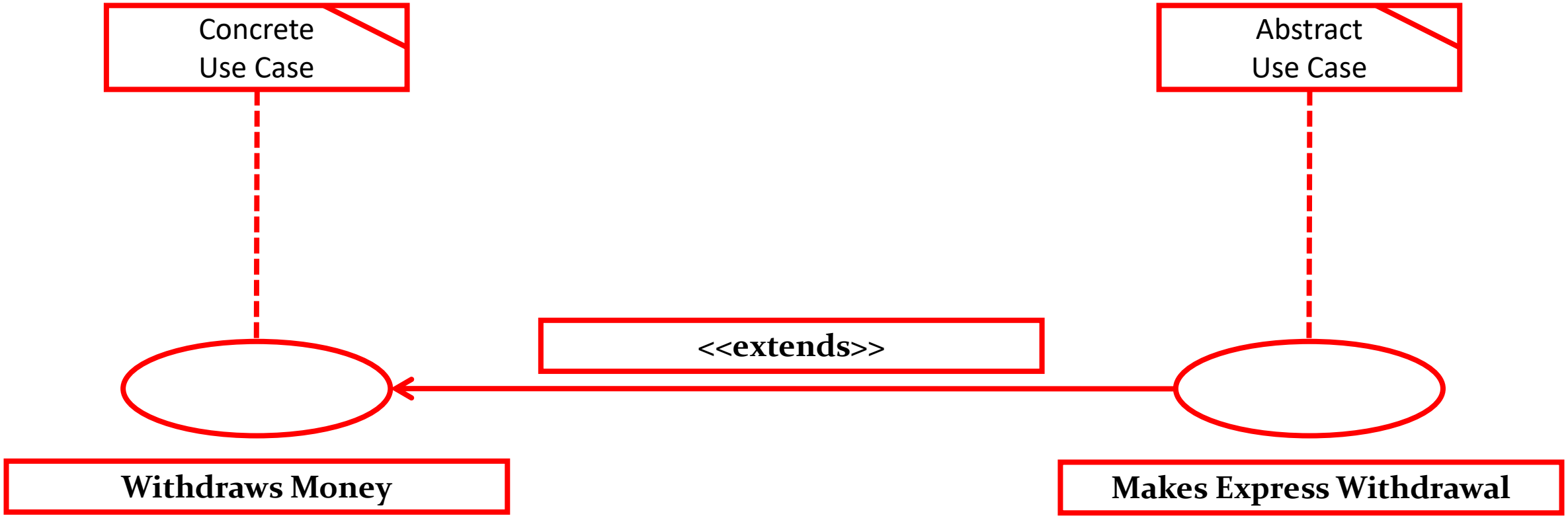
- The arrow head indicates who initiates the communication.

Includes

- It allows one use case to use the functionality provided by another use case.
- It is used to model some reusable functionality that is common to two or more use cases.

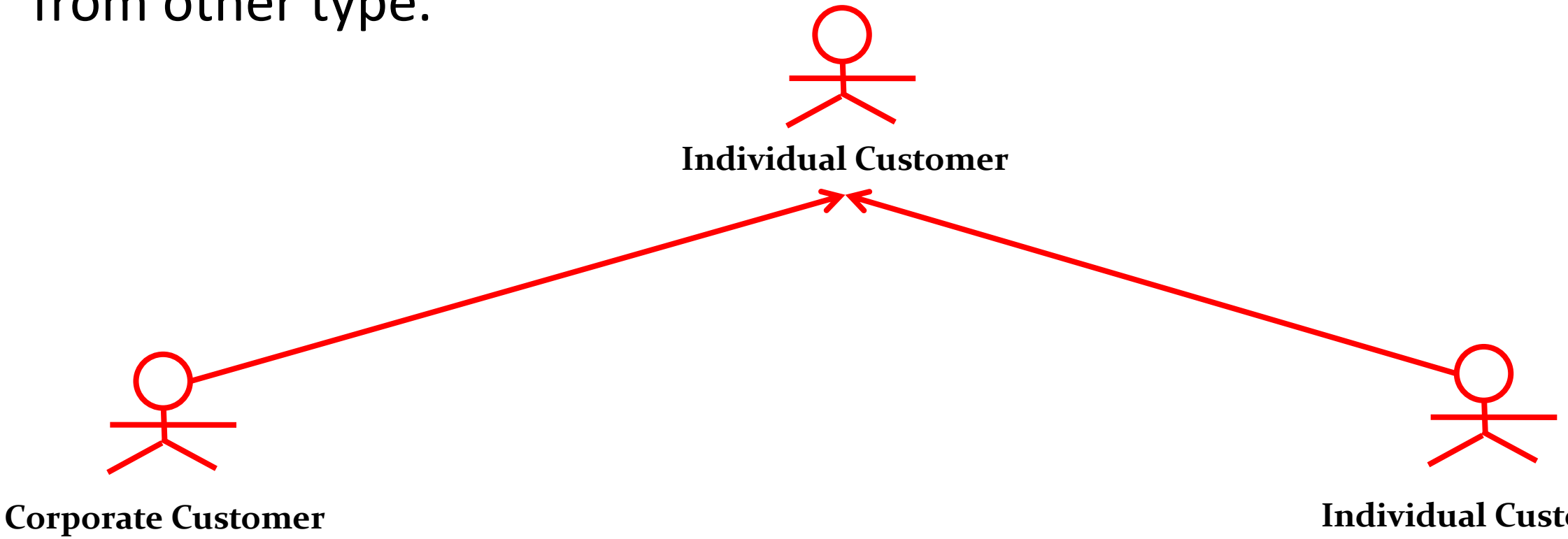
Extends

- It allows one use case to optionally extend the functionality provided by another use case.
- It is chosen as an arrow with the word <<extends>>



Actor Generalization

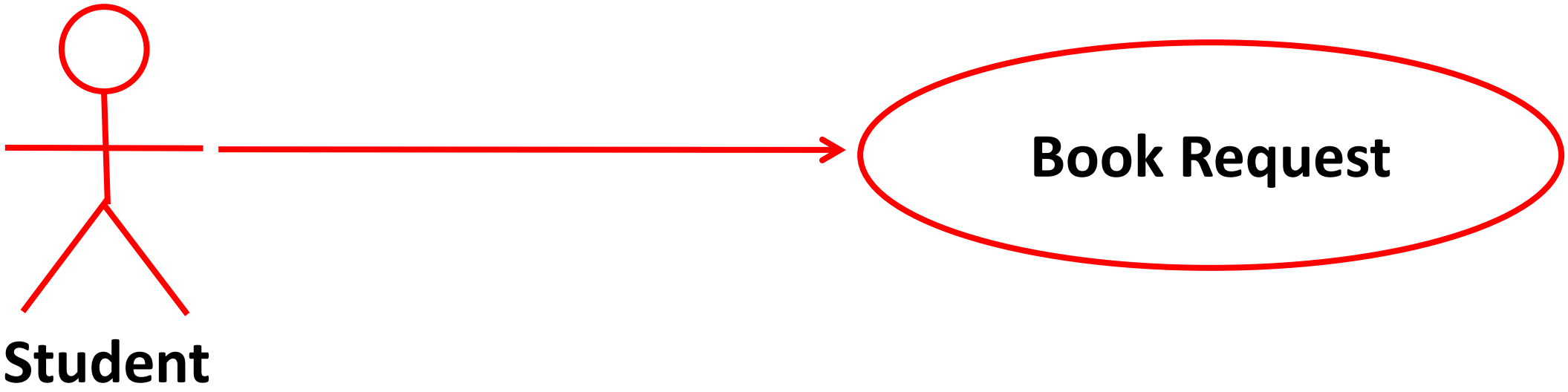
- It is used to show that several actors have some commonality.
- It is needed when one type of actor behaves slightly differently from other type.



Use Case Diagram for Library System

- Minimum Requirement
  - Use case(s)
    - Book Request
    - Identity Checked
    - Book Availability
    - Fine
  - Actor(s)
    - Student
    - Librarian

Use Case Diagram for Library System …



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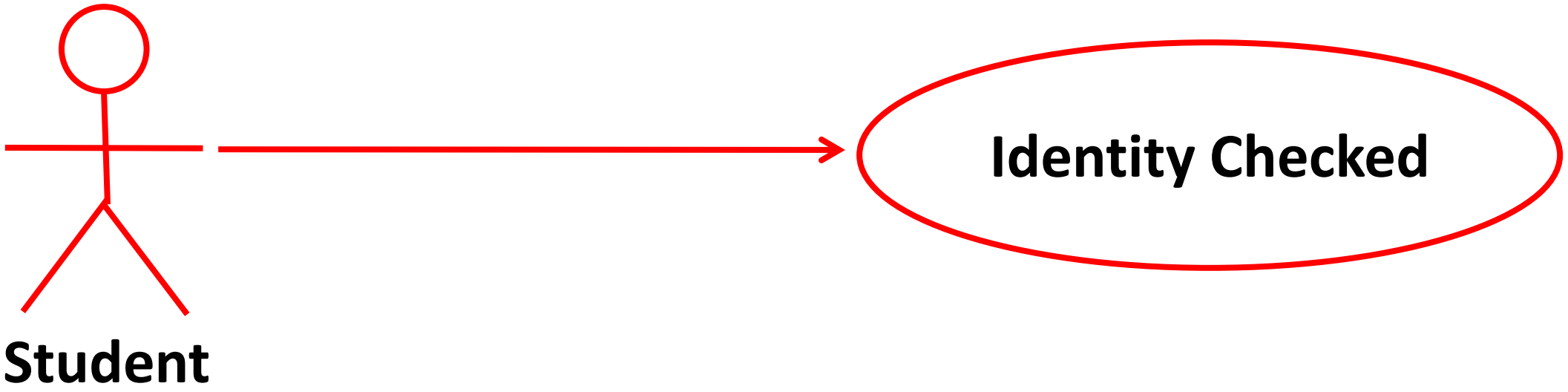

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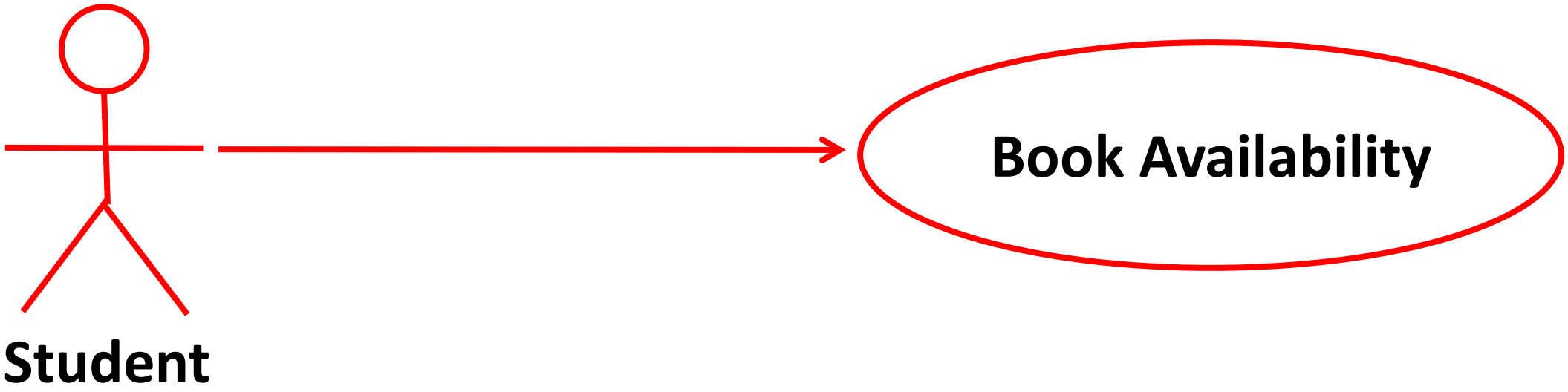

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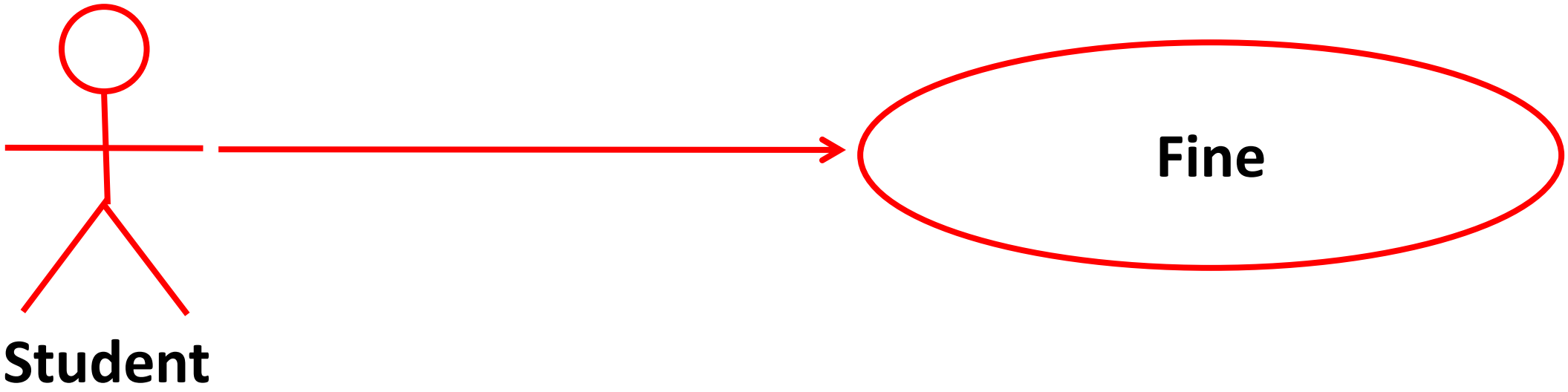

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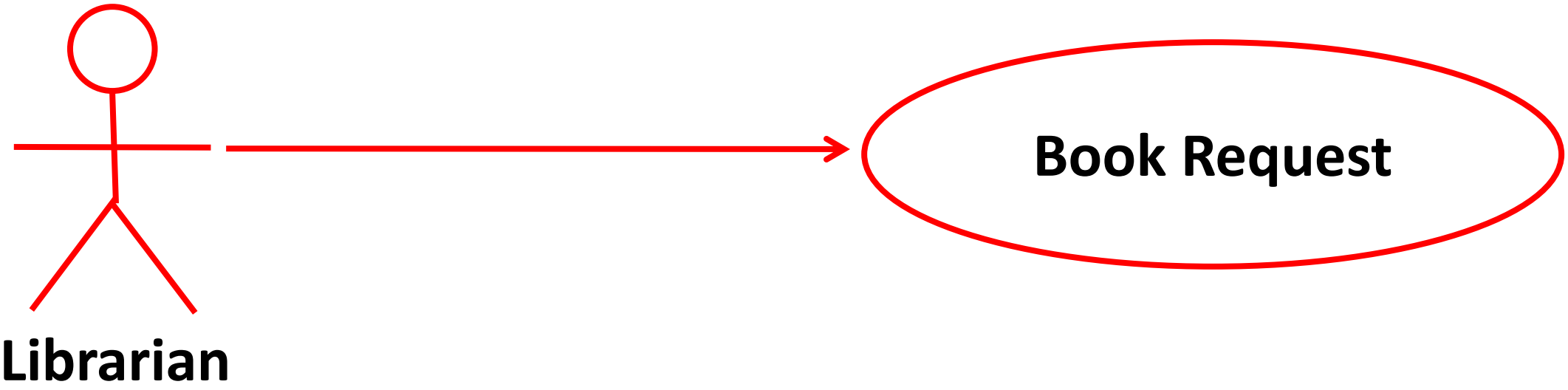

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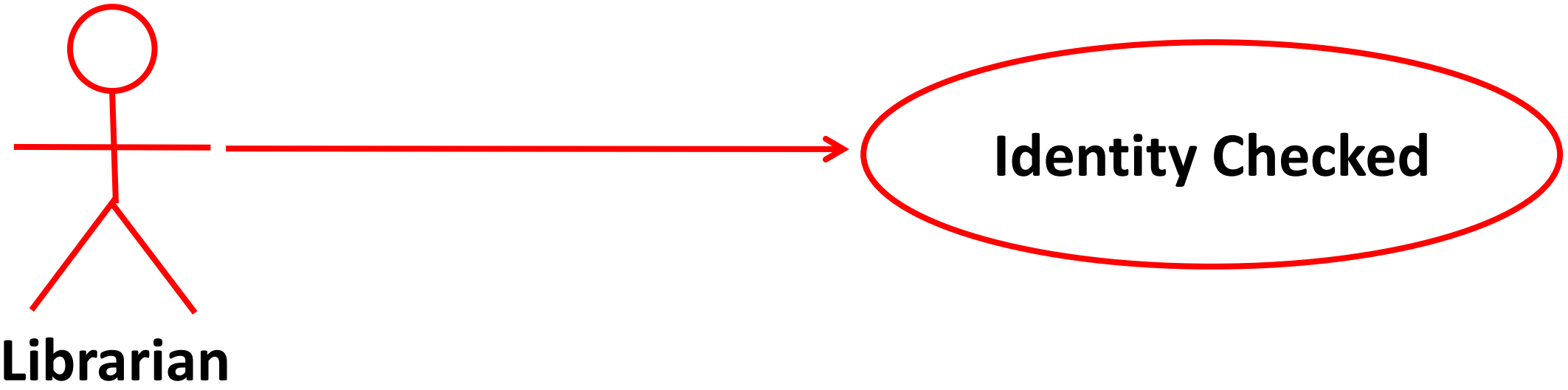

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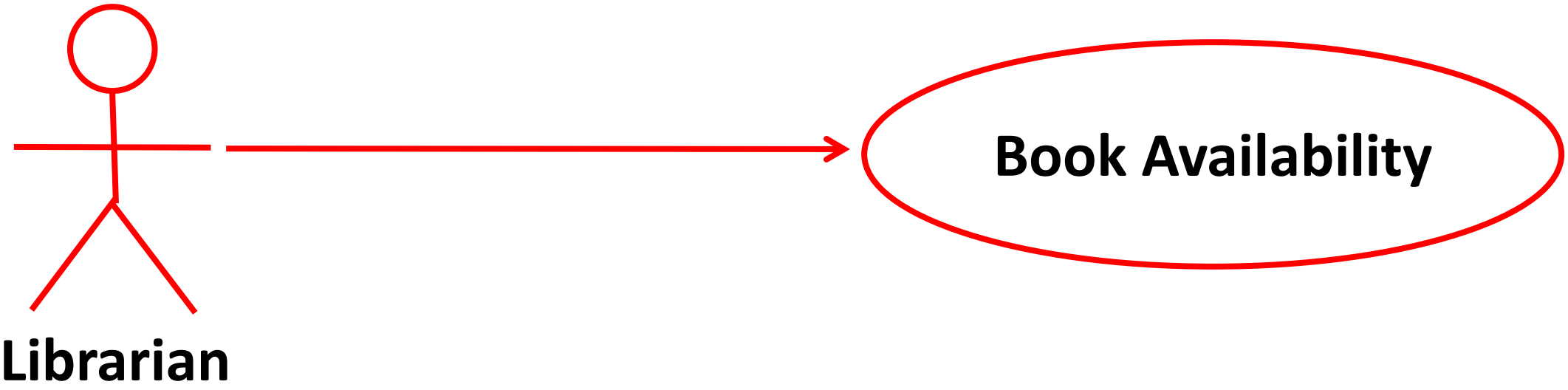

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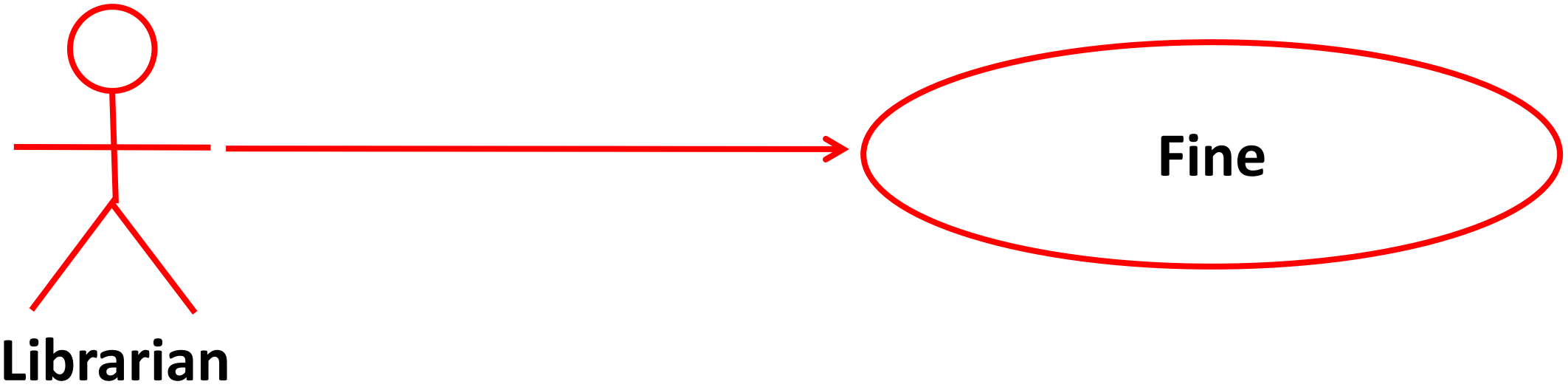

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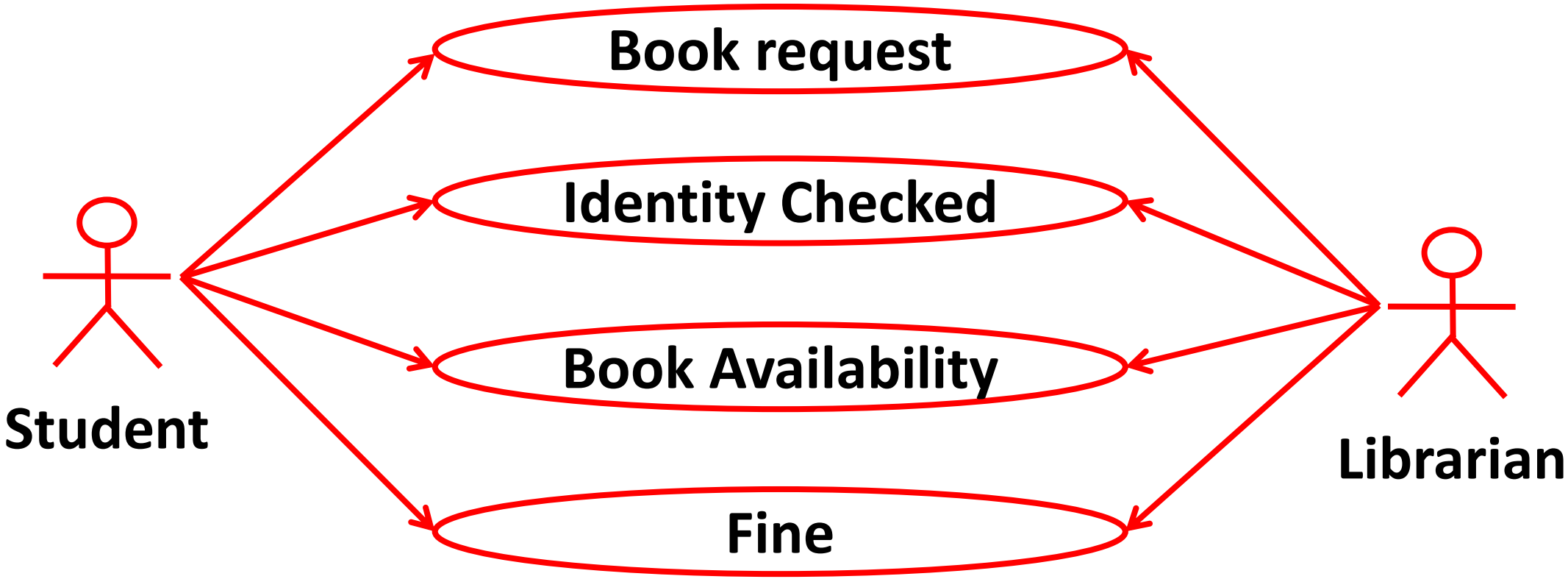

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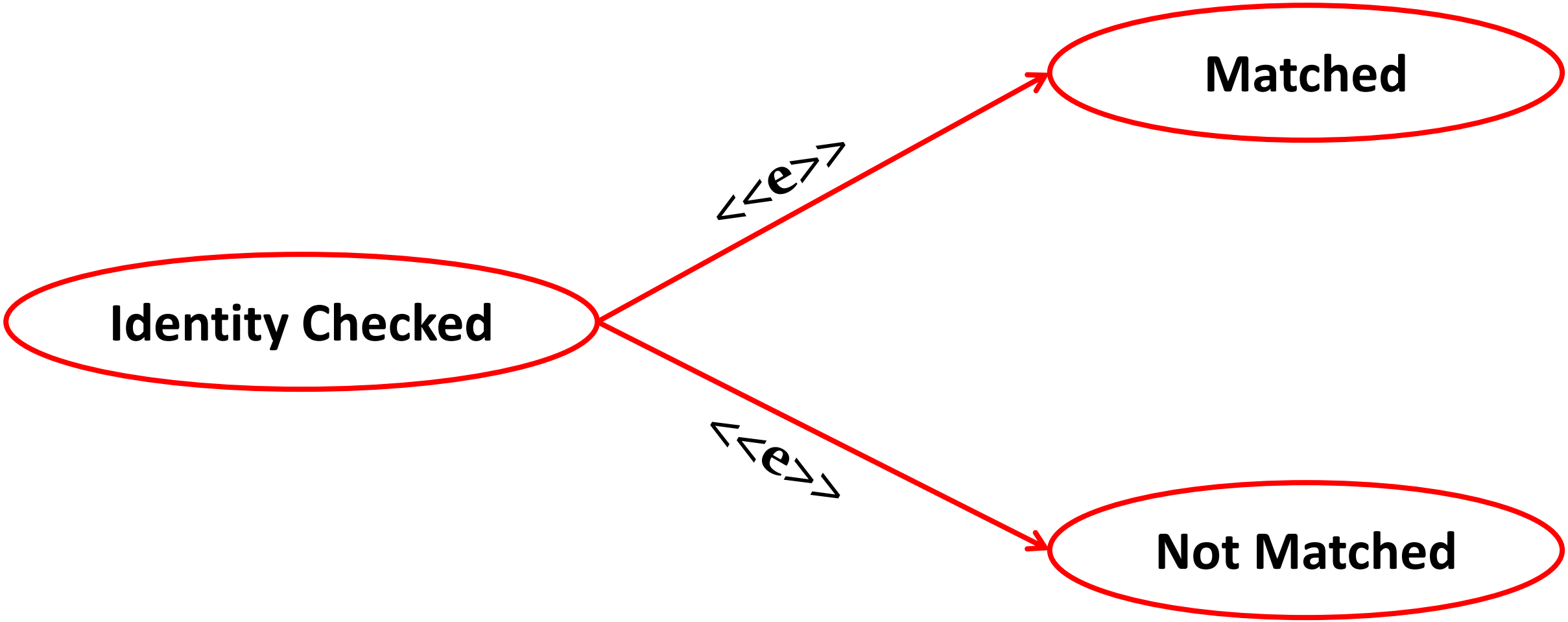

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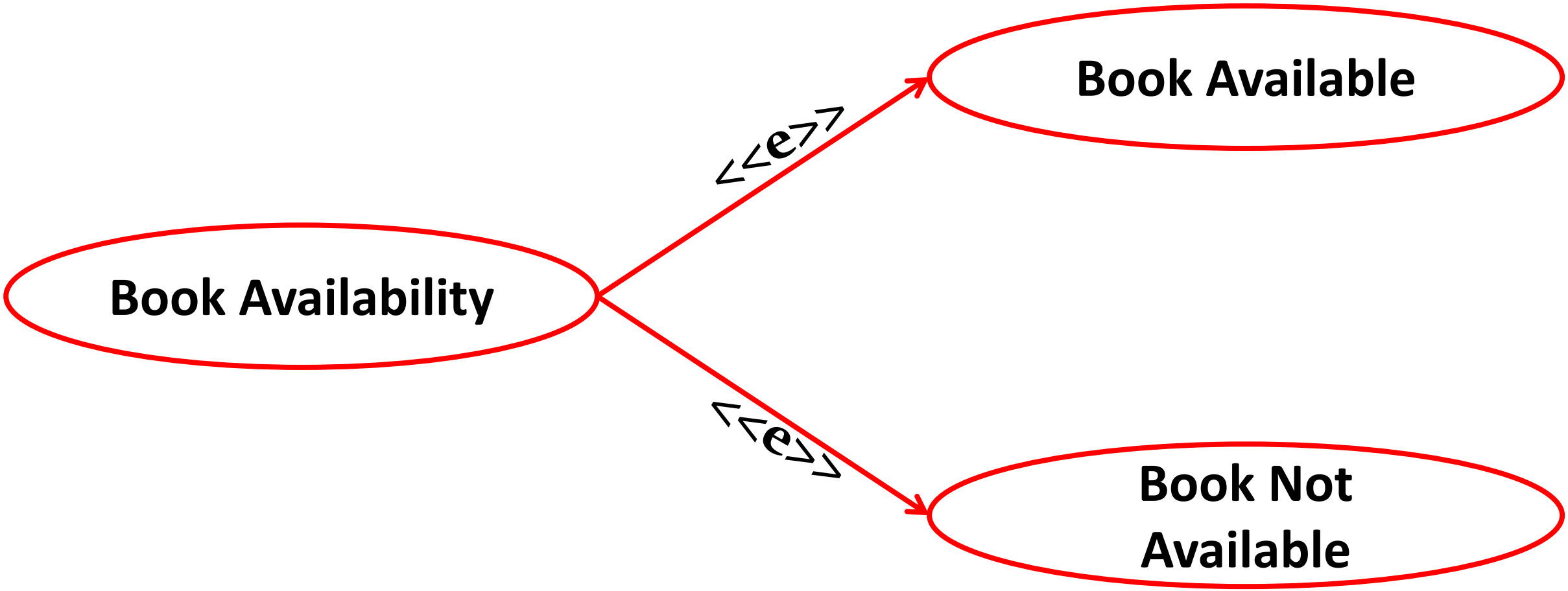

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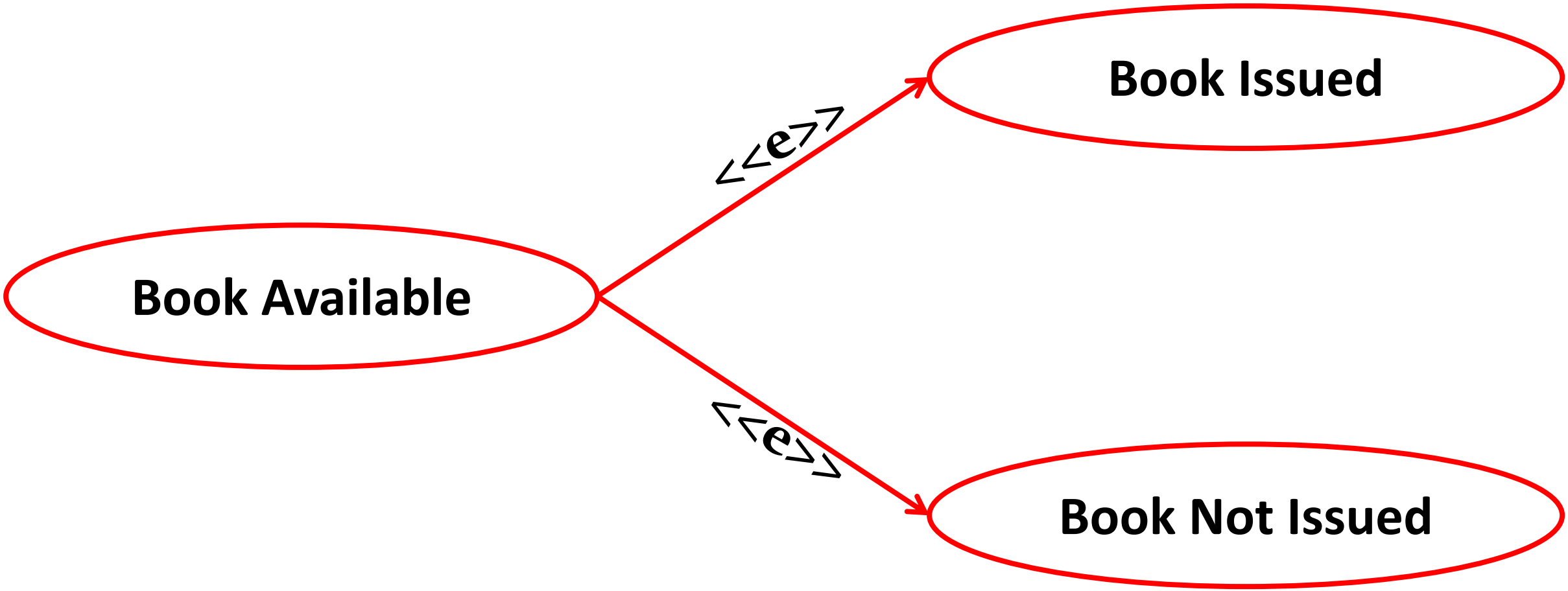
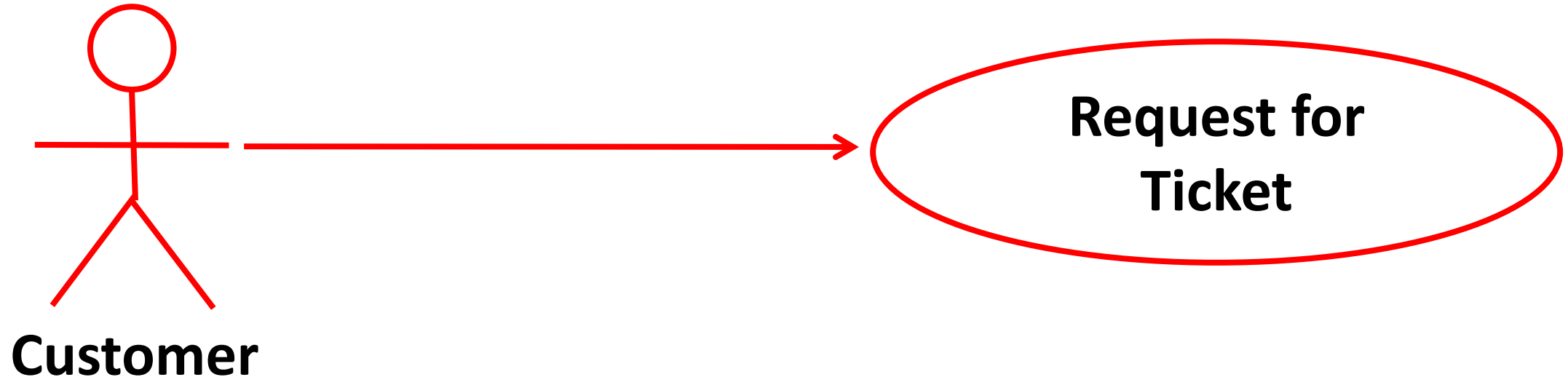


Use Case Diagram for Railway Reservation System

- Minimum Requirement
  - Use case(s)
    - Request for Ticket
    - Reservation Counter
    - Cancellation Counter
    - Information Counter
  - Actor(s)
    - Customer
    - Railway System

Use Case Diagram for Railway Reservation System …



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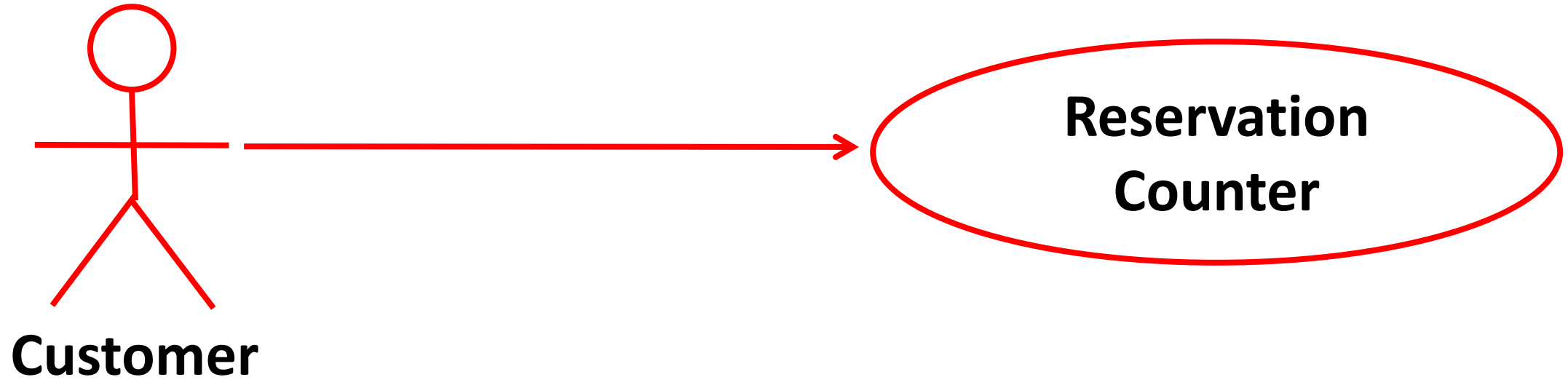

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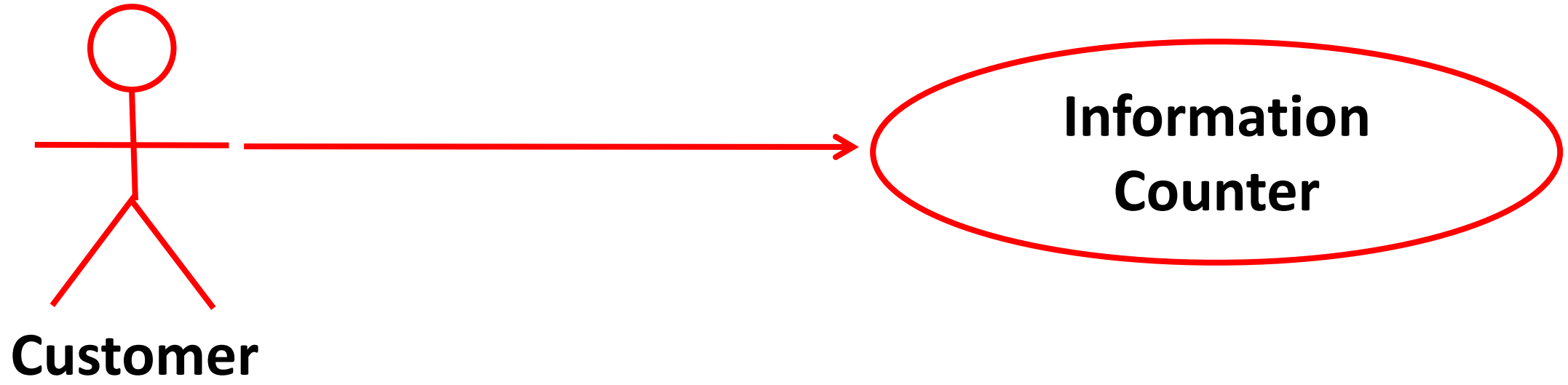

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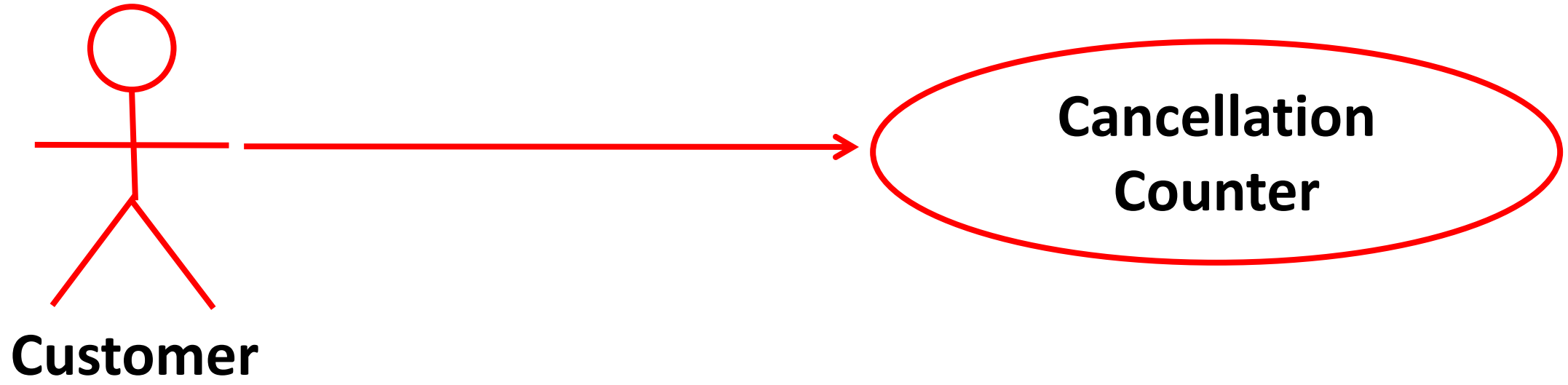

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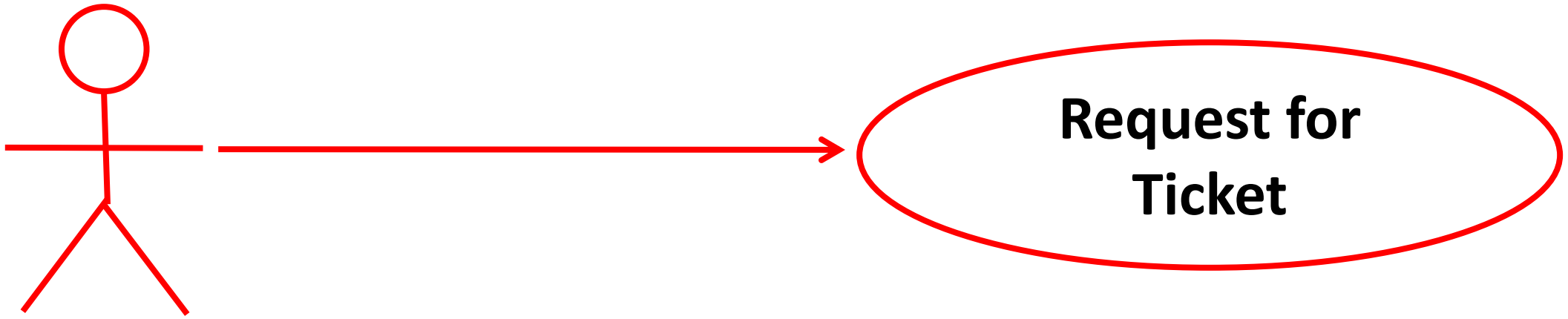

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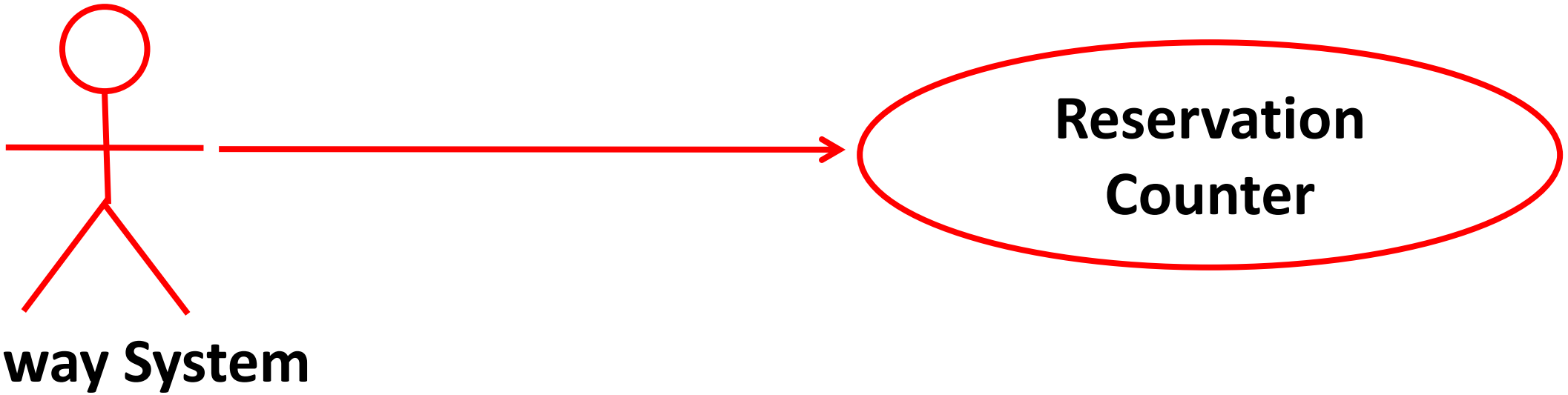

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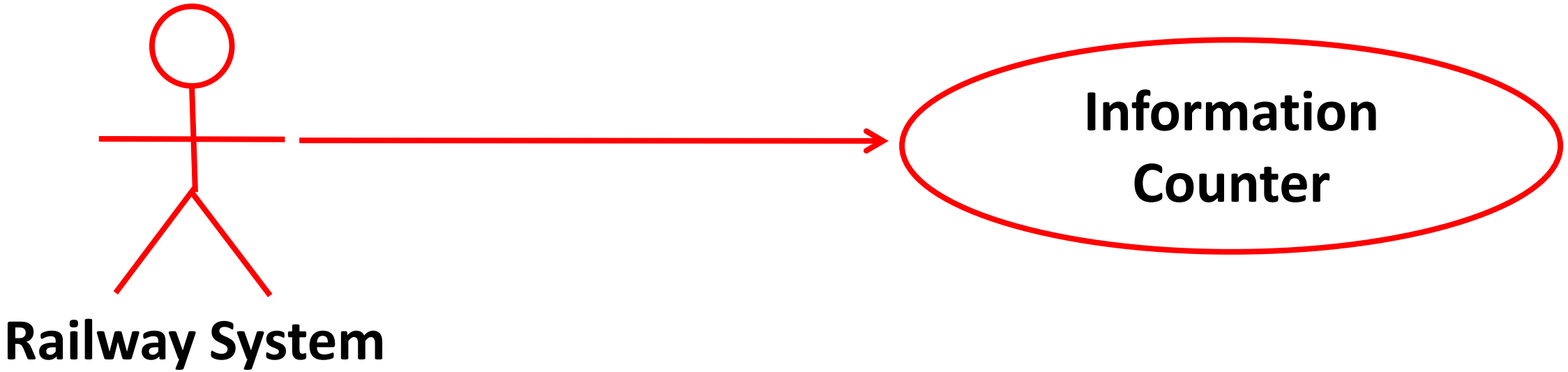

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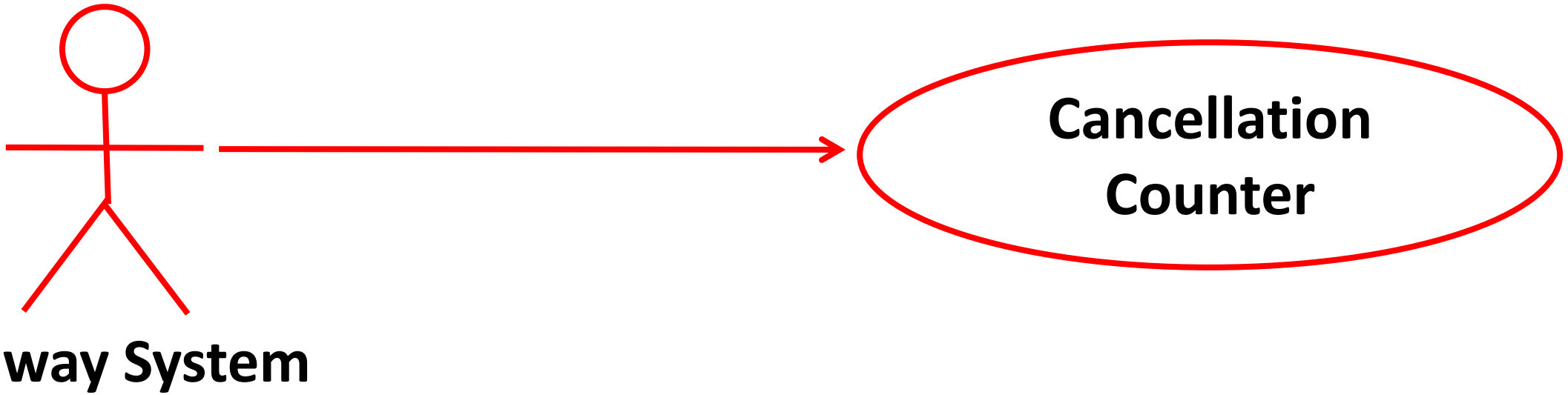

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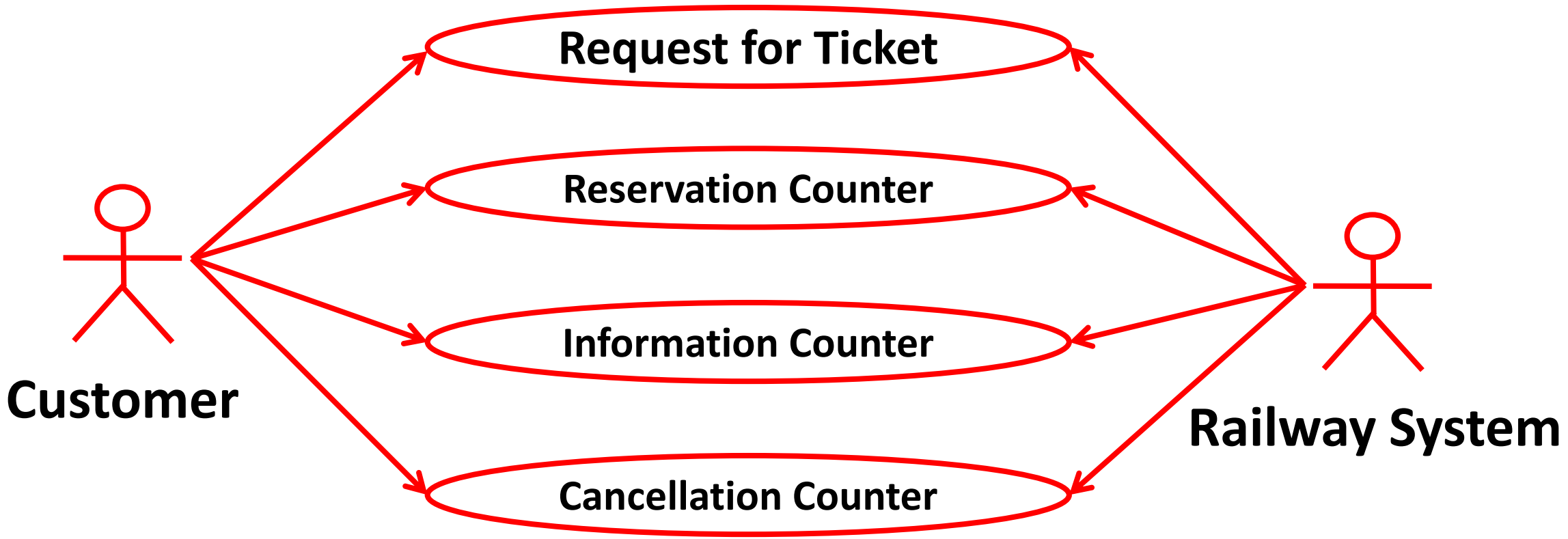

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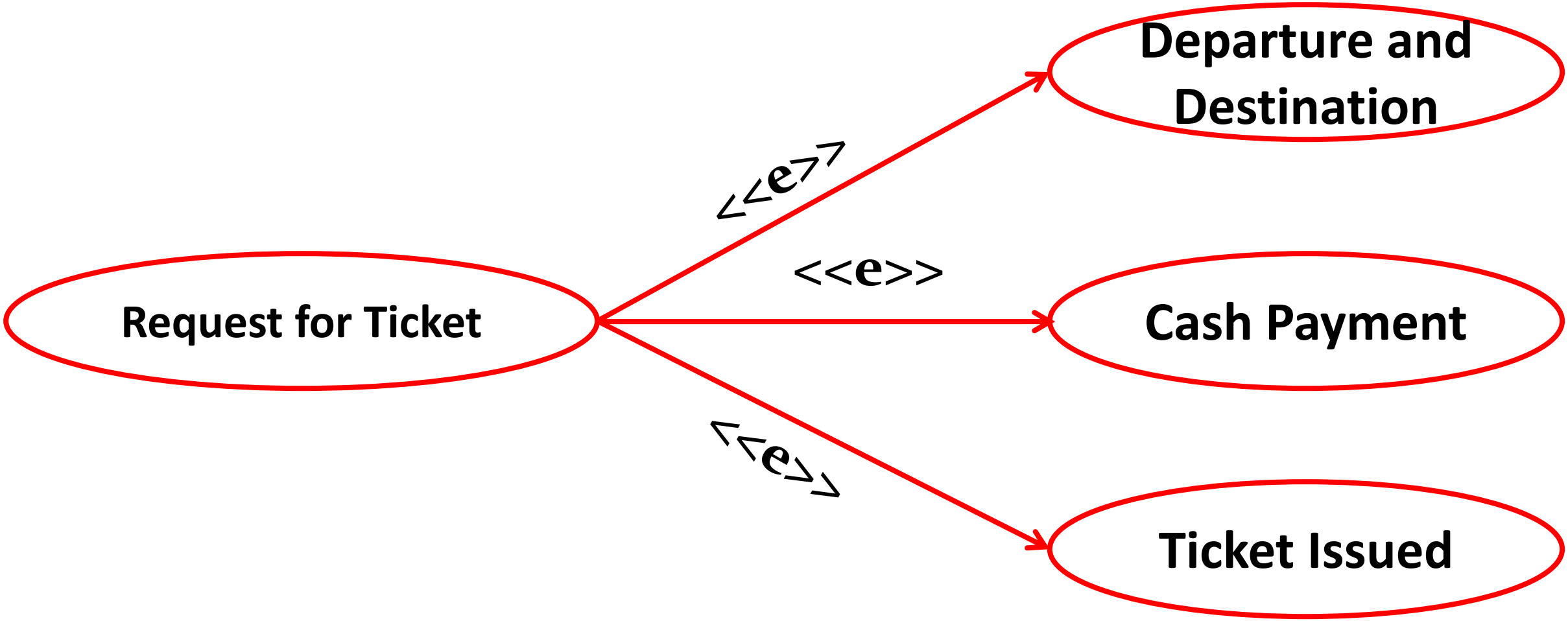

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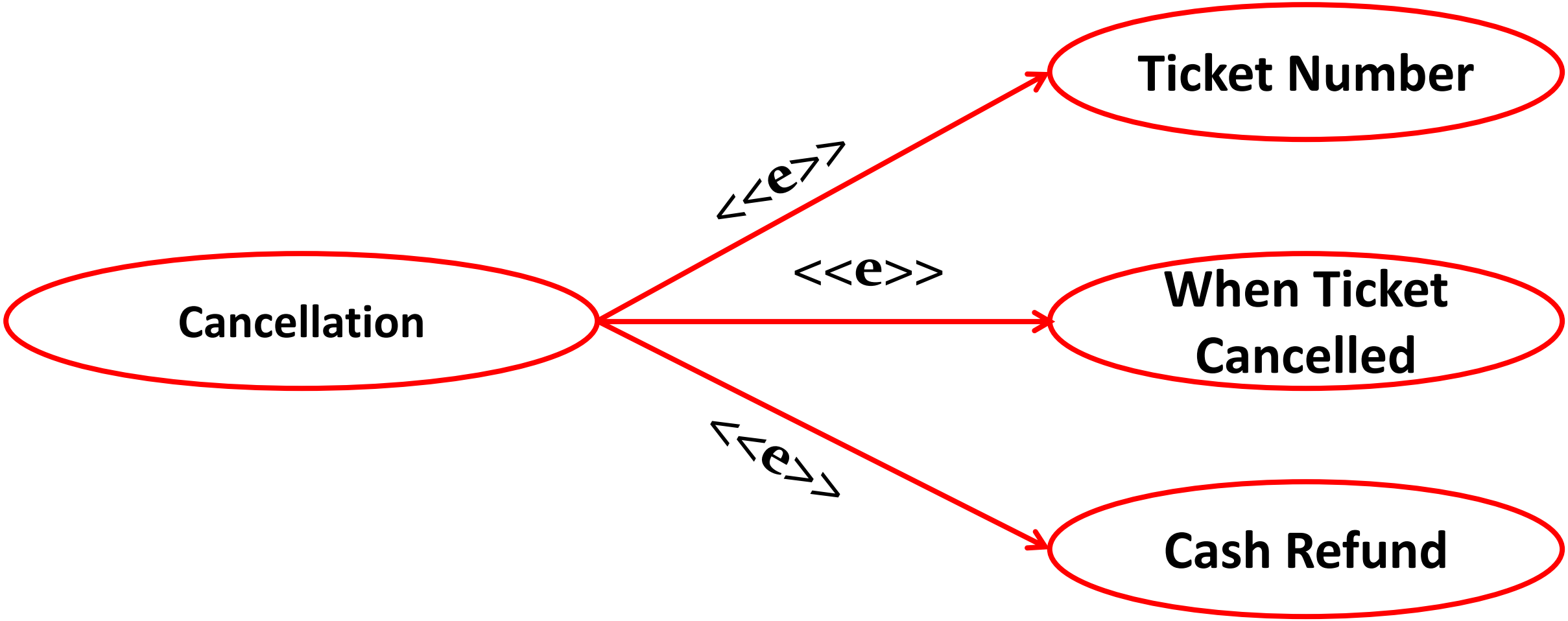


Use Case Diagram for ATM System

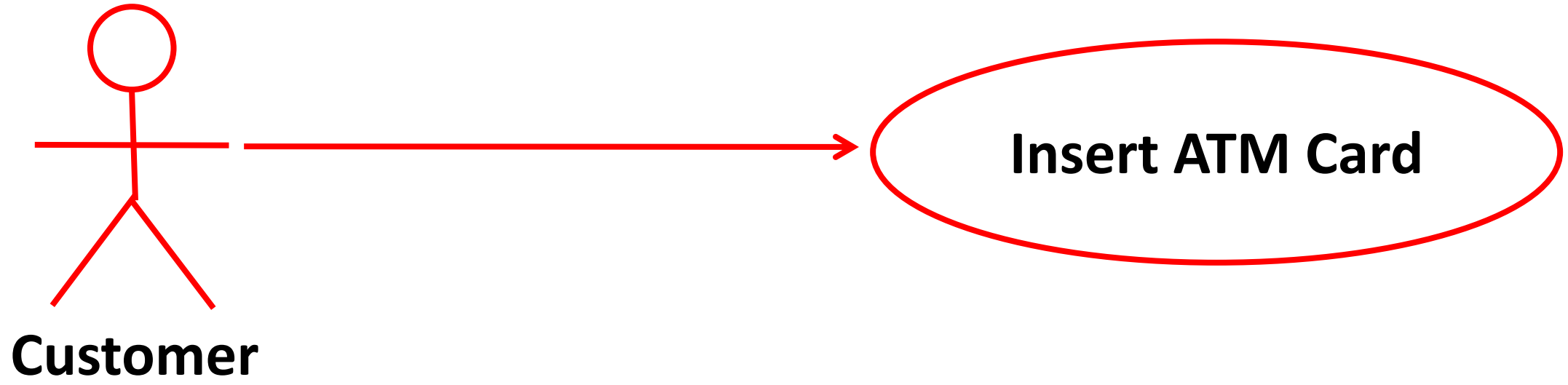
- Minimum Requirement
  - Use case(s)
    - Insert ATM Card
    - Enter PIN
    - Valid PIN
    - Invalid PIN
    - Eject ATM Card
    - Submit Request
    - Balance Enquiry

Use Case Diagram for ATM System …

- Withdrawal
- Mini Statement
- Transfer

- Actor(s)
  - Customer
  - Card Dispenser
  - Bank Database

Use Case Diagram for ATM System …



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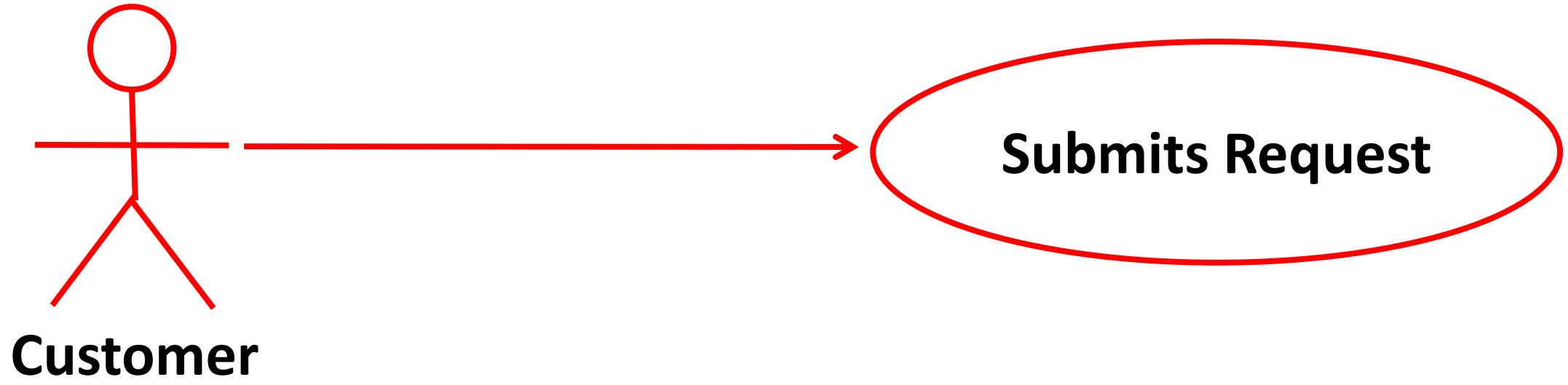
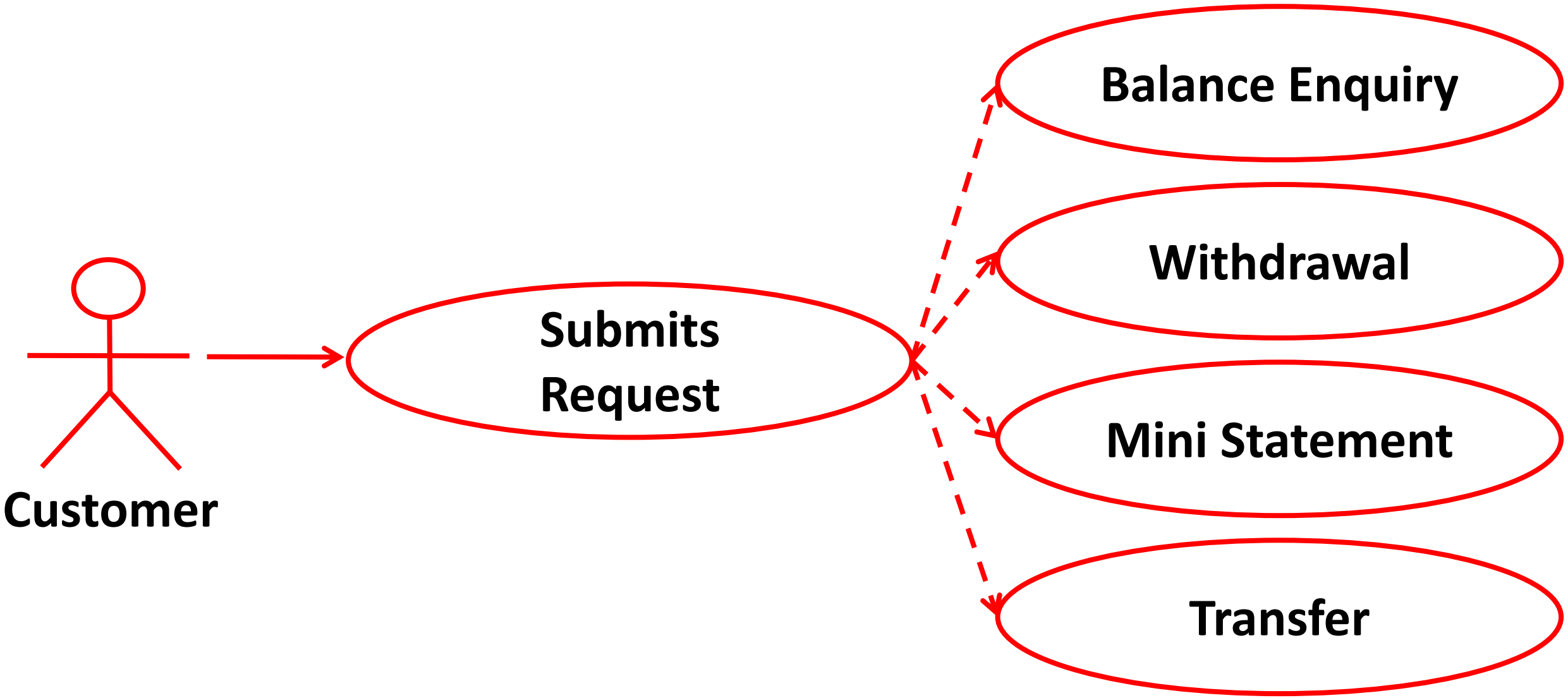
Use Case Diagram for ATM System …