Object Oriented Analysis & Design
面向对象分析与设计

Lecture_05 领域模型

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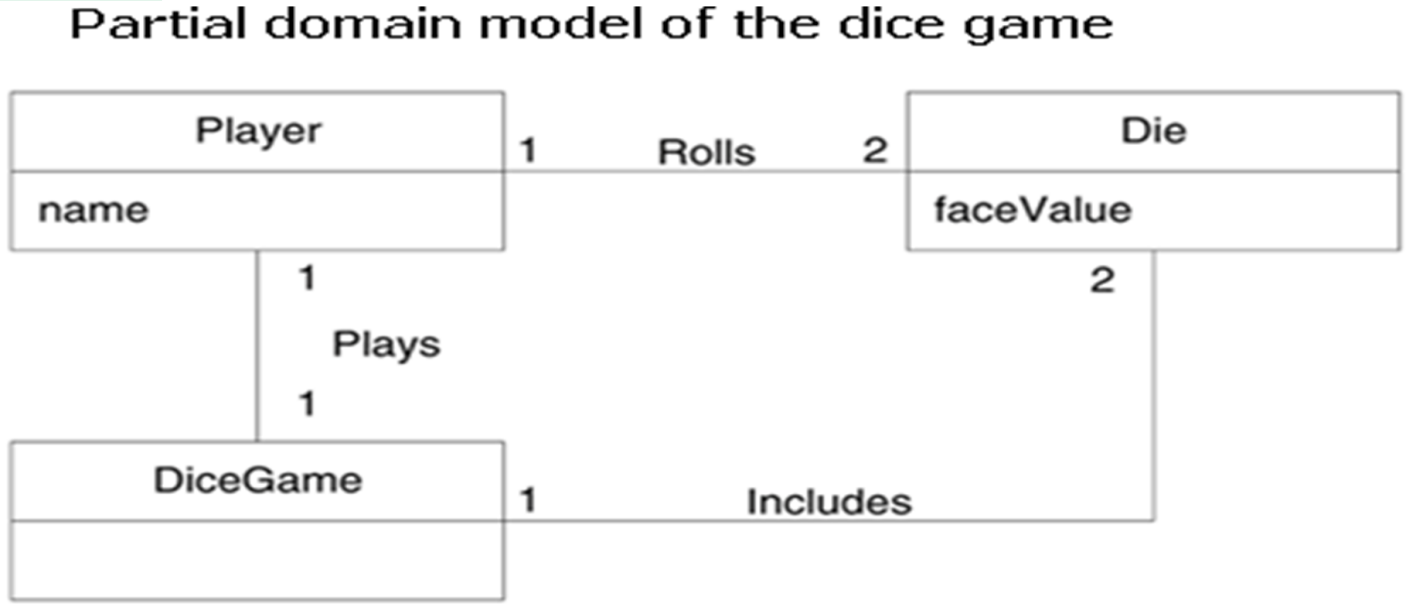
1、领域模型定义

- 为什么要构建领域模型

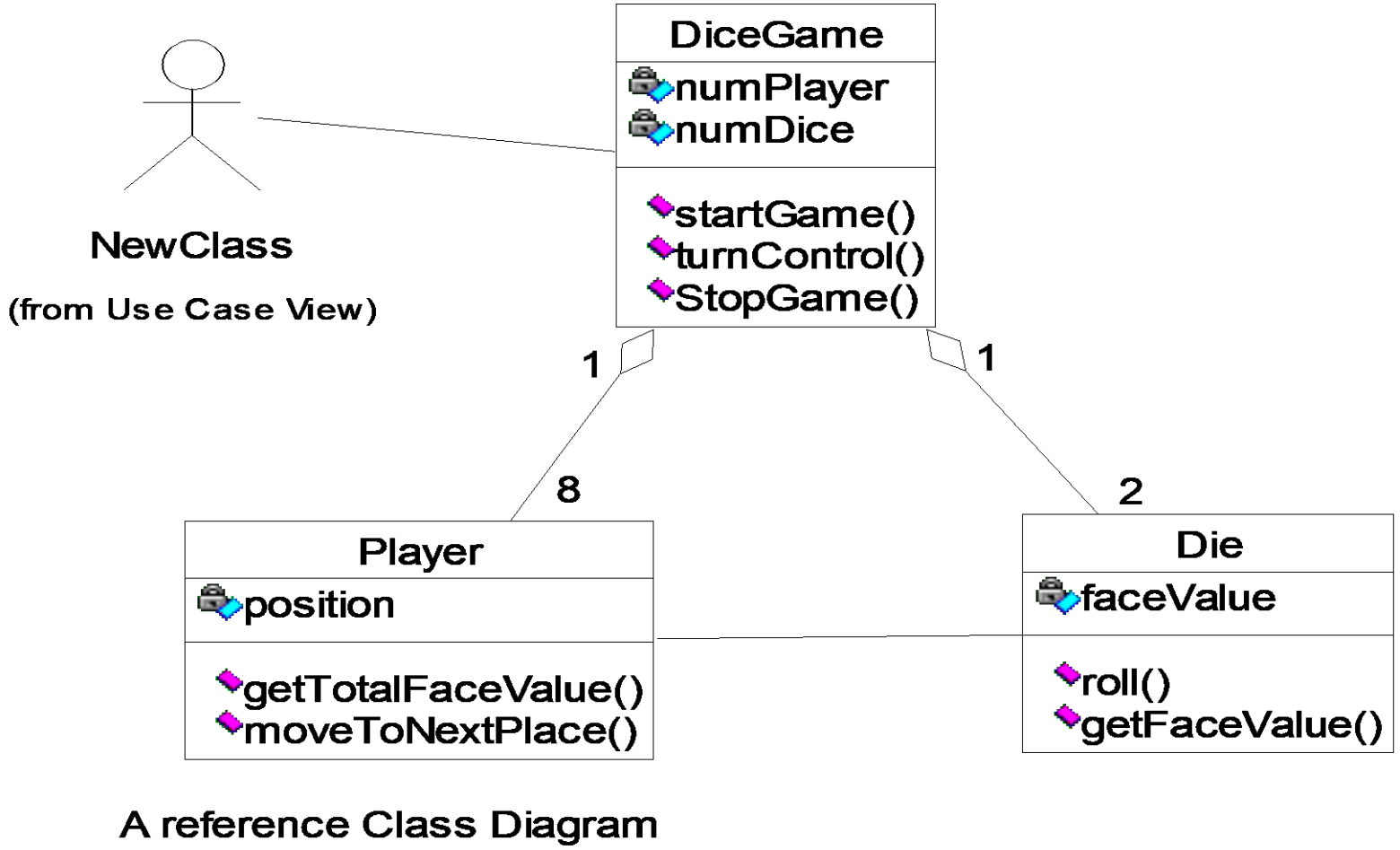
1.1 领域模型 Domain Model

- 什么是领域模型
  - 一种概念模型，问题领域的概念的表示 A conceptual model，a representation of concepts in a problem domain
- 如何表示领域模型
  - 简单地说，“没有定义操作的类图”
    - 模型显示：概念类、概念类之间的关系、概念类的属性



1.1 领域模型 Domain Model

- 比较：”dice game”案例的设计类图



A reference Class Diagram

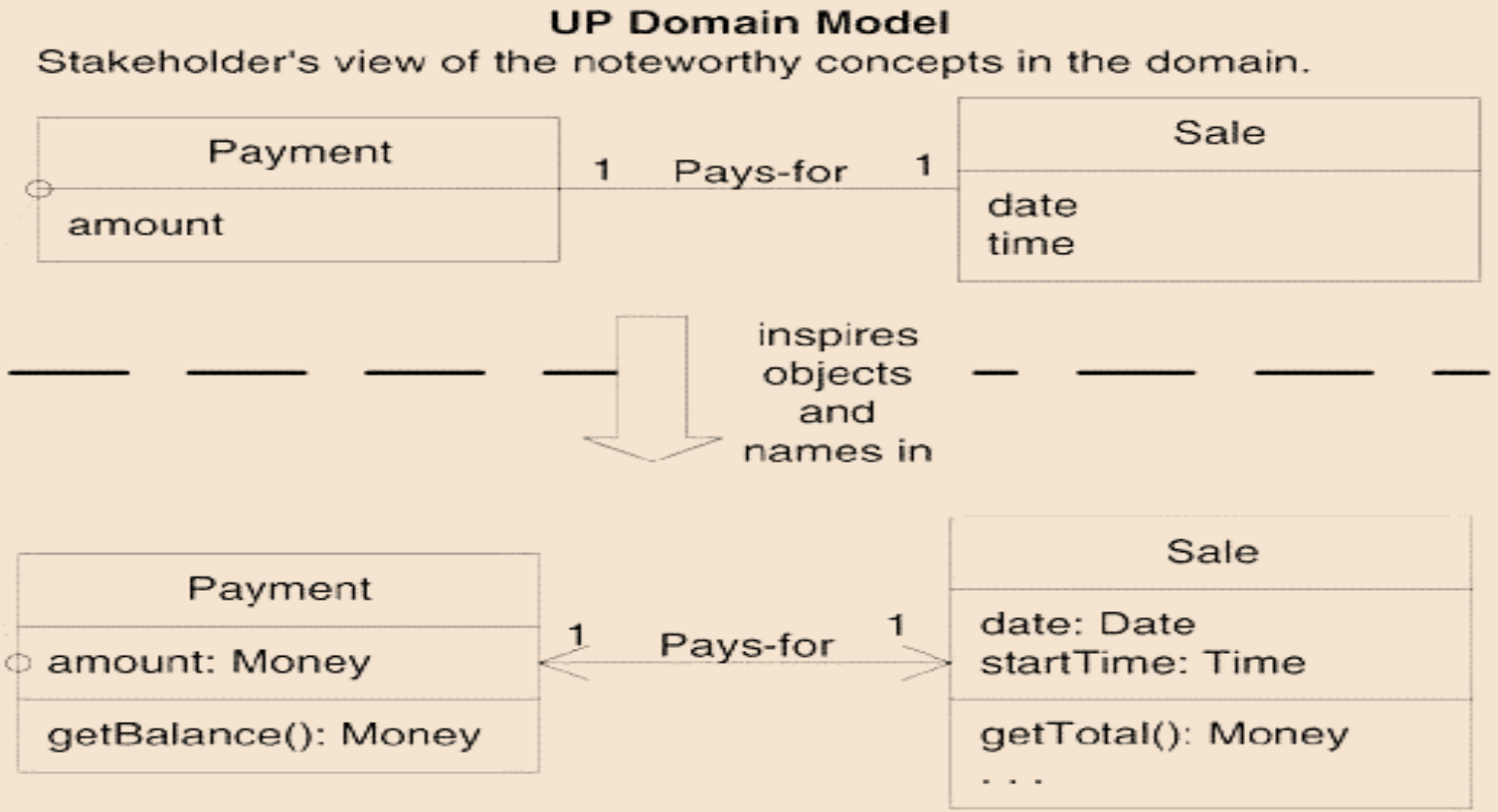
1.1 领域模型 Domain Model

- **低表示差异** LRG: Same names and notation lower the representation gap

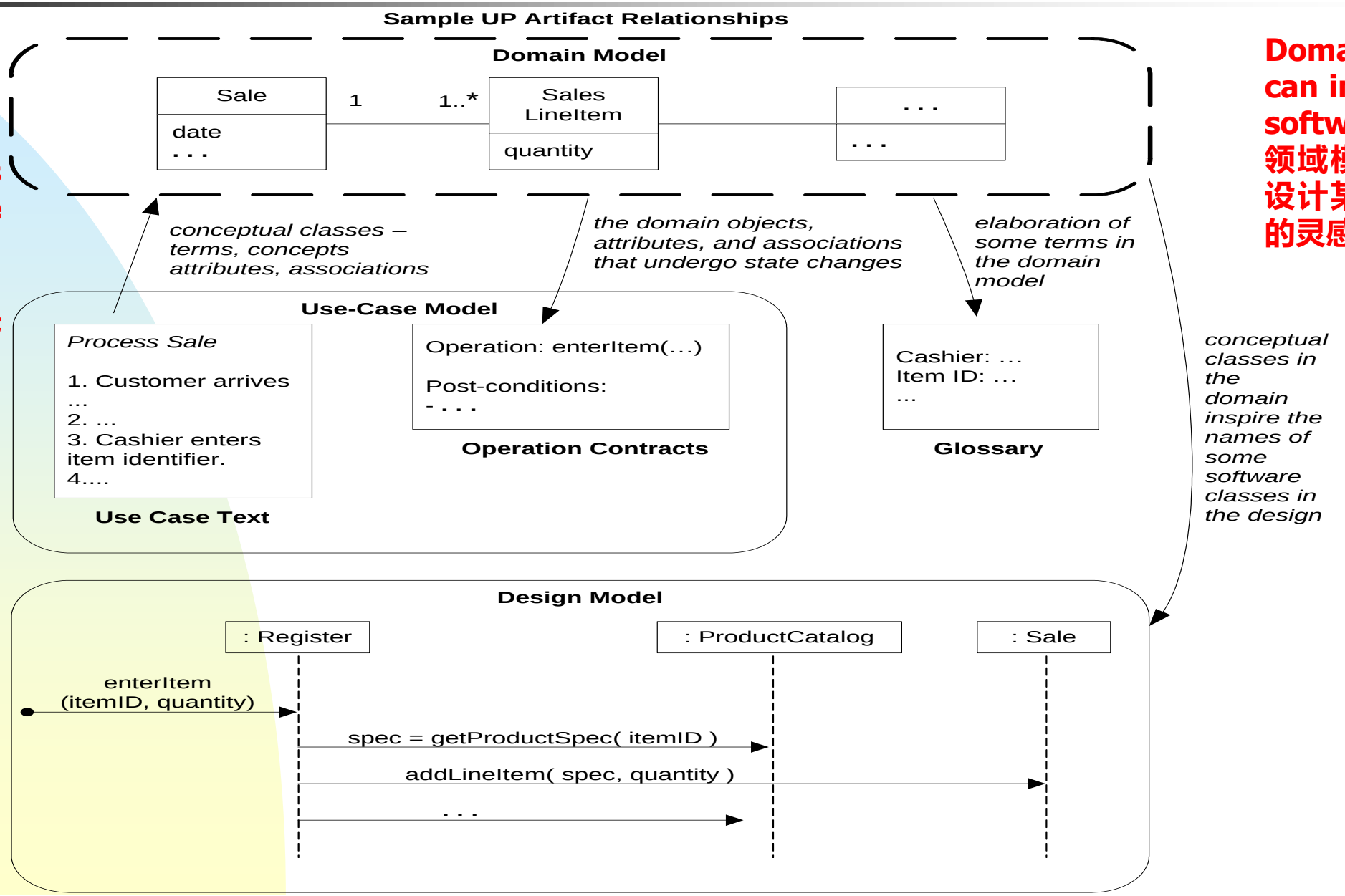
A Payment in the Domain Model is a concept, but a Payment in the Design Model is a software class. They are not the same thing, but the former *inspired* the naming and definition of the latter.

This reduces the representational gap.

This is one of the big ideas in object technology.



1.2 为何需要领域模型 Why domain Model



Use case, expert's opinions are the input of creating domain model 用例概念、专家观点是创建领域模型的输入

Domain model can inspire some software design 领域模型可以作为设计某些软件对象的灵感来源

领域模型又会影响操作契约、词汇表和设计模型，尤其是对软件对象

LRG：Low Representation Gap 减少与 OO 建模之间的表示差异

1.3 如何创建领域模型 how to create

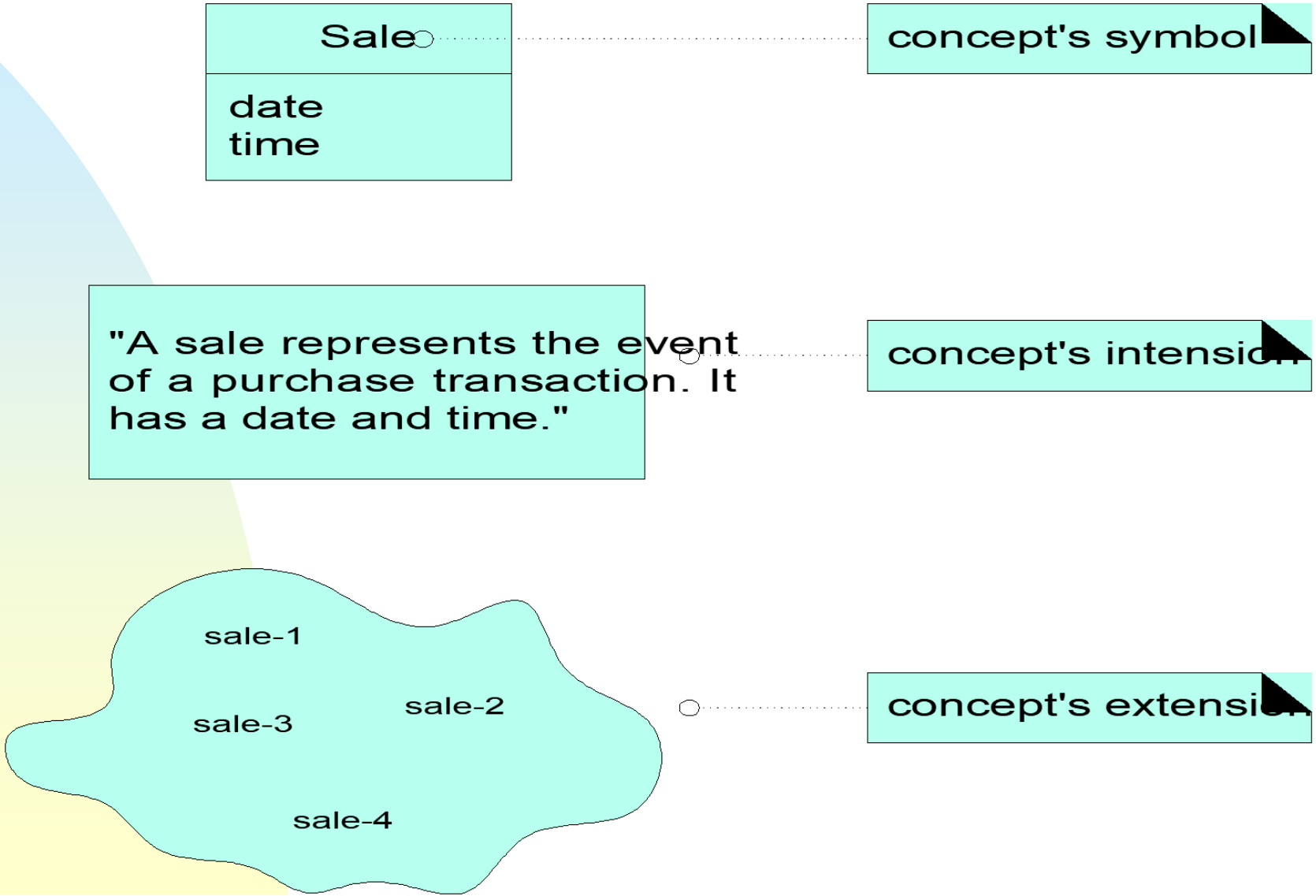
- 三步骤
  - Find conceptual classes
  - Add associations
  - Add attributes
- 复习：What is concept class?
  - an idea, thing, or object in the problem domain
- 复习：how to Identify Concepts
  - 概念模型
    - Reuse or modify existing models
    - Finding Concepts with the Concept Category List
    - Finding Concepts with Noun Phrase Identification
  - 分析模型 stereotype of class [boundary/entity/control]
  - CRC

1.3 如何创建领域模型 how to create

- 理解概念类的三个层面
  - Symbol (符号、表象):
    - word or images representing a conceptual class
  - Intension (内涵):
    - the definition of a conceptual class
  - Extension (外延):
    - the set of examples to which the conceptual class applies

1.3 如何创建领域模型 how to create

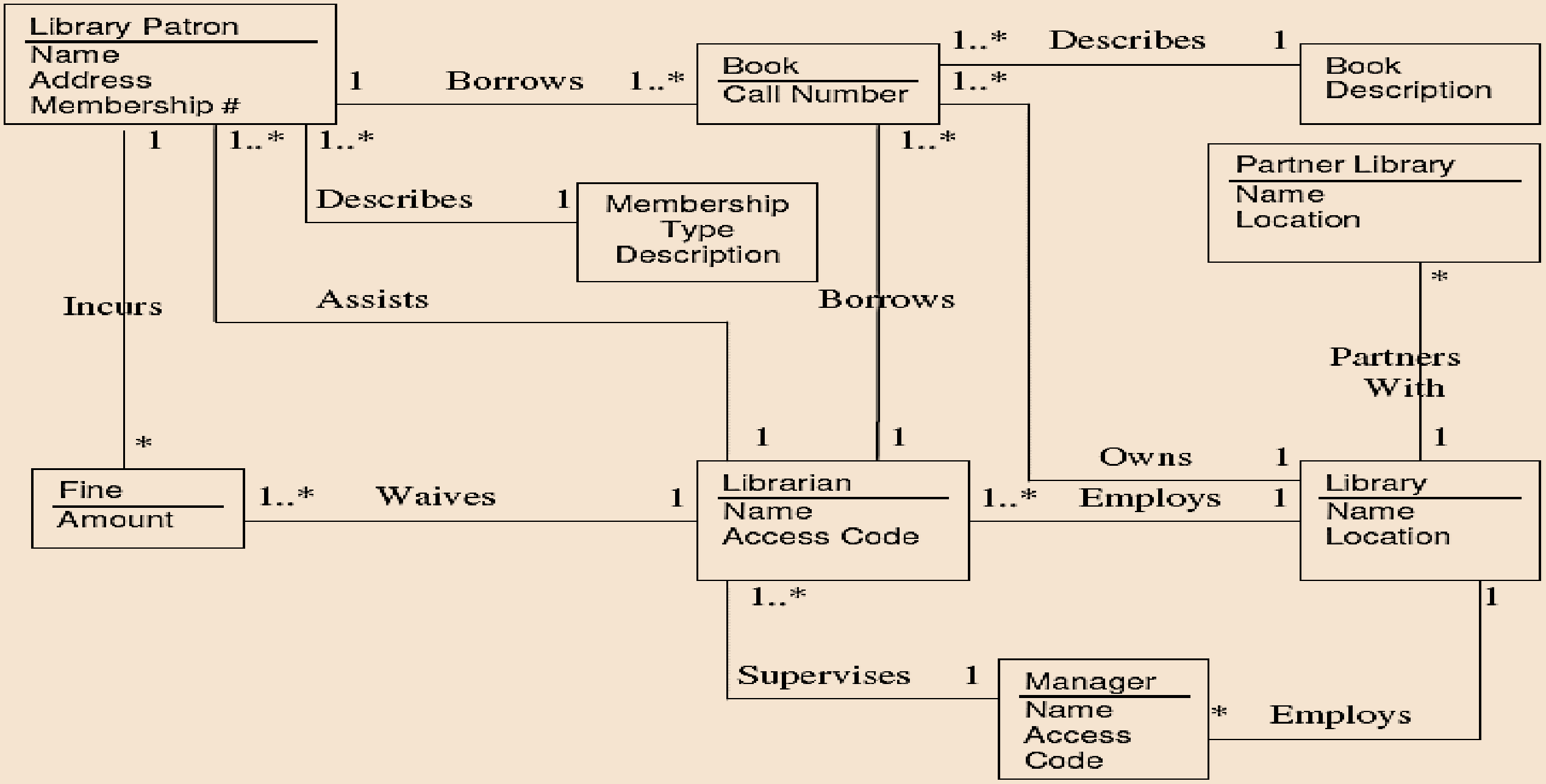
- 案例, 购物交易 purchase transaction 的概念Sale



1.4 领域模型与数据模型 Domain Model vs. Data Model

- **Domain Model**
  - **Concepts, entities, can be abstract**
  - **Relations**
  - **Attributes**
- **Data Model**
  - **How data is stored into persistent storage**
  - **Pure data, in files or databases**

示例：partial domain model for the library administration machine



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