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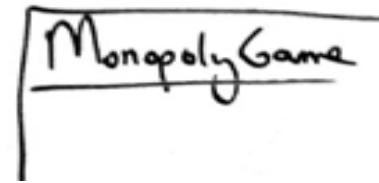## 面向对象分析与设计

Lecture_05 领域模型

主讲: 姜宁康 博士

2、领域模型建模指导

- 助力领域模型的构建

Guideline

- 敏捷建模Agile Modeling – 类图的草图

- – 是否利用工具建模
  - 创建领域模型的目的是快速地理解关键的概念，并在涉众之间交流 the purpose of creating a domain model is to quickly understand and communicate of the key concepts
  - 完美不是目标 Perfection is not the goal
  - 是否利用工具，酌情 For tool, may or not

- 报告性的、或者总结性的对象，是否定义为概念 Report Objects / summary object : to be an concept
  - E.g. Include 'Receipt' in the Model?
  - In general, showing a report of other information in a domain model is not useful since all its information is derived or duplicated from other sources
    - This is a reason to exclude it
  - On the other hand, it has a special role in terms of the business rules:
    - It usually confers the right to the bearer of the (paper) receipt to return bought items (顾客退货的凭据)
    - This is a reason to show it in the model

Guideline

- **构建领域模型，类似地图制作**

  - **使用现有的名词** Use the <u>existing names</u> in the territory
    - **For example, if developing a model for a library, name the customer a "Borrower" or "Patron" the terms used by the library staff**

  - **剔除掉无关的、或者超出范围的一些特征** Exclude irrelevant or out-of-scope features
    - **例如，在课程的案例"大富翁游戏 Monopoly"，第一次迭代中，有些概念,如各类卡片 cards ("免进监狱Get out of Jail Free" card) 暂不考虑，所以就不显示"Card"**

  - **不需要额外增加没必要的概念！** Do not add things that are not there

Guideline

- **如何对非真实世界的概念建模**
  - 有些软件系统着眼于解决领域问题，但是在现实中或者业务中很少有概念与之对应
    - 例如，电信领域"交换机"相关的概念
      - 消息、连接、端口、对话、路由、协议 Message, Connection, Port, Dialog, Route, Protocol

- **经常容易出错的选择：Attributes vs. Classes，原则：**
  - 如果认为某概念类X不是现实世界中的数字或文本，那么X可能是概念类而不是属性
  - 如果符合下列条件，可能是一个类
    - 有很多元素构成 Composed of multiple elements (has attributes-states)
    - 有一些操作、行为 There are operations (behavior)
    - 有数量单位 Has units of quantity
  - 例如
    - **Store ?**
    - consider the domain of airline reservations. Should **destination** be an attribute of Flight, or a separate conceptual class Airport ?

Guideline

- **对一些描述'Description'性质的概念建模**
  - **A description class contains information that describes something else**
  - **For example, a ProductDescription that records the price, picture, vendor, and text description of an Item**
- **为什么单独作为概念类**
  - **Where to find product information when they were sold out 商品卖光了之后，到哪里去找商品的信息呢**
  - **Each Product of same type has its product description information, is there any problem 如果每一个同类产品的信息都含有产品描述，有什么问题吗**
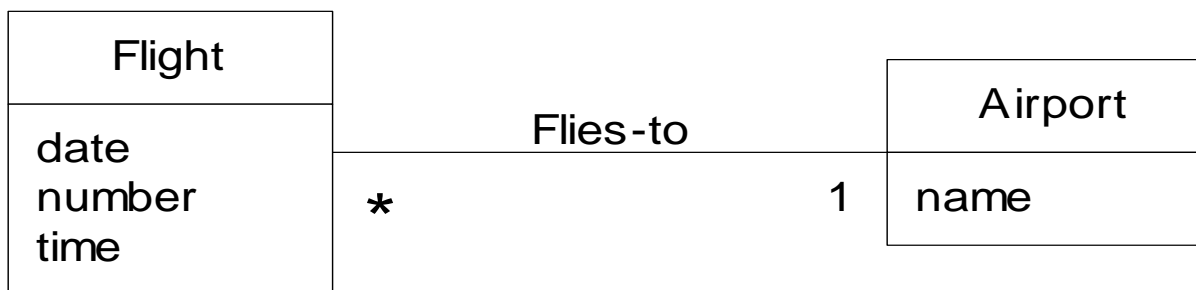   - **Repeat, redundant, inconsistency, and a waste of storage space 重复、累赘，不一致、浪费存储空间**
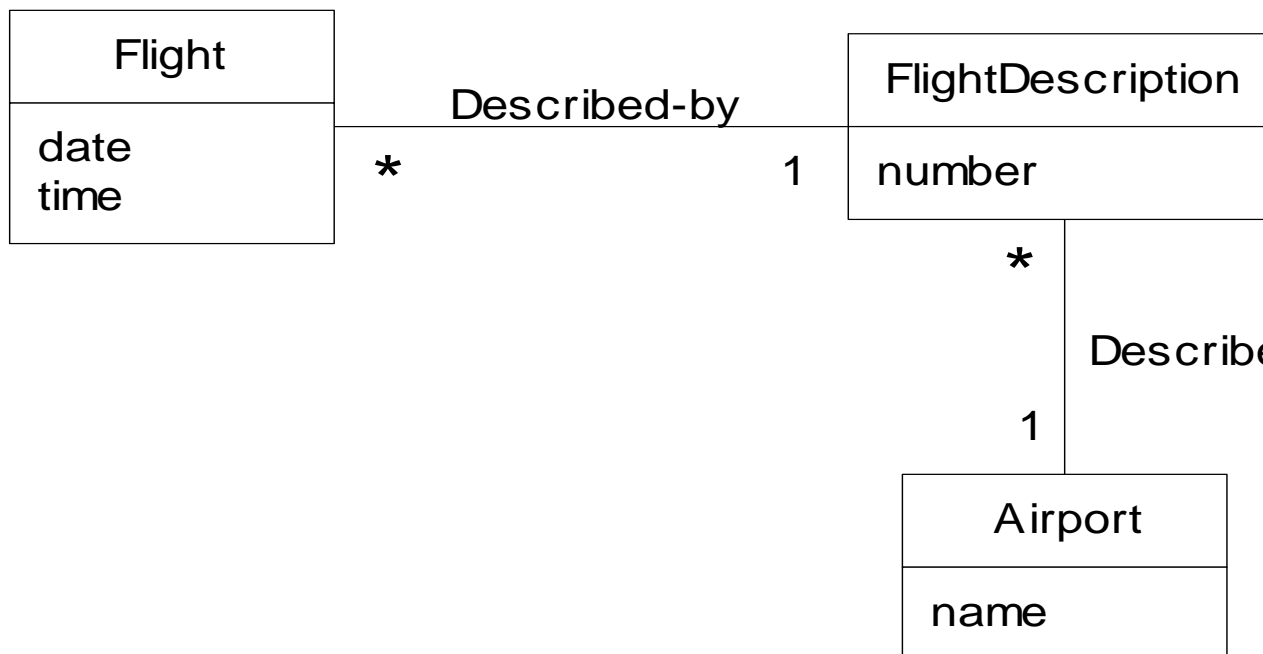- **Example**

Item
description
price
serial number
itemID

worse   **better**

ProductDescription	Describes	Item
description		serial number
price	1 *	
itemID		

Guideline

- **定义成"描述"类的原则**
  - **如果描述内容独立于对应的事物 ，如产品、产品描述**
  - **如果删除对象的同时删除了描述，而该描述还需要继续维护**
  - **为了减少重复或者更清晰**

Flight		
date		
number		
time		

Flies-to

*   1

Airport	
name	

Worse

Flight	
date	
time	

Described-by

*   1

FlightDescription	
number	

Better

*

Describes-flights-to

1

Airport	
name	

- **本讲结束**