

# Object Oriented Analysis & Design

## 面向对象分析与设计

### Lecture\_04 面向对象分析(二)

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## ■ 3、CRC方法建模的一些规则

- Guide, 作为参与人员的指导

## 3.1 CRC指导

### ■ Who Writes CRC Cards?

- No one individual has all needed knowledge
- Best to write CRC cards as a team, rather than individually
- Analysis team should consist of five or six experienced individuals :
  - one or two user domain experts
  - one or two systems analysts
  - one OO software designer
  - one team facilitator and leader 一位引导者
  - The team can include clients 客户 as well as developers
- 小的团队关注点比较集中，大的团队很难给出一致意见 Smaller teams lack diversity, larger teams make consensus difficult to achieve
- 仲裁者具备OO技能以及团队引导能力，不是“老板”型 Facilitator should be skilled at OO and group techniques, not be a "boss" of team
- 围绕团队的提议来写CRC Writing of CRC cards focuses team activities
  - 切忌跑题：参见1994年春晚\_相声《跑题》关于开会的会风问题...

## 3.1 CRC指导

### ■ 头脑风暴 Brainstorming

- Groups work by
  - 收集各种各样的想法, 比较这些想法并进行合成
- A "brainstorming" session is a good way to collect the ideas quickly and creatively

### ■ 头脑风暴的原则 Brainstorming principles

- All ideas are potentially good ideas
  - Don't censure(责难) yourself or others -- all ideas are equal
- Think fast and furiously激烈; ponder(沉思)later
  - A fast-paced discussion encourages individual creativity
- Give every voice a turn
  - Include everyone in the group. Don't let the loudmouths dominate.
- A little humor can be a powerful force
  - Humor can help break down barriers, relieve tension, and build trust needed for a cohesive and effective group

# 3.1 CRC指导

## ■ 头脑风暴的步骤

- 会议分阶段，每阶段目标明确 **State session objectives.** Each session should have a precise objective--clear to all and narrow enough to accomplish in the session
  - **Avoid digression (离题) from the objective**
- 使用“轮转”机制 **Use a round-robin technique**
  - **Go around the group from individual to individual**
  - **Individuals may "pass" if they have nothing to contribute**
  - **Stop when no one has anything to contribute**
- 讨论与选择 **Discuss and select**
  - **一致同意的** **Restate the objective, then identify those items that everyone agrees are "winners"**
  - **一致反对的** **Then select those items that everyone disagrees are "losers"**
  - **需要进一步讨论的** **Then discuss the items remaining--the "maybes"**
- 设置“时间盒”
  - **在规定的时间内有结论：或者完成、或者延迟到有进一步的信息到来，等等**

## 3.1 CRC指导

- 在“头脑风暴”开始之前，收集概念类可能的来源
  - 每个参与者要完成一些调查、分析任务
  - 阅读所有的需求文档 **Read all requirements documents**
    - Examine the formal requirements document (if any)
    - Don't overlook the indirect sources -- memos, meeting minutes, etc.
    - Circle nouns and noun phrases -- these are potential classes
  - 仔细阅读各类报告 **Look carefully at reports**
    - Examine the reports generated in the system being replaced (manual or automated)
    - Examine the profiles for the reports desired in the new system
    - Again circle nouns and noun phrases -- these are potential classes
  - 做一些访谈 **Conduct interviews**
    - Talk to experienced users of the current system
    - Record interview or take careful, precise notes
    - Again identify nouns and noun phrases as candidate classes

## 3.1 CRC指导

- **概念类可能的来源** Sources for the Candidate Classes
  - **检查其他的文档和文件** Examine documentation and files
    - **当前系统的有关文件** Review the documentation on the current system
    - **尝试收集用户、维护人员手里所拥有的非官方的、或者私人的笔记等**  
Try to review any unofficial or personal notes users or maintainers of the system have
    - **同样的，在里面寻找名称** Again identify nouns and noun phrases as candidate classes

## 3.2 CRC寻找结束后 ...

- **“角色扮演” 验证 概念类** Team can engage in role-playing to verify that use-case scenarios make sense for chosen CRC
  - **每个人可以扮演1到多个类** Each person can role-play one or more class cards
  - **如果哪里不顺畅，立即修改** If something doesn't work, change the class accordingly
  - **或者，去修改用例！（需求定义错了哦）** Revision of use-cases might also be indicated

**一个好的分析师也是一个好的 “侦探”**  
A good analyst is a good detective!







■ **本讲结束**