Interaction Models

• The purpose of building interaction models is to assign responsibilities to objects in the conceptual model
• There are two equivalent interaction models: collaboration diagram and sequence diagram

Comparison

• Collaboration and sequence diagrams are semantically equivalent
• Collaboration is good at showing objects are statically connected.
  – It is similar to the conceptual diagram derived during analysis and class diagram derived during design.
• Sequence diagram is good at showing the order in which things occur.
• Both models quickly lose their advantage for expressing complex conditional and looping logic.

Diagramming interaction

Artifacts

• Artifacts at hand:
  – Use cases
  – System events and contracts
  – Conceptual model
• Artifacts sought for:
  – Interaction diagrams
  – Class diagram (adding operations to the objects)

Use case: buy items

Use case: buy items (cont.)
Where to start

• First, who should be responsible for handing the system event?
  – System is an obvious choice, but it’s too vague
  – Scan the conceptual model and pick one. The one you chose is responsible for controlling the interaction among objects, it is called a controller.

Carrying on

• Second, ask “what is created?” and “how is the created object related to existing ones?”
  – At least certain objects need to be created (if not already created) in order to carry on the collaboration.
  – Scan the post-conditions part of the contract, fish out the initial objects to create.
  – Note that the created objects should not be floating around, they should associated to some existing objects.
  – In this example, a Sale is created; Sale was associated with POST.
• This step is repeated until we have all the objects in place to execute the responsibilities stated in contract.
Carrying on

• Third, have the controller initiate the collaboration to carry out the responsibilities.
  – Scan the responsibilities section in contract
  – Consider the messages sequence that goes on
  – Put effort in naming the messages sent between objects

Further Readings

• Larman 1st ed., Chapters 19
• Fowler/Distilled, Chapter 4.