

### From Analysis to Design

- ❖ The most important UML artifacts in this transition are the *Interaction diagrams*
  - *Sequence diagrams*
  - *Collaboration diagrams*
- ❖ Will emphasize the importance of *Responsibility Assignment* and the use of *Design Patterns*

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### Steps in Design

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### Describing Real Use Cases

- ❖ Real Use cases describe:
  - concrete inputs & outputs
  - actual technology used in the system
  - overall use case implementation
- ❖ Derived from Essential Use Cases generated earlier in the project (Analysis phase)
- ❖ User Interfaces are usually a central issue

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### Buy Items - Version 1 - UI

Storyboard

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### Interaction Diagrams

- ❖ Describe message interactions
- ❖ Collaboration diagram:

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### Interaction Diagrams

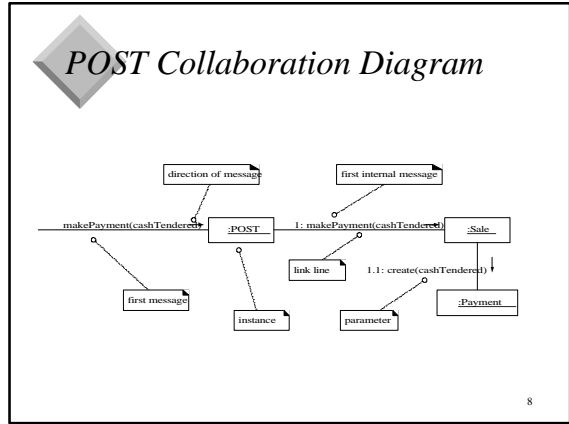
- ❖ Sequence Diagram:

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### Interaction Diagrams

- ❖ Are one of the most important artifacts created in an Object-Oriented Analysis & Design
- ❖ The amount of time & effort spent on them should be a significant % of total project time
- ❖ There are more subtle design principles which underlie Interaction diagrams than any other UML artifact
- ❖ Codified principles, patterns, and idioms can be applied to improve their quality

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### Steps to Make Collaboration Dia.

- ❖ Create a separate diagram for each system operation under development in current dev. Cycle
  - For each system message, make a diagram with it as the starting message
- ❖ Split complex diagrams into smaller ones
- ❖ Using the operation contract responsibilities, post-conditions, and use case descriptions, design interacting objects to fulfill the tasks. Apply GRASP & other patterns to improve design.

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