Interaction Diagrams

Object-Oriented Analysis and Design

CSCI 6448 - Fall 1998

Kenneth M. Anderson

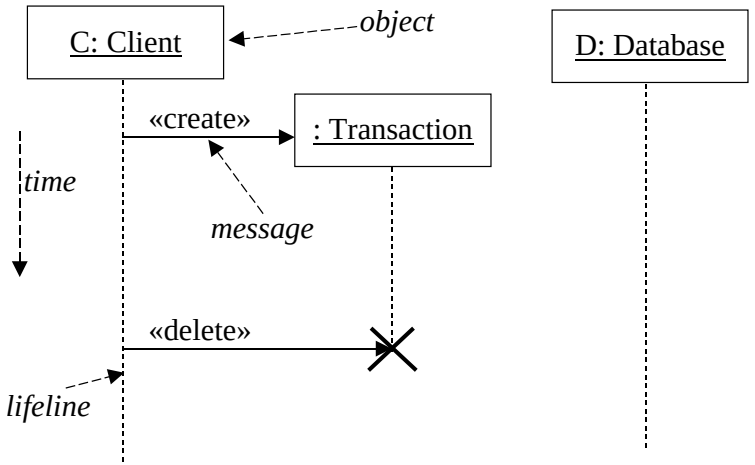
Interaction Diagrams

- Are useful for dynamic modeling
  - Other dynamic modeling diagrams
    - State Diagrams, Activity Diagrams, Use Cases
- These diagrams
  - Visualize, specify, construct, and document the dynamics of a society of objects
  - Can also be used to illustrate the scenario of a use case

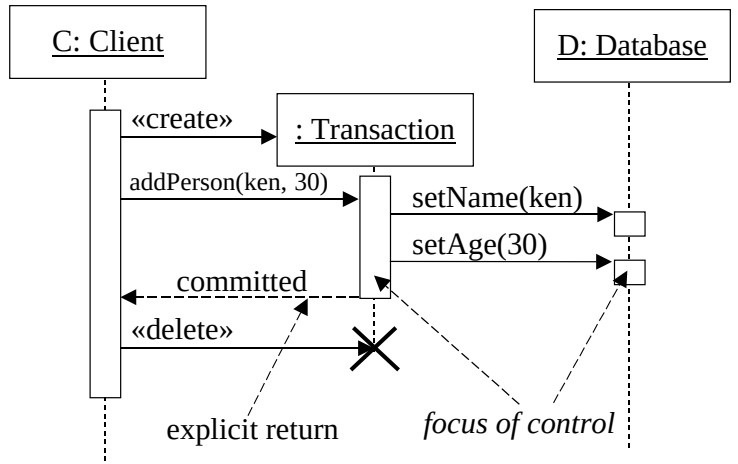
Two Types of Interaction Diagrams

- Sequence Diagrams
  - Emphasizes the time ordering of messages
  - Shows a set of objects and the messages sent and received by those objects
- Collaboration Diagrams
  - Emphasizes the structural organization of collaborating objects
  - Shows links and messages of objects

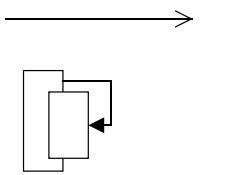
Notation of Sequence Diagrams



Notation, continued

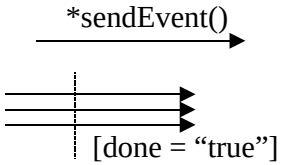


Additional Notation

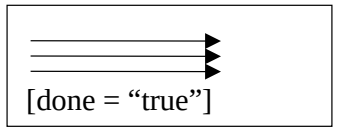


Signal/Asynchronous Message

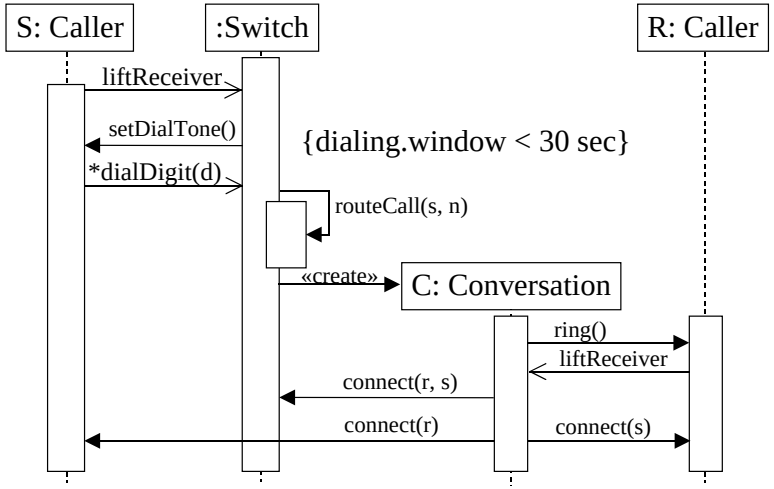
Recursion or Self Delegation



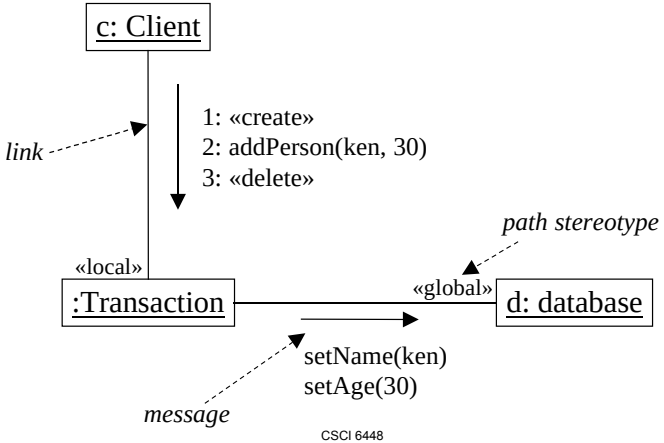
Iteration Notations



Sequence Diagram Example



Collaboration Diagram Notation



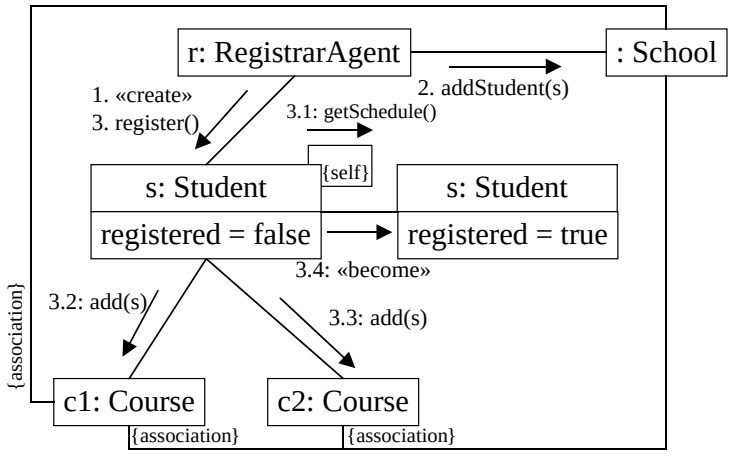
Path Stereotype

- «local»
  - the target is in local scope
- «global»
  - the target is in global scope
- «parameter»
  - the target is a parameter
- «self»
  - the target is visible because it's the source

Showing object evolution

- In an interaction diagram an object may transform from one state to another
- «become»
  - The target is the same object as the source but at a later time and with possibly different values, states, or roles
- «copy»
  - The target is an exact copy of the source

Collaboration Diagram Example



Isomorphism

- Collaboration and Sequence Diagrams are isomorphic
  - You can convert from one into the other
- However, you will typically use them to highlight different information
  - Return values in sequence diagrams
  - Path Stereotypes and structural relationships in collaboration diagrams