

COM S 362

Object-Oriented Analysis & Design

Interaction Diagrams

Reading

Marin Fowler. UML Distilled, Third Edition.
2004.

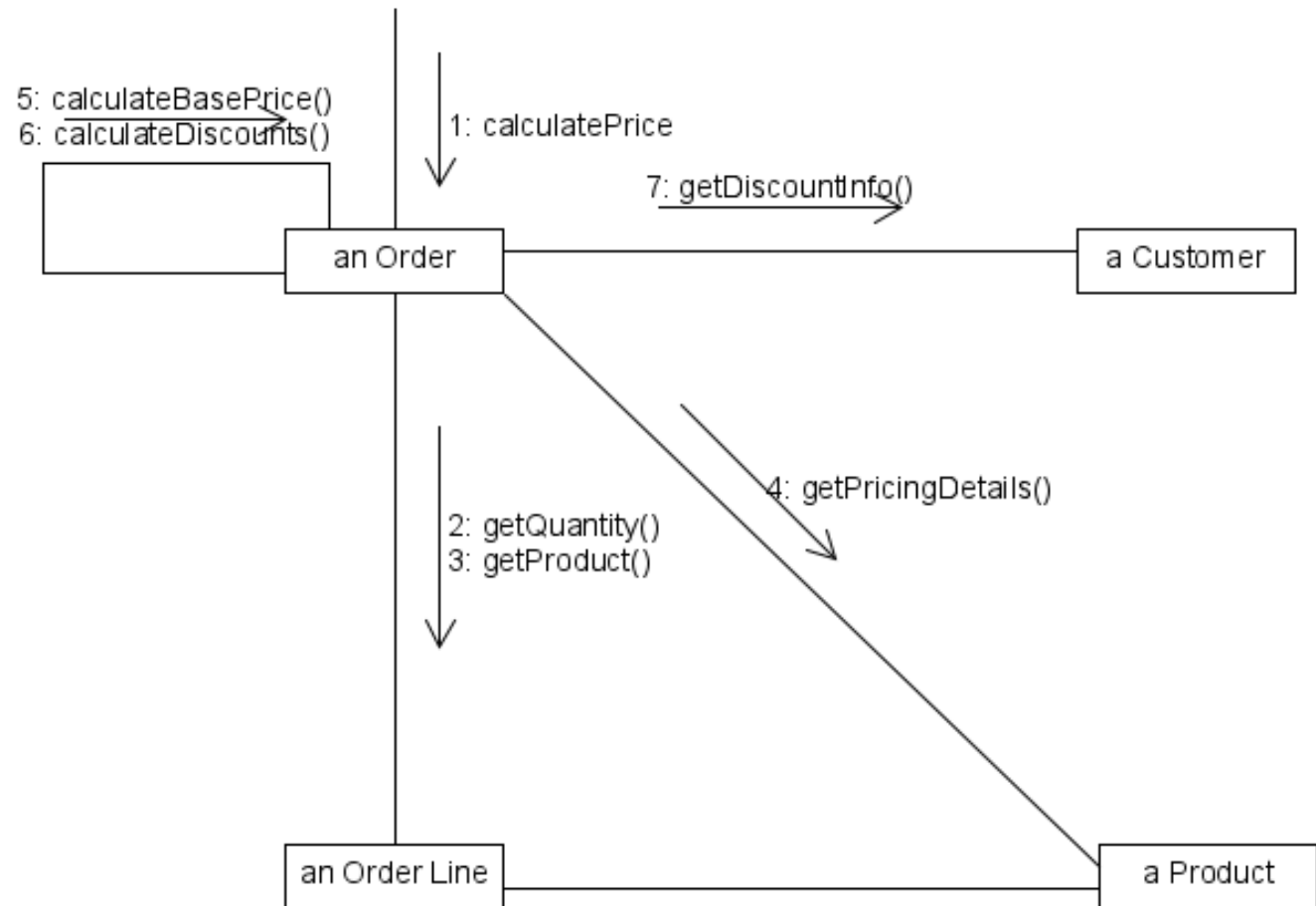
- Ch. 4 and 12

Interaction Diagrams

- Interaction diagrams describe groups of objects collaborating
- Show “messages” passed between objects, can mean method calls, asynchronous network message, etc.
- **Communication Diagram** – simpler, emphasizes object relationships
- **Sequence Diagram** – more detailed, visual representation of time

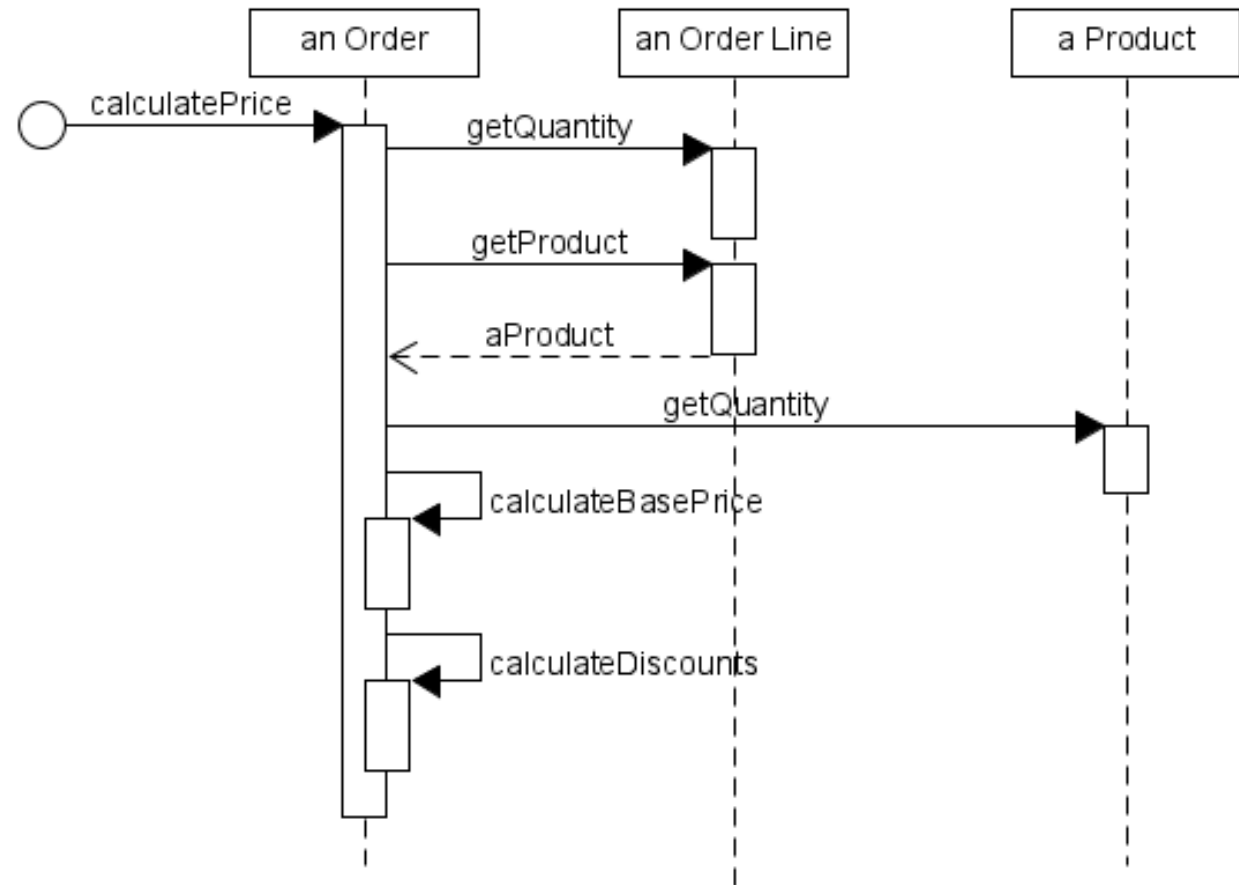
Communication Diagram

- Lines show links between objects
- Messages are numbered
- Arrows indicate direction
- Return from a message is assumed



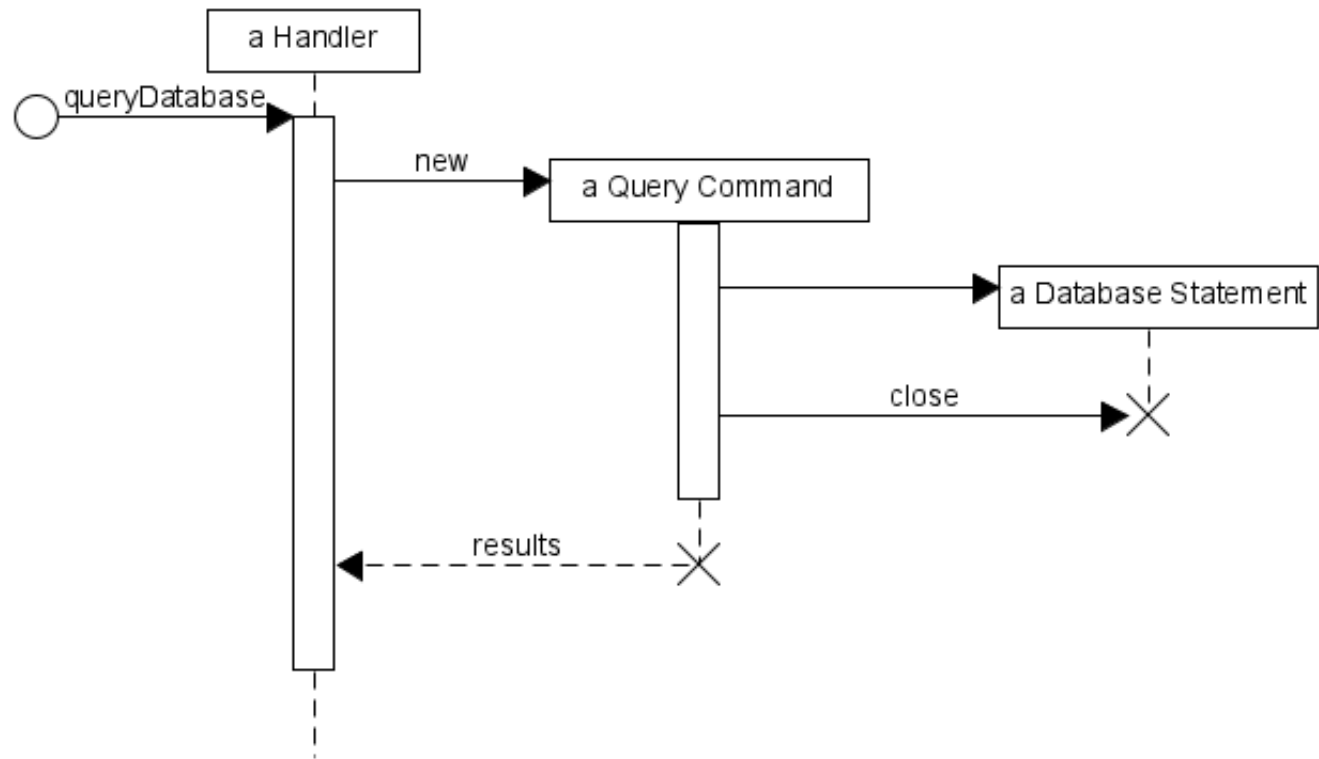
Sequence Diagram

- Dotted lines called lifelines show progression of time
- Messages cause an activation (e.g., method execution)
- Returns are assumed, but can be made explicit with a dotted arrow



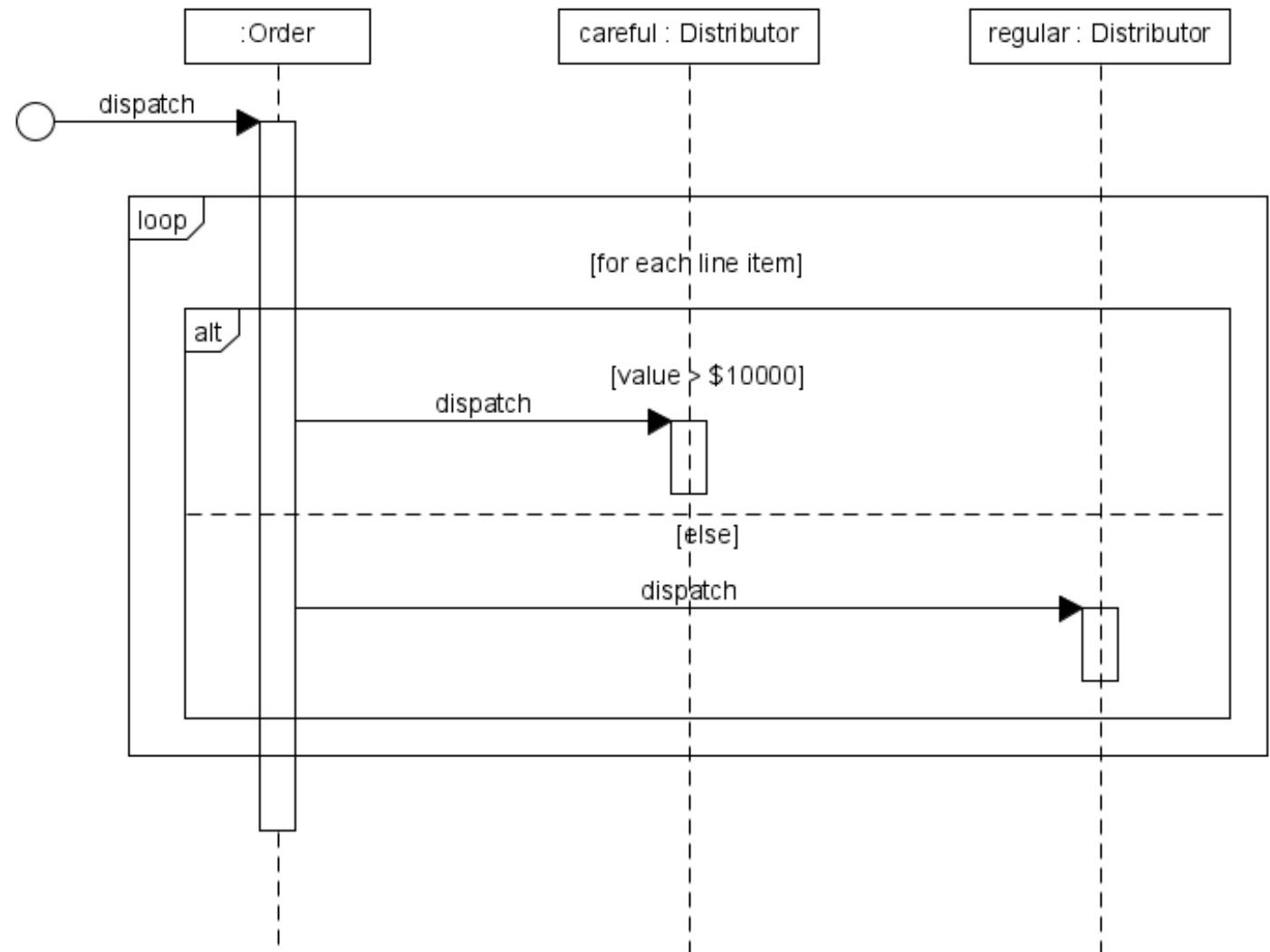
Sequence Diagrams: Object Creation and Destruction

- Objects can be created from a message
- An “X” indicates the object is deleted
- Object deletion can be self-caused or the result of a message



Sequence Diagrams: Interaction Frames

- Frames can be used to indicate loops and alternative flows



When to use Interaction Diagrams

- Use sequence diagrams to look at the behavior of several objects within a single use case
- Use communication diagrams to emphasize links and when a less detailed diagram is appropriate (e.g., drawing on a whiteboard)
- When you want to explore many alternative interactions quickly, CRC Cards may be a better choice than drawing and redrawing diagrams on a whiteboard