

UML2 (UML2.0)

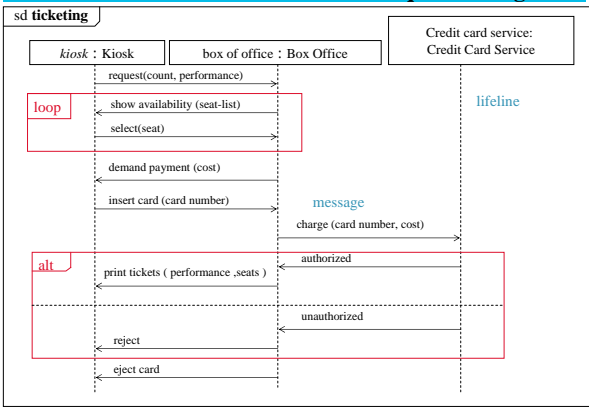
James Rumbaugh, Ivar Jacobson, Grady Booch,
“The Unified Modeling Language Reference Manual, Second Edition”,
Addison-Wesley, 2005.

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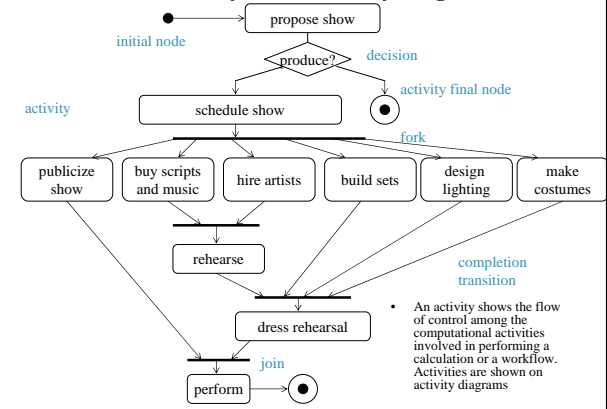
New Features of UML2.0

- Sequence Diagram constructs and notation based largely on the ITU (International Telecommunication Union) Message Sequence Chart standard, adapted to make It more object-oriented
- Decoupling of activity modeling concepts from state machines and use of notation popular in the business modeling community.
- Contextual modeling constructs for the internal composition of classes and collaborations. Theses constructs permit both loose and strict encapsulation and wiring of internal structures from smaller parts.
- Repositioning of components as design constructs and artifacts as physical entities that are deployed

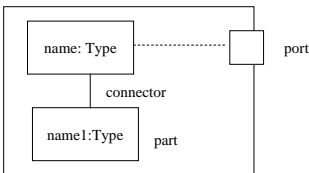
Structured Control constructs in a Sequence Diagram



Activity View (Activity Diagram)



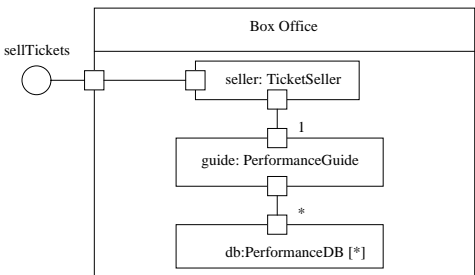
Structured Classifier



- A structured classifier is a classifier with internal structure.
- It contains a set of parts connected by connectors.
- An part has a type and a multiplicity within its container.
- An connector is a contextual relationship between two parts in a structured classifier.
- Structured classifiers may be tightly encapsulated by forcing all interactions between external environment and the internal parts to pass through ports.
- A port is an interaction point with well-defined interface.
- Messages received by a port are automatically forwarded to the part.
- Each port has a set of provides interfaces and required interfaces that define its external interactions.

J.Rumbaugh, I.Jacobson, G.Booch,"The Unified Modeling Language Reference Manual, Second Edition" Addison-Wesley 2005

Design View (Internal structure diagram)

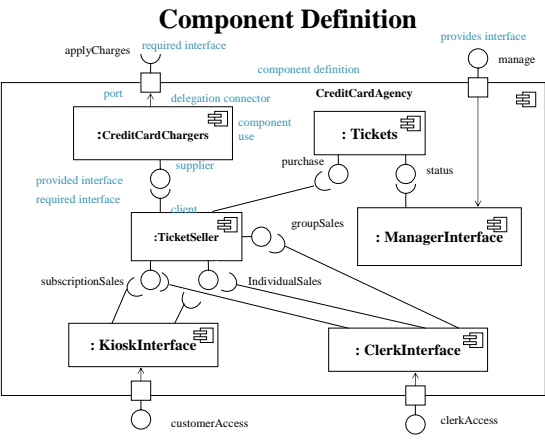


- Each port has a set of provides interfaces and required interfaces that define its external interactions. A provided interface specifies the services that a message to the port may request. A required interface specifies the services that a message from the port may require from the external environment.

J.Rumbaugh, I.Jacobson, G.Booch,"The Unified Modeling Language Reference Manual, Second Edition" Addison-Wesley 2005

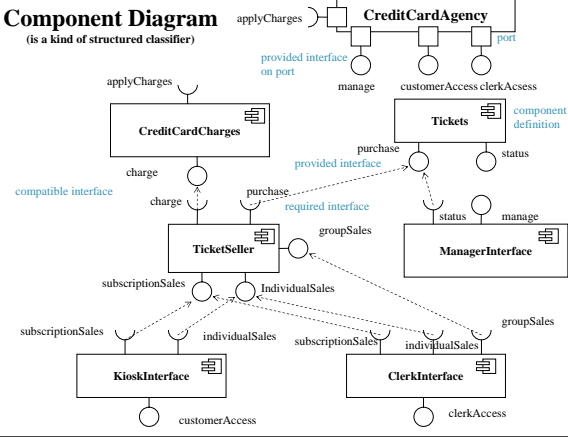
Design View (component diagram)

- A component diagram is a kind of structured classifier, so its Internal structure may be defined on an internal structure diagram.
- A component diagram shows the components in a system – that is, the software units from which the application is constructed. A small circle attached to a component or a class is a provided interface- a coherent set of services made available by a component or class.
- A small semicircle attached to a component or a class is a required interface – a statement that the component or class needs to obtain services from an element that provides them.

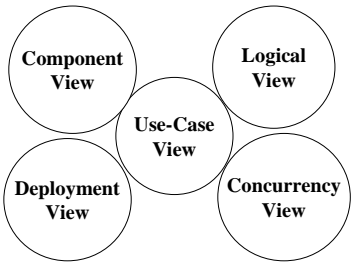


Component Diagram

(is a kind of structured classifier)



Views of UML1.5

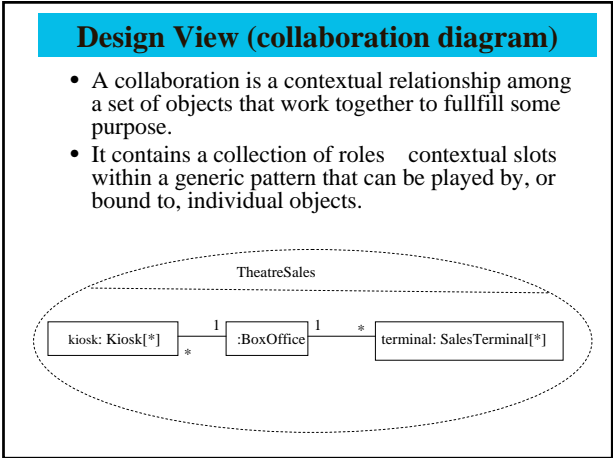
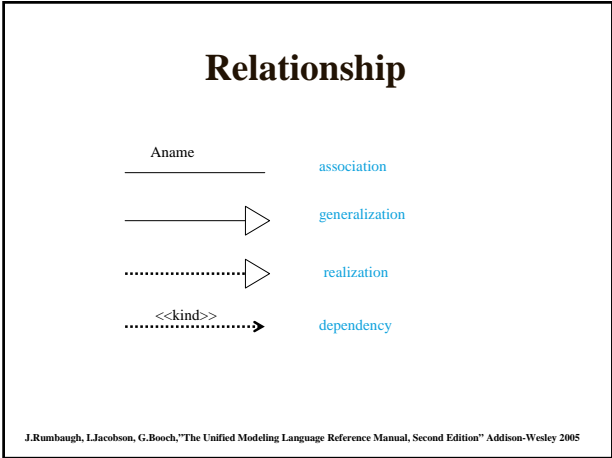
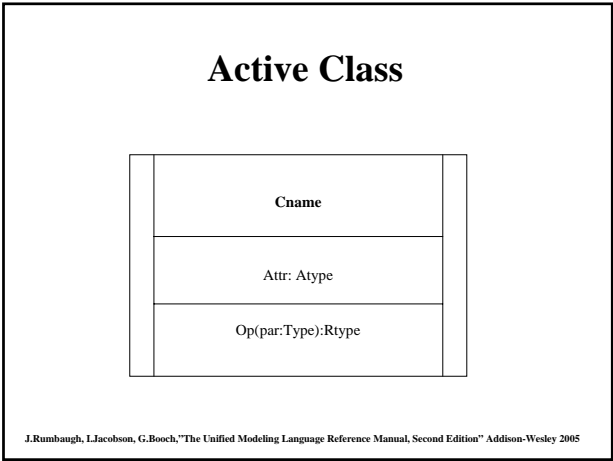
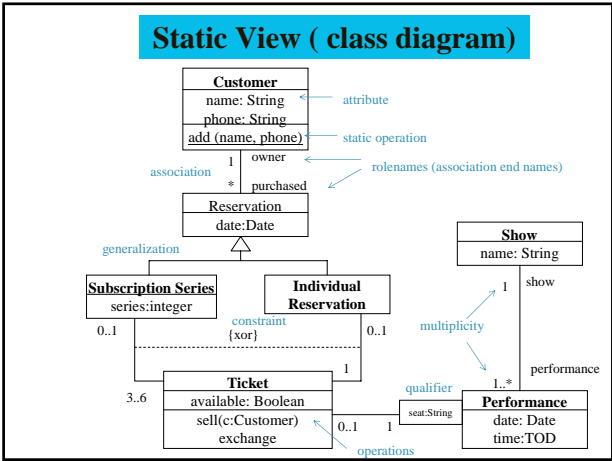
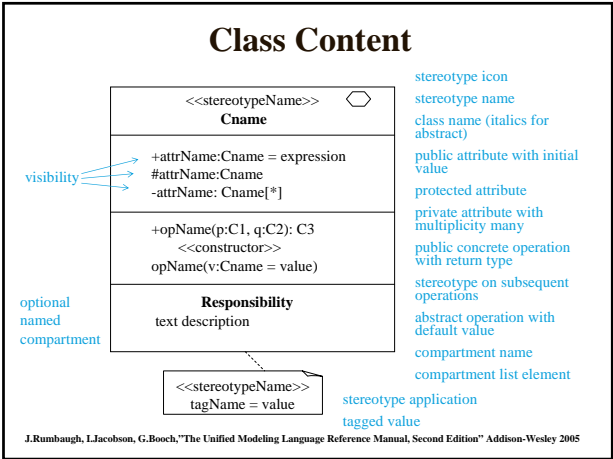
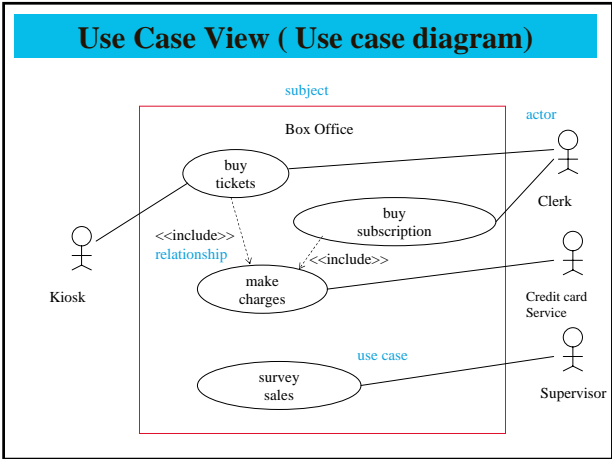


H.E. Eriksson and M. Penker, "UML Toolkit" John Wiley & Sons, Inc.

UML2.0 Views

- Major Area, View
 - Diagram
 - Main Concepts
- structural
 - static view : class diagram
 - design view : internal structure (connector, interface, part, port, provided interface, role, required interface), collaboration diagram (connector, collaboration use, role), component diagram (component, dependency, port, provided interface, realization, required interface, subsystem)
 - use case view : usecase diagram
- dynamic
 - state machine view : state machine diagram
 - activity view : activity diagram
 - interaction view : sequence diagram, communication diagram
- physical
 - deployment view : deployment diagram
- model management
 - model management view : package diagram
 - profile : package diagram

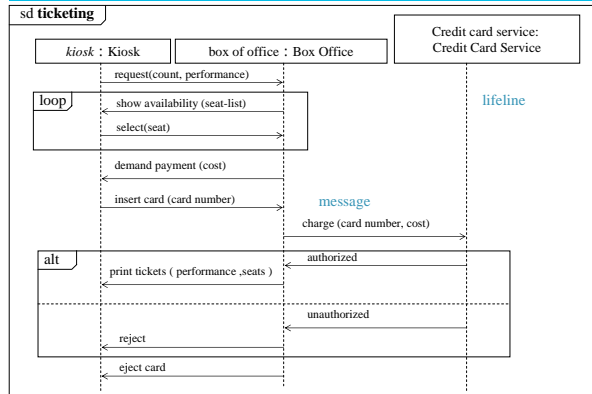
Other Modifications



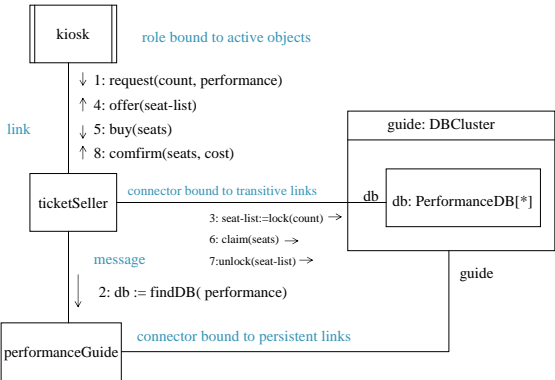
Interaction View

- The interaction view describes sequence of message exchanges among the parts of a system.
- An interaction is based on a structured classifier or a collaboration.
- A role is a slot that may be filled by objects in a particular use of an interaction.
- Interaction view shows the flow of control across many objects and is displayed in two diagrams: sequence diagrams and communication diagrams. The communication diagram is called a collaboration diagram in UML1.5.

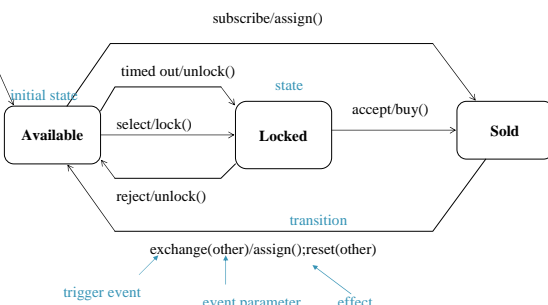
Interaction View (Sequence Diagram)



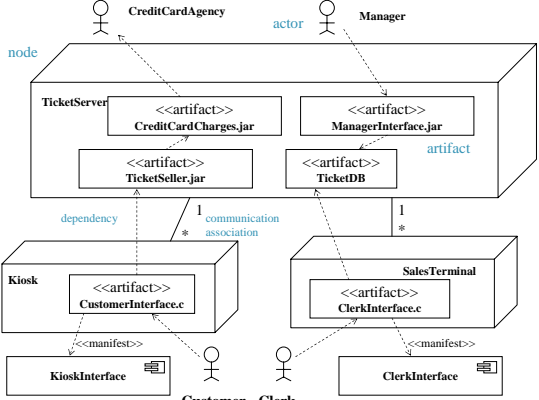
Interaction View (communication diagram)



State Machine View (state machine diagram)



Deployment View (deployment diagram – descriptor level)



Deployment View (deployment diagram instance level)

