

# UML Diagrams

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for UML 1.xx

## 9 Diagrams

- Use Case
- Class
- Collaboration
- Sequence
- Object
- State Chart
- Activity
- Component
- Deployment

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## UML 2.0

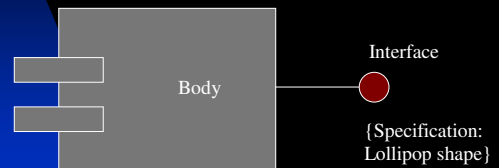
- 3 more diagrams:
  - ◆ Interaction overview
  - ◆ Composite Structure
  - ◆ Timing
- Change:
  - ◆ Collaboration <- Communication

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## Component Diagrams

- Piecing together of software applications
- There is a body and an interface for any class

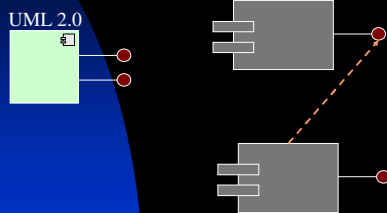


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## Component Diagrams: 2

- Dependencies {compilation dependency}

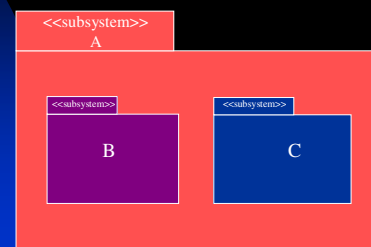


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## Component Diagrams: 3

- SUBSYSTEMS: various components could be grouped to form the structural elements



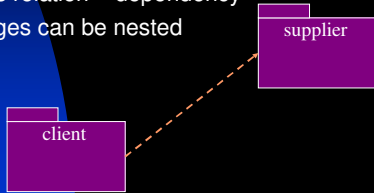
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## Packages

various components could be grouped with respect to LOGICAL Criteria

- Contain other packages, classes, objects, relationships, components, nodes
- Every element belongs to a package.
- Imports relation = dependency
- Packages can be nested

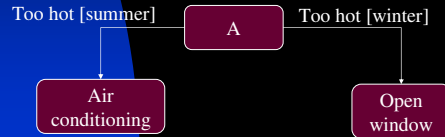


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## Statechart Diagrams

- A state machine representation – corresponding to one “class”
- Actions happen during entry or exit from a state
- Activities last longer, can take place in a state
- States can be aggregated and generalized
- Transactions can be “guard”ed by conditions

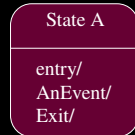


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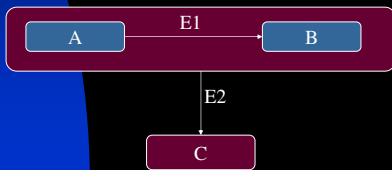
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## Statechart Diagrams: 2

- Actions in a State



- State Generalization

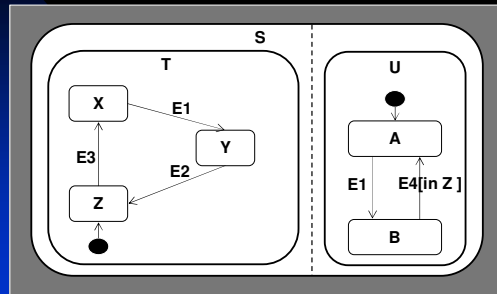


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## Statechart Diagrams: 3

- State Aggregation: S's state is a composition of the states of U and T. Composite states: (Z,A), (Y,A), (Z,B) etc.

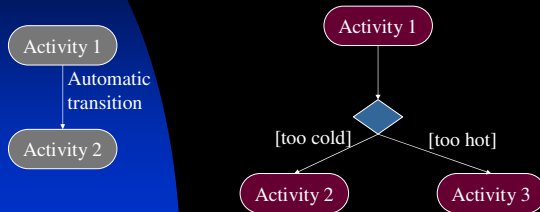


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## Activity Diagrams

- A Statechart Diagrams variation: organized according to actions.
- Automatic transitions, decisions, and synch bars

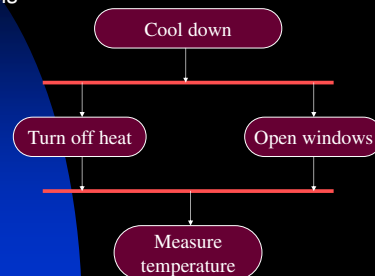


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## Activity Diagrams: 2

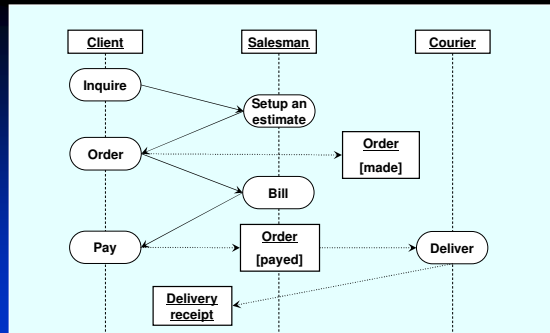
- Synchronization bars represent fork and join controls



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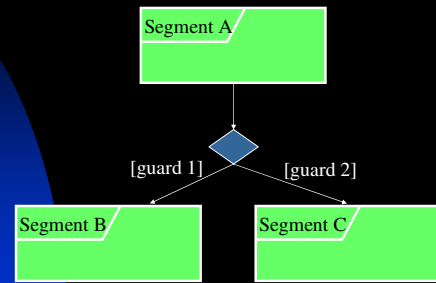
## Activity Diagrams: Swimlanes



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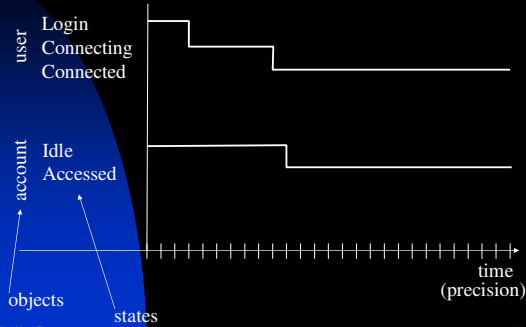
## Interaction Overview Diagrams



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## Timing Diagrams



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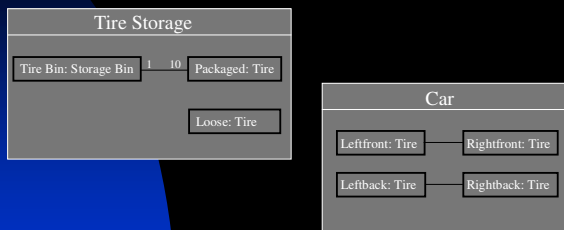
## Composite Structure Diagrams

- “Element” roles at run-time, for a classifier
- Classifier: General model element that has instances - (use case, collaboration, class, node...)
- Element: An abstract base class for UML, mechanisms can be attached – (class, object, state, activity, use case, node, interface, package, comment, component, message, event ...)

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## Composite Structure Diagrams - 2



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