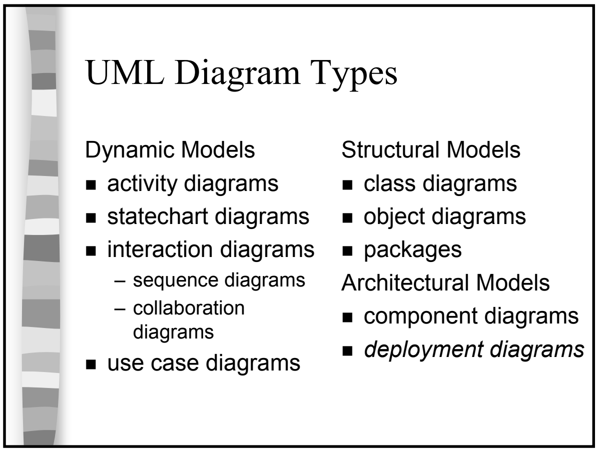


## UML Diagram Types

Dynamic Models

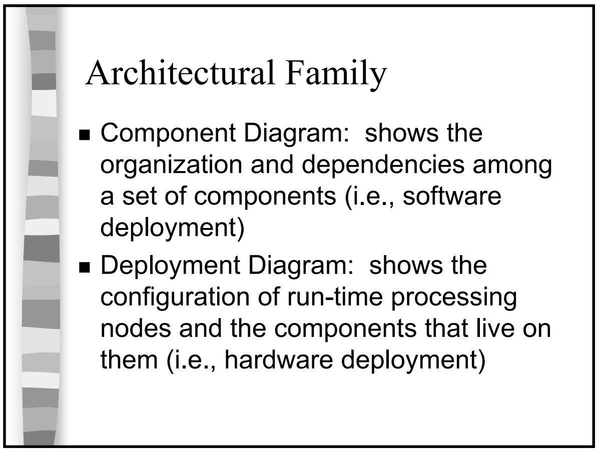
- activity diagrams
- statechart diagrams
- interaction diagrams
  - sequence diagrams
  - collaboration diagrams
- use case diagrams

Structural Models

- class diagrams
- object diagrams
- packages

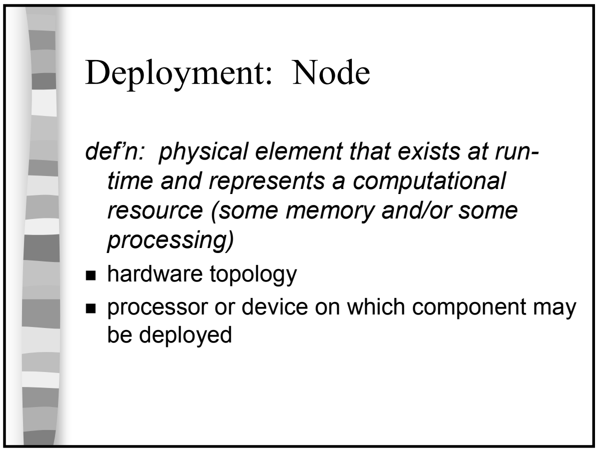
Architectural Models

- component diagrams
- *deployment diagrams*



## Architectural Family

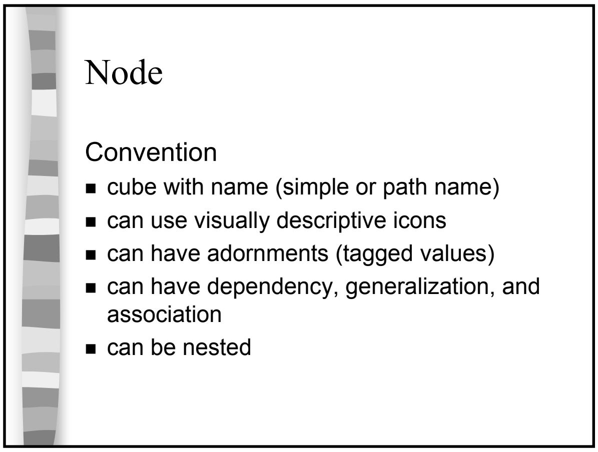
- Component Diagram:  shows the organization and dependencies among a set of components (i.e., software deployment)
- Deployment Diagram:  shows the configuration of run-time processing nodes and the components that live on them (i.e., hardware deployment)



## Deployment:  Node

*def'n:  physical element that exists at run-time and represents a computational resource (some memory and/or some processing)*

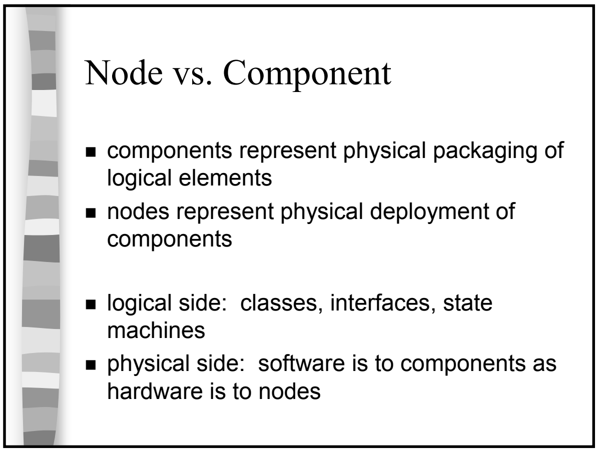
- hardware topology
- processor or device on which component may be deployed



## Node

Convention

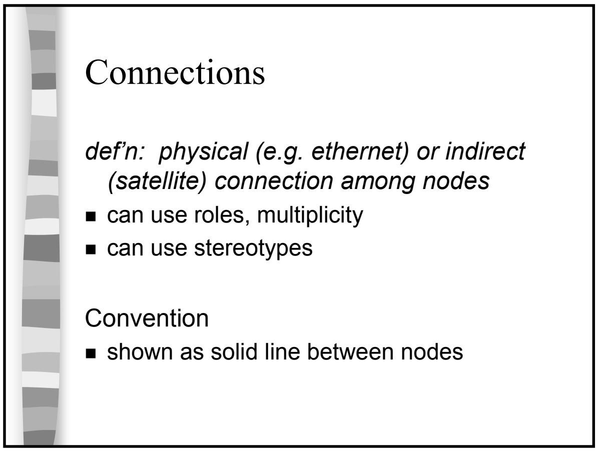
- cube with name (simple or path name)
- can use visually descriptive icons
- can have adornments (tagged values)
- can have dependency, generalization, and association
- can be nested



## Node vs. Component

- components represent physical packaging of logical elements
- nodes represent physical deployment of components

- logical side:  classes, interfaces, state machines
- physical side:  software is to components as hardware is to nodes



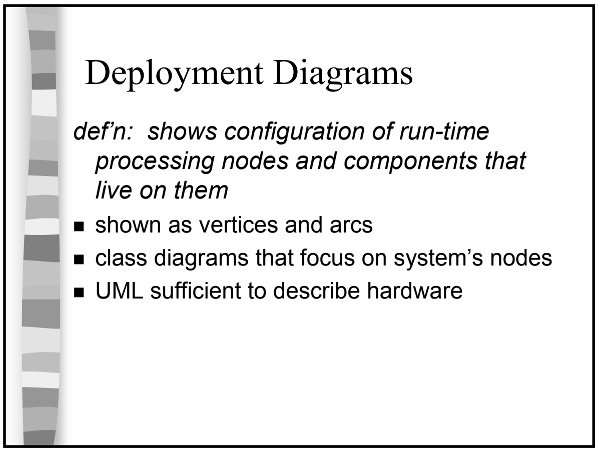
## Connections

*def’n:  physical (e.g. ethernet) or indirect (satellite) connection among nodes*

- can use roles, multiplicity
- can use stereotypes

Convention

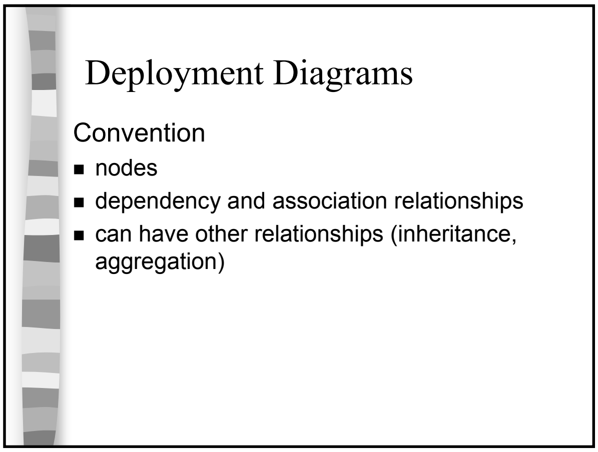
- shown as solid line between nodes



## Deployment Diagrams

*def'n: shows configuration of run-time processing nodes and components that live on them*

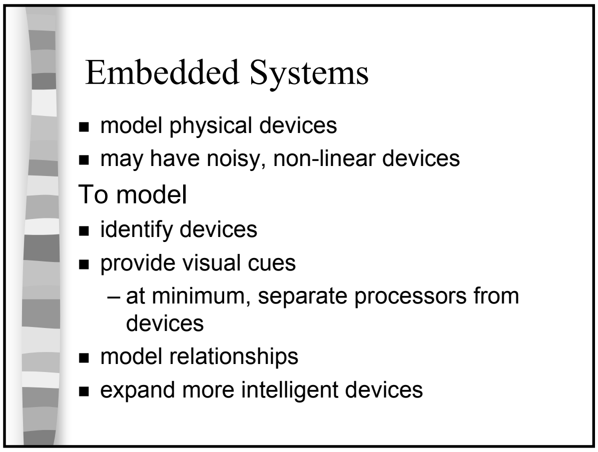
- shown as vertices and arcs
- class diagrams that focus on system's nodes
- UML sufficient to describe hardware



## Deployment Diagrams

Convention

- nodes
- dependency and association relationships
- can have other relationships (inheritance, aggregation)



## Embedded Systems

- model physical devices
- may have noisy, non-linear devices

To model

- identify devices
- provide visual cues
  - at minimum, separate processors from devices
- model relationships
- expand more intelligent devices

## Hints and Tips

- focus on one aspect of system’s static deployment
- contain only elements that are essential to context
- provide appropriate detail
- don’t be too minimalist