Outline

- Diagramming classes
- Association
- Aggregation

Diagramming Classes

- Common notation for class
  - Passenger
  - Class Name: Name, Address, Reservation, changeReservation
  - Fields
  - Operations

- List only important fields and operations

Class Relationships

- has: Aggregation
- uses: Association
- is: Inheritance

Association

Aggregation
Cardinalities

- Not every relationship is one-to-one
- Specify cardinalities of relationships by numbers/symbols at ends of lines
- Possibilities: 1:1, 1:2, 1:0…n, 1:*, 2:2, *:* 
- Aggregations are always 1:x
- Associations may be more complex

Inheritance

Manager

is

Employee

Example Diagram

Design Problem 1

- A mine safety system
- Controls
  - Motors that raise/lower lifts
  - Water level pumps
  - Exhaust fans
- Sensors
  - Methane level
  - Water level

Design Problem 1 (cont)

- If methane level unsafe, turn on fans, disable everything else
- If water level high pump water, turn off when reaches low mark
- Operator may monitor levels, and override default controls from console

Design Problem 2

- Custom suit/dress manufacturing
- Allow customer to
  - Specify fabric, color, style, measurements
  - Place/cancel order
  - Check status of order
- Tailor should be able to access order info
- System should bill customer when delivered