

Behavior Modeling





Imperative Models

- **How** things happen
- Examples:
 - Use Cases Specifications
 - Activity Diagrams
 - Sequence Diagrams



Use Case Specification

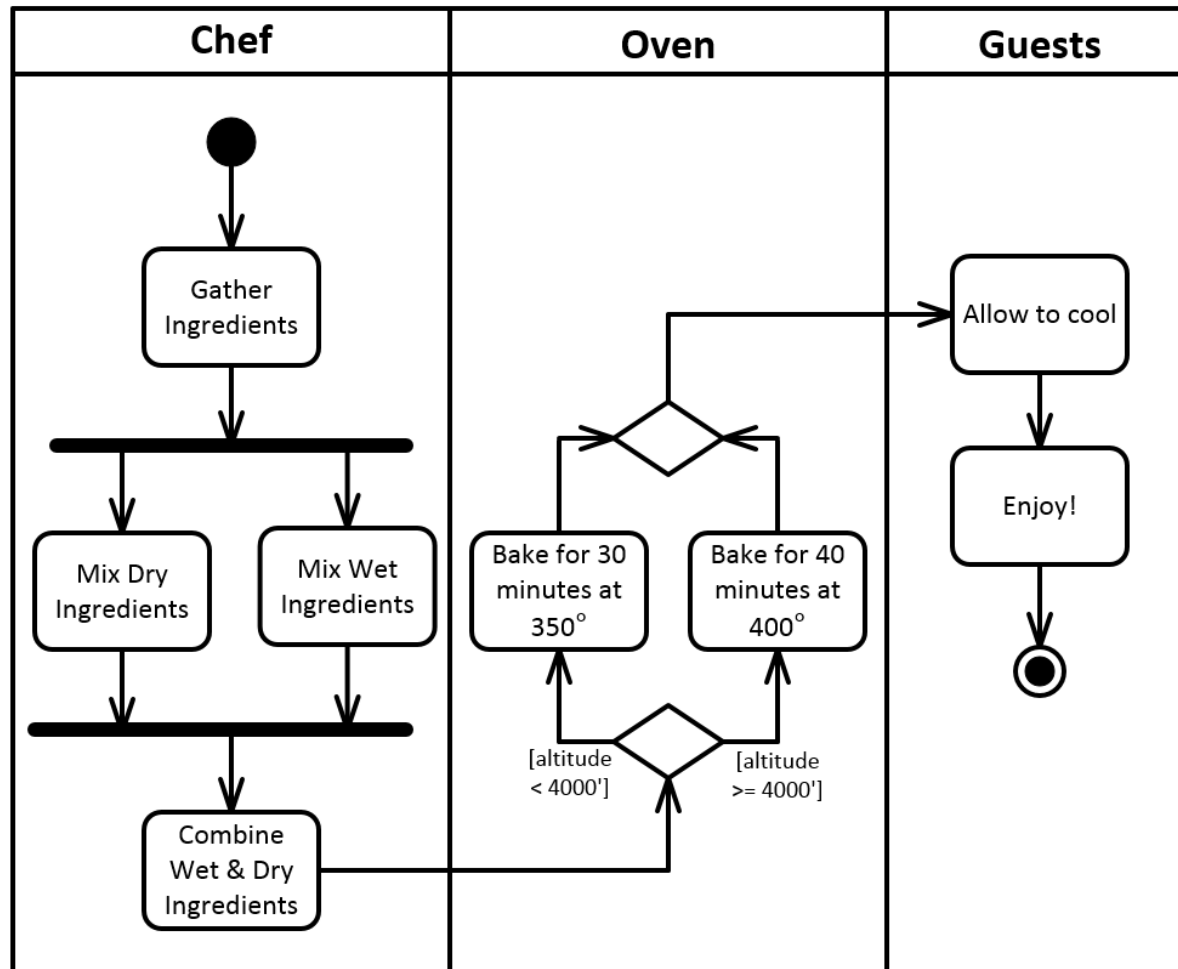
[from ATM system: “Withdraw” use case]

Precondition: Customer has been authenticated

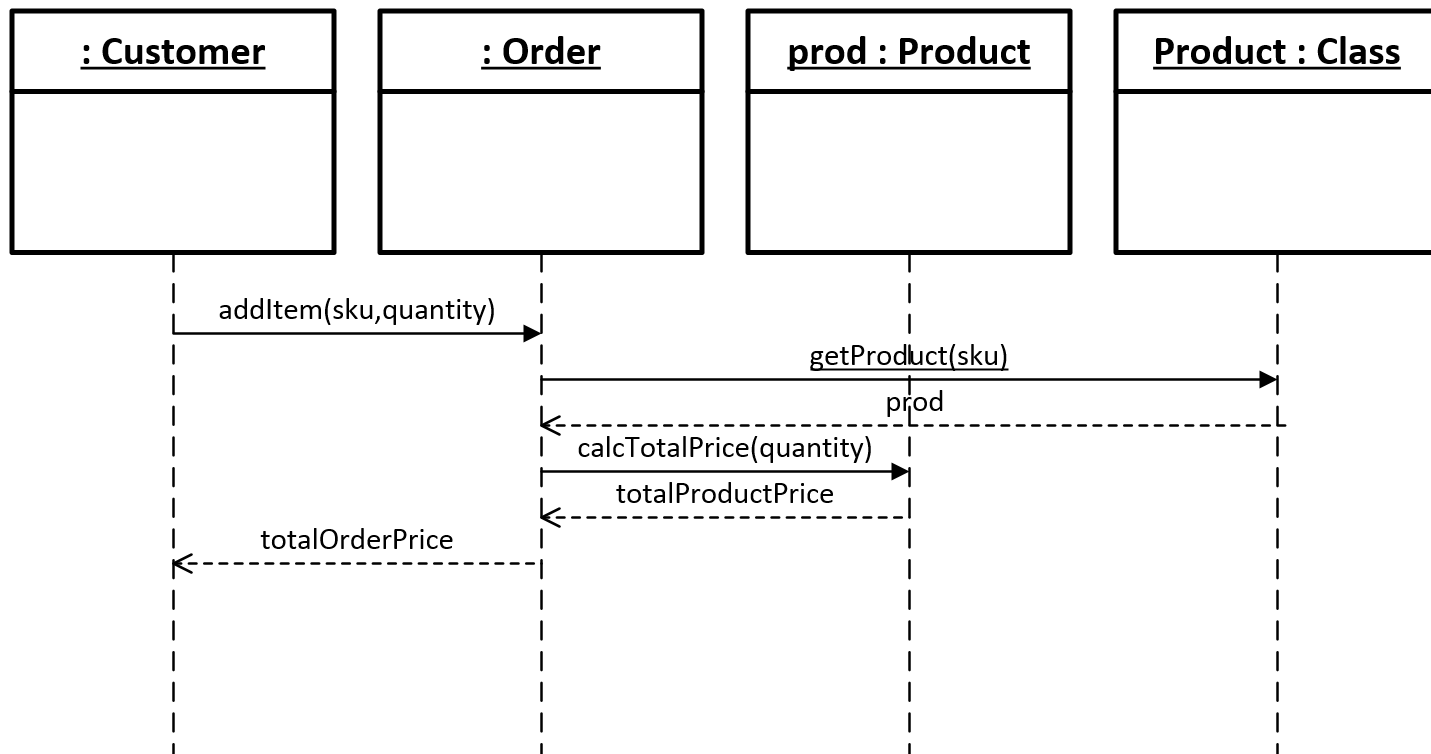
Flow of events:

- Customer selects “Withdraw” and enters the desired account and the amount.
- [debit account] System debits the customer’s account.
- [hardware operational] System opens the cash drawer and dispenses the proper currency.

Activity Diagram



Sequence Diagram





Declarative Models

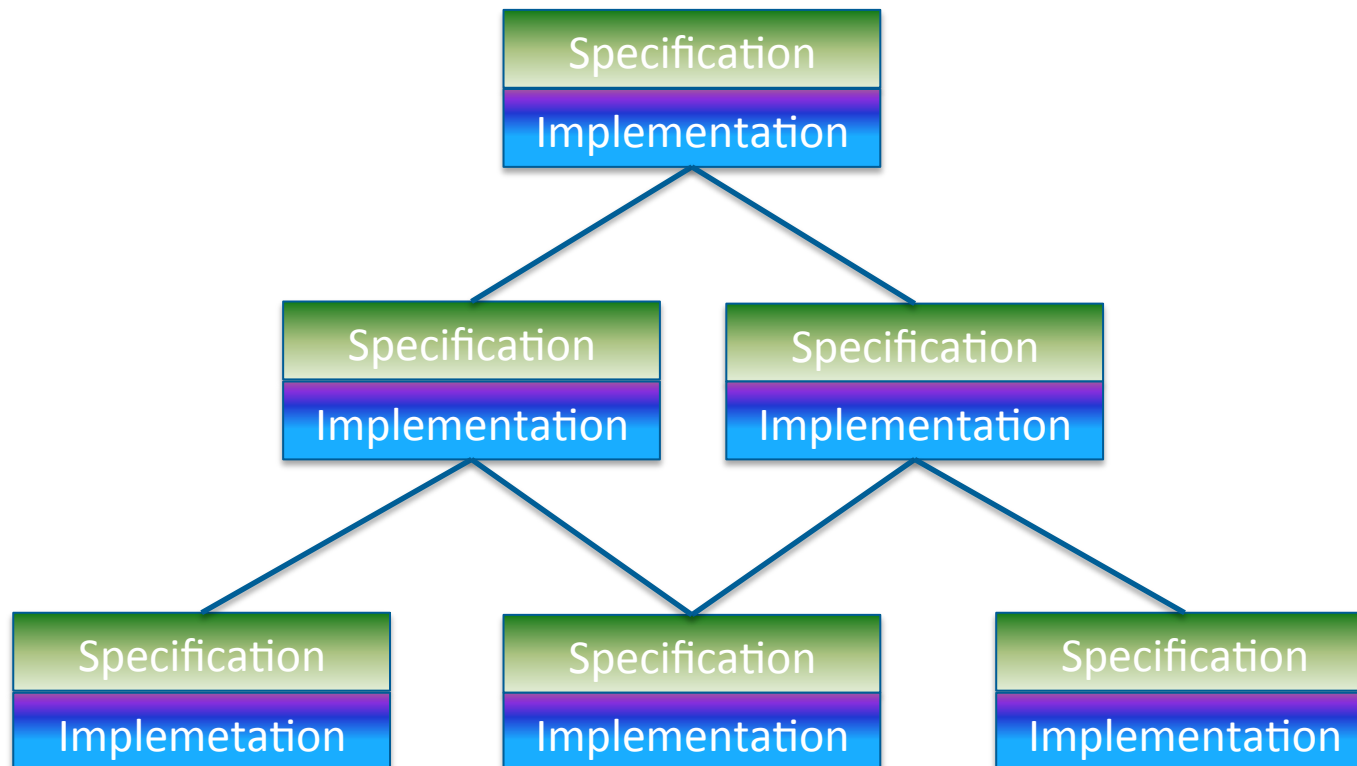
- **What** happens
- Examples:
 - Pre/post conditions
 - Decision tables
 - State Transition Diagrams



Stepwise Refinement

- Divide and conquer
- Repeat as long as there are specifications to be implemented
 - Choose a specification to be implemented
 - Write the implementation, invoking lower level, invented components (if necessary)
 - Write specifications for these components

Stepwise Refinement





Next

- Analysis and design principles
 - Modularity
 - Abstraction
 - Encapsulation

