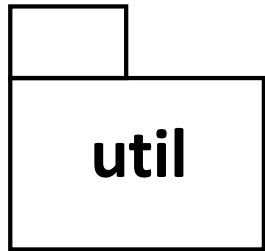# Architecture Modeling

Overview
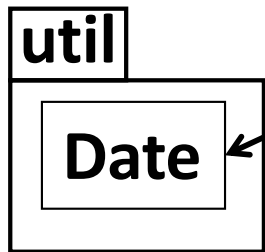
- UML package diagram
- Case study: POS system

UML package diagram

- To organize elements and diagrams into groups
- To show packages and dependencies between the packages
- Can illustrate layered architecture
  - A layer, such as UI layer, can be modeled as a package named UI
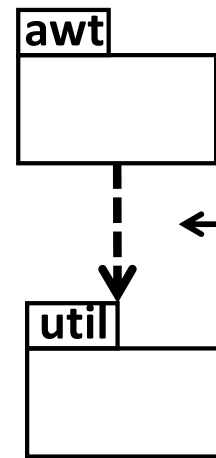 - Depicts relations between packages that make up a model

Legends with JDK Packages

Package: a general purpose mechanism to group together semantically related elements.

Class: a member of the package. It can be represented as a brief or detailed class diagram or simply text.
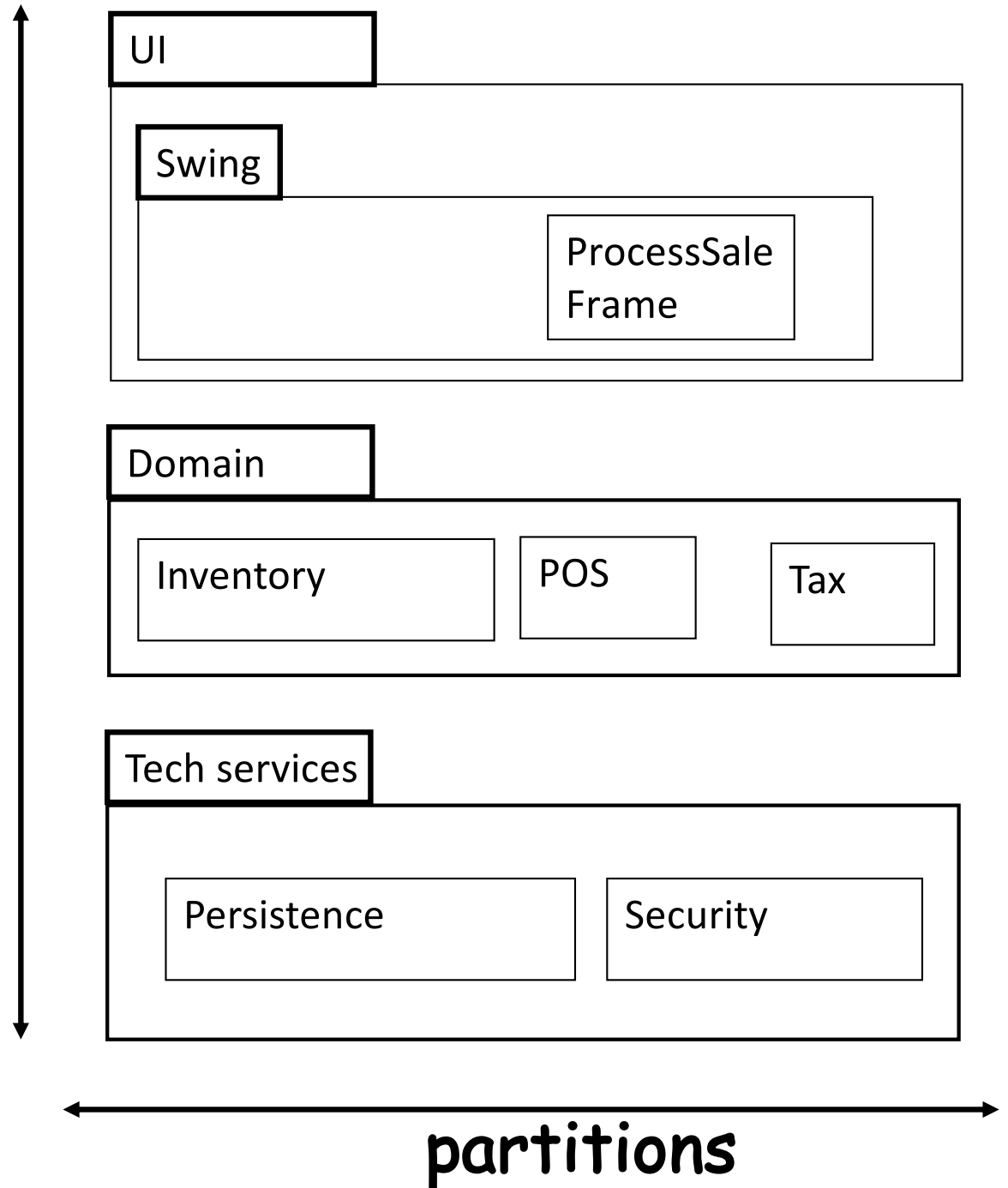
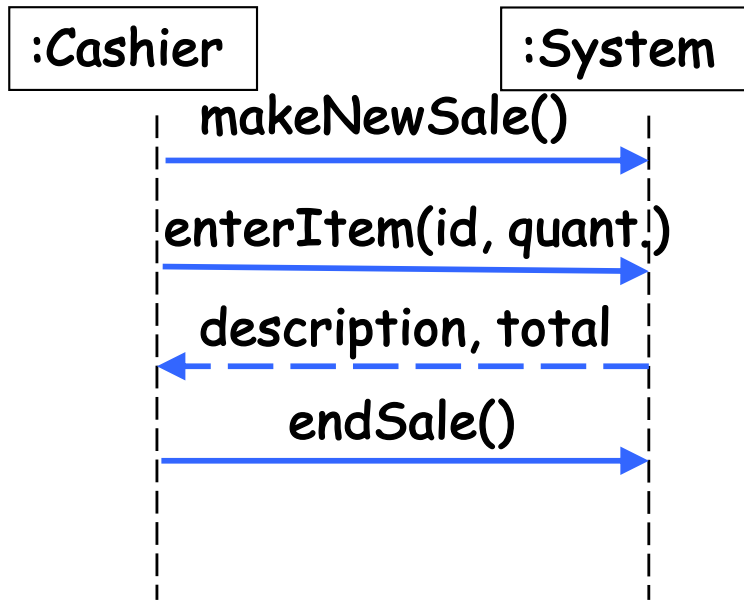**Members of a package can be classes or other packages.**

Dependency: to show "use" relationship.

Case Study: POS system

- ## 3-layer architecture
  - User interface
  - Application logic and domain objects
    - Software objects representing domain concepts, such as Sale
  - Technical services
    - General-purpose objects and subsystems that provide supporting services, such as interfacing with database or error logging
    - Usually application-independent and reusable across systems

What is the relationship between SSDs and Layers?

UI

Swing

ProcessSale Frame

Domain

Inventory | POS | Tax

Tech services

Persistence | Security

partitions

:Cashier :System

makeNewSale()

enterItem(id, quant.)

description, total

endSale()

Messages illustrated on SSDs correspond to messages sent from UI layer to the domain layer.

cashier

UI

Swing

ProcessSale Frame

makeNewSale()
enterItem()
endSale()

makeNewSale()
enterItem()
endSale()

Domain

Inventory   POS   Tax

Tech services

Persistence   Security

partitions