CO457 Business Modelling

Module Week 9

Documenting Business Processes

Documenting Business Processes

- Techniques for documenting business processes
  - Use-case format
    - **Brief**
    - **Casual**
    - **Fully dressed**
  - **Business rules**
  - **Decision tables**
- The OMG set the standard for documenting business rules and their underlying business vocabulary
  - **Semantics of Business Vocabulary and Business Rules (SBVR)**
  - Significant contribution from the Business Rules Group

Business Rules

- Business rules are **clear, concise, and consistent statements of fact**
  - About things and processes under the business jurisdiction
  - **Captured in a natural language sentence**
  - Specify boundaries and constraints
- Built from terms defined in the **business glossary**
- Specified in the textual part of a model

Business Rules

- **Use declarative statements**
  - E.g. customers shall only be seated at tables that are set
- **Avoid procedural descriptions**
  - E.g. first set a table, and then seat the customers
- Elicited by
  - Reading policies, procedures, guidelines, standards, and other source documents
  - **Talking with stakeholders**

Types of Business Rules

- Two types:
  - **Operative**
    - Describe the decision points in a process flow
  - **Structural**
    - Document the relationships between business objects in a domain model

Types of Business Rules

- Examples:
  - Operative
    - On arrival at the restaurant, all customers shall be greeted at the front entrance by the hostess
    - If a customer is wearing a coat, the hostess shall offer to hang it up
    - **Customers shall only be seated at tables that are set**
    - The hostess must provide all parties with a wine list

Types of Business Rules

- Examples:
  - Structural
    - A party consists of one or more customers
    - **A customer may be wearing a coat**
    - A table is a piece of furniture

Decision Tables

- **Decision tables**
  - **Structured to represent a series of closely related operative business rules**
  - Very useful as a business analysis tool to
    - Generate questions
    - **Check if all possible combinations of conditions are handled**

Decision Tables

- Decision tables
  - Composed of three parts
    - **A list of possible conditions**
    - **A list of the actions to be performed**
    - **A column for each rule**
    - The combination of conditions
    - The set of actions to be performed
  - **Are equivalent to many if-then-else statements**
  - Contain a hyphen for a don't-care condition entry

Decision Tables: Example

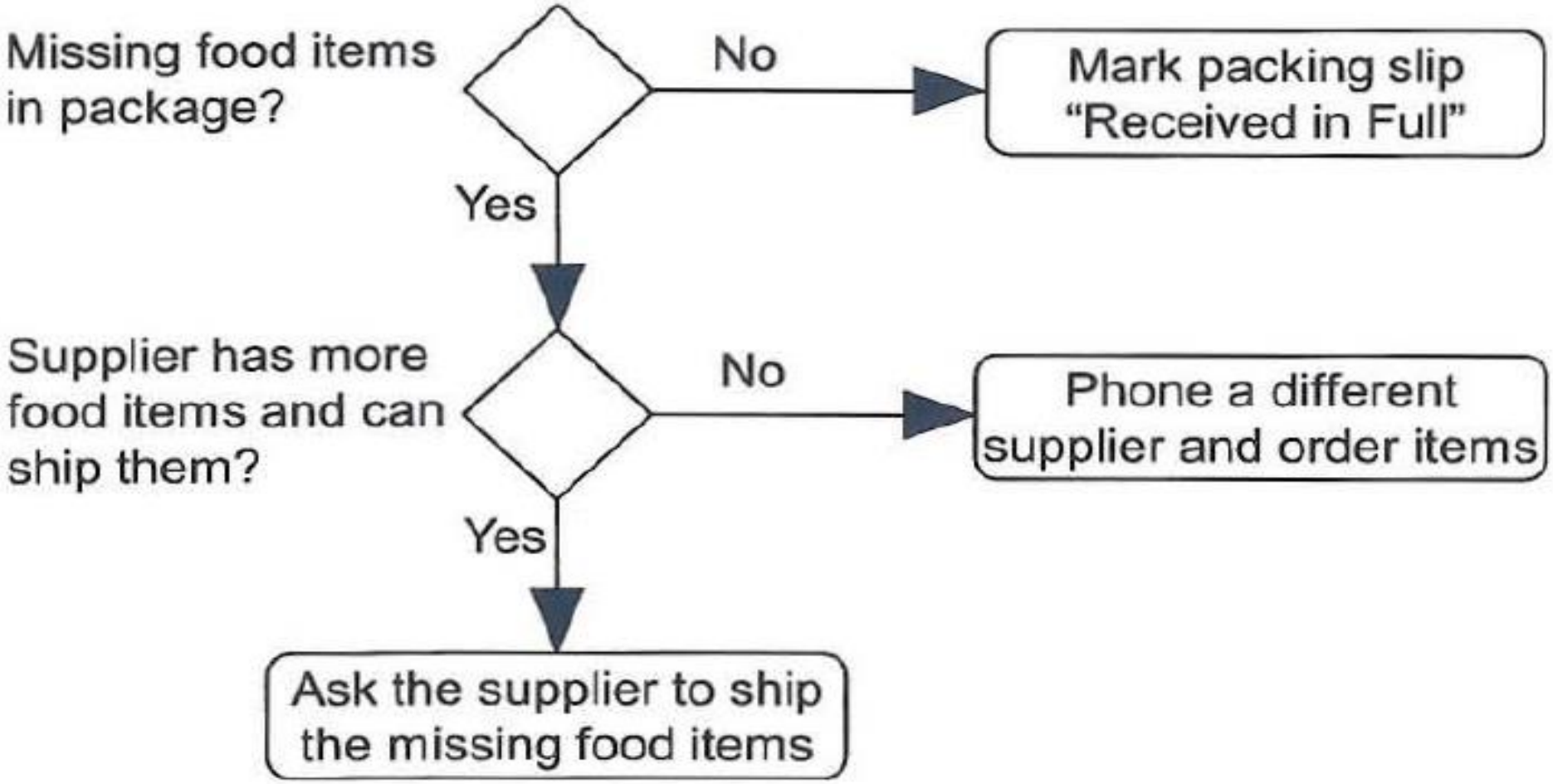
- Decision table example for receiving food from suppliers:
- Are there two rules that could be combined?

Cuisine Branch – Receive Food Decisions — Version 1

		Rules			
		1	2	3	4
Conditions	Missing food items in package?	Y	Y	N	N
	Supplier has more food items and can ship them?	Y	N	Y	N
Actions	Ask the supplier to ship the missing food items	X			
	Phone a different supplier and order items		X		
	Mark packing slip "Received in Full"			X	X

Equivalent Process Flow

- **The same decision logic on a business process diagram**

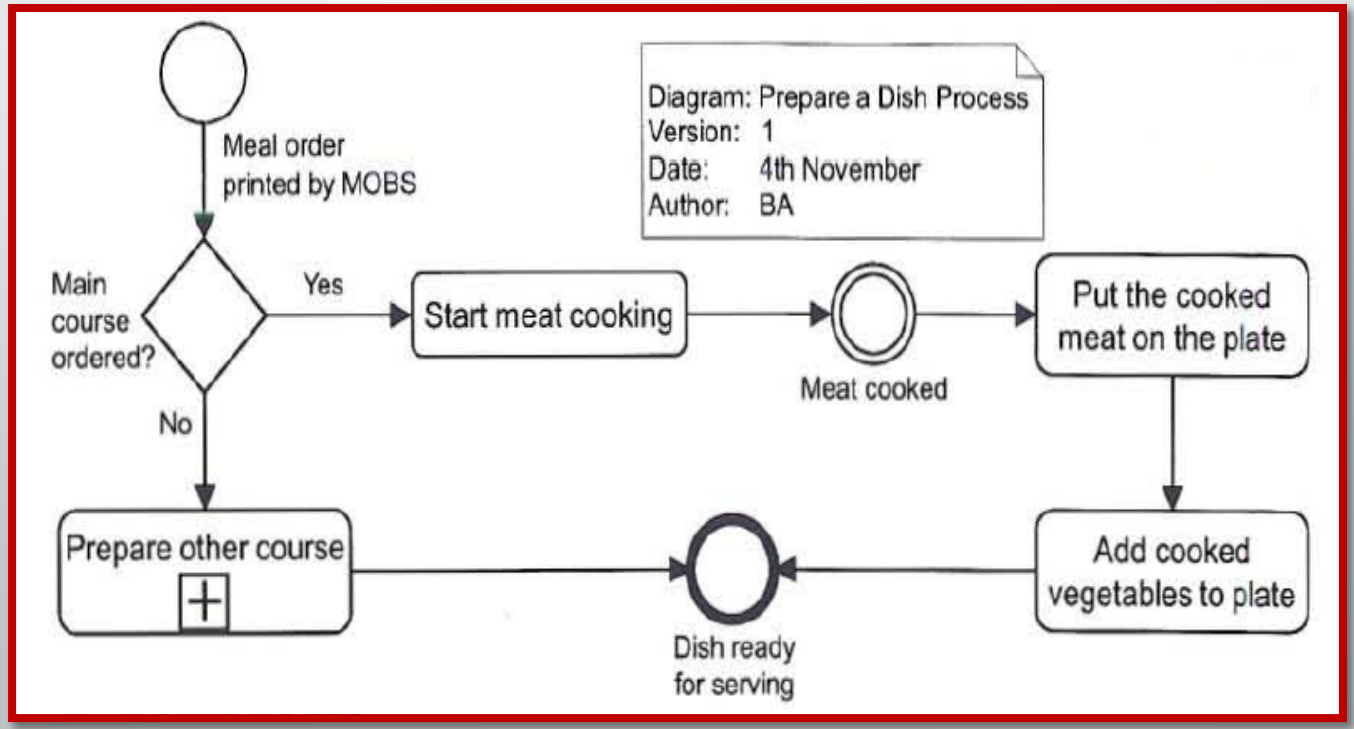


Equivalent Operative Business Rules

- **The same decision logic as structured business rules**
  - If there are missing food items in the package then
    - If the supplier has more food items and can ship them then
    - Ask the supplier to ship the missing food items
    - Else phone a different supplier and order the items
  - Else mark the packing slip "Received in Full"

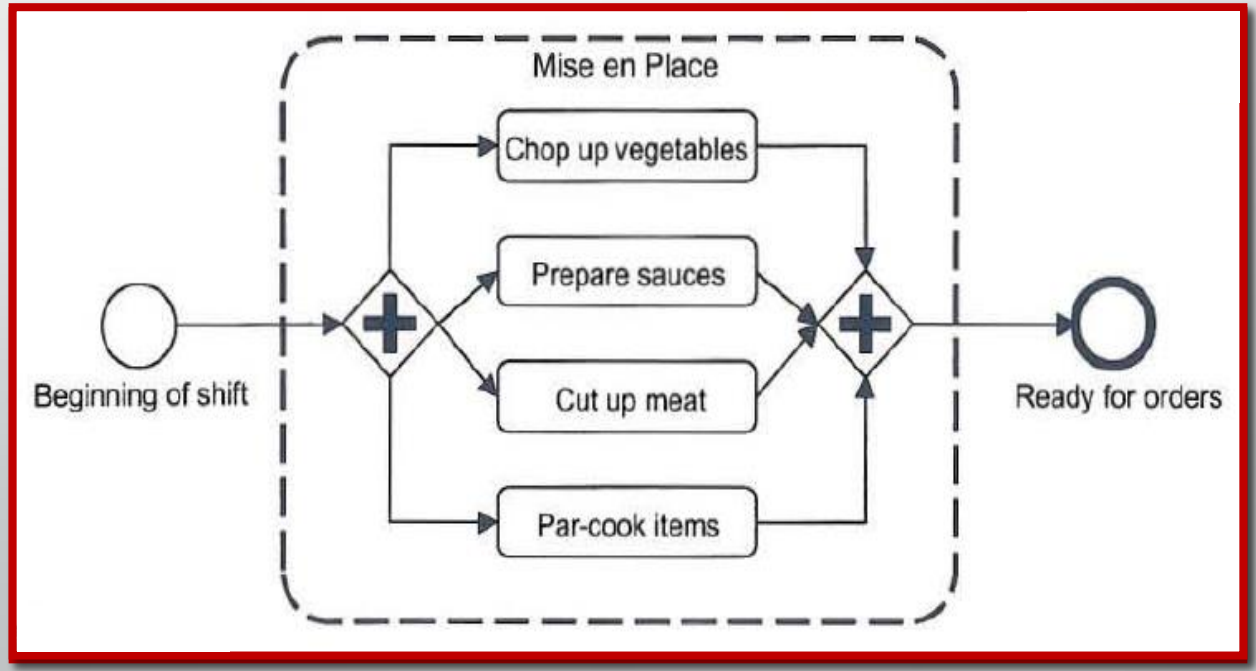
Quick Quiz

- What does the **+ symbol** imply on this diagram?
  - A sub-process
  - A process
  - An activity
  - A task



Quick Quiz

- The **+ symbols** on this diagram imply that the activities are:
  - Repeated
  - Independent of each other
  - Done sequentially
  - In a group



Quick Quiz

- What action is taken when ordering food from suppliers if not all the food items have been ordered but all the food suppliers have been phoned?
  - Find a new supplier for unordered items
  - Phone another supplier
  - Create a food order list
  - Done; no action required

Cuisine Branch – Order Food Decisions — Version 1		Rules			
		1	2	3	4
Conditions	All food items ordered?	N	N	Y	Y
	All food suppliers phoned?	N	Y	N	Y
Actions	Phone another supplier	X			
	Order food items available from this supplier	X			
	Find a new supplier for unordered items		X		
	Done—no action required			X	X

Business Domain Model

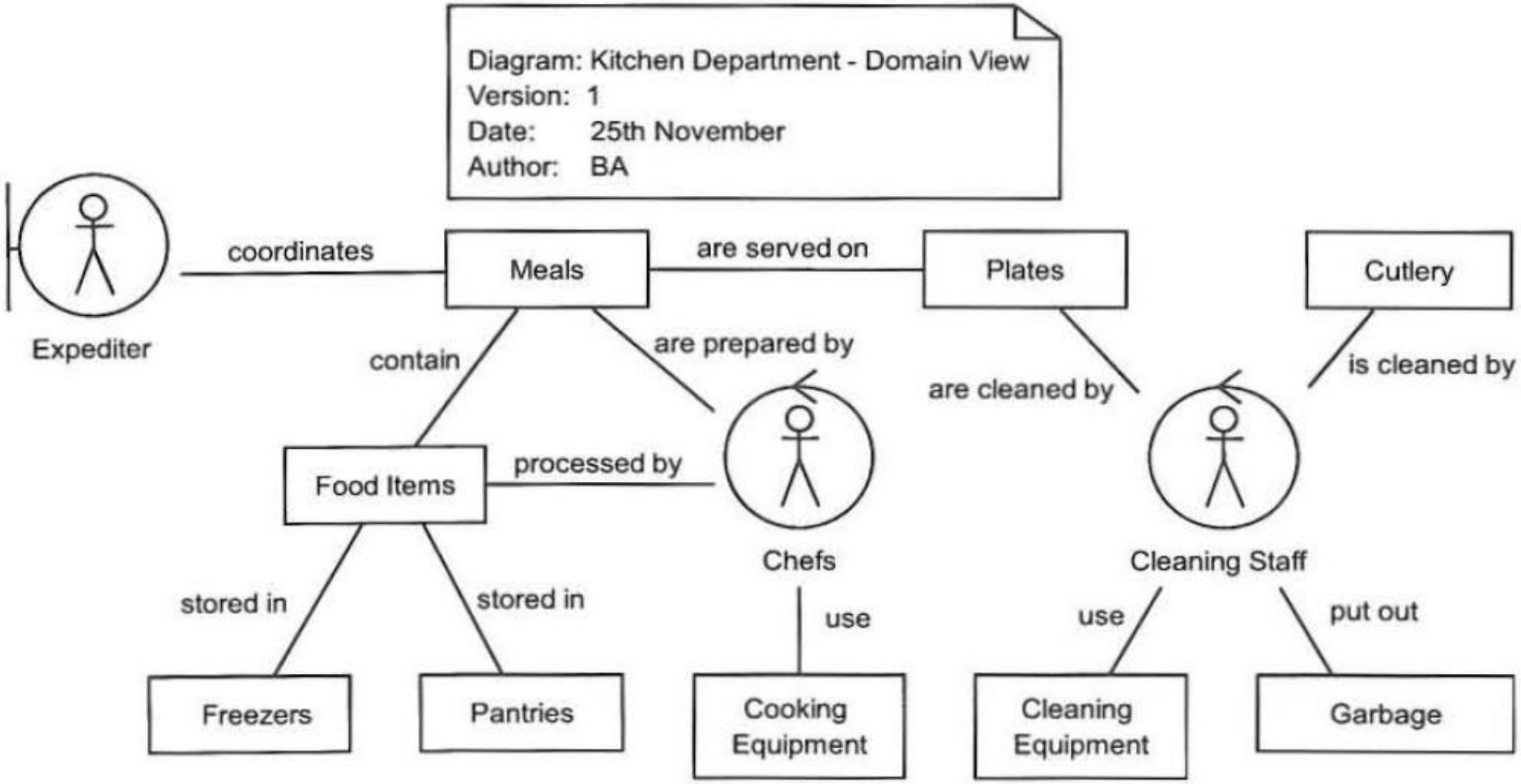
- **Business structure is represented in a business domain model**
  - Also known as a semantic or conceptual data model
  - **Using a UML class diagram**
  - A static structural view of
    - Things in the business
    - Relationships between them

Business Domain Model

- **The scope of the domain is the same as the use-case subject boundary**
  - The entire business
  - An organisational unit
  - A business function
  - A single process
    - Things involved in the process
- Two levels of detail
  - **Architecture**
  - **Detailed**

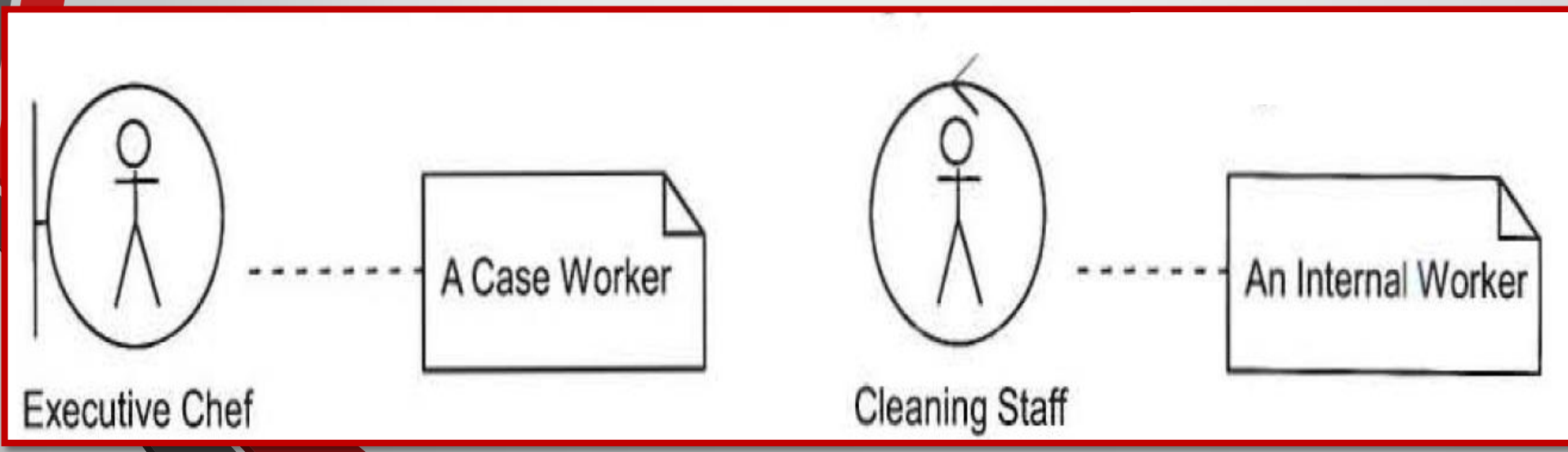
Business Domain Model: Example

- **Business domain diagram-architecture level**



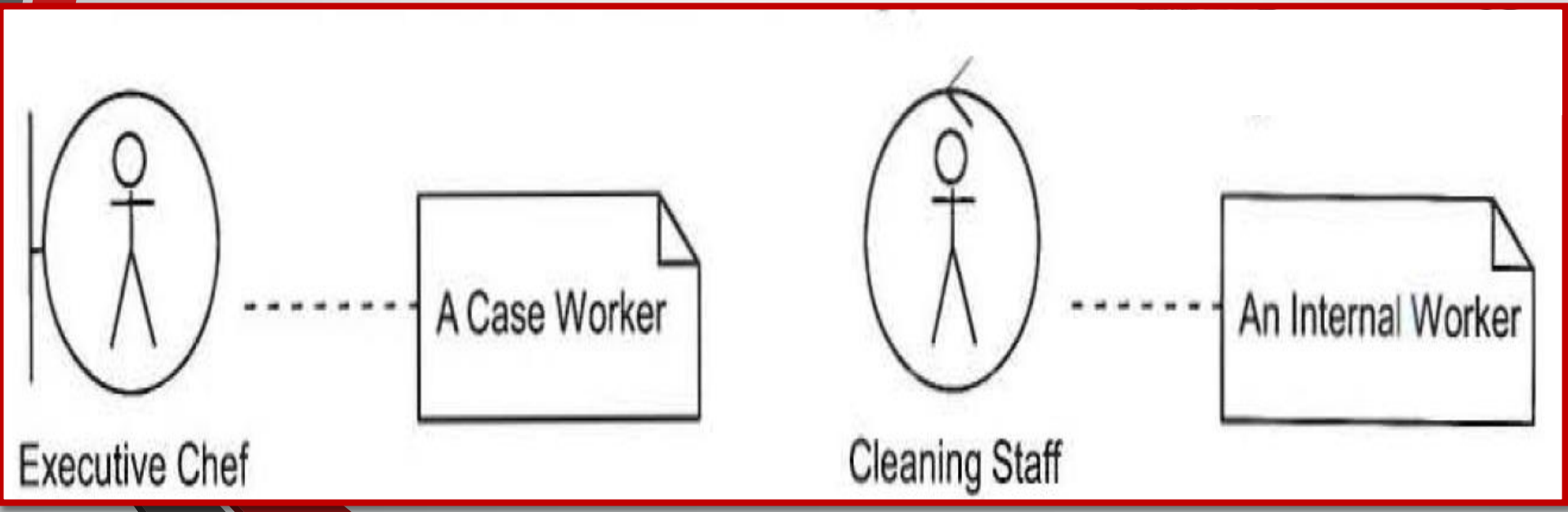
Domain Objects: Workers

- **The objects on the diagram are workers and entities**
- Roles played by people are mode led as workers
  - Perform business processes
  - Appear as special icons on the diagram
    - Defined in UML v1.5 business modelling profile



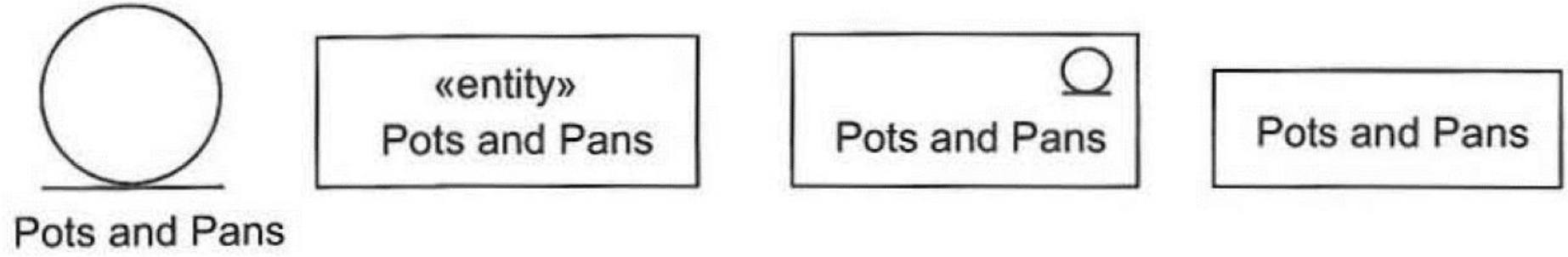
Domain Objects: Workers

- **A case worker interacts directly with actors outside the subject boundary** and other workers and entities inside the boundary
- **An internal worker interacts with other workers and entities inside the boundary**



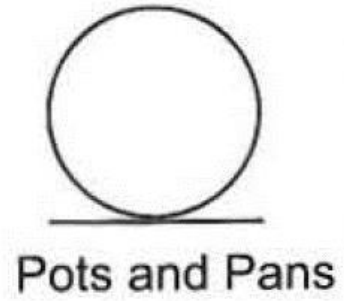
Domain Objects: Entities

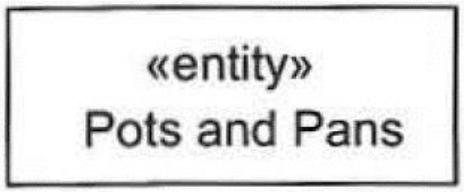
- **Entities are things in the business**
  - Tools, equipment, IT systems
  - Documents, materials and products

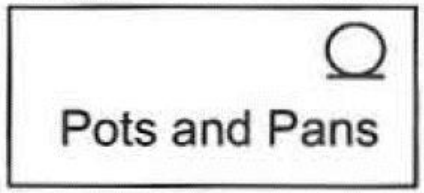


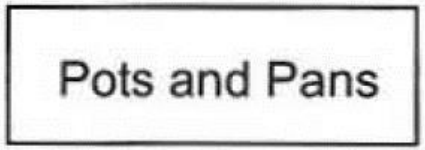
Domain Objects: Entities

- UML V1.5 business modelling profile **defines the entity stereotype**
  - Displayed using the stereotype icon
  - Labelled with
    - **Stereotype name in guillemots (« »)**
    - **Stereotype icon**
  - Unspecified stereotype









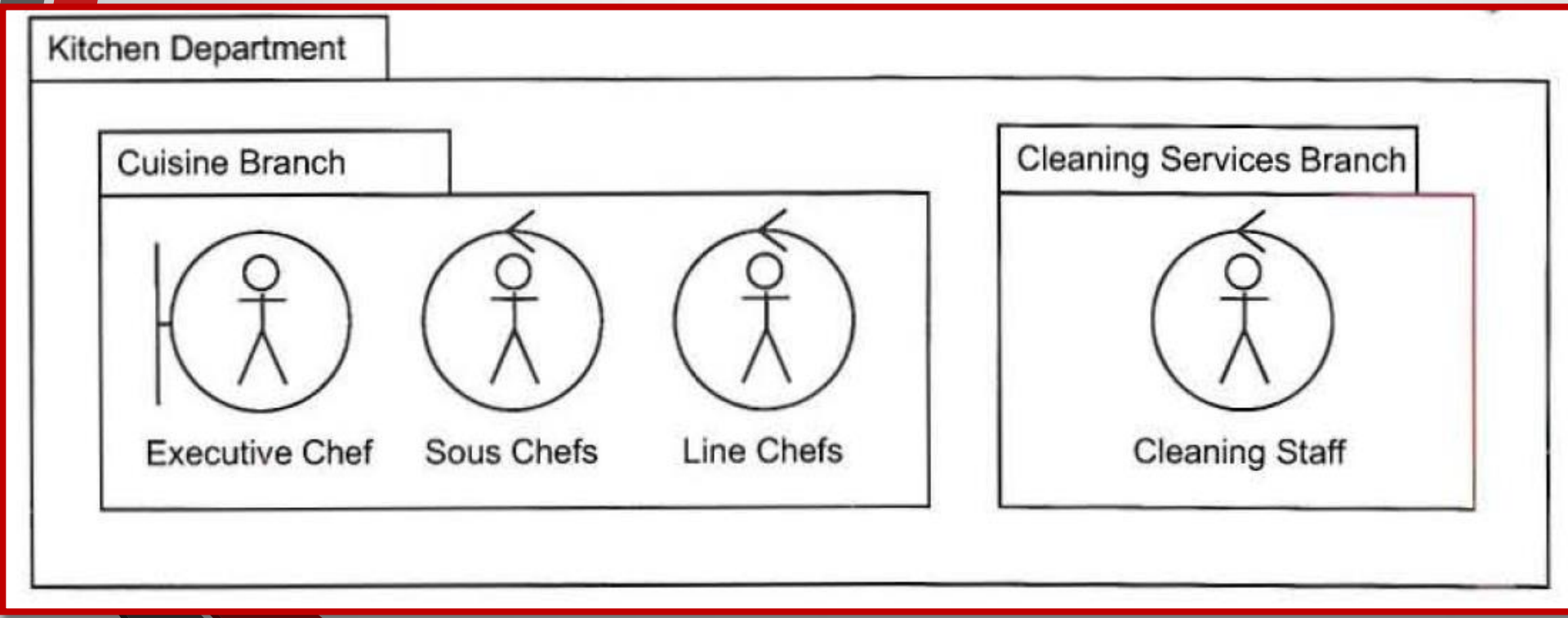
Domain Objects: Entities

- At the architecture level, **pluralise entity names for readability**
  - Collective nouns are allowed
- At the detailed level, **entity names are singularised**
  - Collective nouns are not allowed

Architecture level	Detailed level
Plates	Plate
Freezers	Freezer
Chefs	Chef
Cutlery	Utensil
Staff	Employee
Garbage	Bag of Garbage
Food	Food Item

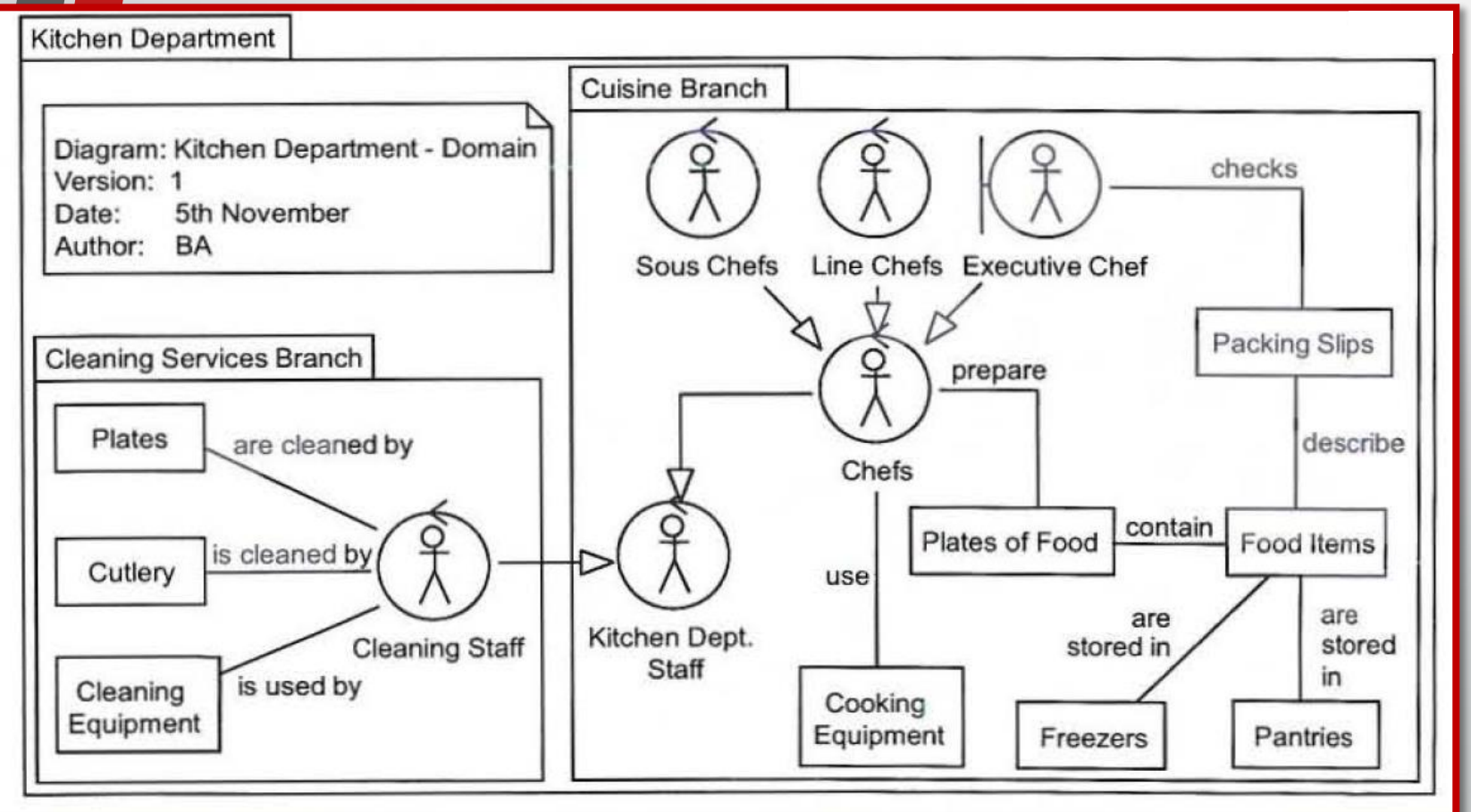
Organisation Units

- **Organisational units group workers and entities**
  - Drawn using UML package notation
  - Nested according to the organisation structure



Relationships: Associations and Generalizations

- The relationships at the architecture level
  - **Associations and generalisations**



Relationships: Associations and Generalisations

- **Each association illustrates a structural business rule**
  - Chefs use Cooking Equipment
  - Chefs prepare Plates of Food
  - Plates of Food contain Food Items
  - Food Items are stored in Freezers and Pantries
  - Packing Slips describe Food Items
  - The Executive Chef checks Packing Slips
  - Plates are cleaned by Cleaning Staff
  - Cutlery is cleaned by Cleaning Staff
  - Cleaning Equipment is used by Cleaning Staff

Relationships: Associations and Generalisations

- **Each generalisation is a structural business rule**
  - Line Chefs are a type of Chef
  - Chefs are Kitchen Department Staff
  - Cleaning Staff are Kitchen Department Staff
  - The Executive Chef is a Chef
  - The Sous Chef is a Chef