

Section #1

INTRODUCTION TO USE CASES



Introduction

Use Cases

Use cases represent **typical** sets of **scenarios** that help to **structure**, **relate** and **understand** the essential requirements.

To **obtain** use cases **interview** the users and **ask** them about the various things they want to do with the system.

Describe each use case in a **paragraph** and **annotate** it with documents, forms, ...



Introduction

Usefulness of Use cases

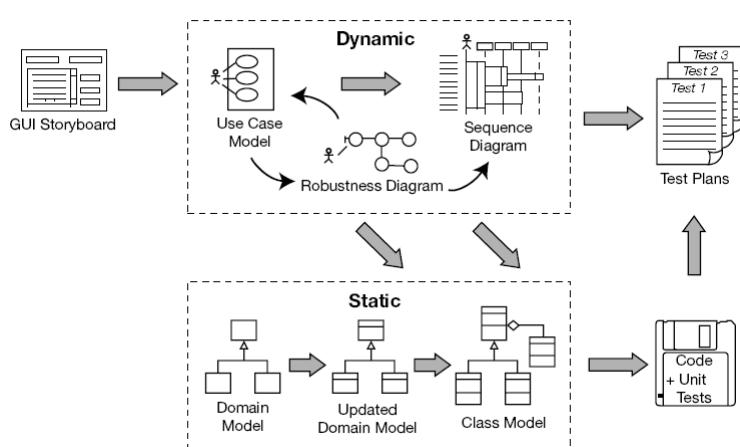
*One of the most important things during **analysis** is to **discover** all the potential **use cases**.*

Unified Modeling Language (UML) delivers the **use cases** to analyze the requirements of a system.

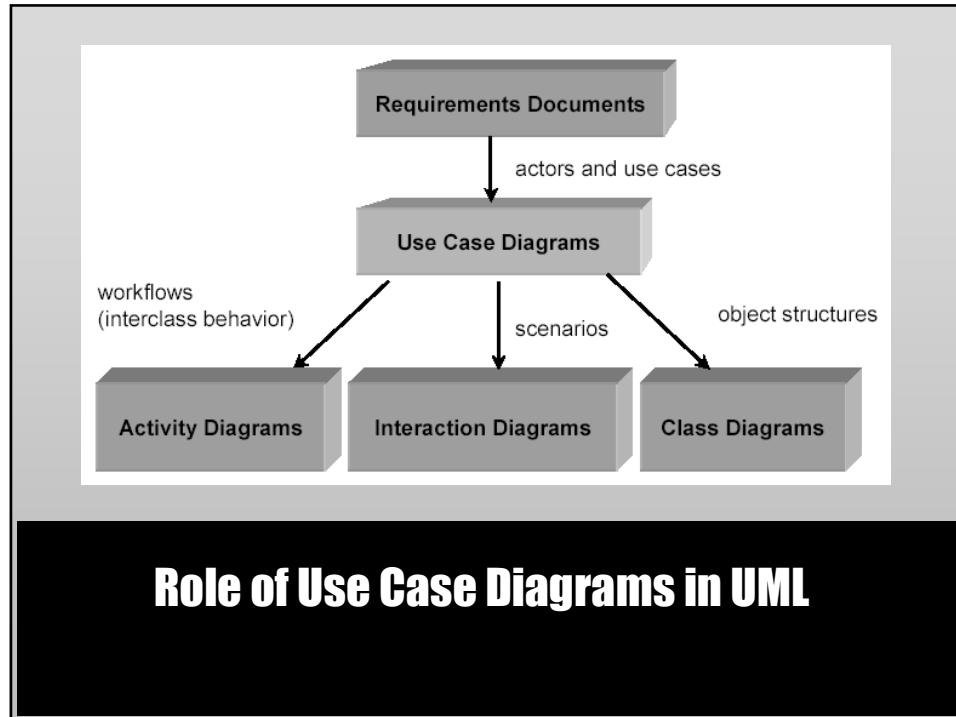
- Use cases are typical **interactions** a **user** has with the **system**.
- A use case indicates a **function** that the user can **understand** and that has **value** for the user.
- Use cases can **vary** considerably in **size**.

Use cases are an essential tool in **requirements capturing** and in **planning** and **controlling** an iterative **project**.

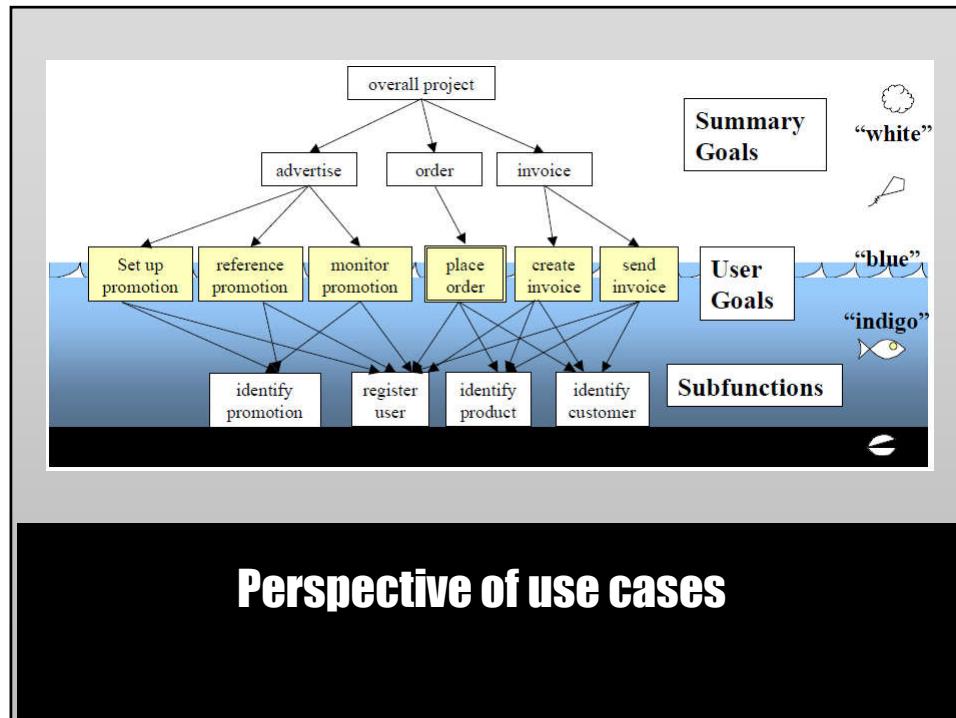
Introduction



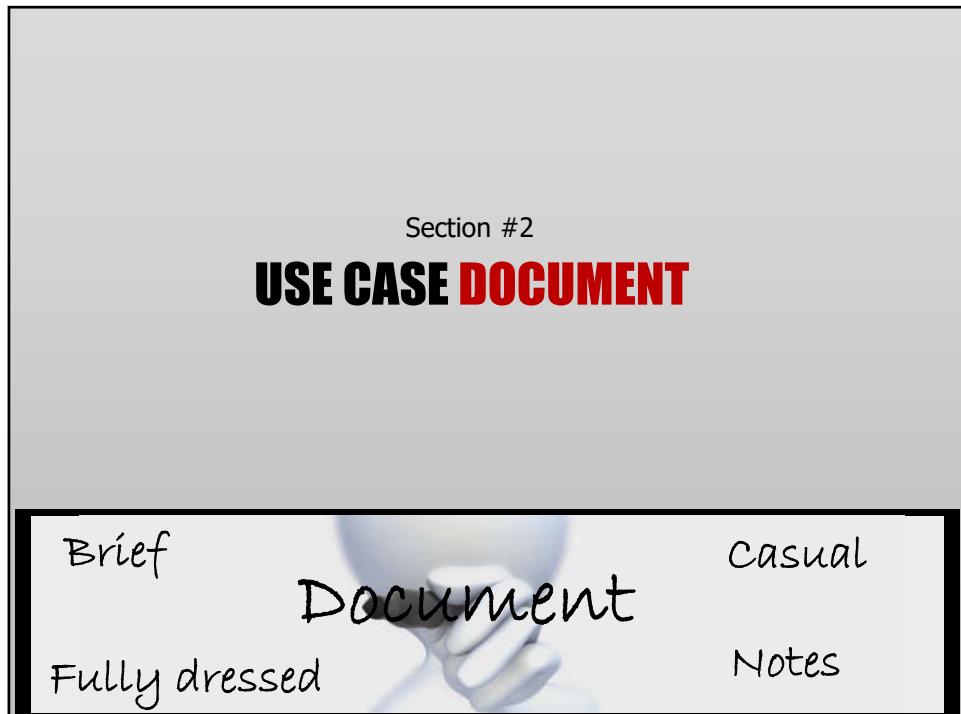
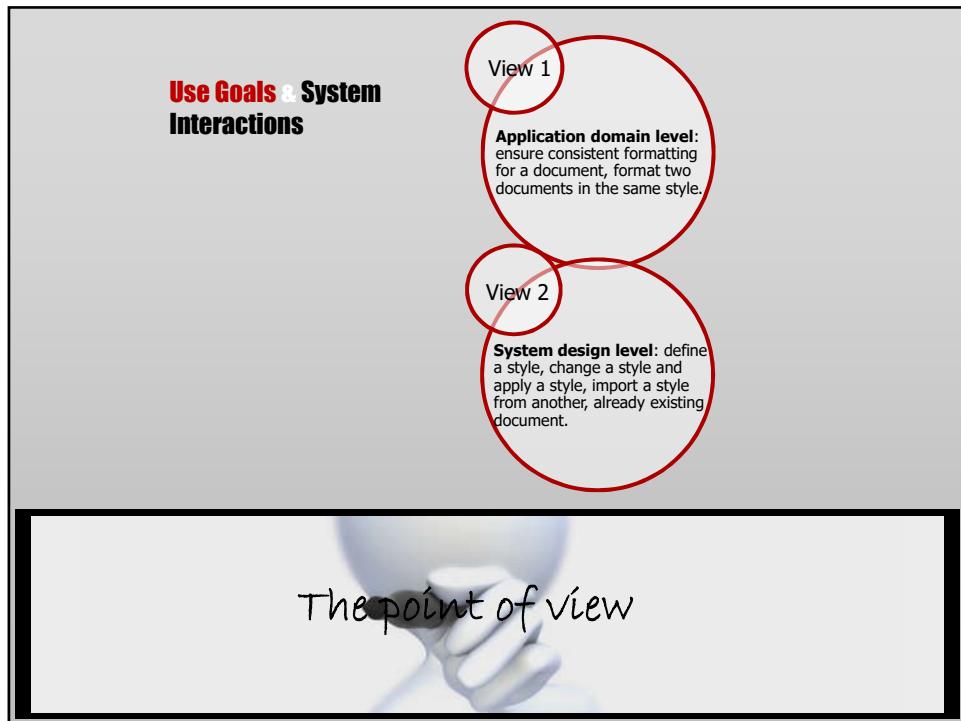
Role of the Use Case in SE



Role of Use Case Diagrams in UML



Perspective of use cases



Brief Document

Use Case: Buy Item

Actors: Customer, Cashier

Description:

- The use case begins when the customer arrives at a checkout with items to purchase.
- The Cashier records each item. If there is more than one of an item, the Cashier can enter the quantity as well.
- The system determines the item price and adds the information to the running sales transaction. The description and price of the current item are presented.
- On completion of item entry, the cashier indicates that item entry is complete.
- The system calculates and presents the sale total.



DOCUMENT

Casual Document

Use Case: Painterly Render

Actors: Modeler, Imager, Artist, Animator

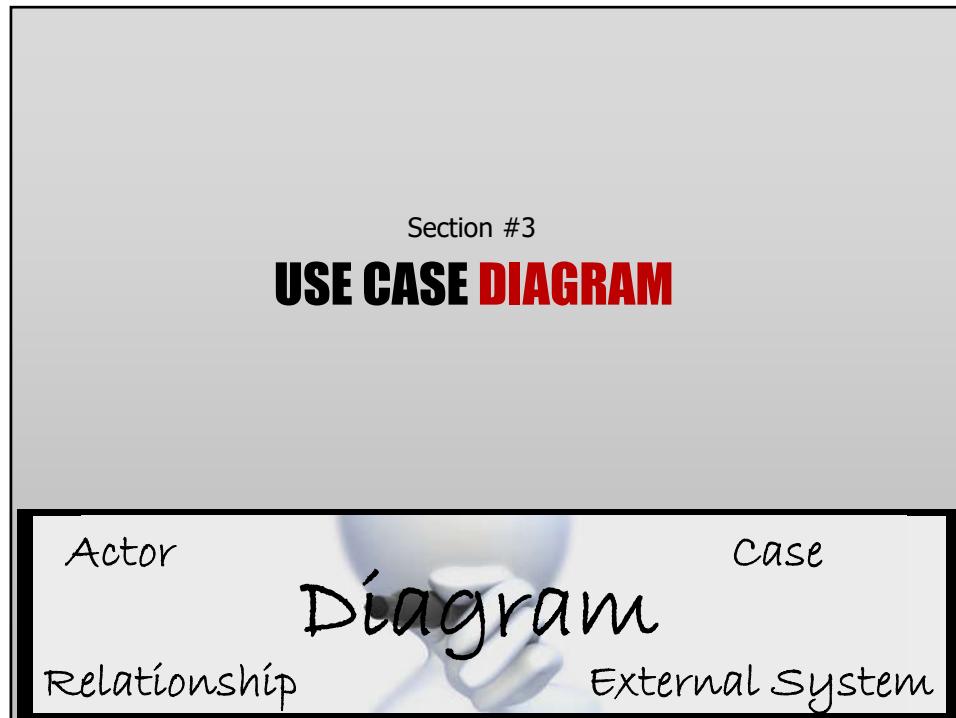
Description:

- 1 - Modeler designs the geometric shapes of a 3-D scene consisting of triangulated polygon meshes
- 2 - System automatically places particles across the geometry
- 3 - Artist sets paint parameters on geometry for reference images
- 4 - Imager specifies camera attributes (position, orientation, lense size)
- 5 - System creates painterly image using reference images, particles and geometry
- 6 - Artist refines image (repeat from step3 until satisfied)

Alternative: Animation at step 4 artist can specify a smooth spline path of camera attributes for creating a painterly animation of the scene. Step 5 then creates a sequence of painterly frames which when played back produce an animation.



DOCUMENT



Actors



An actor is a **role** that a user or other systems plays with respect to the system to be developed.

A single actor in a use case diagram can represent **multiple users** (or systems).

A single user (or system) also may play **multiple roles**.

Actors don't need to be human, e.g., an **external system** that needs some information from the current system.

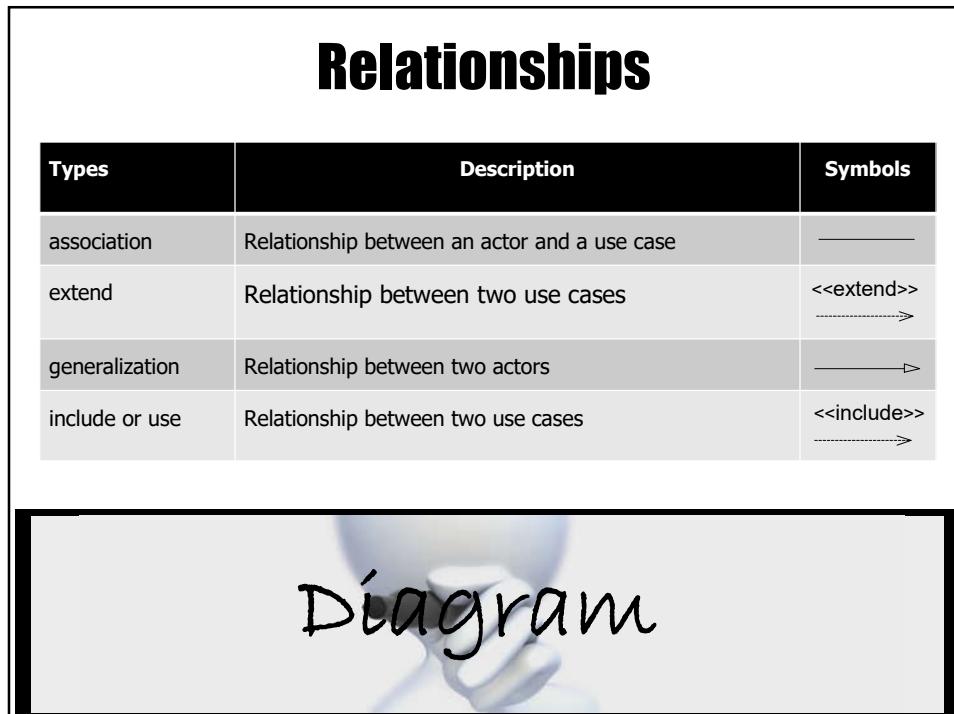
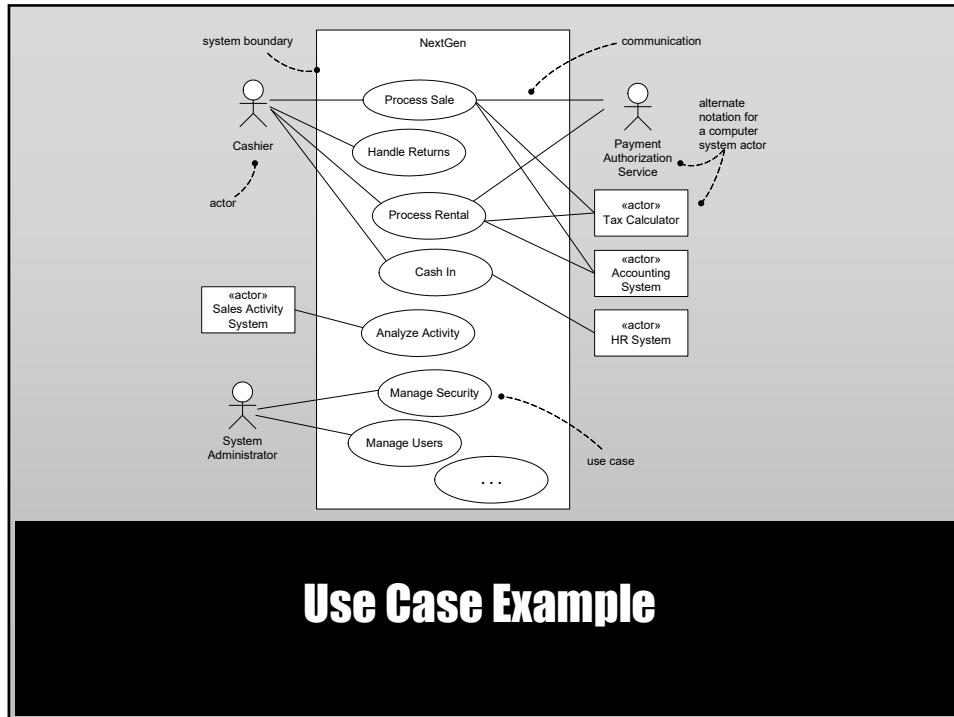
Diagram

Cases

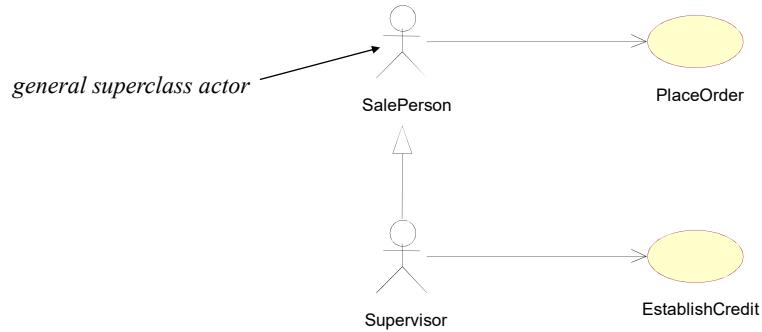
The “**case** aspect” in a use case represents a high-level description of a desired action in which the actor is involved.

UseCase Name

Diagram



Generalization Relationship



Diagram

Include Relationship

Use include when you are repeating yourself in two or more separate use cases.

Copying the description of that behavior introduces redundancy and may lead to inconsistencies when the behavior is changed.

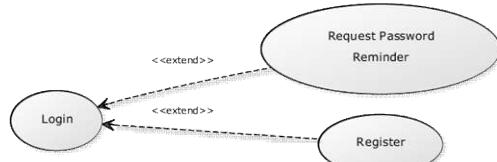


Diagram

Extend Relationship

Extensions are used instead of modeling every extra case by a single use case.

Extensions are used instead of creating a complex use case that covers all variations.



Diagram

Interaction with External Systems

Use **external events** to identify use cases which are not captured by actors.

Think about all the possible events from the outside world to which you want to **react**.



Diagram

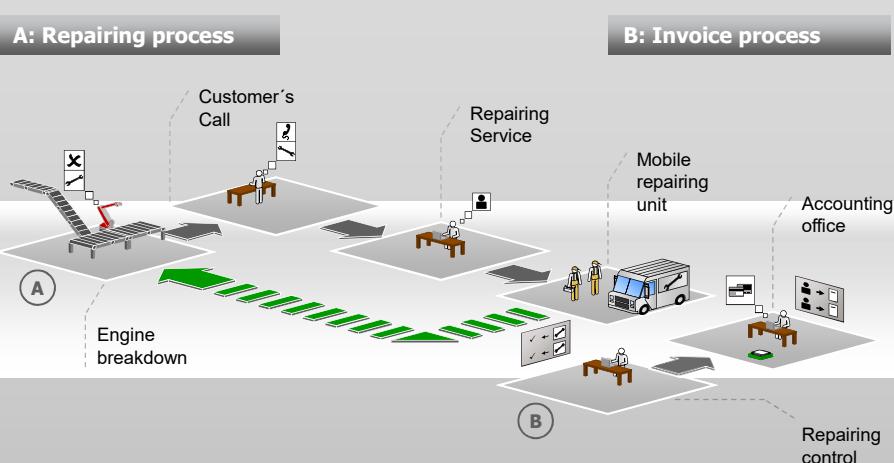
Working with Use Cases

Use cases are all about externally-required **functionality**

Discuss use cases with system users.

Adjust the **granularity** of your use cases according to the complexity of the individual problem you are working on, bearing in mind that

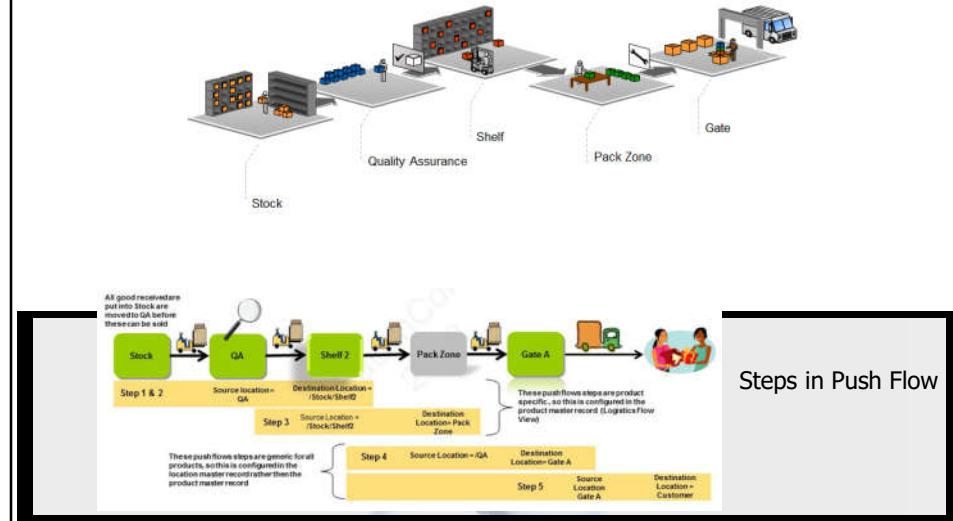
Notes



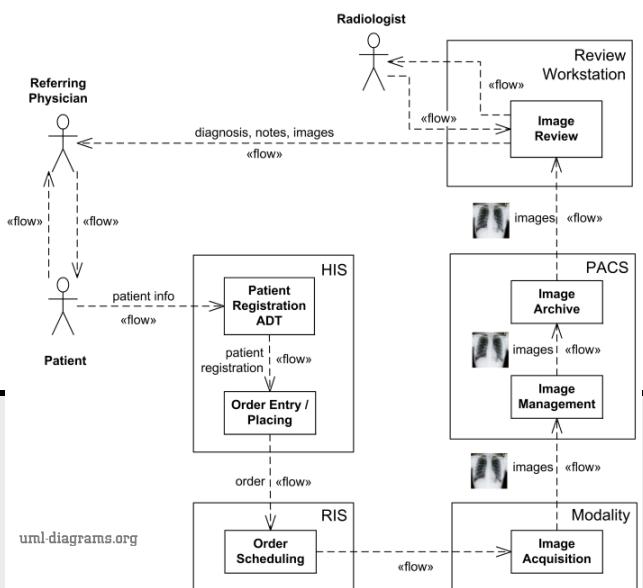
Customer Service

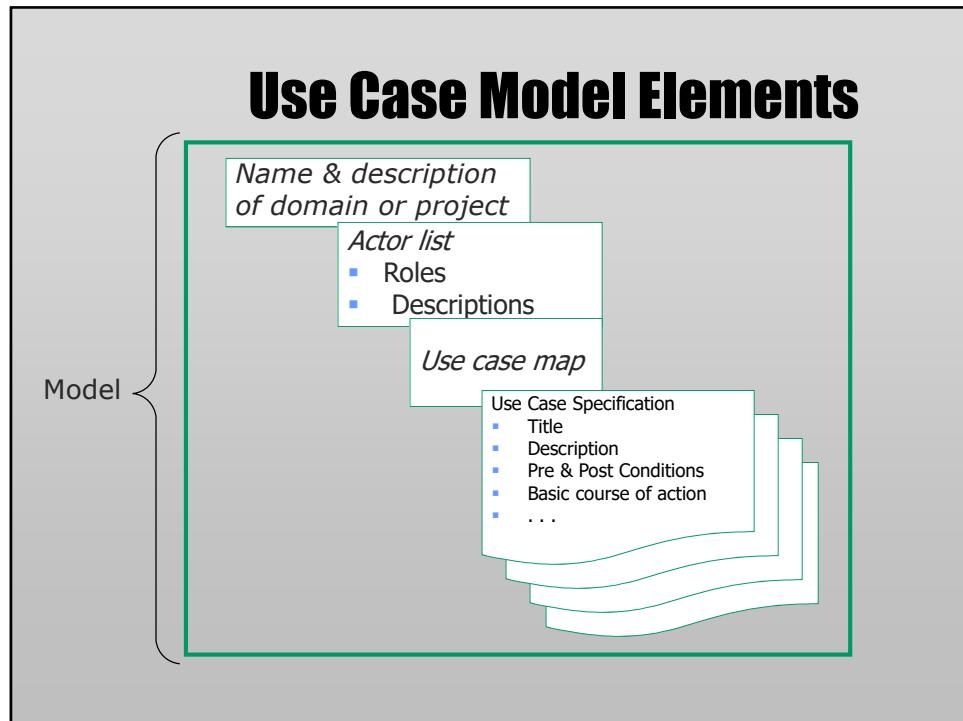
Push Flow Diagram

Push Flow



Information Flow Diagram

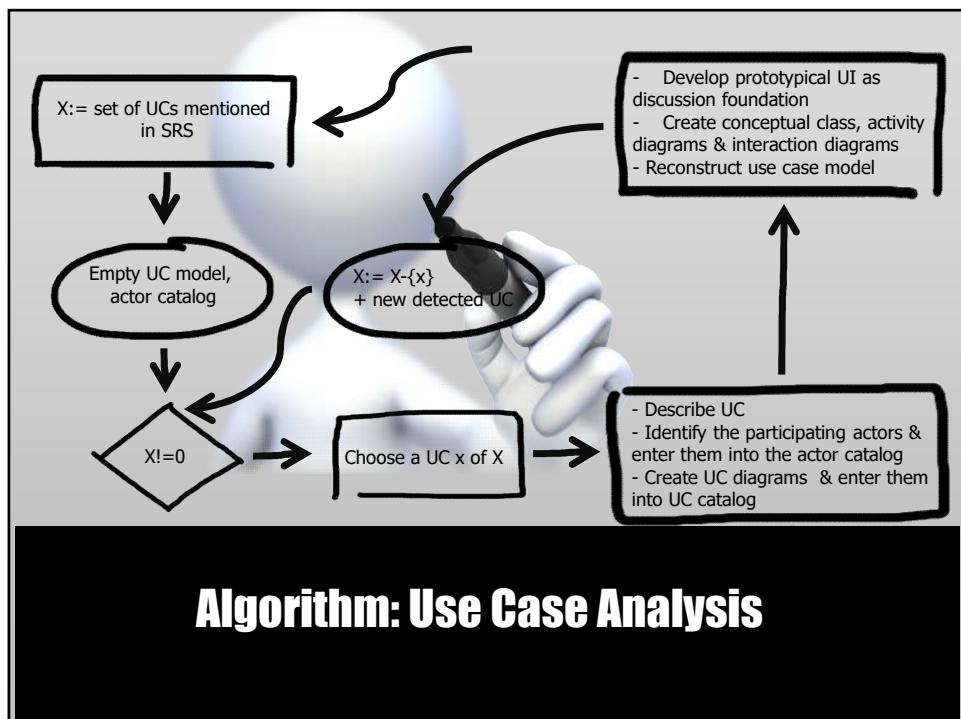
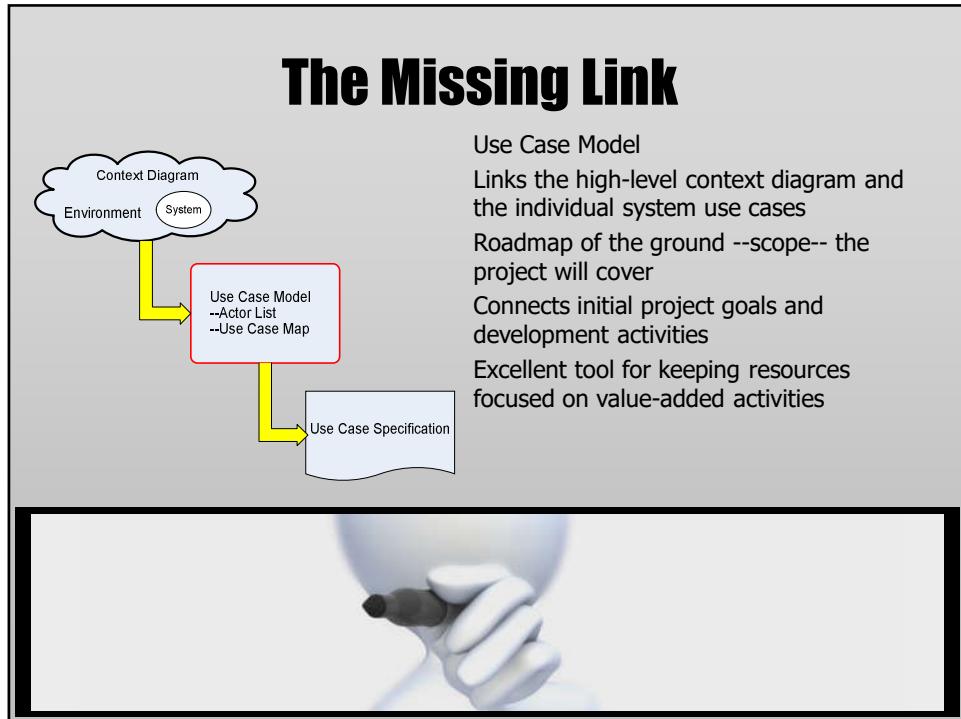




The Use Case Map

Tabular form

Actor	Use Case Title
Receptionist	Check patient for appointment
Receptionist	Schedule patient for appointment
Billing Clerk	Research Claim
Referral Coord.	Refer patient

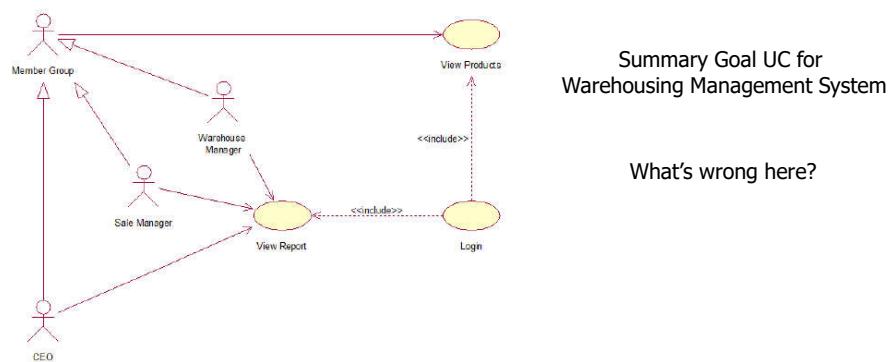


Section #4

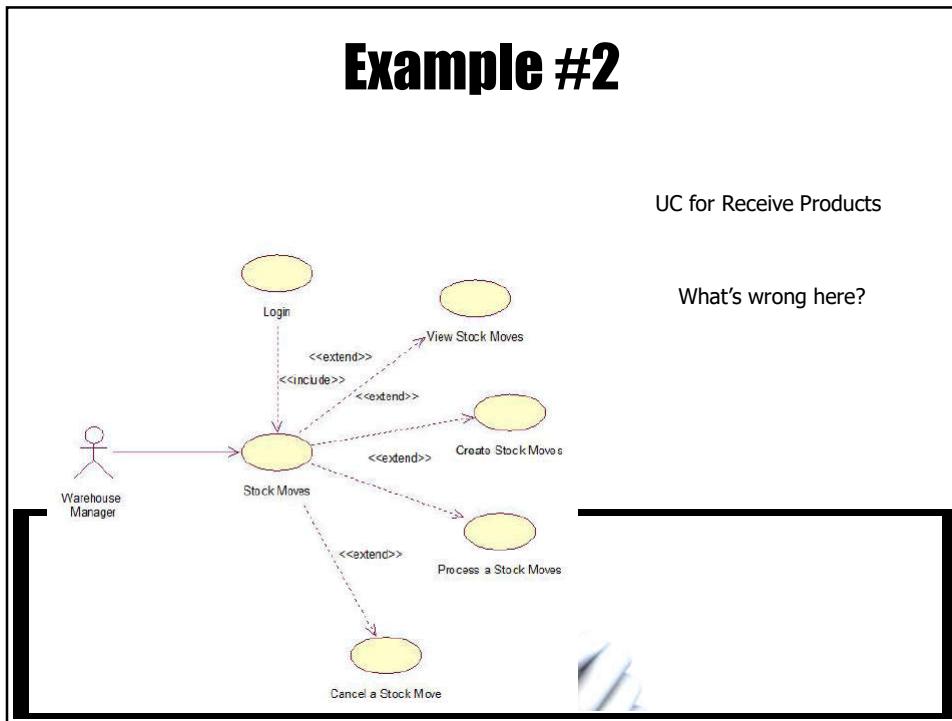
SAMPLES FOR USE CASES

UC Analysis Samples
Balancing Process

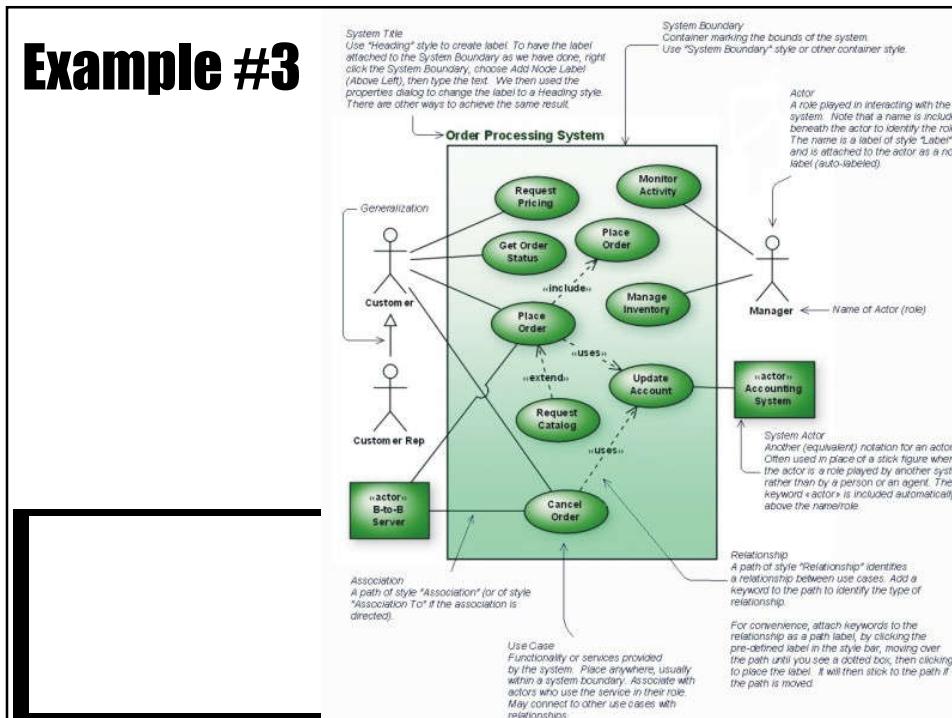
Example #1



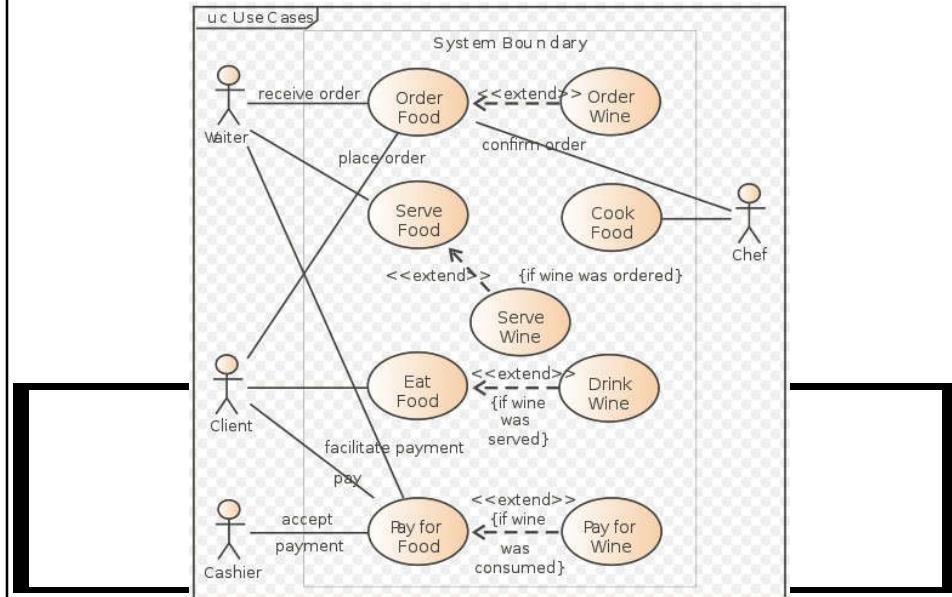
Example #2



Example #3



Example #4



Any Questions?

hvusynh@hcmiu.edu.vn

