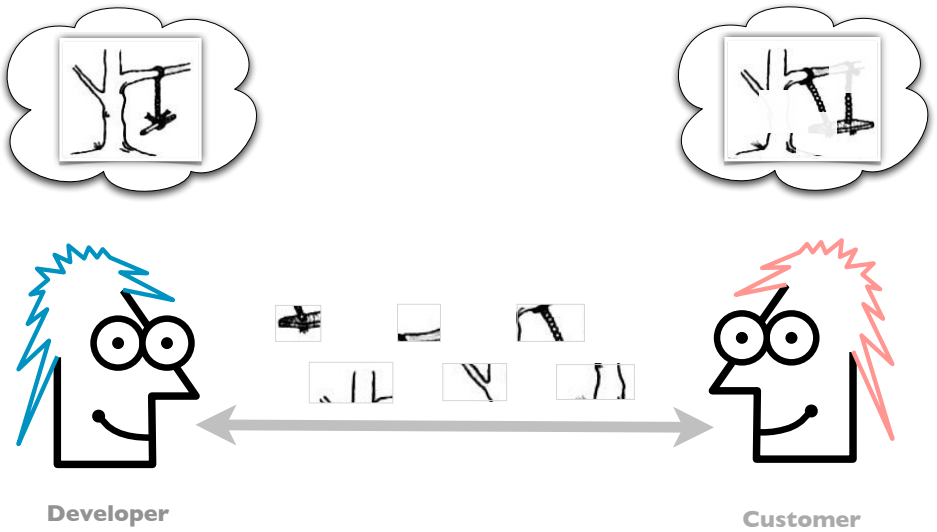
Foundations of Software Engineering

Introduction to Use Cases

Dr. Petru Florin Mihancea

Why Requirements Engineering ?



Use Cases

Capture
functional requirements

by describing **users interactions** with the system

Concepts

Actor

A **role** played by a user
with respect to the system

Same actor
different persons

Concepts

Actor

A **role** played by a user
with respect to the system

Same person
different actors

ophir.wordpress.com/2009/05/

Concepts

Actor

A **role** played by a user
with respect to the system

External to the system

Concepts

Actor

A **role** played by a user
with respect to the system

Interacts with
the system

http://histechreport.com/

Concepts

Actor

A **role** played by a user
with respect to the system

It can be an **external**
system

http://www.socialsignal.com

Concepts

Scenario

A sequence of interactions between an actor and the system

Customer

1. Customer selects the books
2. System asks for delivery address
3. Customer provides this information
4. Systems asks for credit card data
5. Customer gives this information
6. System validates the credit card via VISA services
7. System informs delivery department

Online Book Store

Concepts

Use Case

Main success scenario

1. Customer selects the books
2. System asks for delivery address
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4. System asks for credit card data
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Extension

In 6 validation fails
1. Customer reenters card infos (then back to 6) or cancels

Concepts

Use Case

set of scenarios

tied together by a common

goal of an actor

A use case is not an interaction step !

Main success scenario

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Concepts

Use Case

set of scenarios

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Use case description

Buy books

Primary actor: Customer

Secondary actors: Delivery department, VISA validation system

...

Main success scenario

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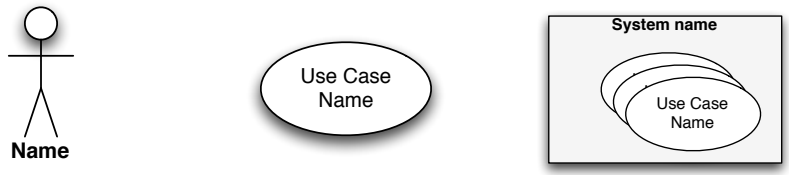
Use Case Diagram

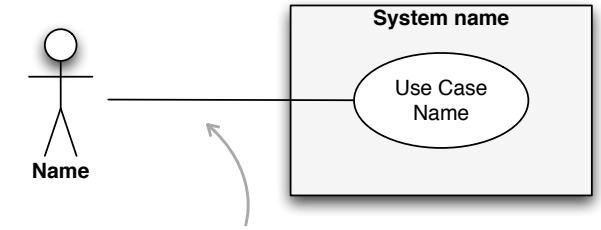
A model of the system capturing its external behavior



Usually a noun

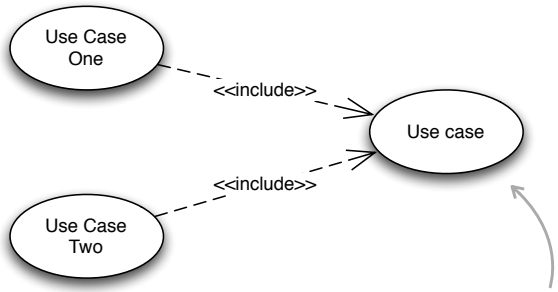
Usually a verb + noun

Use Case Diagram
Association



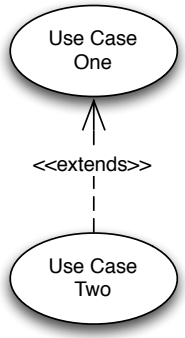
The actor is involved in the use case

Use Case Diagram
Include



Factors out common interaction steps

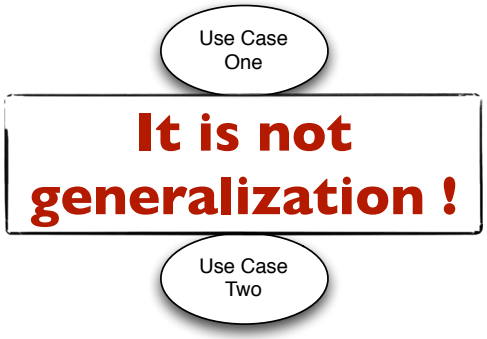
Use Case Diagram
Extends



UML

Use Case Diagram

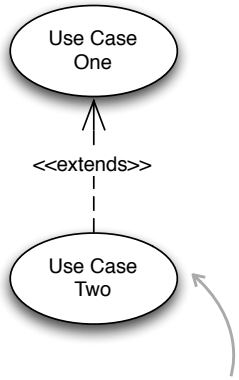
Extends



UML

Use Case Diagram

Extends



Steps inserted in the extended scenario in some circumstances

Tips

Identifying actors

NOT part of the system

Good questions

- Who obtains information from this system ?
- Who provides information to the system ?
- What other systems interact with this system ?
- Where does the system get information ?

Tips

Identifying use cases

satisfy a goal of an actor

Good questions

- What are users in this role trying to accomplish ?
- What does this actor need to be able to do ?
- What this actor need to be informed of by the system?

www.evz.ro

Let us model an ATM