
WEEK 4 Material

Lecture 4a (Wed.)

Use Cases/Actors

What is a use case ?

A sequence of actions performed by a system that yields an observable result of value to a particular actor.

What is an actor?

Someone or something that interacts with the system

The Use Case Detail

Each identified Use Case is defined in further detail.

Use Case name

Use Case summary -- a brief description of:

the nature of what the actor needs (the system) to do
the observable result of value to the actor

Preconditions / Postconditions

Use Case flow

simple – bullet list

more complex – "flow-of-events"

Use Case scenarios, as needed

Use Case Detail ~ completing the narrative

the set of user actions and system responses (execution of some computation or algorithmic procedure), initiated when:

*an actor signals (“sends a request to”) the system, or
the system gets a scheduled request.*

For example:

Use Case name:

Accept Bid

Use Case description:

record the amount a club member is offering in response to the invitation to bid in an auction.

Comment: This is either the member's initial bidding response of a subsequent response that changes the member's original bid-amount -- i.e., only the current (latest) bid-amount for a member in a given auction is recorded.

Use Case Detail ~ completing the narrative (continued)

Use Case Flow-of-Events:

a narrative (outline or list) describing the sequence of action / response steps.

Use Case Scenarios:

One use-case flow may have different courses of action – different paths through the flow, e.g.,

- different conditions

- alternative branches

Each scenario describes one path through the use-case flow.

- one "normal" (most typical) scenario ~ the "*Happy Day*" scenario

- additional variations – e.g., "what could go wrong?"

Use Case Detail ~ the Flow-of-Events

Begin by describing the "simple" (most typical) flow:

the Search for Firms and Submit RFQ flow of events:

The user selects link from homepage for SurveyThis application

The system displays zip code and type of survey form

The user enters zip code and survey type and submits form

The system displays Firm List

The user selects hyperlink on a firm to view online credentials

The user selects firms and submits Request for Qualifications (and names project)

The system sends Request for Qualification Notice to selected providers.

Use Case Detail ~ Scenarios

A scenario is one possible path through a use-case flow. It shows one particular combination of conditions within the use case.

For each step in the typical flow, ask "what could go wrong here?" or "how might this be done differently?"

For example, you could describe scenarios for:

Scenario 1: an invalid zip code is keyed in

Scenario 2: no firms in zip code area.

Scenario 3: the user decides to not submit RFQ

However: don't go overboard during this phase. You will do more of this in later phases.

Using a “Use Case Template”

- . *Format for collecting the detail about the use case*
- . *Note that its format is NOT specified as a part of the UML standard -- every site tends to define their own.... And “here is one” (next slide)*

a Use-Case Template

the use case name

purpose ~ services provided to the actor

UC results ~ emphasize the value it delivers to the actor

flow ~ actor action / system response

usage scenarios

non-behavioral requirements (example categories from IEEE standard)

EU-Rent EU-Bid:Requirements - Use Case Detail

Use Case: _____

Description:

Observable Result of Value:

Contract

Preconditions:
• _____

Postconditions
• _____

Flow-of-Events

1. The actor _____
2. The system _____
3. _____

Alternate Flow of Events
1. _____

Exception Flow-of-Events
1. _____

Scenarios

- (a) _____
- (b) _____
- (c) _____

Non-behavior Requirements

Performance:

Capacity:

Reliability and Availability:

Security:

Design Constraints:

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preconditions (known state)

postconditions (later)

alternate flows

exception flows

Another Use Case Template

Use Case	System displays login form
Summary	System displays login form for subscribers
Actors	General Users
Precondition	None
Description	Entry into the Subscribers SurveyThis
Content	<p>The user is presented with a form with the following fields</p> <p><i>Userid</i> required 6 – 20 characters, case insensitive</p> <p><i>Password</i> required, 6 – 20 characters, case sensitive, masked</p> <p>If cookie is available, then userid is pre-populated.</p> <p>The user is presented with a link for forgotton userid/password.</p>
Exceptions	<ul style="list-style-type: none">• User leaves userid field empty• User leaves password field empty• Username/password combination is not valid <p>Either exception will cause a login error page to be displayed to the user, advising them on the invalid entry.</p>
Postconditions	User is presented with SurveyExpert HomePage if login is successful, else the user is presented with login error page.