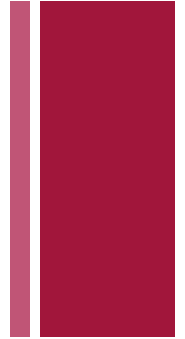# Writing Effective Use Cases.

COMP-4770

+ Essential and Concrete Use Cases

Essential use cases capture the essence of an interaction between actors and the System Under Design (SUD).

Concrete use cases refine essential use cases exposing all steps in the the interaction, alternative paths, and more detail.
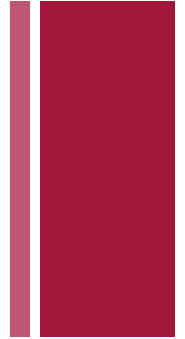
User Story: As a user I need to edit Questions or Answers so that mistakes can be corrected and Questions and Answers can be improved.

Essential:

The user edits a Question or Answer. The system updates the Question or Answer immediately or sends the edit to a Review Queue.
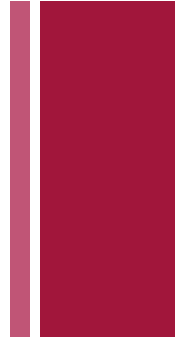
Concrete: (next slide)

+

An Essential Use Case

Essential Use Case:

- Name: Edit a Question or Answer (Essential)

- User stories addressed: US-53

- Precondition: The user is viewing a Question Page

- Scenario: The user edits a Question or Answer. The system updates the Question or Answer immediately or sends an Edit to a Review Queue.

- Postcondition: The user is viewing a Question Page

+ A Concrete Use Case

- Name: Edit a Question or Answer (Concrete)

- User stories addressed: US-53

- Precondition: The user is viewing a Question Page

- Main Scenario:
  1. The user clicks on "Edit" under a Question or Answer
  2. *The system loads an Edit Page for the Question or Answer, which displays the Question or Answer in an editable text area*
  3. The user optionally modifies the contents of the test area.
  4. The user clicks on "save".
  5. *The system creates an Edit and applies it.*
  6. *The system reloads the Question Page*
  - Postcondition: The user is viewing a Question Page

+ A Concrete Use Case (continued)
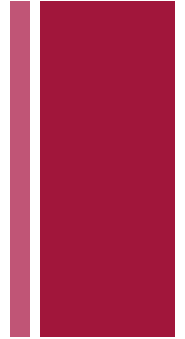
- Alternate Scenarios:
  - Cancellation
    - 4a The user clicks on "Cancel."
    - 5a *The system displays a Yes/No dialog: ``Are you sure you wish to cancel"*
    - 6a If the user clicks no, back to step 3, otherwise on to 7a.
    - 7a *The system reloads the Question Page*
    - Postcondition: The user is viewing a Question Page
  - Insufficient privilege
    - 5b: *If the user is a Guest User or has less than 1000 Privilege Points, an Edit is created and is sent to the Review Queue.*
    - 6b *The system reloads the Question Page*
    - Postcondition: The user is viewing a Question Page

+ Advice for use cases
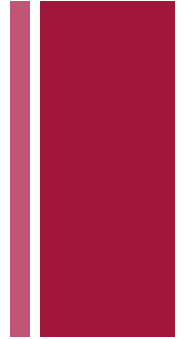
- Use cases are dialogs.

- Each use cases describes a *set* of *sequences* of *events that cross the system boundary*.

- Avoid descriptions of actions that are internal to the system (not apparent to external actors).
  - Bad
    - 4. The system sorts the Items List by price (lowest first)
    - 5. The system redisplays the top 10 items of the Items List
  - Better
    - 4. The system displays the 10 lowest priced items (lowest first).

+ Advice for use cases (cont)
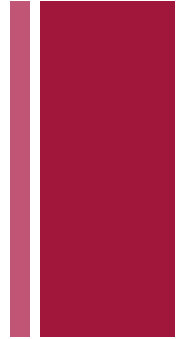
- Each step of a use case should describe the actions of one actor or the system under design, **but not both**.

- Factor out common parts into included (or invoked) use cases. (**DRY** – Don't Repeat Yourself)

- Indicate which user stories (or functional requirements) are implemented by each use case. (Tracability.)

- Use cases are the transitions of a grand state machine. Pre- and postconditions are the states.

- Sequence diagrams can illustrate use cases.

+ Further Reading and Viewing
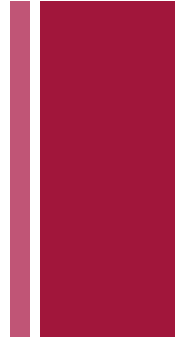
- Craig Larman : Applying UML and Patterns

- Doug Rosenberg and Matt Stephens: Use Case Driven Object Modeling with UML