

Use Case

Overview

Arman Kanooni

Use Case Agenda

- *Use Case Definition*
- *Use Case Example*
- *Who Uses the Use Case Model*
- *Use Case Procedure*
- *Case Study*
- *Productivity Plus Deliverable*
- *Questions*

Use Case Definition

A Use Case (Jacobson, 1995) is a description, typically written in structured English or point form, of a potential business situation that an application may or may not be able to handle. You can also say that a use case describes a way in which a real-world actor – a person, organization, or external system – interacts with the application.

For example, the following would be considered use-cases for a university information system:

Use cases describe the basic business logic of an application.

Enroll students in courses.

Output seminar enrolment lists.

Remove students from courses.

Produce student transcripts.

A student wants to enroll in a course but they are missing a prerequisite.

A student wants to enroll in a course but the course is over-booked for the term.

A student wants to enroll in a course, they have the prerequisites and there is still room left.

Use Case Definition

Use-case scenarios are specific examples of use cases.

To put our use cases into context, we will draw a use-case diagram (Rational, 1997; Jacobson, 1997), an example of which is shown in Figure 1.

*Use-case diagrams are straightforward, showing the **actors**, the use cases they are involved with, and the system itself. An actor is any person, organization, or system that interacts with the application but is external to it. Actors are shown as stick figures, use cases are shown as ovals, and the system is shown as a box. The arrows indicate which actor is involved in which use cases, and the direction of the arrow indicates flow of information.*

Use Case Example

- In this example, students are enrolling in courses via the help of registrars. Professors input and read marks, and registrars authorize the sending out of transcripts (report cards) to students. Note how for some use cases there is more than one actor involved, and that sometimes the flow of information is in only one direction.*

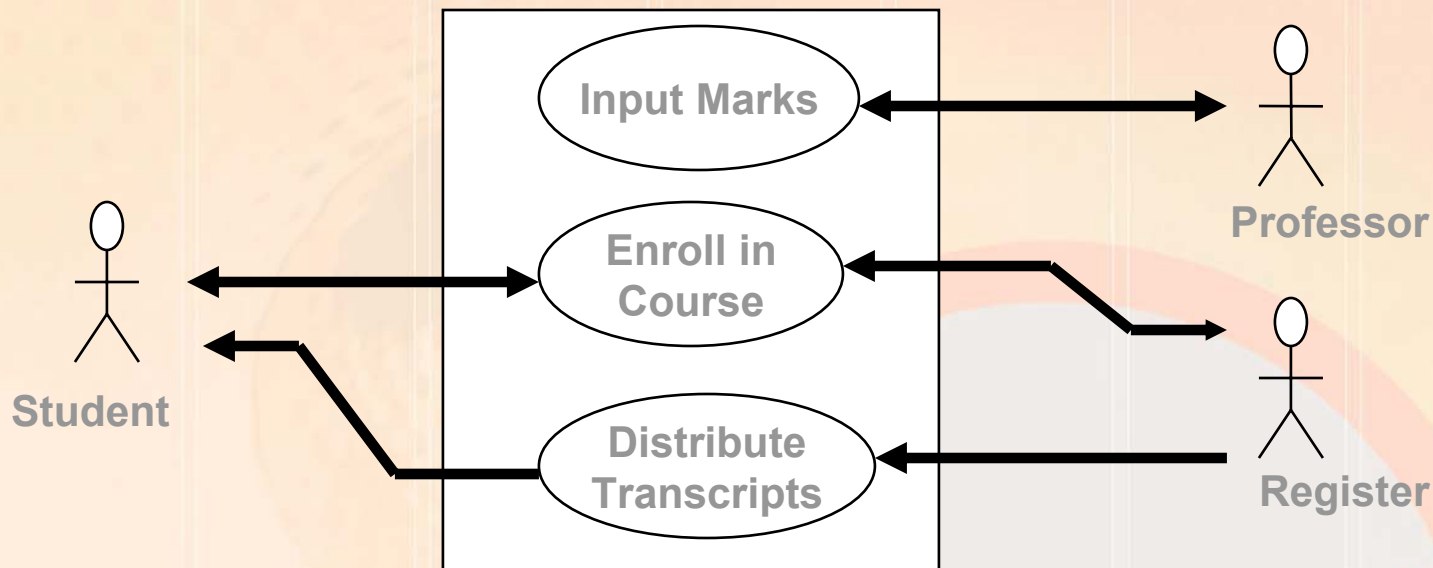


Figure 1

Who Uses the Use Case Model

- *Customer (approves result)*
- *User (defines what the system should do)*
- *System Architects (communicates understanding of system behavior)*
- *Functional Analysts (use as a base for functional analysis)*
- *Reviewers (examine the flow of events)*
- *System Tester (use as a base for defining test cases and test plans)*
- *Project Manager (define and track the project)*
- *Technical Writer (write the user's guide for the end users)*

Use Case Procedure

- 1. Define System Boundaries (Scope)*
- 2. Find Potential Actors*
 - Name and briefly describe the actors*
 - Identify communication-association between actors*
- 3. Find Use Cases Based on the requirements specification and actor's needs*
 - Find out how the actor wants to use the system*

Use Case Procedure

- *Examine each actor to determine what functionality the system must have.*
- *Name and briefly described the flow of events of Use Cases*
- *Look for re-use and re-useable Use Cases.*

4. Create a diagram showing the relationships between all the actors and Use Cases

5. Compile a Glossary of common terms and definition.



Use Case Procedure

6. *Simplify Use Cases which are complex*

7. *Review*

- *Discuss the Use Cases with users*
- *Build consensus on the system functionality*
- *Validate Use Cases against:*
 - *domain experts,*
 - *Users,*
 - *prototypes,*
 - *and common sense knowledge.*

8. *Identify reusable Use Cases*



Case Study

Provide Use Case for MS-Word

The following Use Case diagram provide a high level view of MS Word application requirements.

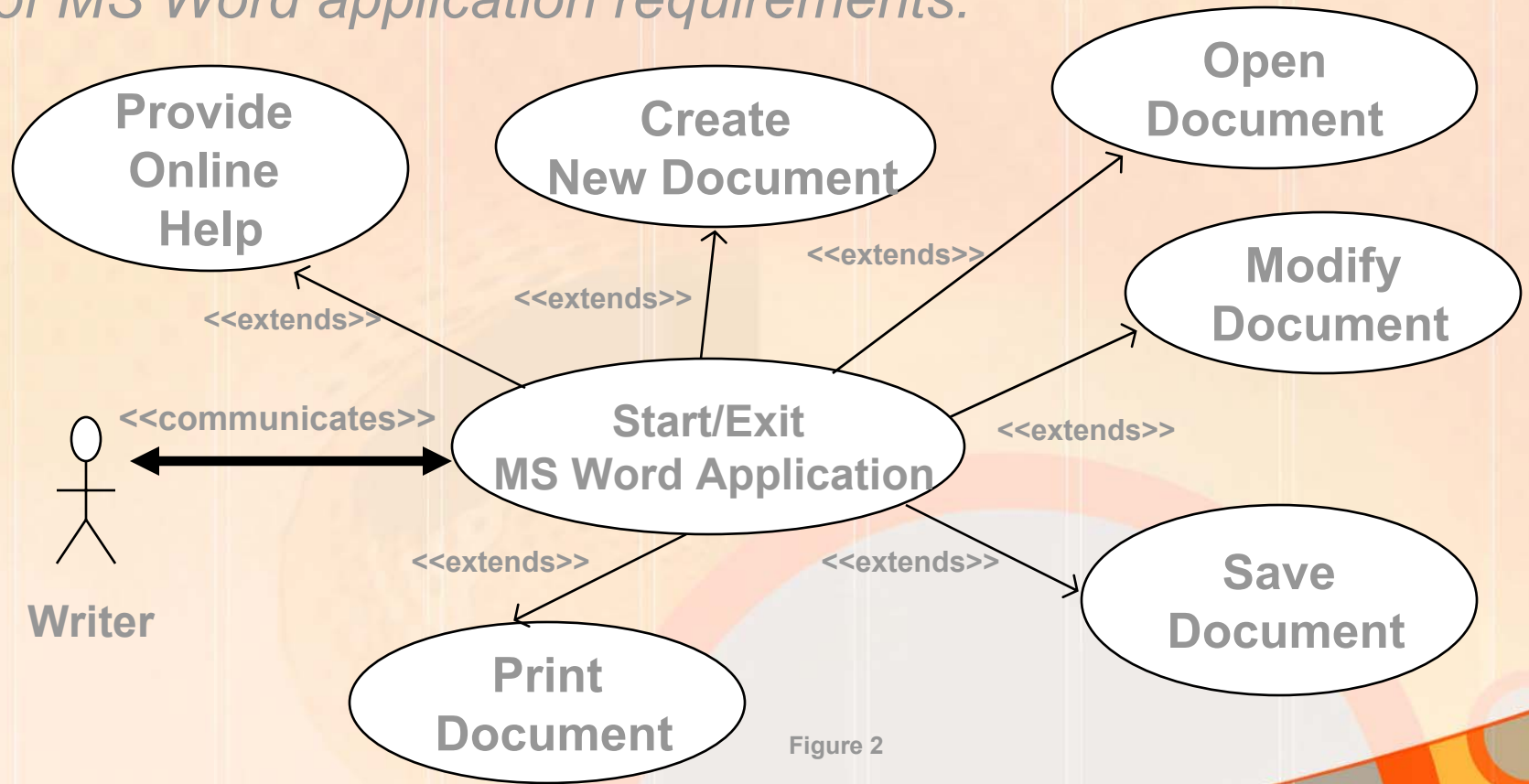


Figure 2



Case Study

- *Description*

Goal:

This use case describe the basic requirement of MS Word application. With it, a writer can start the application, create multiple document editors, activate and close editors as desired, and exit the application.

Scope & Level:

MS Word Application

Preconditions:

The Writer has logged onto a workstation that has MS Word application.

Case Study

Success End Condition:

The Writer was able to execute the MS Word application, create/activate/close document editor as described and exit the application.

Failed End Condition:

The Writer was either unable to start the MS Word application, or could not create/activate/close document editors or could not exit the application.

Primary Actor:

Writer

Secondary Actor:

None



Case Study

Operations

Step	Who	Action
1	Actor	Writer starts the MS Word.
2	System	A document editor and tool palettes appear.
3	Actor	Writer exits the MS Word Application.
4	System	All document editors and tool palettes close.

Case Study

Step	Who	Branching Action
2a1	Actor	The Writer may create a new document editor.
2a2	System	A new document editor appears.
2b1	Actor	The Writer may select another document editor to make it active.
2b2	System	The selected document editor becomes the active graphic editor. Any document either data displayed in support palettes changes to reflect the new active document editor.
2c1	Actor	The Writer may close a single editor.
2c2	System	The document editor closes. If there are no more document editors, the application will exsit.
2d		Additional functionality is available through these use case extensions: <ul style="list-style-type: none">- Create New Document- Save Document-

Case Study

Scenario Identification

Scenario	Steps	Description
1	1,2,3,4	Start/Exit MS Word
2	2a1, 2a2	Open New Document editor
3	2b1, 2b2	Activate Document editor
4	2c1, 2c2	Close Document editor.