



Tutorial Form

Title: Requirements Analysis with Use Cases

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Requested level: Novice

Background: No requirements

Abstract

We will show how Use Cases can be used at an early stage of the software development process for modeling user requirements and getting insights into the expected behavior of the system.

A use case describes every possible situation that can arise when a user has a particular goal against the system. Use cases are an excellent tool for capturing behavioral requirements of software systems. Use cases are popular because of their informal, easy to use and to understand style which caters to technical as well as non-technical stakeholders.

Contrary to popular belief, use cases are primarily textual descriptions, whereas the graphical appearance, called a use case diagram in UML, tells nothing more than the names of the use cases and their relationships to actors.

Upon completion of this tutorial, participants should be able to:

- understand the role of use cases in requirements analysis;
- understand the importance of capturing the functional requirements without going into design/implementation detail;
- understand the relationship between use cases and non-functional requirements;
- understand what makes an effective use case;
- understand the limitations of use cases and be aware of other models available that can make use cases more precise and rigorous.

Presenter summary

Alfred Strohmeier is a Professor of Computer Science at the Swiss Federal Institute of Technology in Lausanne (EPFL), Switzerland, where he leads the Software Engineering Laboratory. He has been teaching object-oriented technologies and Ada in academic and industrial settings. He was a Distinguished Reviewer of Ada 95 and participated in its definition. In 2003, he became a member of the Swiss Academy of Engineering Sciences. His current interests are software engineering; software development methodologies, especially object-oriented approaches; software development environments; and technologies related to the Ada language.



Why you should participate in this tutorial? You should attend this audience if you want to learn how to write effective Use Case descriptions for requirements elicitation. It is often difficult to bootstrap the software development process in an orderly manner. The first step, i.e. requirements elicitation, is mostly about communication between people. When some of the stakeholders are not software specialists, technical notations are clearly not suitable as a communication vehicle. Because of their informal nature, Use Cases are then a popular choice. A complete set of Use Cases specifies all the different ways to use the system, and thus defines all behavior required of the system, bounding the scope of the system. Even though Use Cases are a powerful tool, some training and discipline are needed for writing effective Use Cases. The tutorial proposes to use a goal-oriented approach, and will propose a format for writing Use Case descriptions and criteria for structuring them. The approach will be exemplified on several case studies.