

Tutorial

Learning and Teaching Frameworks

Jutta Eckstein

Objects in Action
Thierschstr. 20
80538 Munich, Germany
+49 89 2248 27
jeckstein@acm.org

Summary

- The process of training and educating people in object oriented design frameworks is a task with many unsolved problems. While many ideas are presented at OO conferences and published in journals each year about framework design, relatively little attention has been paid to effective techniques for educating people in using frameworks.

Often people using a framework aren't the framework's authors. In addition, frameworks are almost always rather complex, and grasping the framework's underlying concepts is generally a major challenge and barrier to their effective application. Trainers need a set of guidelines for how to train new users unfamiliar with frameworks' architecture, so they are able to understand the underlying concepts, and are able to use and adapt the framework. The goal of this paper is to show how different teaching techniques emphasize different aspects of the architectural design of a framework, and how these techniques can be combined into a general framework instruction method.

Teaching approaches covered:

- • Teaching and learning a framework should be strongly related to the characteristics - the white Box and the Black Box aspect - of a framework. Black Box teaching helps to clarify the scope and boundary of a framework. Whereas White Box teaching considers the inherent architecture by focussing either on the design patterns inside the framework or on the Hot Spots, the points of predefined refinement.

The combination of these teaching techniques allows the training process to progressively dive into the framework. The basic idea for this combination is the incremental teaching approach, which discusses a complex framework by using several smaller and simpler frameworks and patterns. With each part the students learn, they become progressively more familiar with the context of the framework and the possibilities the framework offers them.

In the session all these teaching approaches will be explained by example.

Audience:

- This session is relevant for everybody who has to teach or learn a framework. The audience should have an advanced level of experience with objects, e.g. they should be familiar with design patterns.

About the session leader:

- Jutta Eckstein is an independent trainer and consultant in the area of object-oriented application development. She develops object-oriented software since 1990 and has worked for Integral Development and ParcPlace Systems (today ObjectShare) for many years also as a trainer and consultant. Before becoming an engineer, Jutta completed a pedagogical study to become a teacher.