

## Applying Concurrent Development Process for the Web Using Aspect-Oriented Approach

**Authors :** Hiroaki Fukuda

**Abstract :** This paper shows a concurrent development process for modern web application, called Rich Internet Application (RIA), and describes its effect using a non-trivial application development. In the last years, RIAs such as Ajax and Flex have become popular based mainly on high-speed network. RIA provides sophisticated interfaces and user experiences, therefore, the development of RIA requires two kinds of engineer: a developer who implements business logic, and a designer who designs interface and experiences. Although collaborative works are becoming important for the development of RIAs, shared resources such as source code make it difficult. For example, if a design of interface is modified after developers have finished business logic implementations, they need to repeat the same implementations, and also tests to verify application's behavior. MVC architecture and Object-oriented programming (OOP) enables to dividing an application into modules such as interfaces and logic, however, developers and/or designers have to write pieces of code (e.g., event handlers) that make these modules work as an application. On the other hand, Aspect-oriented programming (AOP) is expected to solve complexity of application software development nowadays. AOP provides methods to separate crosscutting concerns that are scattered pieces of code from primary concerns. In this paper, we provide a concurrent development process for RIAs by introducing AOP concept. This process makes it possible to reduce shared resources between developers and designers, therefore they can perform their tasks concurrently. In addition, we describe experiences of development for a practical application using our proposed development process to show its availability.

**Keywords :** aspect-oriented programming, concurrent, development process, rich internet application

**Conference Title :** ICSEA 2015 : International Conference on Software Engineering Advances

**Conference Location :** Copenhagen, Denmark

**Conference Dates :** June 11-12, 2015