

Contents

	Page
Editorial	5

COLUMNS

Strategic Software Engineering

CM – Configuration Change Management	7
<i>By John McGregor</i>	

A configuration can be thought of as defining a coupling that binds together artifacts that serve some common purpose. That means change to one of the artifacts in the configuration is likely to trigger changes to other artifacts. From a tactical perspective, configuration management must provide tools that manage the individual modifications to assets and products and a procedural environment in which distributed, concurrent work is facilitated.

OO Requirements Engineering Task

Common Requirements Problems, Their Negative Consequences, and the Industry Best Practices to Help Solve Them	17
<i>By Don Firesmith</i>	

And now a new project is about to start. you have been tasked to lead the requirements effort. And you have also been tasked to develop and document the project's process for performing requirements engineering (RE) with the understanding that what you come up with is intended to become your company's standard RE process if it works reasonably well on your project. So what do you do?

Java at Large

The Saverbeans Screensaver and Initium RJS System Integration: Part 5 35

By Douglas Lyon and Francisco Castellanos

We describe the process followed to integrate the IRJS screensaver with the IRJS grid computing middleware. Our goal is to provide a minimally invasive CPU scavenging technology. The IRJS screensaver launches a Compute Server (CS) when the computer enters a quiescent state. The CS joins the grid and volunteers its resources. The IRJS screensaver terminates the CS when any user input is detected. We use the [Saverbeans] framework to create our screensaver and to allow such behavior.

Business Objects

Where's the (Business) Beef? 59

By Mahesh Dodani

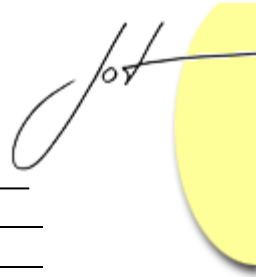
SOA has dug its heels into all aspects of software engineering and become entrenched as the main enabler of the holy grail of aligning IT to business, along with the ability to facilitate business innovation through a flexible and agile IT. Service Oriented Architecture teaches that business flexibility is achieved by accessing business functions, data and processes as business services, which may be hosted on disparate systems and by service providers; wiring them together in new and creative ways to create competitive advantage.

Book review

The Art of Computer Programming, Volume 4: Generating All Trees, History of Combinatorial Generation 65

Reviewed by Charles Ashbacher

T by Donald E. Knuth, Addison Wesley & Prentice Hall, Upper Saddle Rive, New Jersey, 2006. 120 pp., \$19.99 (paper). ISBN 0-321-33570-8.



REFEREED ARTICLES

Towards a Tool Supporting Integration Testing of Aspect-Oriented Programs 67

By Philippe Massicotte, Linda Badri and Mourad Badri

There have been many approaches to Aspect-Oriented Design. Each approach attempts to capture and address a significant issue relating to crosscutting in design. Aspect-Oriented Programming does for crosscutting concerns what Object-Oriented Programming has done for object encapsulation and inheritance: it provides language mechanisms that explicitly capture crosscutting structure and achieve the usual benefits of improved modularity.

A Framework to specify Declarative Rules on Objects, Attributes and Associations in the object model 91

By C. Anantaram

Rules can be used to specify semantic checks based on object properties and associations. Allowing rules on the object, attributes and associations will provide evaluating conditions and also carrying out some actions. New states can be derived from existing states and this new state can be used for further processing.

UML-based Approach to Specify Secured, Fine-grained Concurrent Access to Shared Resources 107

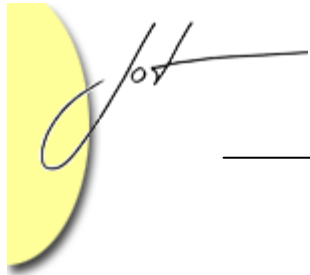
By Jagadish Suryadevara and Shyamasundar R.K.

In spite of several efforts, concurrency in UML remains an active research area, requiring concrete approaches to precise modeling to support the programming activity. UML through its active object paradigm, provides various mechanisms to specify concurrency.

Software Design Metrics for Object-Oriented Software 121

By K.K.Aggarwal, Yogesh Singh, Arvinder Kaur and Ruchika Malhotra

The importance of software measurement is increasing leading to development of new measurement techniques. As the development of object-oriented software is rising, more and more metrics are being defined for object-oriented languages. Many metrics have been proposed related to various object-oriented constructs like class, coupling, cohesion, inheritance, information hiding and polymorphism.



Reuse and Abuse	139
<i>By Susan Eisenbach and Chris Sadler</i>	

The designers of modern programming languages and runtime systems have devoted considerable efforts to ensuring that today's software systems can, in some circumstances, be updated incrementally through the mechanism of dynamic linking. We examine those circumstances and the situations where they do not apply.

OUTLOOK

A brief outlook to the next issue	169
--	-----