

## **Design of the modern domain specific programming languages**

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### **Abstract**

© Medwell Journals, 2015. In the modern industry of the software design the new paradigm, the new approach Language-Oriented Programming (LOP) becomes more and more popular. LOP is such approach to programming that is based on creation of the Domain-Specific Language; DSL) for solution of tasks within a specific subject area. In the LOP, a programmer firstly creates a single or a few DSL for solution of a particular set of tasks and then uses the created DSL by the software system design. They distinguish the two main kinds of the domain-specific languages: external (external DSL) and internal (internal DSL or embedded DSL) ones. The external DSL feature their own syntax separated from the core language of the application. The internal DSL use as the basis a general purpose programming language but differ through using a specific subset of capabilities of this language within a particular style. The study provides the review of the modern means (languages, platforms, development environments) allowing creating both external and internal DSL. It shall be noted that one of the most important issues by creation and further use of DSL is availability of a language workbench. The language workbench represents specialized integrated development environment, IDE for identification and creation of DSL. It is the complexity of creation of the language infrastructure required for implementation of DSL of different kind and operational comfort being one of the reasons of the small-scale use during commercial development of the software where the high developers' performance is crucial. In this review, special emphasis is laid on technologies allowing ensuring support of development in the LOP-style by means of the language workbench.

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### **Keywords**

Design, Development, Domain-specific programming, Information architecture, Information systems, Programming languages, Programming techniques (methods), Software