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Methods of integration and execution of the code of modern programming languages

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Abstract

© Mcdwell Journals, 2015. The study shows that in the modern projects for software design the need for a specialized programming tool for solution of tasks relating to a particular subject area arises frequently. However, there is no universal programming language that would be equally efficient when applied in any area. In this case, the most efficient method is application of the domain-specific languages dedicated to solution of a narrow range of tasks. At the same time, design of a specialized programming language is labor-consuming and expensive process that is not always possible within the frameworks of a particular project. The review of the methods of extension of the modern programming languages specified by the researches and used for classification of extensions by method of integration and execution of the extension codes is provided. The application of extensions in the real programming systems with examples of the source codes in the extended languages is considered, the advantages and disadvantages of each of the methods discussed are analyzed. The simplest and the most frequently used methods of integration of the extension code into the core code not requiring changes in the basic programming system are considered. In the presented review, the information about kinds of extensions in the modern programming languages, about the methods of integration and execution of the extension codes is systematized. This material provides the idea of the existing enhanced capabilities in known programming languages that allows orientating in the variety thereof and choosing the most appropriate tool for solution of the specific specialized tasks in the most convenient and efficient way with the use of programming language extensions. This information will also be useful by selection of the optimal methods for implementation of proprietary extensions if necessary. The methods described in this study have been used by development of the application for an automated information system for diesel engine testing.

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Keywords

Code integration, Design (engineering), Development, Information architecture, Information systems, Programming languages, Programming methods, Software