

Xtext of Eclipse Text Modeling Framework

Abstract of VYPE project "Lecture notes"

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The purpose of this lecture is introduction of a DSL framework called Xtext. We feel the need to provide basic information about domain specific languages, such as common usage and characteristics. Both terms are part of so called model driven software development. Tools used in that context can be graphical or textual.

Xtext is an Eclipse and Java based open source framework. The main focus of the Xtext framework is the creation of the domain specific languages. There are many tools that allow such work. However, Xtext can be counted among the very few test-based. It is not only a variant of antlr nor alternative to yacc. Of course, considering it a framework is only a narrow point of view in this case. Xtext provides a vast environment that is fully integrated into Eclipse and Eclipse Modeling Framework. Based on a given grammar, which resembles EBNF notation, Xtext generates not only the intended language, but also provides an IDE for it (including parser, highlighter and other fancy stuff developer would expect from an IDE). Semantics is provided via mapping of constructs of the DSL to Java objects which enables seamless integration of various DSLs and Java itself.

The domain specific languages form a set of languages that are designed to target a particular subset of problems, unlike general purpose programming languages such as C++ or Java. In exchange for a limited expressing power the user (programmer) gains access to powerful tool that allows the user quickly and comfortably develop solutions that would otherwise take more time. The DSLs can both be, again, graphical and textual.