

Eclipse Xtext

Advance course

Xtext is a Modeling framework for building Textual Domain-Specific Languages (DSL). It takes the language definition as input and generates infrastructure that can be fully customized, and has integration with popular IDE's like Eclipse and IntelliJ idea.

The framework can also be used to create fully-functional programming languages. Xtend is a Java-like language and is a proof of concept of how involved a language implementation in Xtext can be.

Workshop

In this workshop, we focus primarily on the advanced Xtext concepts described in the course content. Participants will have an opportunity to practically implement an expression-language based on Xbase, a custom code generator using Xtend, and make use of all the advanced concepts.

Key concepts mentioned in the training schedule is covered in-depth with appropriate hands-in exercises.

Prerequisite

Eclipse Xtext Basic course is mandatory.

Modalities

Duration: 8 hours

Structure: Instructor-led with 100% hands-on labs

Participants: Maximum 8 per workshop

Equipment: Participants supply their own computer with the latest Eclipse and DSL tooling installed.

Agenda

Introduction

- Xtext framework introduction
- Advance example use-cases.

Language definition

- Introduction to the Xbase language
- Defining an expression-language based on Xbase
- Overriding Xbase Rules.

Runtime concepts

- Scoping, Linking, and Indexing
- Local and Global Scoping
- Providing a library.

Code Generation

- Introduction to the Xtend language
- Defining a Code generator for our language using Xtend
- Testing the code generation.

Testing

- Unit-testing language Runtime
- Unit-testing UI features.

Extending Xbase

- Extending the Xbase Compiler
- Customizing the Xbase Interpreter.