



Developing Programming and Domain Specific languages

ABOUT XTEXT

Xtext is a framework for building textual DSL's. It takes the language definition (a.k.a grammar) as input and generates infrastructure that can be fully customized and has proper 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.

The latest release supports integration with Web which allows editing and modifying your languages in a browser.

ABOUT THE WORKSHOP

In this course, we will be developing a fully-functional Domain Specific language (DSL) using Xtext Framework. We'll learn how the grammar is build and how various infrastructural components can be customized to suite the project needs

We have chosen Xtend as our primary language for programming. This is to get a first-hand experience of using a language developed using Xtext.

The workshop is based on Xtext 2.9.0 and covers latest features and enhancements made to the framework.

AUDIENCE

Java Developers, Architects, Domain Experts interesting in developing languages

PREREQUISITE

Experience of programming in Java
Experience of using Eclipse IDE

COURSE DETAILS

Duration : 8 hours
Structure : Instructor led with at-least 90% hands-on labs and tutorials
Equipment : Participants supply their own computer with the latest Eclipse and Xtext installed

ABOUT TRAINER

Eclipse expert with a decade of experience in building applications based on Eclipse. He is a public speaker, has presented at various Eclipse Demo camps and at Eclipse Con India. He is a seasoned trainer and has trained more than 200+ engineers, most of them are officially working on commercial Eclipse based products at various multinational companies.

WORKSHOP SCHEDULE

OVERVIEW

- What is Xtext ?
- How does it work ?

GETTING STARTED

- Creating a DSL
 - Created an Xtext project
 - Project Layout
 - Build your own language
 - Generate Language artifacts
 - Run the generated IDE

THE GRAMMAR LANGUAGE

- The Syntax
 - Language declaration
 - EPackage declaration
 - Rules - Parser, DataType and Enum
- Grammar Mixins
 - Reusing Existing grammars
- Common Terminals
- Overriding terminal rules

RUNTIME CONCEPTS

- Validation
 - Automatic and Custom Validation
- Scoping
 - Global and Local Scoping
 - Index implementation
- Formatting
 - Pretty printing

IDE CONCEPTS

- Proposal provider
- Quick fixes
- Syntax highlighting

CODE GENERATION

- Defining a code generator

