

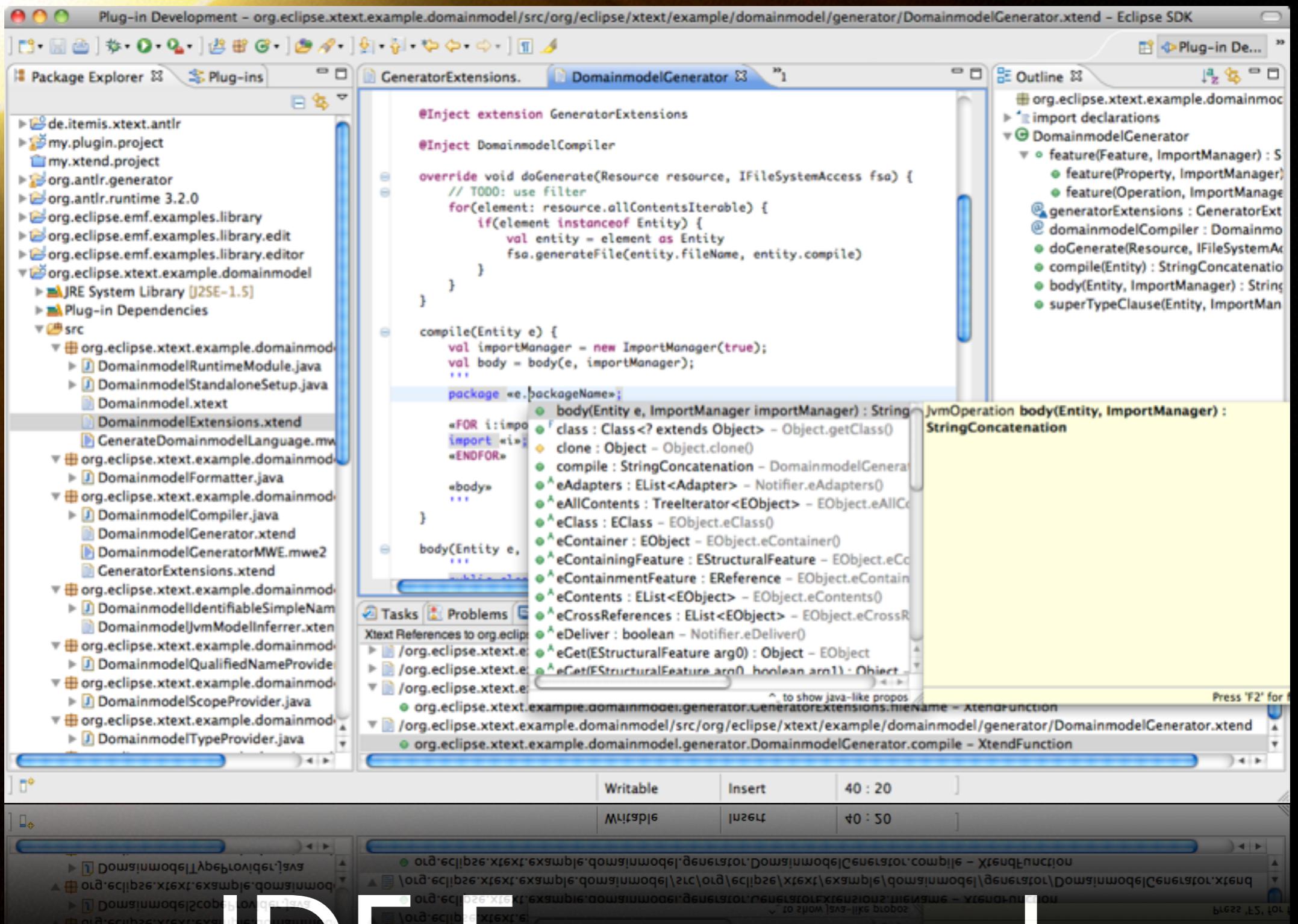
What's New In Luna?

Xtext

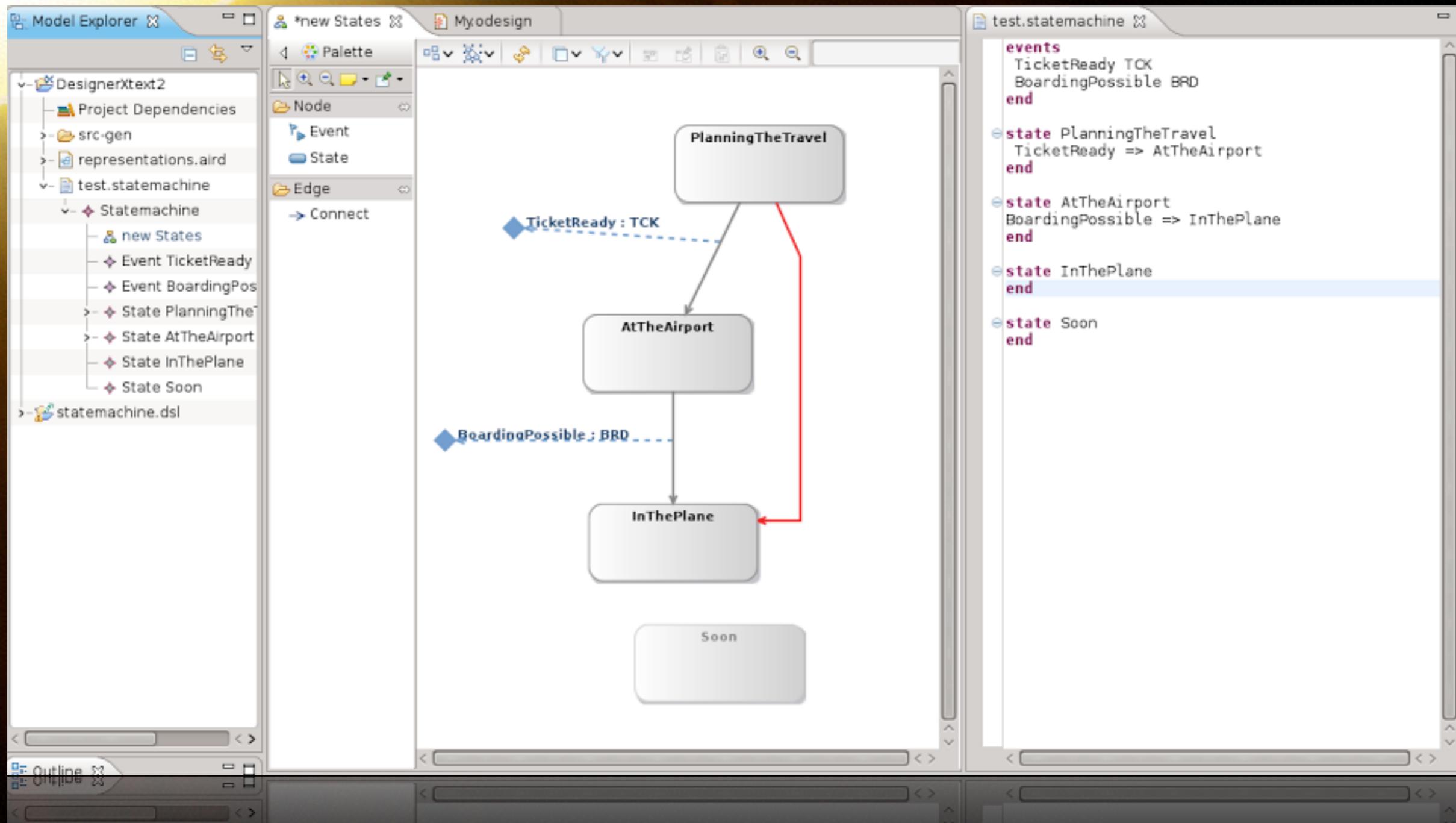
Sven Efftinge (itemis)



What is Xtext?



# IDE Framework



# Modeling Tool

openHAB Designer

Presence.rules

```
rule "Leaving Home"
when
    Item Presence changed to OFF
    then
        Radio.sendCommand(OFF)
        ITunesPlayer.sendCommand(OFF)
        if(Shutter_Auto.state==ON) {
            Shutter_Auto.send(ON)
        }
    end

rule "Coming Home"
when
    Item Window_GF_Frontdoor changed to OPEN
    then
        if(!Presence.changedSince(now.minusMinutes(5))) {
            Presence.sendCommand(ON)
        }
    end
```

Quick Access

Internal Web Browser

First Floor

Ground

Cellar

Garage

Terrace

Status

http://

# DSL Toolkit



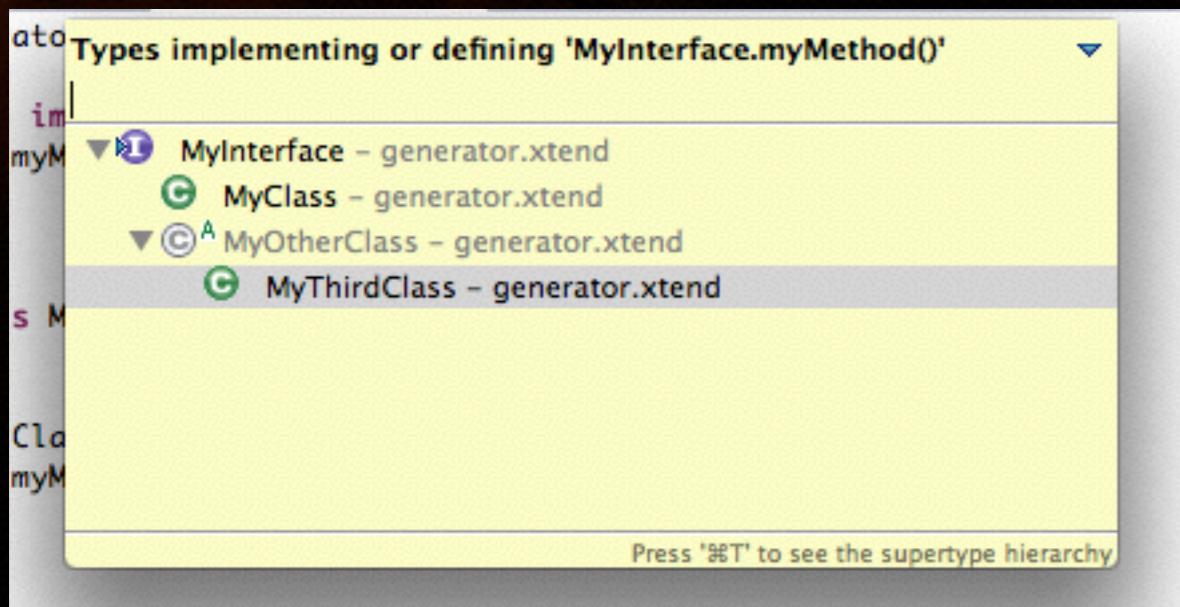
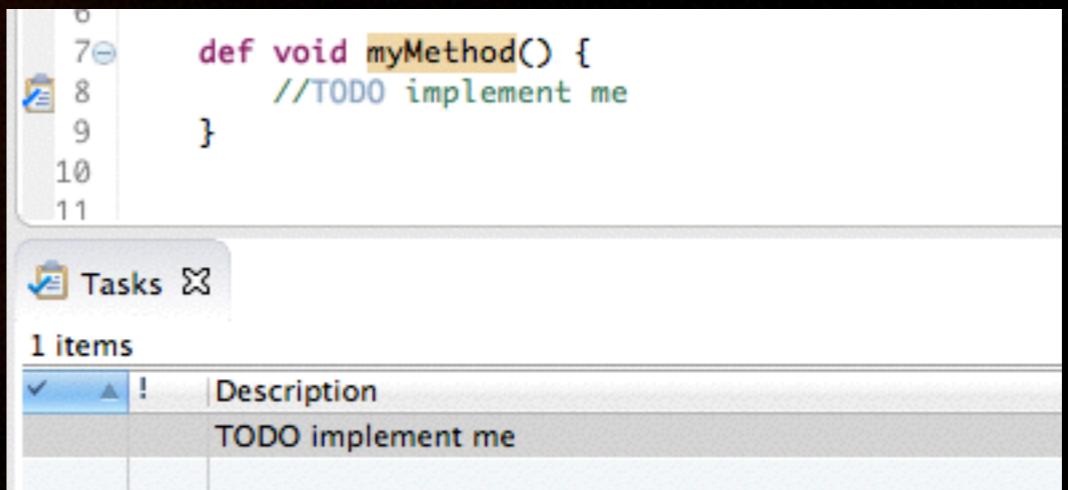
What's new in Luna?



Version 2.6.1

# New UI Features

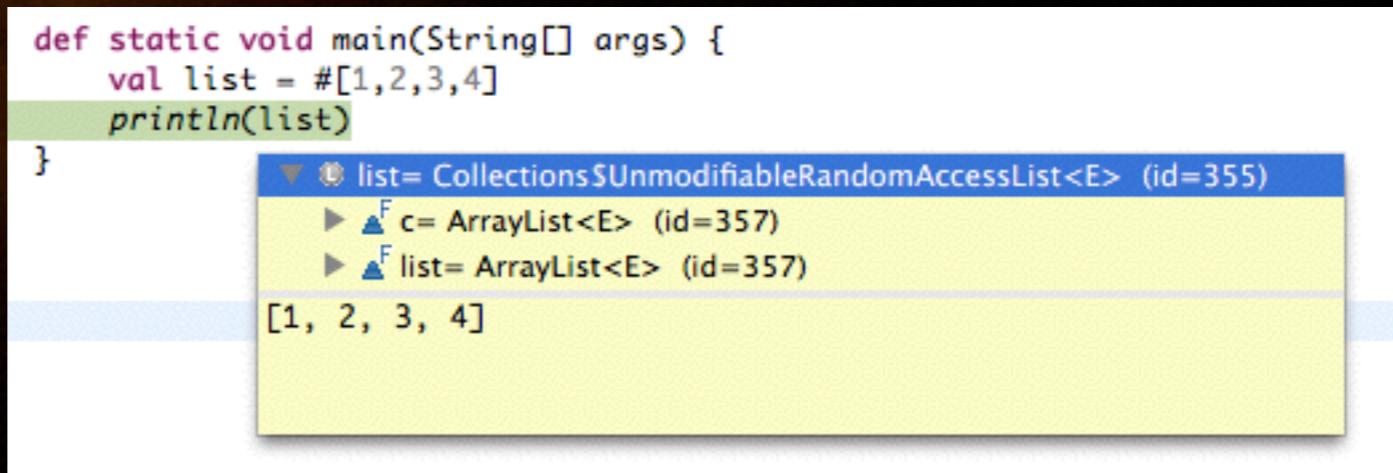
## Task Markers



Open Implementation  
(Xbase)

# New UI Features

## Debug Hover (Xbase)



A screenshot of the Eclipse IDE interface in a dark theme. The code editor window title is "RuleEngine.xtext". The code in the editor is:

```
1 grammar org.xtext.ruleengine.RuleEngine with org.eclipse.xtext.xtend.lib.Extension
2
3 generate ruleEngine "http://www.xtext.org/ruleengine/RuleEngine"
4
5 @Model
6 declarations+=Declaration*
7
8 @Declaration :
9     Device | Rule
10 ;
11
```

## Dark Theme Support

# Xbase Expressions

synchronized

```
1. synchronized(lock) {  
2.     // do stuff  
3. }
```

$+=$ ,  $-=$ ,  $*=$ , ...

```
1. var i = 0  
2. i += 42
```

```
1. var distance = 15.km  
2. distance += 5.km
```

old-school for-loop

```
1. for (var i = 0; i < 99; i++) {  
2.     println(''+i+' bottles of beer on the wall.')  
3. }
```

increment operator

```
1. var i = 0  
2. while (condition()) {  
3.     i++  
4. }
```

# New in Xtend

## anonymous classes

```
1. val tabListener = new ActionBar.TabListener() {  
2.  
3.     override onTabSelected(ActionBar.Tab tab, FragmentTransaction ft) {  
4.         // show the given tab  
5.     }  
6.  
7.     override onTabUnselected(ActionBar.Tab tab, FragmentTransaction ft) {  
8.         // hide the given tab  
9.     }  
10.  
11.    override onTabReselected(ActionBar.Tab tab, FragmentTransaction ft) {  
12.        // probably ignore this event  
13.    }  
14.};
```

## nested classes

```
1. class A {  
2.     static class NestedClass {  
3.     }  
4. }
```

## operator declaration

```
1. class Money {  
2.     def + (Money other) { ... }  
3.     def - (Money other) { ... }  
4.     def * (BigDecimal times) { ... }  
5.     ...  
6. }
```

# Gradle Support

Generic Plug-in for all Xtext languages

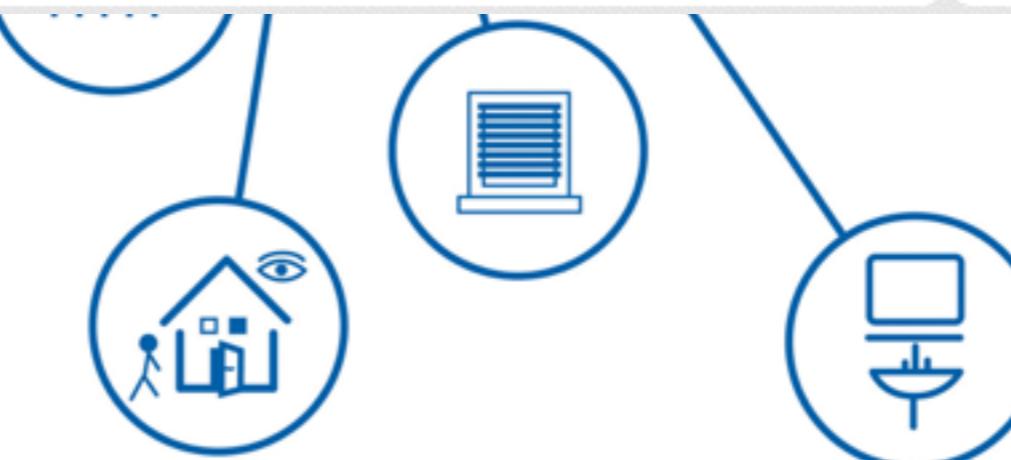
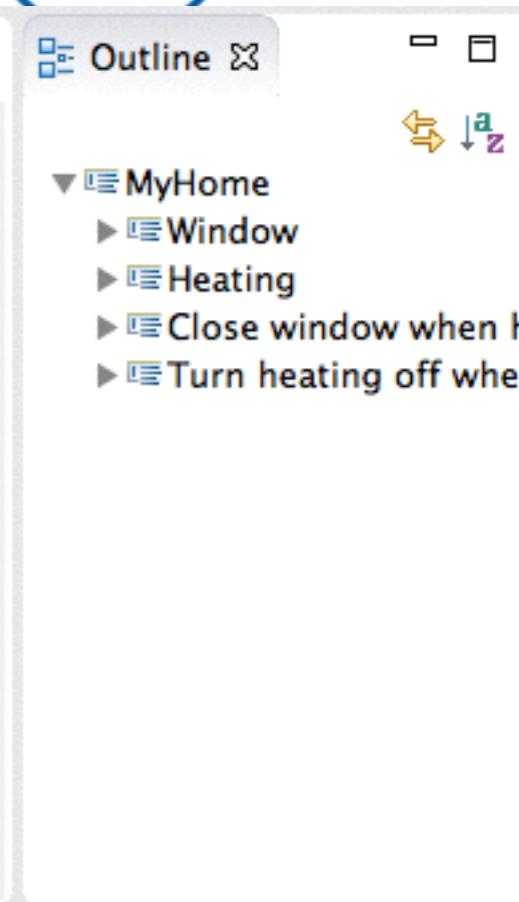
```
1. buildscript {  
2.     repositories {  
3.         mavenCentral()  
4.     }  
5.     dependencies {  
6.         classpath 'org.xtext:xtend-gradle-plugin:0.0.8'  
7.     }  
8. }  
9. apply plugin: 'xtend'  
10. repositories {  
11.     mavenCentral()  
12. }  
13. dependencies {  
14.     //or testCompile if you only want to use Xtend for some tests  
15.     compile 'org.eclipse.xtext:org.eclipse.xtext.lib:2.6.0'  
16. }
```



```
MyHome.rules □
Device Window can be OPEN, CLOSED
Device Heating can be ON, OFF

Rule "Close window when heating is turned on"
when Heating.ON
then fire(Window.OPEN)

Rule "Turn heating off when window is opened"
when Window.OPEN
then fire(Heating.OFF)
```



# DEMO



Content Assist

Find References

Incremental Builders

Wizards

Rich Hovers

Bracket Matching

Auto Editing

Code Folding

Refactoring

Template Proposals

Global Indexing

Go To Declaration

Outline View

Quick Fixes

Validation

Syntax Coloring



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Connecting People

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The Cisco Systems logo, featuring a dark blue rectangle with a white bar chart graphic at the bottom.



**SAIC**  
From Science to Solutions



CONFERENCE



SPEAKERS



PROGRAM



LOCATION

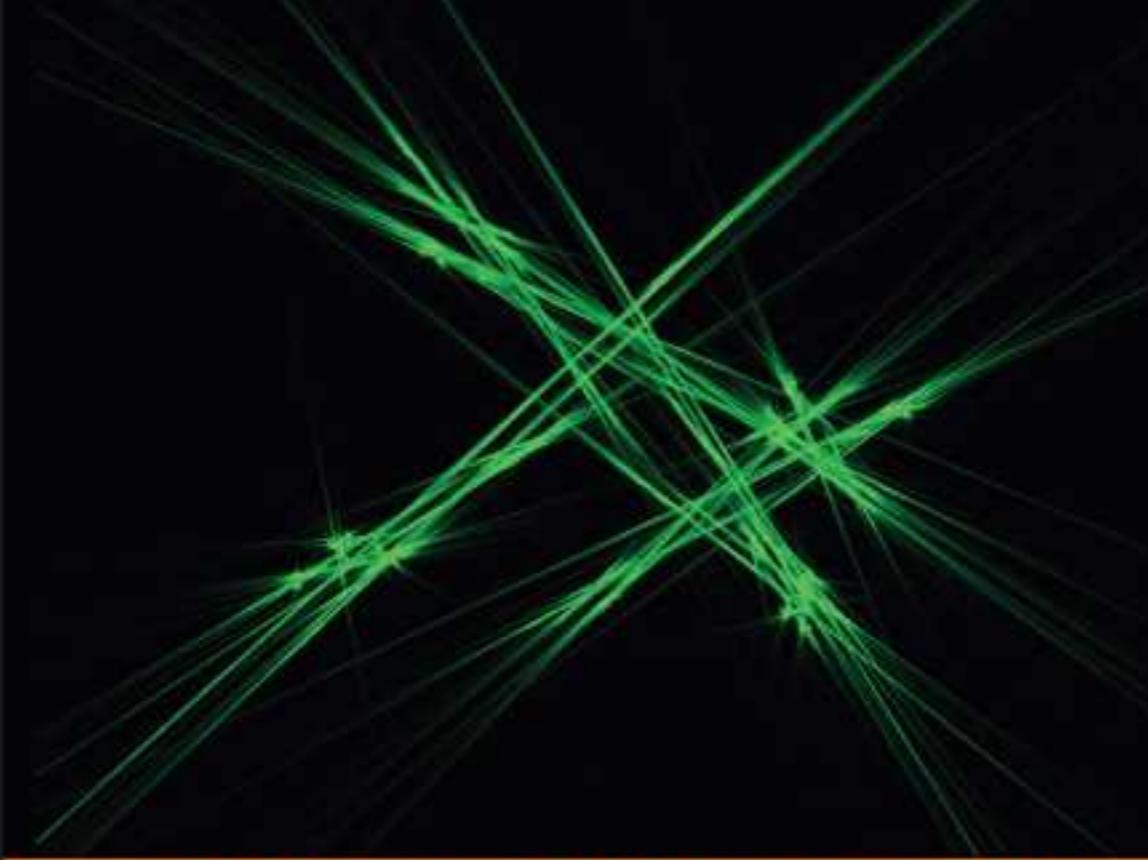
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# XtextCON

May 27-28 2014  
Kiel, Germany

REGISTER NOW >

[www.xtextcon.org](http://www.xtextcon.org)



Community Experience Distilled

# Implementing Domain-Specific Languages with Xtext and Xtend

Learn how to implement a DSL with Xtext and Xtend using easy-to-understand examples and best practices

Lorenzo Bettini

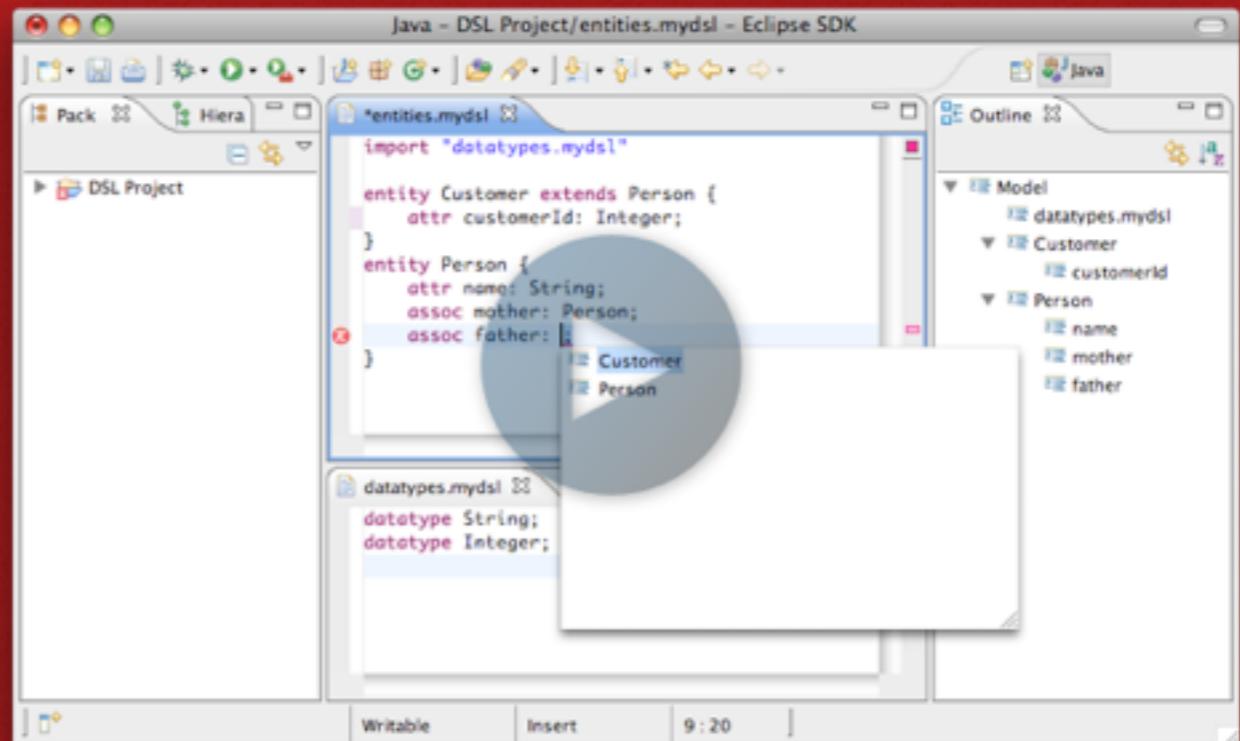
[PACKT] open source\*

## LANGUAGE DEVELOPMENT MADE EASY!

Building your own domain-specific languages has never been so easy. Just put your grammar in place and you not only get the working parser and linker but also first class Eclipse support.



Download



## WHAT IS XTEXT?

Xtext is a framework for development of programming languages and domain specific languages.

It covers all aspects of a complete language infrastructure, from parsers, over linker, compiler or interpreter to fully-blown top-notch Eclipse IDE integration. It comes with good defaults for all these aspects and at the same time every single aspect can be tailored to your needs.