

DSLs in Groovy

say what you mean,
mean what you say

Scott Davis



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developerWorks > Java technology

Mastering Grails Practically Groovy

What is a
Domain Specific
Language?

DOMAÍN

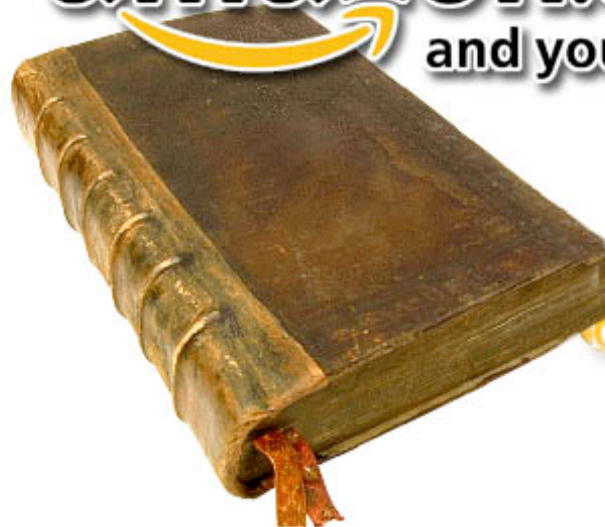


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Fragment of an ancient tablet with cuneiform script, likely from the Epic of Gilgamesh. The text is arranged in approximately 25 horizontal lines. The top portion of the fragment shows the beginning of a line with the characters "UŠUR" (Uruk) and "LÚ" (man), which are the opening words of the famous line: "Uruk-lugal, the man of Uruk." The fragment is dark and shows signs of age and wear.

Language







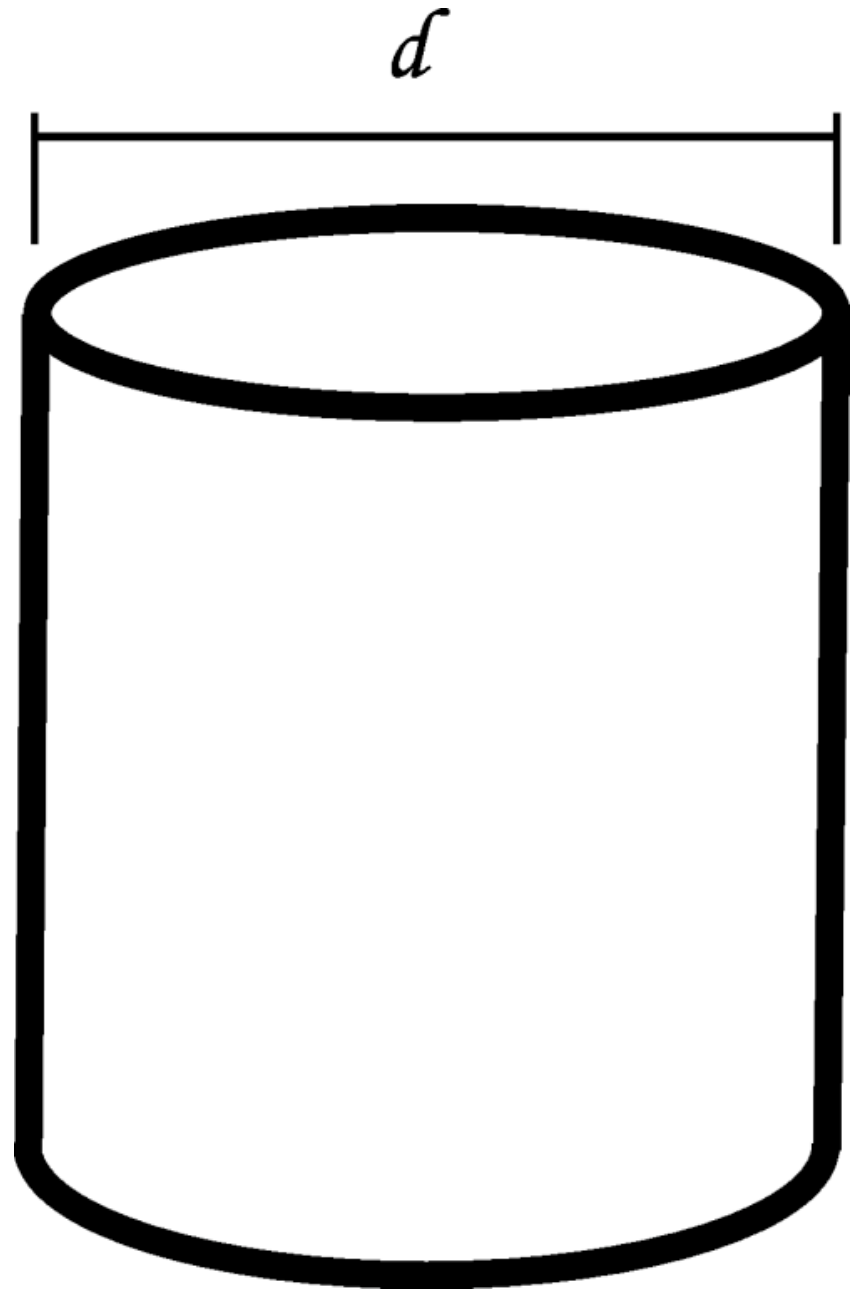




DSL:

a specific tool for a
specific job

SQL



```
select title, author  
from book  
where isbn = 'abc123';
```




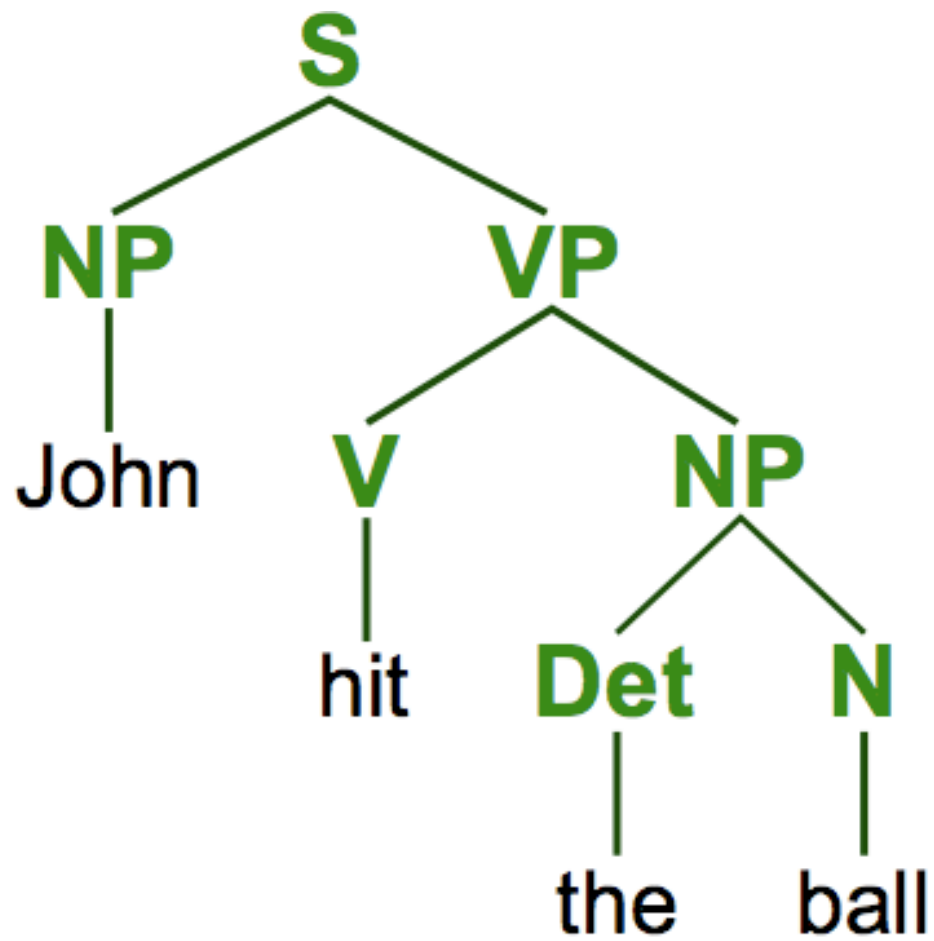

```
<target name="compile"
    description="Compiles the Java code">
    <mkdir dir="${build.dir}" />
    <mkdir dir="${classes.dir}" />

    <javac srcdir="${source.dir}"
        destdir="${classes.dir}"
        debug="on" deprecation="on">
        <classpath refid="compile.classpath"/>
    </javac>

    <copy todir="${classes.dir}">
        <fileset dir="${source.dir}">
            <include name="**/*.properties" />
            <include name="**/*.xml" />
        </fileset>
    </copy>
</target>
```

Internal
or
External?

The background is a solid blue color. In the bottom right corner, there are several faint, concentric circles of varying sizes, resembling ripples in water. The text is centered and written in a white, hand-drawn, slightly irregular font.



The Pragmatic Programmers

The Definitive ANTLR Reference

Building Domain-Specific Languages



Terence Parr

An Easy-to-Use Guide for Developers

Generating Parsers with JavaCC



Tom Copeland

Author of PMD Applied

Solutions to Real-World Problems

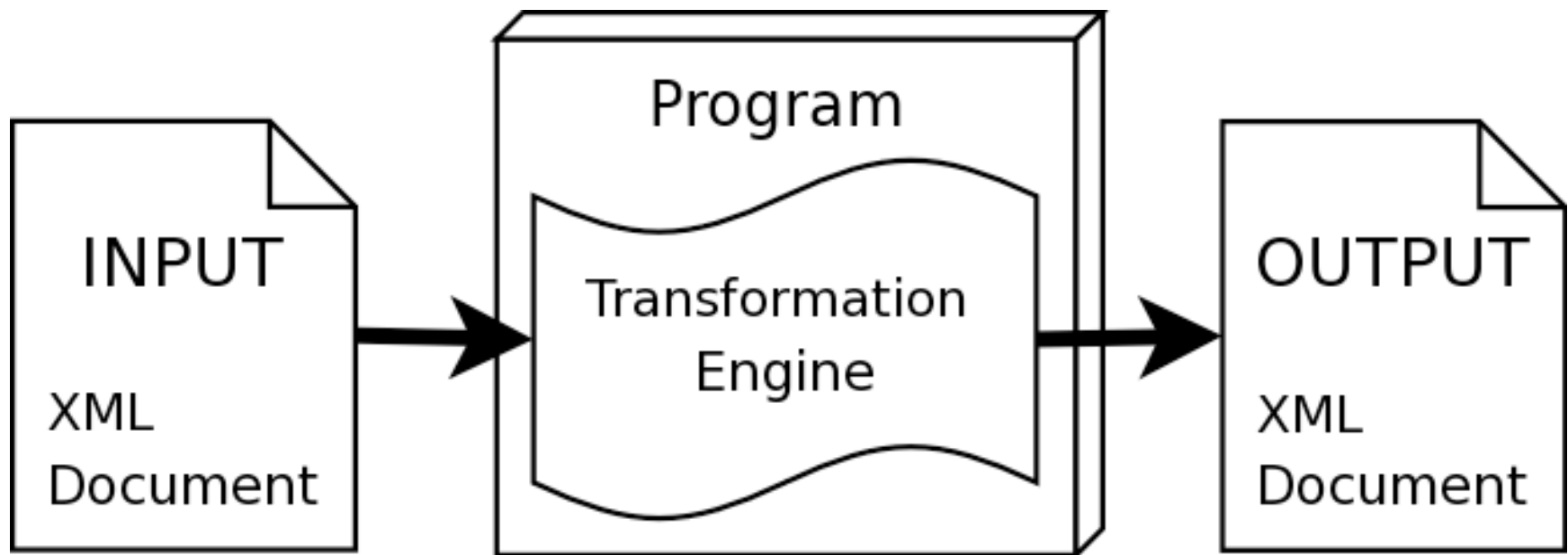
3rd Edition

Java & XML



O'REILLY®

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Simplicity







- * Cornstarch
- * Corn flour
- * Corn syrup solids
- * Mono and diglycerides
- * Soy lecithin
- * Polysorbate 60
- * Dextrin
- * Calcium caseinate
- * Sodium stearyl lactylate
- * Wheat gluten
- * Calcium sulfate
- * Natural and artificial flavors
- * Caramel color
- * Sorbic acid (to retain freshness)
- * Artificial color (yellow 5, red 40)

My Journey to Discover How the
Ingredients Found in Processed Foods
Are Grown, Mined (Yes, Mined), and
Manipulated into What America Eats

Twinkie, Deconstructed



**Steve
Ettlinger**

```
select * from books;
```

What is
Groovy?





is a DSL for Java



Groovy

[Download](#) | [Documentation](#) | [Developers](#) | [Community](#)

An agile dynamic language for the Java Platform

Groovy...

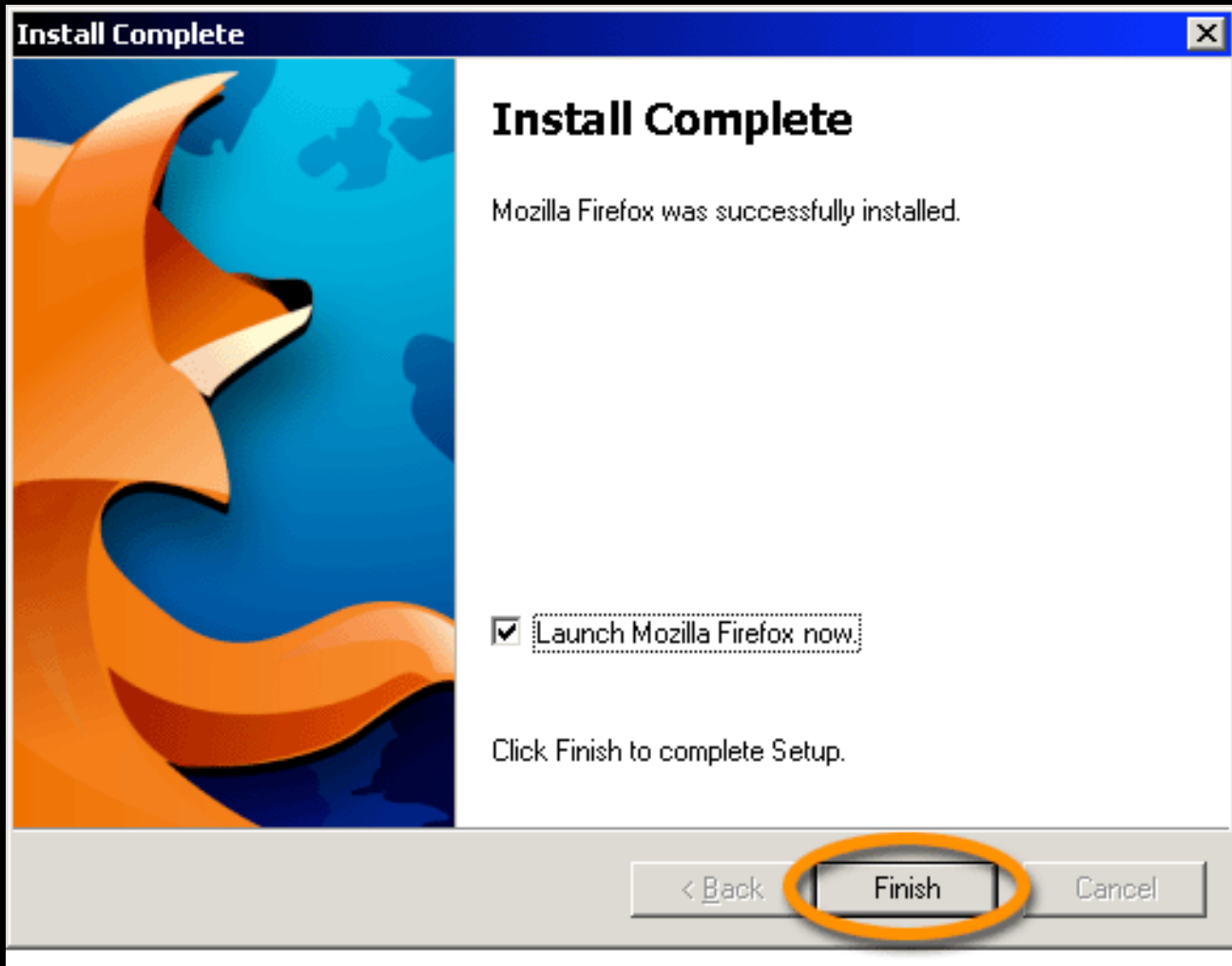
- is an agile and **dynamic language** for the **Java Virtual Machine**
- builds upon the strengths of Java but has **additional power features** inspired by languages like Python, Ruby and Smalltalk
- makes **modern programming features** available to Java developers with **almost-zero learning curve**
- supports **Domain-Specific Languages** and other compact syntax so your code becomes **easy to read and maintain**
- makes writing shell and build scripts easy with its **powerful processing primitives**, OO abilities and an Ant DSL
- increases developer productivity by **reducing scaffolding code** when developing web, GUI, database or console applications
- **simplifies testing** by supporting unit testing and mocking out-of-the-box
- seamlessly **integrates with all existing Java objects and libraries**
- compiles straight to Java bytecode so you can use it anywhere you can use Java


```
public class HelloJava{  
    public static void main(String[] args){  
        System.out.println("Hello Java");  
    }  
}
```

```
println "Hello Groovy"
```

A DSL for Installation





```
#!/usr/bin/env groovy

if(args){
    def project = args[0]
    println "Installing ${project}..."
    "cp jboss.tar.gz /install/jboss".execute()
    println "Finished installing ${project}..."
} else{
    println """"USAGE: install jboss
        [from src/dir] [to dest/dir]""""
}
}
```

A DSL for Time





```
Integer.metaClass.getHour = {->  
    delegate * 60  
}
```

```
Integer.metaClass.getMinutes = {->  
    delegate  
}
```

```
println 1.hour + 30.minutes
```

A DSL is a specific tool

Internal or External

To simplify the solution

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Questions?

Thanks for your time.

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