TECHNISCHE UNIVERSITÄT DRESDEN

MODELPLEX

REWERSE
reasoning on the web

Faculty of Computer Science, Institute of Software and Multimedia Technology, Software Technology Group
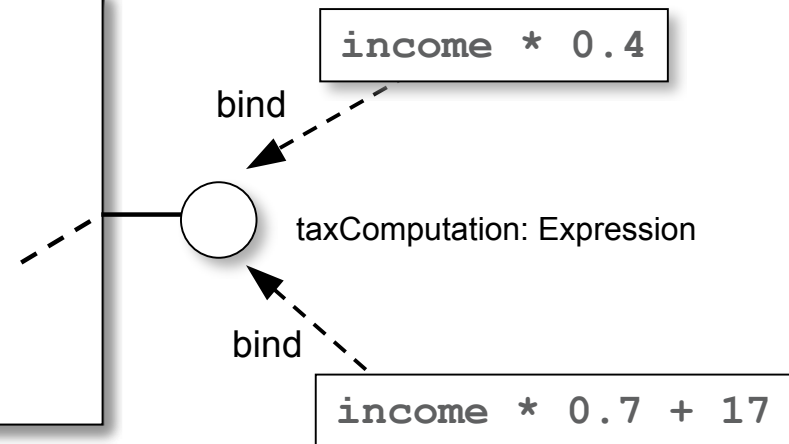
Source Code Composition with the Reuseware Composition Framework

http://reuseware.org

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Reuseware Background:
Invasive Software Composition

- Generic grey-box composition technique
- Based on manipulation of abstract syntax trees / graphs


```
public class TaxPayer {
  private double income;

  public double deductTax() {
    return
      income * 0.7 + 17;
  }
}
```

`income * 0.4`

bind

taxComputation: Expression

bind

`income * 0.7 + 17`

The Reuseware Formalism:

**Reuse and Component-based development
as a language feature:**

You want it in your Domain-Specific Language?

Now you get it for free!

Your language of choice does not support the desired
composition technique to separate your concerns?

Now you can extend it!

Your artifacts describe your system in different languages
and you do not know how to relate them?

Now you have a common component model!

Reuseware Composition Framework

- Framework and GUI to extend languages for reuse
- GUI integration into Eclipse
- Grammar-based language descriptions
  - Oriented at standard EBNF
  - Separation between abstract and concrete syntax
  - **+ Wizards for language extension**
- Composition environment generation
  - **+ Generation of a complete composition environment for an extended language from the grammars** (utilizing EMF)
  - **+ Composition engine utilizable as pre-processor**
  - **+ Eclipse-IDE including Editors with syntax-checking and -highlighting for extended languages**

Visit **the Demo!**

» ...and see for yourself

Visit **http://reuseware.org**

» Tutorials

» Screencasts

» Try it out:
Easy installation via Eclipse Update-Manager