TECHNISCHE UNIVERSITÄT DRESDEN

Fakultät Informatik Institut für Software- und Multimediatechnik, Lehrstuhl für Softwaretechnologie

Winter term 2015/2016 - Model-Driven Software Development in Technical Spaces

Exercise 2: EMFText

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The purpose of this exercise is to understand how to build domain specific languages (DSL). To get started, first download Eclipse and install EMFText (www.emftext.org).

Task 1: Statechart DSL

- Use the metamodel for state charts from the first exercise.
- Develop a DSL for statecharts using the keywords: `statechart`, `state` and `transition`

Task 2: Class Diagram DSL

- Develop a metamodel for class diagrams, which supports
  - Classes
  - Attributes
  - Methods with parameters and return type
  - Inheritance, Associations, Aggregations and Compositions
- Develop a DSL for this meta model using the keywords `attribute`, `method`, `class`, etc..
- Evolve your DSL so the keywords `attribute` and `method` are no longer needed

Task 3: DSL Integration

- Integrate the two DSLs developed in Task 1 and 2
- Each class can additionally have a statechart as shown in Listing 1.

Listing 1: Example DSL Instance for Class Model+Statechart

```
class Door {
  boolean isOpen;

  void open();
  void close();

  statechart {
     state open;
     state closed;
     transition open (close() [isOpen] / isOpen=false) closed
     transition closed (open() [!isOpen] / isOpen=true) open
  }
}
```