Universität Siegen
Software Engineering Group

Exercises for Softwaretechnik II
Sheet 3 — Issue date: 04.05.2017, Solution due by: 09.05.2017

Notes: To solve this task, you need the integrated development environment Eclipse and Xtext, an Eclipse plug-in for the development of domain-specific languages (DSLs).

A current Eclipse version is available at http://www.eclipse.org/downloads/.
An installation guide and an update site for Xtext can be found at https://eclipse.org/Xtext/download.html.

Task 3.1:  DSLs
[simple / Examination processing time ca. 6 Min.; actually: _____; preparatory reading: _____]
What are DSLs and what are they used for? Explain their properties and advantages with two examples.

Task 3.2:  Xtext Introduction
[medium / Examination processing time ca. 20 Min.; actually: _____; preparatory reading: _____]
Install XText (if necessary) in your Eclipse. Familiarize yourself with the environment in which you will work through the following 15-minute tutorial:
https://eclipse.org/Xtext/documentation/102_domainmodelwalkthrough.html

Task 3.3:  DSLs
[medium / Examination processing time ca. 10 Min.; actually: _____; preparatory reading: _____]
Design a textual DSL for state machines using Xtext. The DSL should be equivalent to the metamodel specified in Ecore in Figure 1. The definition of your DSL, i.e., how instances are represented textually, is up to you.

Task 3.4:  DSLs
[mittel / Examination processing time ca. 10 Min.; actually: _____; preparatory reading: _____]
Check the correctness of the Xtext grammar defined in task 3.3 by creating the following instances in your DSL.
Figure 1: Meta model for state automata