Implementation of a Graphical Modelica Editor with Preserved Source Code Formatting

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When an Integrated Development Environment (IDE) is developed, the support for multiple views of the same document is often essential. An example of this is Modelica models, where it should be possible to view and edit the same model in both its textual and graphical representation.

One implementation of Modelica is the open-source platform JModelica.org. It contains the Eclipse-based JModelica.org IDE [1] which provides a text editor for Modelica code, implemented using the JModelica.org compilers and the JastAdd framework [2].

In this paper, we present an implementation of a graphical editor for the JModelica.org IDE. Several challenges arising when implementing a graphical editor for Modelica models are discussed. Amongst others, the difficulties in rendering Modelica diagrams and how to interact with existing frameworks in Eclipse are covered. Also, a method for preserving the formatting of a modified source code file is presented, which is essential when the model is altered in the graphical editor.

The presented implementation is compared to other open source software (OSS) implementations of Modelica editors.

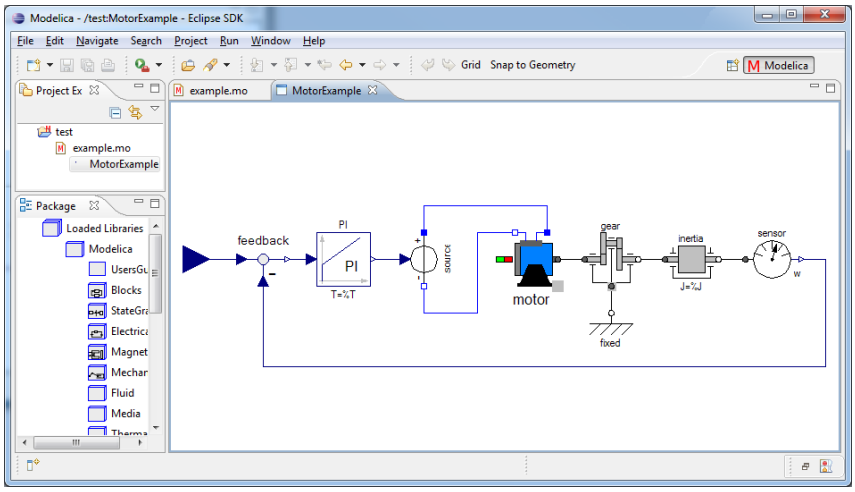

Figure 1: The graphical editor in JModelica.org.

References

[1] J. Mattsson, The JModelica IDE: Developing an IDE by Reusing a JastAdd Compiler, Master's thesis, Department of Computer Science, Lund University, Sweden, 2009.

[2] G. Hedin, E. Magnusson, JastAdd: an aspect-oriented compiler construction system, *Science of Computer Programming* 47 (1) (2003) 37–58. doi:http://dx.doi.org/10.1016/S0167-6423(02)00109-0.