

An OpenModelica Python Interface and its use in PySimulator

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How can Python users be empowered with the robust simulation, compilation and scripting abilities of a non-proprietary object-oriented, equation based modeling language such as Modelica? The immediate objective of this work is to develop an application programming interface for the OpenModelica modeling and simulation environment that would bridge the gap between the two agile programming languages Python and Modelica.

The Python interface to OpenModelica – OMPython, is both a tool and a functional library that allows Python users to realize the full capabilities of OpenModelica's scripting and simulation environment requiring minimal setup actions. OMPython is designed to combine both the simulation and model building processes. Thus domain experts (people writing the models) and computational engineers (people writing the solver code) can work on one unified tool that is industrially viable for optimization of Modelica models, while offering a flexible platform for algorithm development and research.

Figure 1 presents an overview of the functions of the OMPython API together with its sub components.

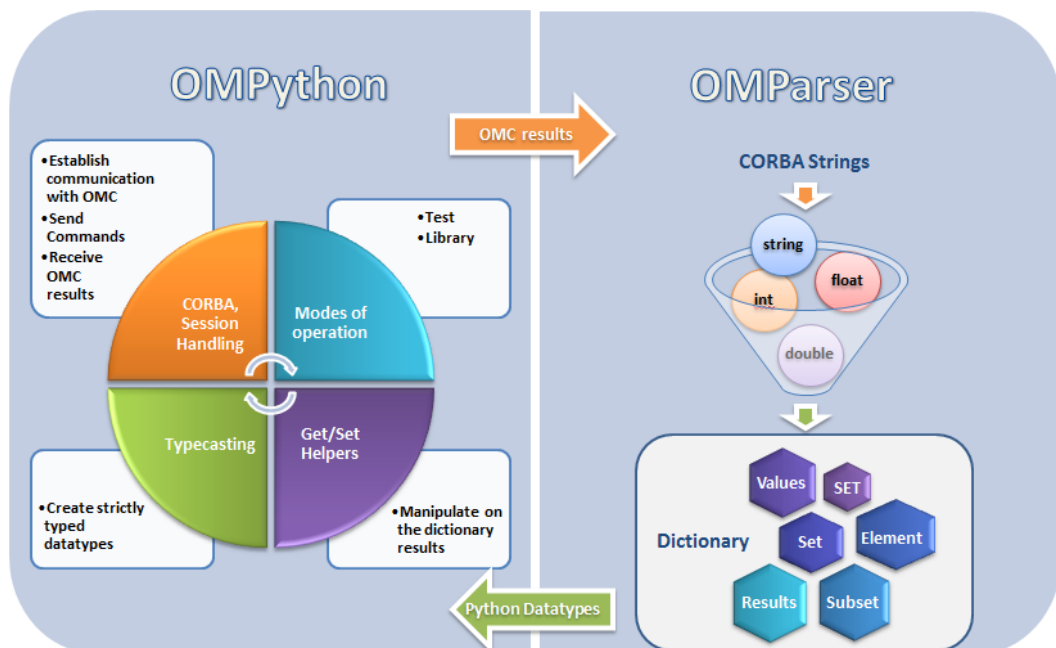


Figure 1. Functions of the OMPython API