

## Software Lab:



# Testing concept for scripts used in model-based software development

## Description

Model Based Software Development (MBSD) is increasing in various industries to replace manual coding. To support the MB-Developers during the process, tools are designed to change the model or find errors inside quickly. Verifying that a tool is working as intended is time consuming due to the size of the models. Instead of testing the tool on the software model itself, it is more efficient to use a unit-testing approach. The time consumption of testing the tool decreases considerably, because modifications of the functionality can be verified by a single unit-test, instead of running the whole system. Using a modular testing concept poses difficulties, such as dependencies to external functions, which have to be reduced or replaced by using mock functions.

## Task

Developing different testing concepts for tools that support MBSD:

- Evaluation of the different test concepts
- Evaluating which metrics (e.g. code coverage) exists for test concepts and are meaningful in this environment
- Implementation of one or more test concepts
- Implementation of mock functions to avoid dependencies
- Evaluation of test automation and automatic test model creation
- Evaluating which test concept fulfill which metrics

## Supervisor

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